Ministry of Higher and Secondary Special Education of Uzbekistan
BUKHARA Medical Institute named after Abu Ali ibn Sino
Department of Therapeutic Dentistry

Training and metodology complex
for the 2nd year students in the subject
"Clinical Restorative Dentistry"

Area of expertise - 500000 "Health and Welfare"
Field of Education - 510000 «Health»
Direction of Education - 5510400 "Dentistry"

Bukhara - 2019

Methodical complex designed object based on curriculum "Clinical restorative dentistry" registered Ministry of higher and middle special education under № 5510400-402.

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Methodical complex is made on the basis of the curriculum and the curriculum towards education 5510400 - Dentistry, discussed and approved at a meeting of the cathedral.

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Methodical complex discussed and approved by the Central methodical Council Bukhara State Medical Institute.

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Methodist: _____ Jumaeva Sh.B

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"Approved"
Vice President for Academic and
educational work
_____ G.J Jarilkasinova
"_____" was _____2019

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lecture №1

Subject: aseptic and antiseptic in restorative dentistry.

1.1. Technological models for education

The lesson of 80 minutes	**Number of students**
Type of classes	**News Introduction of lectures**
Plan of the lecture:	***pery hour*** 1. Master aseptic and antiseptitku in dentistry. 2. Consider pre sterializatsii. ***The second hour.*** 3. Types of sterilization. 4. Preparation tools to presterilizing cleaning.
The task of the training session	Inform students to give a full explanation of sterilization. Types of sterilization.
Teaching methods	Conversation, visual aids for lectures
Type of classes	total-collective
Visual aids on	Textbook, lecture material, projector, computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

1.2Tehnologicheskaya card lectures

stages of work	**Teacher**	**Student**
1.Stage of preparition (10 minutes)	1. Aims classes 2. Preparation of slides for lecture material 3.Literatura Related 1. Harald O. Heymann Sturdevant's Art and Science of Operative Dentistry, 6e (Roberson, Sturdevant's Art and Science of Operative Dentistry), 2015 2. Kamilov HP va b. - «Stomatologik asbob va ashyolar» - Tashkent 2005 th. 3. Kamilov HP va b. «Terapevtik stomatologiya propedevtikasi" - Tashkent, 2006y. 4. Borovsky EV "Therapeutic dentistry". - M., 1989. 5. Magid EA, Mukhin NA "Phantom of the therapeutic courseDentistry. Atlas". M .: Medicine 1987. Borovsky EV "Dentistry. Guide to practical training. " - M., 1987	Listens to and records
2.Introduction (10 minutes)	***1. Aims and objectives of the lecture material:*** **Goal:** 1. Master aseptic and antiseptitku in dentistry. Consider pre sterializatsii **Task:** Learn techniques asekptiki and antiseptics. **Questions on the topic**	listen Answers the students' questions
3.BASIC stage (50	1. Introduction to the theme with the indication slides	Listen and write

minutes)		
4.Final stage (10 minutes)	1. Conclusion.	Listen and write

Plan of the lecture:

1.types of disinfection methods
2.Physical method of disinfection
3.Mechanical method of Disinfection
4.Chemical method of disinfection
5.Biological method of disinfection
6.Airborne method of disinfection
7.Requirements chemical disinfectants used in hospitals
8.Methods of presterilization cleaning
9. Azopyramid sample
10.Amidopirin sample
11.Phenolphthalein sample
12.Packaging and packing of medical devices
13.LAbeling for steam sterilization
14.Packed glassware, bottles, cups, bottles
15.The concept of sterilization
16.Advantages of steam sterilization
17.Shortcomings with steam sterilization
18. Advantages of air sterilization
19. Shortcomings with air sterilization
20.Produre work with ovens
21. Advantages of Glasperlin sterilizer
22. Shortcomings with Glasperlin sterilizer
23. HIV prevention

The text of the lecture

Used 4 main methods of disinfection:
Mechanical method - a ventilation, ventilation of premises, laundry, surface treatment vacuuming, wiping them with a damp cloth.
The physical method is used in the high temperature treatment in boiling distilled water or water with the addition of sodium bicarbonate (baking soda), steam sterilizer method (autoclave), the air in the dry air oven method. This method is reliable, environmentally friendly and safe for the personnel.
The chemical method allows to process medical items of various chemicals in liquid, gaseous state. Products are immersed in the disinfecting solution, poured into plastic, glass or enamel coated without damage to the container. For such disinfection is recommended to use special containers in which the products are placed on the perforated grilles. This reduces the risk of infection and trauma personnel. Containers with disinfectant solutions must be provided with covers, have inscriptions indicating the name of the means, its concentration, the preparation and use of the term.
The biological method is based on the antagonism of different types of microorganisms. So, using bacteriophages, ie viruses bacteria are killed staphylococci, Pseudomonas aeruginosa, typhoid bacteria, and so on. D.
Mechanical method of disinfection

Mechanical method of disinfection does not kill microorganisms. It is based on the removal of microflora with objects, including pathogenic and pathogenic forms. This is achieved by filtering the air and water through the various designs of filters, processing soft and hard surface cleaner, mechanical cleaning of objects. The mechanical method is used as the first stage of treatment. It is carried out to remove the outer and inner surfaces of medical devices impurities. As a result of purification by microorganisms reduces their seeding

Physical method of disinfection

Disinfection using a physical method provides the death of microorganisms due to the antimicrobial action of natural disinfectants. Physical method is environmentally friendly and in compliance with the guidelines, is safe for personnel. Before disinfecting with the use of one of the physical methods produce products or cleaning tool of the organic impurities in tanks with running water.

Exposure to high temperature

All pathogenic and conditionally pathogenic microorganisms tolerate low temperatures, but relatively quickly die at a temperature above 100 ° C. For disinfecting of medical devices are used to a high temperature heated water and / or air - boiling, processing dry hot air, saturated steam or water vapor-air mixture.

A method for boilingin distilled water with the addition of 2% sodium bicarbonate (baking soda) used in the disinfection of glass articles, rubber, heat-resistant polymeric materials and metals. Water at a temperature of 100 ° C has a devastating effect on many micro-organisms. Addition of water 2% sodium hydrogencarbonate antimicrobial effect amplifies boiling. Disinfection exposure time is counted from the moment of boiling water. Within 15 minutes of boiling is provided on a workpiece death of pathogenic and conditionally pathogenic bacteria in vegetative form, mycobacteria, viruses and fungi. For decontamination of anthrax must be boiling for at least 45 minutes. Boiling is recommended for disinfection of linen, dishes, toys, medical equipment, health products,

air method It can be used for products uncontaminated by organic substances only. When the dry hot air temperature 160-180 ° C causes the death of all kinds and forms of microorganisms. Therefore, in the air sterilizers active method is used as a disinfectant and sterilizing agent of medical devices. At a temperature of 120 ° C and 45 minutes of exposure dry hot air sterilizers in air can be used to disinfect clean medical devices made of glass, metal, silicone rubber, and the net and dining ware tea.

steam method(Autoclaving) is the most active method of disinfection as well as the steam is able to penetrate deeply into the treated objects and to ensure the destruction of all microbial species, including spore forms. This method is implemented in a steam sterilizer for disinfecting at 110 ° C at a pressure of 0.02-0.05 MPa (0.2-0.5 kg / cm2) and at 20 minutes exposure; parovozdushnoformalinovyh in cells in the form of vapor at a temperature of 97-98 ° C. The steam sterilizer disinfecting medical devices, work clothes, health products and others. Parovozdushnoformalinovyh disinfection chambers made clothes disinfection, books, bedding, clothing and other objects.

The UV method

Ultraviolet germicidal radiation is an effective prophylactic antiepidemic means aimed at suppressing the activity of microorganisms in air and on surfaces Improvement. It is one of the means to ensure the reduction of the spread of infectious diseases, supplements mandatory compliance with the sanitary rules and regulations on the production and maintenance of the premises. Ultraviolet germicidal installation should be used in areas with an increased risk of the spread of infections, due to possible microbial contamination of air and surfaces in medical, industrial and public facilities. The list of facilities to be equipped with ultraviolet germicidal plants, Sanitary apparatus defined rules and operation or industry standard technical documentation agreed with Rospotrebnadzora bodies. Technical means for air disinfection by ultraviolet germicidal radiation and indoor surfaces, include: ultraviolet germicidal radiation source (germicidal lamp) in which the radiation has a spectral range with wavelengths of 205-

315 nm (the other region of the radiation spectrum plays a secondary role); irradiators, redistribute radiation flux in the surrounding space in a predetermined direction; Fitting bactericidal representing group irradiators installed indoors to provide a predetermined level of reduction in microbial contamination. UV disinfection is carried out by use of bactericidal irradiators. Bactericidal irradiators in design there are wall-mounted, ceiling, mobile, shielded and recirculation. Unshielded be used only in the absence of people, screened - short time (no more than 15 min) in the presence of people and recirculating - unlimited time in the presence of people. Optimal at the present time, we should recognize the recirculation irradiators such as "Dezar" using non-mercury lamps and bezozonovye "Phillips". Ability recirculation leads to quality improvement of indoor environments, although outside remediation can not be achieved. More sensitive to ultraviolet radiation viruses and bacteria in vegetative form (rods, cocci). Practically insensitive mushrooms, Mycobacterium tuberculosis and protozoa microorganisms. They have the greatest stability spore forms of bacteria. Microorganisms are cumulative photobiological receivers, therefore, the result of interaction germicidal radiation and microorganism depends on its type and the radiation energy absorbed by the cell, i.e., proportional bactericidal dose (exposure). The antimicrobial effect of ultraviolet radiation, which is part of the electromagnetic spectrum, the optical band appears in the destructive-modifying photochemical DNA damage in the cell nucleus of microorganisms that leads to the death of the microbial cell in the first or a subsequent generation. Ultraviolet radiation provides effective disinfection only clean air and clean dust free surfaces. One of the highlights of the use of germicidal lamps is to control the lifetime of the lamp. The use of open-type lamps outdated negative impact on the health of staff and lead to the development of the factors of resistance to antibiotics and disinfectants by microorganisms. The offices available should be working documents, including input lamps act of commissioning and operation log, testifying about the features of the regime of radiation depending on the room mode, its cubic capacity, processing time and the timing of replacement of the lamp on the basis of the information submitted in the passport for product. The use of open-type lamps outdated negative impact on the health of staff and lead to the development of the factors of resistance to antibiotics and disinfectants by microorganisms. The offices available should be working documents, including input lamps act of commissioning and operation log, testifying about the features of the regime of radiation depending on the room mode, its cubic capacity, processing time and the timing of replacement of the lamp on the basis of the information submitted in the passport for product. The use of open-type lamps outdated negative impact on the health of staff and lead to the development of the factors of resistance to antibiotics and disinfectants by microorganisms. The offices available should be working documents, including input lamps act of commissioning and operation log, testifying about the features of the regime of radiation depending on the room mode, its cubic capacity, processing time and the timing of replacement of the lamp on the basis of the information submitted in the passport for product.

Chemical disinfectants

In hospitals for disinfection widely used chemicals - disinfectants. History of the discovery of disinfectants refers to the XVIII century. When in Europe were discovered chlorine and hypochlorides. Despite the fact that the chemical formula of hydrogen peroxide was known in 1818, its properties as a disinfectant were published only in 1891. Phenol was known to 1834 and was used for the treatment of wounds Lister and other surgeons in Europe. In the second half of the XIX century. in connection with the discoveries of R. Koch and Louis Pasteur had studied the antimicrobial activity of different chemical compounds. It was created disinfectants such as mercury chloride, bleach, alcohol and phenolic tar oil. The first disinfectant on the basis of formaldehyde, known as "Lysoform", was created in the 90s of XIX century. Since 1916, were published data on the antimicrobial activity of quaternary ammonium compounds (QAC). Since 1935, HR began to be widely used and still in use today. Despite the fact that by the end of 2005 in Russia allowed to use 335 disinfectants, research on the development of new drugs is an urgent problem.

Disinfectants are produced in the following forms: tablets, granules, powders, liquid concentrates (solutions, emulsions, pastes, creams, etc.); Gases; ready to use forms (working solutions, antibacterial wipes, varnishes, paints, aerosol cans).

The chemical disinfectants used in hospitals following requirements1. Antimicrobial activity - should have microbicidal action (bactericidal, tubercles-tsidnym, virucidal, fungicidal, sporicidal), i.e. "Kill" bacteria. Not only suitable means delaying the growth of microorganisms, i.e. having mikrobostaticheskim action; have a broad spectrum of antimicrobial activity, i.e., to destroy pathogenic and conditionally pathogenic bacteria, viruses, fungi, spore forms of Bacillus;
- have a high efficiency, i.e. provide decontamination facility, when used in small concentrations in the short term;
- have residual antimicrobial activity, have a slight dependence of the activity on the presence of contaminants, change in pH and lowering the temperature. 2. the toxicity of all disinfectants are divided into 4 classes.

In health care facilities may use: - means 2 hazard class - with the means of protection of respiratory organs, eyes, skin, in the absence of patients, and patients; - means Hazard Class 3 - without protection, in the absence of patients, and patients; - means 4 class of danger - without protection in the presence of patients and patients.

3. **Physico-chemical properties**: - to have a large amount of the active ingredient; dissolve rapidly in water; - to have a disinfectant stability for several years (3-5), working solutions - a few hours; the content of active ingredients, physical and chemical parameters shall conform to the requirements of normative-methodical documents. Disinfectants should not have corrosiveness, discolor and destroy tissue, wallpaper, damage the lacquered, polished, synthetic surfaces, etc., as well as pollute the environment, i.e., be biodegradable. It is desirable that, besides the basic antimicrobial action means has a positive side properties: cleaning, deodorizing, bleaching, cleaning, as well as have the ability homogenising at decontamination of biological secretions (urine, pus, etc.), And food residues.

The process of decontamination of products and objects complicated, its effectiveness depends on the following factors- on the chemical nature of the active substance and its mechanism of action, the concentration of active substance in the formulation and its concentration in the working solution; - the type of microorganisms which cause infections, they are resistant to the disinfectant; the physicochemical properties of the treated object, its shape, size, the presence of contaminants thereon of organic and inorganic nature; - processing the object the method a disinfectant (irrigation, cleaning, dipping in the solutions, and wiping al.); - the time of action of the disinfectant solution to the microorganisms. Experts have noted that human immunodeficiency virus (HIV) in comparison with other viruses (hepatitis B, C, enteroviruses) is less resistant to chemical disinfectants, therefore means, designed to inactivate viruses parenteral hepatitis, have a virucidal effect on HIV. As seen from these publications, with

increasing resistance to various chemical disinfecting agents all microorganisms can be positioned as follows: human immunodeficiency -virus
- hepatitis B virus
-virus herpes simplex
-lipidnye (medium-sized) viruses
: vegetative bacteria
-griby
- non-lipid (small) viruses
- Mycobacterium tuberculosis
- bacterial spores.

It is also noted that there must not be carried out rinsing product under running water after their application in patients, as aerosol formed during washing, can infect persons involved in the processing of products, and promote the microbial contamination of surfaces and equipment pomescheniy.Neposredstvenno after application toolkit immersed a container with a disinfectant so that the solution covered the product is not less than 1 cm. Channels and cavities filled with disinfectant solution products so as not to them It keeps the air bubbles. Thus, the purpose of disinfection is to kill pathogenic and conditionally pathogenic microorganisms which is obtained by the combined use of both mechanical, chemical and physical methods to influence the microflora. Disinfectants belong to different chemical groups depending on the membership of their component active substances (DV). For tools that come into contact with mucous membranes and wounds, including operating, a disinfection is not enough. sterilization is required. But before this is carried presterilizing obrabotku.Predsterilizatsionnuyu purification - is carried out in order to remove articles from protein, fat and mechanical impurities and residues of drugs.

Pre-sterilized cleansing dental products is carried out after disinfection and the subsequent laundering of residues of disinfectants with running drinking water.

Presterilizing purification is carried out using means and cleaning modes as well as a new generation of drugs, according to the instructions for use.

It can be done:

manually;

mechanized way.

When manual cleaning process involves a series of operations:

Soaking in a detergent solution with the full immersion of the product in exploded view with the required filling of all channels and cavities for 15-60 minutes depending on the used means.

Wash each product in the wash liquor by means of a ruff or cotton-gauze tampon, tissue wipes during 0.5-1 minutes. Monitor the temperature regime, if this condition is stipulated in the guidelines. Ershevanie rubber products is not allowed.

Rinse under running water (0.5-10 minutes). Implemented in containers (bath, sink) using an inkjet device for supplying water, for a time, provided the instruction to apply means. Sink for rinsing instruments should not be used for hand washing of medical personnel.

Rinsing with distilled water for 0.5 minutes.

Drying with hot air at a temperature of 85 ° C until complete disappearance of moisture in outdoor air sterilizer at the vent; in a drying cabinet at sterilizatsionnom- door ajar.

To determine the quality of medical devices presterilizing purification the following samples are used:

blood and protein contaminants (azopiramovaya and amidopirinovaya sample);

residual quantities of alkali washing solutions (phenolphthalein test);

fat (sample with Sudan III).

Quality Control of cleaning subject items 1% of each item processed in the change.

Azopiramovaya sample.

Preparation of reagent: 100 g amidopirina and 1.0-1.5 g of aniline hydrochloride are mixed in a dry container, and then pour 95% ethyl alcohol until
liter. The mixture is thoroughly mixed. The reagent is ready after complete dissolution of the components. Shelf life of the reagent in the refrigerator in a tightly closed vessel 2 months at room temperature - not more than 1 month.
Before setting the sample prepared working solution. Mix equal volumetric amount of the above reagent (azopiram) and 3% hydrogen peroxide solution. The sample must be placed for 30-40 minutes. Otherwise, it may spontaneously staining reagent.
Amidopirinovaya sample.
For the production of the sample is needed 5% amidopirina solution (95% ethanol), 30% acetic acid solution and 3% hydrogen peroxide solution. The last two reagent is prepared in distilled water. The working solution was prepared by mixing equal amounts of these solutions.
Phenolphthalein sample.
Using 1% alcohol solution of phenolphthalein. The solution can be used for a month under the condition of its storage in a refrigerator.
Technique setting azopiramovoy, amidopirinovoy, Phenolphthalein samples: exterior surface of products working reagent solution is wiped or applied multiple drops. To control the needle cleaning them bring 3-4 drops of reagent and repeatedly pushing the piston. Then the reagent is displaced through 3060 seconds pas white gauze.
With a positive sample azopiramovoy immediately or within 1 minute of a violet, then pink-lilac or brownish coloration reagent.
Positive amidopirinovaya sample followed by blue-purple staining reagent. Staining reagents come later 1 minute, it is not considered.
Phenolphthalein sample is considered positive when a pink color reagent.
The sample with the Sudan III.
Dissolve 0.2 g of the crushed dye Sudan III and 0.2 g of methylene blue in 70 ml of pre-warmed to 60 ° C 95% ethanol. Then 10 ml of distilled water. The prepared solution may be stored in a tightly sealed bottle in the refrigerator for up to 6 months. Reagent wetted surface of the product, which could be contaminated fats. After 10 seconds the dye rinsed copiously with water. Stains, painted in yellow color, indicative of grease.

Packaging and packing of medical products

Packaging - this is one of the five general sterilization process basic steps: cleaning, disinfection, preparation and packaging, sterilization, storage and holiday use. The effectiveness of the sterilization process depends on the type of packaging material, packing method and loading products to be sterilized. Packaging - this is the stage in the overall process of sterilization that follows the cleaning, disinfection and preparation for loading the products to be sterilized. Selection and use of a suitable packaging material - one of the most important aspects to maintain effective sterilization storage. to the packaging material requirements: must match the used sterilization method; allow air to penetrate and sterilyantu; maintain sterility during storage and handling; no damage; be strong, to withstand tears and punctures; not delaminate when opening; be capable of marking; not allocate the organic substances to be flexible enough for easy folding and unfolding; be low; be of high quality; must be readily recycled. Allocate sterilizing packaging materials for protecting the sterilized items from secondary contamination by microorganisms within the maximum permissible period, and protective packaging designed to protect the sterilized packages containing medical devices from the effects of environmental factors during their transport and storage prior to use products on naznacheniyu.Naibolee

frequently as packaging materials used muslin (140 filament sections of 1 cm), a kraft paper, Nonwoven wrapping materials and paper / plastic bags. When using single-walled sterile package contents may be contaminated from the outer surface of the package when opened. In connection with ztim items to be sterilized must be packaged in a two-layer paper or nonwoven wrapping materials. Studies in recent decades found that used for the sterilization of the combined paper and packaging materials meet the modern requirements of sterilization. It is necessary to minimize the use for the sterilization of medical products sterilization boxes (NIRS). Their use is permissible only in extreme cases when the equipment internal protective belt of textile materials. Should not be used for packaging the rubber adhesive tape, pins, paper clips, staples or other sharp objects, which could damage the packing and cause damage to the sterilization equipment. As the results of bacteriological examinations, inoculation of microflora of NIRS was 3.8%, Kraft packages - 1.08%, in paper bags and combined firms' vipaka Medical »and« SPS / Rexam »products were completely sterile. High inoculation microflora with articles subjected to the sterilization kraft packages handicraft production, probably occurs due to the fact that in steam sterilizers with vacuum pumping air they often unstuck. In recent years, widely used to sterilize got Gluing and heat sealable bags. microflora inoculation of NIRS was 3.8%, Kraft packages - 1.08%, in paper bags and combined firms' vipaka Medical »and« SPS / Rexam »products were completely sterile. High inoculation microflora with articles subjected to the sterilization kraft packages handicraft production, probably occurs due to the fact that in steam sterilizers with vacuum pumping air they often unstuck. In recent years, widely used to sterilize got Gluing and heat sealable bags. microflora inoculation of NIRS was 3.8%, Kraft packages - 1.08%, in paper bags and combined firms' vipaka Medical »and« SPS / Rexam »products were completely sterile. High inoculation microflora with articles subjected to the sterilization kraft packages handicraft production, probably occurs due to the fact that in steam sterilizers with vacuum pumping air they often unstuck. In recent years, widely used to sterilize got Gluing and heat sealable bags. that in a steam sterilizer with vacuum pumping air they often unstuck. In recent years, widely used to sterilize got Gluing and heat sealable bags. that in a steam sterilizer with vacuum pumping air they often unstuck. In recent years, widely used to sterilize got Gluing and heat sealable bags.

Self-sealing sterilization bags made of a special paper and Kraft medical polipropilenopoliefirnoy transparent laminated films 2 mm thick. The film should be tinted to provide a better shade inside the tool. The preferred package design - is the side and end-splice joints with adhesive tape that can adhere to both the paper and the film, i.e., 50% paper, 50% of the film and the perforated fold. There is an easy way to check the quality of used packages. Sealed empty bag. Then opened upper perforated corner-seam gluing so as to be able to pour water into half volume. If water leakage is detected, then the Self-sealing sterilization pouches substandard bonding. Important to remember, that opening of the package after the sterilization is carried out from below the tool. Preferably the presence of the notch for gripping when opening the paper and film. The correct procedure of taking out contents of the bag film is separated from the paper, and not pushing the tool through the film and paper, as in this case, sterility is broken. It is important that when you open the foil packet separated from the paper. If even the slightest part of the film will remain on paper, the contents of the package is considered contaminated and should be re-sterilized. The film remaining on the paper was exposed to the environment. Once the contents of the package when opening comes into contact with the film, there will be contamination of the contents of the material. The complete separation of the paper from the film is required. Otherwise, the quality of the packets is questionable. Package size is just as important for the quality of sterilization. If the package is too small or too densely filled, it is not possible to seal it properly. Any unevenness in the place of bonding will lead to the formation of holes and violation of sterilization quality. Heat-sterilization packaging is shown in the example of production of firm "MEDTEST SPb": combined heat sealable bags intended for packaging of medical devices, sterilizable by steam; rolled heat-sealable packaging material for medical devices, sterilizable air method. Combined sterilization packaging made of special

multilayer film of blue or green and medical paper connected thermojunction. Package size is just as important for the quality of sterilization. If the package is too small or too densely filled, it is not possible to seal it properly. Any unevenness in the place of bonding will lead to the formation of holes and violation of sterilization quality. Heat-sterilization packaging is shown in the example of production of firm "MEDTEST SPb": combined heat sealable bags intended for packaging of medical devices, sterilizable by steam; rolled heat-sealable packaging material for medical devices, sterilizable air method. Combined sterilization packaging made of special multilayer film of blue or green and medical paper connected thermojunction. Package size is just as important for the quality of sterilization. If the package is too small or too densely filled, it is not possible to seal it properly. Any unevenness in the place of bonding will lead to the formation of holes and violation of sterilization quality. Heat-sterilization packaging is shown in the example of production of firm "MEDTEST SPb": combined heat sealable bags intended for packaging of medical devices, sterilizable by steam; rolled heat-sealable packaging material for medical devices, sterilizable air method. Combined sterilization packaging made of special multilayer film of blue or green and medical paper connected thermojunction. it is not possible to seal it properly. Any unevenness in the place of bonding will lead to the formation of holes and violation of sterilization quality. Heat-sterilization packaging is shown in the example of production of firm "MEDTEST SPb": combined heat sealable bags intended for packaging of medical devices, sterilizable by steam; rolled heat-sealable packaging material for medical devices, sterilizable air method. Combined sterilization packaging made of special multilayer film of blue or green and medical paper connected thermojunction. it is not possible to seal it properly. Any unevenness in the place of bonding will lead to the formation of holes and violation of sterilization quality. Heat-sterilization packaging is shown in the example of production of firm "MEDTEST SPb": combined heat sealable bags intended for packaging of medical devices, sterilizable by steam; rolled heat-sealable packaging material for medical devices, sterilizable air method. Combined sterilization packaging made of special multilayer film of blue or green and medical paper connected thermojunction. Heat-sterilization packaging is shown in the example of production of firm "MEDTEST SPb": combined heat sealable bags intended for packaging of medical devices, sterilizable by steam; rolled heat-sealable packaging material for medical devices, sterilizable air method. Combined sterilization packaging made of special multilayer film of blue or green and medical paper connected thermojunction. Heat-sterilization packaging is shown in the example of production of firm "MEDTEST SPb": combined heat sealable bags intended for packaging of medical devices, sterilizable by steam; rolled heat-sealable packaging material for medical devices, sterilizable air method. Combined sterilization packaging made of special multilayer film of blue or green and medical paper connected thermojunction.

Round sealable material colorless made of special heat-resistant film. **protective packaging**represented packages made of special grades of polymer plenki.Kazhdaya pack (pack) for the steam sterilization of marking comprises: a chemical process indicator with letter designation color (gray) of the final state; trademark of the manufacturer; symbol or letter of the opening direction; digital signage batch number, date of manufacture; size designation code; symbol or letter designation steam sterilization method. The marking of the web material for air sterilization comprising: a manufacturer's trademark; symbol or letter designation air sterilization method; designation of the lot number, date of manufacture; code size designation. When using the rolled material for air sterilizing packages prepared therefrom, cutting segments hoses required length. the segment size is chosen with a margin of at least 3-4 cm for the bottom and top sealing seam. Thermojunction sealed so that the seam was still behind 2-3 cm segment of the film bag. The edges of the sleeves should never be cut, because In this case, the film can be wrapped, creating a cavity for accumulation of dust. Each consumer unit (packet) of the protective packaging for transportation and storage of packages containing sterilized medical products includes labeling: trademark of the manufacturer; size designation code; designation of the lot number, date of manufacture; symbol or lettering functionality. Place the sterilized

product in a package, orienting a product toward the working part, the opposition of character opening. To prevent damage to the sterilization of packages stitching (Needles et al.) And cutting tools must first wrap working parts of cutting tools with paper towels or gauze or pack products sequentially in two sterilizing packaging, observing sine rule: "paper to paper", "film to the film." Woven dressings and operational stack without seals to ensure free penetration of steam between the layers. The sealing of the packages is performed by heat-sealing devices providing thermojunction width of not less than 8 mm. Heat sealing temperature mode is: for packets combined, sterilized by steam: +180 ... + 195 ° C; for web material, sterilizable hot air: +195 ... + 205 ° C. Optimum sealing conditions are selected temperature by adjusting the practical heat-sealing temperature, termovalikov force in accordance with the instruction manual for the particular heat-sealable pribora.Kontrol mode parameters and conditions of sterilization by means of chemical indicators located both outside and inside the sterilization upakovki.Prosterilizovannye products in containers after unloading of the sterilizer must remain in the sterile area before they full self-cooling. During the self-cooling should be excluded: the emergence of drafts in a sterile area of cold air, the presence of unauthorized persons. Cooled packaging are subject to mandatory visual inspection. Damaged, wet, fallen on the floor packaging considered to be contaminated, and their products are subject to mandatory re-packing and re-sterilization. Increased reliability scheduled period of storage (90 days) is achieved by storing the packages in a secondary (protective) packaging. Sealing protective packaging is performed using a self-adhesive tape of a width not less than 12 cm, or via heat-sealing machines, providing a seam width of not less than 8 mm. By sealing the end to the protective packaging is marked indicating the date of sterilization, name of department. When recruiting tool sets before packaging it must be ensured that the stainless steel instruments do not come in contact with the tools that have damage to chrome or nickel layers. Such instruments should not be used to prevent corrosion of instruments that do not have corrosion. Packed instruments in sterilization containers are stacked on edge, so that the condensate does not accumulate in packs. If the tool kits are packed in cardboard trays, they can be stacked horizontally, since the condensate is easily absorbed by the cardboard or fabric wrap. Kidney-shaped trays sterilization stacked on edge or bottom up to prevent kondensatoobrazovaniya. Glassware, bottles, cups, bottles are packed in disposable packaging - paper sheets or packages bore down. packet size is selected so that the boundary between the pictures and a thermojunction remained interval not less than 3 cm. sterilizable material should take no more than 3/4 of the volume of package to package sutures were not stretched. Before sealing the package must squeeze the air, to avoid high pressure and rupture the sealed seams. Operational folded linen stacked in paper packaging, Bix or sterilization baskets vertically, so that the steam can smoothly flow between its layers. packing density should be such that between the stacked layers of clothes could freely pass the hand. To prevent contamination of the sterilized goods are additional protective packaging, e.g., textile bags, plastic covers, particularly during transportation over long distances. The most effective placement of packages to be sterilized beforehand in protective packaging, followed by sterilization at the same time all the packages complex. Storage of sterile materials is carried out in closed enclosures. Sterile packaging stacked in one layer so they do not wrinkle and deform, as it can carry out to the depressurization. even to avoid short-term storage of sterile packages on the floor sills near handwashing sinks near unprotected water pipes, as Moisture on the packaging increases the risk of re-infection of the materials. Each package must be marked with the date or time of sterilization of the product.

The shelf life of sterile products are determined by the applicable instructions and guidance documents. In recent years, for the storage of sterilized instruments used "UV cabinets" of domestic and foreign production to extend shelf life and ease of use. Sterilization - is the destruction of all types of microbial flora, including their spore forms, and viruses by means of physical or chemical effects. It is considered a medical device sterile if the probability of bioburden is equal to or less than 10 to the power -6. Sterilization should be subject to medical

devices that come into contact with the blood of the patient in contact with the wound surface and in contact with the mucosa and able to cause a breach of its integrity.

-Sulfonic sterilization process for the successful implementation of which requires the following requirements: Is the effective cleaning;

- appropriate packaging materials; - compliance with the rules of the packaging of medical devices; - compliance with the rules of the sterilizer load packages of medical products; - an adequate quantity and quality of retortable material; appropriate work equipment; - compliance with rules governing the storage, handling and transport sterilized material.

The process of sterilization of medical instruments and products from the time the operation is completed and before a sterile storage or following application comprises performing actions in sequence. All steps should be strictly followed to ensure sterility and long tool life. Schematically it can be represented as follows: Takeout tools after use

Disinfection ->
Mechanical cleaning tool ->
Check for damage ->
Rinse Drying Instruments ->
Pack in sterilization packaging ->
Sterilization ->
Sterile storage / application.

In the application of the sterilization packaging (paper, foil or sterilization containers) tools may be stored in sterile form, and used later for 24 hours to 6 months.

In health care settings used several forms of sterilization of the organization: decentralized, centralized, carried out in the CSSD, and mixed. In outpatient dental practice decentralized sterilization is used more often (especially in private clinics). Centralized sterilization characteristic of regional dental clinics and large private clinics. Septic sterilization has a number of significant drawbacks affecting its efficiency. Presterilizing products processing is performed mostly by hand and the quality of cleaning products is low. Control over compliance with the technology of sterilization, packaging rules, download items in the sterilizer, and the effectiveness of the equipment in a decentralized sterilization difficult. All this leads to a reduction in quality of sterilization. When applying centralized form of sterilization is possible to achieve higher sterilization results through improvement of existing and introduction of new sterilization methods (mechanization of cleaning instruments and medical devices, facilitating the work of nurses and others.). In the central sterilization department release: washing, disinfection, packaging and sterilization unit and separate storage of sterile items. The air temperature in all divisions should be from 18 ° C to 22 ° C, relative humidity - 35-70%, the air flow direction - of the net relative to the contaminated zones. When applying centralized form of sterilization is possible to achieve higher sterilization results through improvement of existing and introduction of new sterilization methods (mechanization of cleaning instruments and medical devices, facilitating the work of nurses and others.). In the central sterilization department release: washing, disinfection, packaging and sterilization unit and separate storage of sterile items. The air temperature in all divisions should be from 18 ° C to 22 ° C, relative humidity - 35-70%, the air flow direction - of the net relative to the contaminated zones. When applying centralized form of sterilization is possible to achieve higher sterilization results through improvement of existing and introduction of new sterilization methods (mechanization of cleaning instruments and medical devices, facilitating the work of nurses and others.). In the central sterilization department release: washing, disinfection, packaging and sterilization unit and separate storage of sterile items. The air temperature in all divisions should be from 18 ° C to 22 ° C, relative humidity - 35-70%, the air flow direction - of the net relative to the contaminated zones. In the central sterilization department release: washing, disinfection, packaging and sterilization unit and separate storage of sterile items. The air temperature in all divisions should be from 18 ° C to 22 ° C, relative humidity - 35-70%, the air flow direction - of the net relative to the contaminated zones. In the central sterilization department release: washing, disinfection,

packaging and sterilization unit and separate storage of sterile items. The air temperature in all divisions should be from 18 ° C to 22 ° C, relative humidity - 35-70%, the air flow direction - of the net relative to the contaminated zones.

Table 1. Types sterializatsii.

types of sterilization	sterilization methods	active agent
physical	steam air glasperlenovy infrared	pressurized steam (120 ° C, pressure 1.1 atm) (132 ° C, pressure 2.0 atm) dry air at 180 ° C heated glass beads at 190-240 ° C infrared radiation at 200 + 3 ° C
chemical	liquid plasma	solutions of chemical compounds (Aldehyde, oxygen, chlorine) pair 20% hydrogen peroxide
gas	-	ethylene oxide in the mixture with carbon dioxide, methyl bromide and others.

On successful completion of sterilization can talk with the following processing parameters: temperature, steam pressure, the time of exposure (exposure).

Table 2. Modes of sterilization of some medical instruments

sterilization process	Temperature, ° C	Pressure, kgf / cm²	The exhibition, min.	Workpiece Material
Hot dry air (Dry-air sterilizer)	180		60	metal, glass
Water-saturated steam under excess pressure (autoclave)	132	2.0	20	metal, glass, textiles, rubber
	120	1.1	45	rubber, latex, certain polymeric materials

Sterilization with hot steam is widespread in everyday medical practice. Its advantages - it is a short full production cycle and low temperature. Autoclave equipment and in recent years was improved and allows for accessible health facility level costs to ensure stringent clinical standards.

The recommended method of steam sterilization modes:

The temperature of 134 ° C, pressure 2 bar, 20 minutes exposure. The program is used for sterilizing instruments, wound dressing, surgical linen and other izdeliy.Temperatura 120 ° C, pressure 1.1 bar, 45 min exposure. The program is used to sterilize rubber and glass (see Table 2.2.) .Evropeysky standard EN 13060 divides autoclaves into classes B, 8, N.Autoclaves Class B meet the highest standards of sterilization. Such devices are sterilized any tool, including porous with numerous cavities in the package and without it.

Class 8 autoclaves have a lower power and limited in application. For example, they can not sterilize complex instruments with multiple internal cavities or objects in a multi-layer packaging.

Autoclaves class N recommended for simple sterilization of solid articles, tools.

Figure 2.1. Steam Sterilizer - autoclave

Table 2.2. Modes sterilization by autoclaving of various dental materials and tools

Indicator	**Temperature, ° C**	**Pressure, bar**	**Time (without pre-vacuum phase and heating up phase), min**	**The total exposure time, min**
Metalliches Kie and glass instruments unpacked	134	2.10	-17 min Total time: 4 min - sterilization; 10 min - drying; 3 min - pressure equalization	37
Packed metal tools, fabrics, rurgicheskaya wadding, gauze	134	2.10	Total time - 25 min 12 min - sterilization; 10 min - drying; 3 min - pressure equalization	45
Dental handpieces without packaging. Rubber and plastic materials in bulk	121	1.08	Total time - 33 min 20 min - sterilization; 10 min - drying; 3 min - pressure equalization	fifty
Packed dental handpieces. Packed rubber and plastic materials	121	1.08	Total time - 43 min 30 min - sterilization; 10 min - drying; 3 min - pressure equalization	60

One of the basic conditions of the quality sterilization autoclave charge is exactly according to the manufacturer's recommendations. This means the correct location and the number of downloadable items. Water vapor must circulate freely, and the condensate is timely output. When loading the autoclave note that heavy tools were located on the lower trays, and light - on verhnih.Izdeliya loaded in an amount which allows free air flow to the products to be sterilized. It is not allowed to block the scavenging ports and air vents. Loading and unloading products carried out at a temperature not exceeding 40-50 ° C.

For sterilization control in every Bix lay special thermoindicators. They should be placed at three different levels - the lower, middle, upper - and allow both external (in the sterilizer chamber) and inner (packed with products) control. After closure and sterilization is required to use a sterile material is checked by tests. They need to change the color. If at least one of the bars did not change color, all material re-sterilized.

Storage of sterilized products Deadline: Bix without a filter, in a double soft package - 3 days; in parchment paper unimpregnated sack, sack wet strength, high packing paper, crepe paper, filter sterilization box - 20 days.

Air sterilization method

The sterilizing agent in air (a hot air) method of sterilization - dry hot air temperature of 180 ° C. The sterilization is then carried out in air sterilizers (ovens) (fig.2.2).

Drying cabinet is an electrical cabinet or a rounded rectangular shape. The sterilization chamber has a grid or trays to accommodate items. The desired temperature is set and maintained by a thermoelectric switch. Before sterilization of the enclosure is completely removed humid air, which includes the door open chamber machine and heated to 80 ° C. Thereafter, the cabinet is closed, and after 10-15 minutes, the temperature reaches 150-170 ° C. Sterilization is carried out in a package of special paper or unpacked in an open container. sterilization mode is shown in Table. 2.3.

Dry Heat Sterilization method is suitable for materials which can not be sterilized under pressure (powders, oils). This method is applicable for manufacturing of metal, silicon, and glass.

Articles to be sterilized are loaded in an amount which allows free air flow to the sterilizable object.

Metal tools for laying should not touch each other.

Dry Heat method has both advantages and disadvantages.

Advantages of the method:

when exposed to dry air drying cabinet there is no corrosion of the instrument;

the method is simple and economical, it can be used in health care settings.

Disadvantages:

long full sterilization cycle (at least 60 min);

High temperature damage sterilizable instruments, so this method can not be sterilized handpieces, mirrors, light pipes, cutting tools, as well as wool and dressings (see. Table 2.3.).

Conditions of sterilization	**modes of sterilization**		**name object**
	Temperature, °C	**Exposure time, min**	
Dry products or packaging it in an open container	180	60	Surgical and dental instruments, components and instrumentation components and devices in contact with the wound surface, including those made from materials and alloys korrozionnonestoykih
	180	60	Syringes labeled "200 ° C" glassware

There sterilizers, which use a method based on the use of a short pulse of infrared radiation which creates in the chamber at 200 + 3 ° C. infrared sterilization of instruments time unpackaged from 10 to 25 minutes, including at the output stages and cooling mode. However, the drawbacks are the lack of a sterilization packaging tools, damaging effects on polymeric materials and rubber, finally, the lack of regulatory indicators.
Currently, there are various instruments for sterilization of small instruments. As an example glasperlenovy sterilizer. Glasperlenovy sterilization method

Reference: 1-9-005

Model: thermoest

Manufacturer:GEOSOFT

TERMO EST - small glasperlenovy sterilizer (ball) desktop type.
Glasperlenovy Sterilizer ball tool
Glassperlenovye sterilizers Tau Quartz ball 150 and 150 Tau Quartz "Tau Steril di Bianchi Giancarlo e. CSnc" company (Italy) are used for sterilization of endodontic instruments, burs and other small tools destination (ortho-, medical, surgical, cosmetic, etc.). .
Glasperlenovy sterilizer Tau Quartz ball 150
Glasperlenovy sterilizer ball Tau Quartz 500

OPERATING PROCEDURE
with glasperlenovym sterilizer

Turn glasperlenovy sterilizer ON / OFF button
Wait until the orange indicator light goes out
(Glasperlenovy sterilizer scored the desired temperature)
Flip the ball sterilizer and insert working portion of the tool into a glass filler at the time indicated on the front panel sterilizer glasperlenovogo
After sterilization close lid closure glasperlenovogo sterilizer.

STORAGE AND MAINTENANCE glasperlenovogo sterilizer

Glasperlenovy sterilizer to be stored in heated and ventilated at a temperature from +5 to +40 0 C, with relative humidity of 80% (at 25 0C), in its original packaging manufacturer.
Keep the ball in the sterilizer clean. Processing glasperlenovogo outer surfaces of the sterilizer must be made in accordance with the GOST standards and SES (42 # 21 # 2 # 85).
Do not damage the insulation of the power cord glasperlenovogo sterilizer.
Service and repair glasperlenovogo sterilizer should only be performed by qualified service personnel.

WARRANTY on glasperlenovy Sterilizer

The manufacturer guarantees the quality of glasperlenovogo sterilizer, materials and quality of work for 12 months from the date of purchase, at the customer subject to the rules and conditions of use and storage. During the warranty period, determined by us to be defective, will be repaired free of charge or, at our discretion, be replaced.
The warranty is void if the ball sterilizer has been damaged by accident, misuse, and also in case of repairs or modifications made by persons not authorized by the manufacturer. Glasperlenovy sterilizer is not the subject of any other warranty, expressed or implied.
Glasperlenovye sterilizers having mechanical damage repair warranty can not be.
Repair glasperlenovogo sterilizer is made at the factory or in specially authorized service representative. Delivery glasperlenovogo sterilizer service organization for warranty and post-warranty service is carried out at the expense of the owner of the product.
Glasperlenovy sterilizer taken in warranty repairs only if the warranty card.

Specifications glasperlenovogo sterilizer:

Model glasperlenovogo sterilizer:	**Tau Quartz 150**	**Tau Quartz 500**
Sterilization time (sec.)		
Mirrors, probes	2	2
Endoigly, files, drills	5	5
surgical Instruments	10	10
cosmetic tools	10	10
The dimensions of the bulb.		
Diameter (mm)	40	**62**
Height (mm)	35	**fifty**

Other features glasperlenovogo sterilizer		
Sterilization temperature (0C):	230	230
Voltage (V)	220	220
Line Frequency (Hz)	fifty	fifty
Power, W)	85	**170**
Weight, kg)	1.5	**2**
Overall dimensions, mm)	90 x 160 x 115	**130**x 160 x 135

Operating principleglasperlenovogo sterilizer:
Sterilization occurs by processing the medical instrument heat. It uses a metal cup filled with - glass beads 2 mm in diameter (hence the name 2 - ball sterilizer).
Electric heating element glasperlenovogo sterilizer heats the flask, which contains tools.
Heat transfer occurs through the filler.

Glasperlenovye balls.

Tau Quartz Glasperlenovy sterilizer 150
Glasperlenovy Sterilizer Tau Quartz 500

RESPONSIBILITY

The manufacturer, its agents and dealers do not bear any responsibility to consumers and any other natural and legal persons of any potential or actual damages, loss or damage, direct or indirect, caused glasperlenovym sterilizer, sold or delivered by us, or followed as a result of or use of equipment, including any termination of service, loss of business or anticipated profits.
The manufacturer reserves the right to make changes and additions to the product design, without impairing the basic specifications. make changes to the documentation and publications related to the product, without the need to put someone else in known about the changes and additions.
The disadvantage of liquid sterilizing chemical agents is the possible presence in the purified cleaning tools traces - toxic residues microbicides. Besides this, the presence of sterile receptacles, wherein at least two of sterile distilled water to wash the sterilant. When chemical sterilization may occur contamination by microorganisms sterilized instruments.
Gas sterilization method is more reliable, but it is technically very complicated. For her special facilities are required, equipment, coordination with the local sanitary control bodies. However, sometimes this method, there is no alternative. After all, not all medical equipment will withstand temperature and liquid sterilization. For example, optical instruments, electrical

equipment. But gas sterilization method is not widely used with ethylene oxide and formaldehyde in Russia, as long as the development of domestic equipment are at the initial stage. In some health facilities using foreign gas sterilizers. Note that this equipment is quite expensive. Plus a gas sterilization method is the use of packaging materials that can be stored for years. The downside, in addition to its high cost,

There is a modern, efficient, but very expensive method of sterilization - plasma cleaning in low-temperature plasma sterilizer SPS. The operating principle of this apparatus is based on plasma generation directly around sterilizable material. The sterilizing agent is 20% hydrogen peroxide. The process occurs in any part of the chamber. Temperature control is carried out with infrared sensors. Sterilization in this case is a dry process at a temperature between +35 to +50 ° C, which guarantees safety tools and equipment sensitive to elevated temperature and humidity. Sterilization Time - 90 to 120 minutes.

Sterilization plasma.

Plasma - the fourth state of matter. For this type of sterilization is used argon, flowing through the alternating current. The method is penetrating. Use the effect of ball lightning. The bombardment of atoms or molecules of the plasma substance sterilizable object performs communication gap microbial proteins, resulting in their death. Sterilization takes place at a temperature of 60-80 0C for 10-12 minutes. Apparatus "plasmodynamic-2."

1.7. Prevention of hepatitis B and HIV infection

In the process of sterilization of instruments special attention is paid to the prevention of hepatitis B and HIV.

instrument sterilization with the threat of HIV infection. Virus is killed at 46o C for 30 minutes. Disinfectants (WHO, 1986): ethyl alcohol 70 ° - 10 min, 50 ° - 12 min. 75o propyl alcohol - 1 min, ethyl acetone 1: 1 - 10 minutes; chlorhexidine 4% - 5 min, chlorhexidine 3% - 10 min; Sodium hypochlorite 0.5% - 1 min, 0.1% - 10 min; Hydrogen peroxide 3% - 1 min

3% - 10 min; formaldehyde 0.2% - 5 minutes, 2% - 1 min; phenol - 5% - 1 min, Lysol 0.5% - 10 min; parafarmaldegid 0.6% - 25 min; polivinilpiralidon 10%

1 minute; Chloramine 2% formaldehyde 40% 1: 1 - 10 hours for mirrors.

During the dental procedures, especially the manipulation of cutting, piercing tools (needles, scalpels, drills separatsi- tional drives for the preparation of the teeth), special precautions must be observed.

Health care workers should relate to blood, saliva and other body fluids as potentially infectious material. Before operation you must wear safety glasses or plastic sheets, face mask, disposable gloves. After examination of the patient and after each procedure when working with infectious material should be thoroughly wash your hands.

In the case of risk of HIV infection - infection medical personnel must carry out all manipulations in double gloves. Re gloves are not used. In operation, the glove was treated with 70% alcohol or other antiseptic.

Puncture gloves and damaged skin must be treated gloves disinfectant, then remove them, to squeeze blood from a wound, wash your hands with running water and soap, treat the skin of the hands of 70% alcohol and rub the wound with 5% tincture of iodine. Contaminated blood immediately treated hands for 30 minutes swab moistened skin antiseptic (70% alcohol, 3% chloramine solution aktiniderm, aktini-

sept, chlorhexidine). After that, wash hands twice with warm running water and soap, wipe dry with a towel individually.
After contact with blood and other biological fluids to ophthalmic mucous membrane must be washed with water or eye 1% boric acid solution. If the blood has got on the nasal mucosa, the nose should drip protargola 1% solution. When contacting blood or other biological fluids with the mucosa of the mouth must rinse mouth with 70% alcohol or 0.005% potassium permanganate solution, or 1% boric acid solution. In case of violation of the integrity of the skin (wounds, scratches, oozing dermatitis) Medical practice excluded from work.
The risk of infection is greatly reduced spread before treatment if the patient rinses the oral cavity. Thus, rinsing water only reduces the number of microorganisms in the aerosol by 75% and the use of special rinses the oral - 98%.
For a medical professional, the injured when providing dental care HIV-infected patient is set in the observation period of 12 months with blood examination after 3, 6 and 12 months in AIDS - center. Immediately after the injury is necessary to prevent HIV infection using special anti-retroviral agents.
For sanitary and hygienic treatment of dental office except for daily cleaning of the room during therapeutic, orthopedic receiving required-cleaning time 1 month using disinfectants: 1% chloramine solution or 0.05% septodora solution. At the doctor's surgery general cleaning should be carried out more often - 1 time per week.

lecture №2

Subject: Methods of examination of patients in the clinic of therapeutic dentistry. Structures tooth enamel and other hard tissues.

1.1. Technological models for education

The lesson of 80 minutes	**Number of students**
Type of classes	**News Introduction of lectures**
Plan of the lecture:	***pery hour*** 1. Master the methods of examination in dentistry 2. Consider questions concerning the structure of tooth enamel. ***The second hour.*** 3. Objective and subjective methods of examination. 4. Histological structure of tooth enamel
The task of the training session	Inform students to give a full explanation of the method of examination of patients.
Teaching methods	Conversation, visual aids for lectures
Type of classes	total-collective
Visual aids on	Textbook, lecture material, projector, computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

1.2Tehnologicheskaya card lectures

stages of work	Teacher	Student
1.Etapy training (10 minutes)	1. Aims classes 2. Preparation of slides for lecture material 3.Literatura Related 6. Harald O. Heymann Sturdevant's Art and Science of Operative Dentistry, 6e (Roberson, Sturdevant's Art and Science of Operative Dentistry), 2015 7. Kamilov HP va b. - «Stomatologik asbob va ashyolar» - Tashkent 2005 th. 8. Kamilov HP va b. «Terapevtik stomatologiya propedevtikasi" -Tashkent, 2006y. 9. Borovsky EV "Therapeutic dentistry". - M., 1989. 10. Magid EA, Mukhin NA "Phantom of the therapeutic courseDentistry. Atlas". M .: Medicine 1987. Borovsky EV "Dentistry. Guide to practical training. " - M., 1987	Listens to and records
2.Vvedenie (10 minutes)	***1. Aims and objectives of the lecture material:*** **Goal:** 1. Master the methods of examination in dentistry 2. Consider questions concerning the structure of tooth enamel. **Task:** Inform students to give a full explanation of the method of examination of patients. **Questions on the topic**	listen Answers the students' questions
3.BASIC stage (50 minutes)	1. Introduction to the theme with the indication slides	Listen and write
4.Zaklyuchitelny step (10 minutes)	1. Conclusion.	Listen and write

The text of the lecture

drying method consists in purifying the tooth from dental plaque and drying air. In the presence of caries is noted the appearance of dull matt stains respectively zone hard tissue demineralization. vital staining method is based on the fact that with the structure of enamel caries process acquires change is observed in the enamel appearance spaces into which can penetrate sufficiently large particle dyes. Thus, the possible visualization of caries in its initial stages. For carrying vital staining method is necessary to make the removal of dental plaque from the tooth or teeth to be surveyed. Teeth via saliva ejector or cotton rolls delimited by exposure to saliva, air dried and exposed to a solution of methylene blue staining (using a 2% aqueous solution). After time staining tooth was washed with water and, using a special color intensity scale of ten, the result is evaluated. Emit light, medium and high degree of demineralization.

TERMOTEST or thermodiagnostics used to describe the temperature sensitivity of teeth. Receptors tooth pulp respond to stimuli in the temperature range 5-10 ° C less than and more than 55-60 ° C sensation of pain. Within the limits of these temperatures, the pain is not observed. This is normal. Under the conditions of having the pathological process limits within which the pain response is observed, it is narrowed. When the total disintegration of the pulp pain under the influence of temperature irritants will not be observed. To conduct TERMOTEST in the most simple version of it, we need hot or cold water a certain temperature.

Elektroodontometriya used to determine the viability of the tooth pulp. The basis of this method is the additional examination is susceptibility to the stimulus in the form of electric current. Normally, in the absence of a pathological process pulp of permanent teeth of stable existence in step responsive to a current of 2-6 mA. In the presence of the pathological process, this threshold is reduced, and at different nosologies, in which there is partial or complete destruction of the pulp, the numerical value of this threshold will be correspondingly different. When carrying out electric pulp test uses a special device that contains in its composition of two electrodes: a passive, fixed to the arm of the subject, and active, which is placed on the dried surface carefully cutting edge or protuberance in the study of intact tooth (or in a cavity in the presence of the latter). The obtained values are compared with normal values.

X-ray diagnostics for examination of patients with dental profile is extremely important. Depending on the situation, the task will be used by various methods radiography. Depending on the location of the film decided to subdivide their intra- and extraoral. near-focus contact radiographing method is applicable for determining the state of solid teeth tissues hidden cavities, recurrent caries process at the boundary between the filling and the tooth. These processes are often not detected at their location on the interproximal surfaces, which most often occur. In conducting x-ray radiographs will be revealed on the presence respectively the hearth chamber bleaching hard tissue destruction. Detection of changes in the bone tissue surrounding the tooth, also carried out by contact near-focus X-ray. Pereapikalnye changes will be absolutely certain type in certain nosology. Thus, when fibrous periodontitis observed increase in the width of the periodontal ligament without altering its contours. The width of the periodontal ligament in this case is 2.1 mm. When granulating periodontitis on the radiograph is determined bleaching hearth with unclear contours, which are usually compared with flames. Granulating periodontitis accompanied radiographic changes in the form of bleaching with clear contours. bleaching size is not more than 5 mm. Kistogranulema radicular cyst and will also have a characteristic smooth clear contours, but their size increases even greater (kistogranulema - from 5 to 8 mm, radicular cyst - 8 mm). Properties bone changes in the alveolar bone of teeth groups (4-5 teeth) is detected by the contact radiography. Diagnosis tissue changes within the jaw carried by panoramic radiography. In this manner determined by neoplastic processes, fractures, cracks, pathological processes in the area of the maxillary sinus, sequesters osteomyelitis, changes in the bone of the alveolar process (the state of a compact plate, spongy substance, changing the height of partitions between the teeth, and so on. D.). Orthopantomogram used when the need to obtain an image of both jaws. Very often this method is used in the diagnosis of periodontal disease. Orthopantomography panoramic images and can be used for the diagnosis of pathological processes in the area of individual teeth, but the image,

In such cases, you must also receive sighting shots, on which it is practicable. Tomography is receiving a certain picture layer of various tissues. Tomogram quite often used for the diagnosis of changes in the temporomandibular joints, in neoplastic processes, and so on. D.

Determination of acidity can be performed to define the acidity of saliva and dental plaque acidity. Saliva we subjected to a study of its pre-assembled prior to receiving food from the oral cavity in an amount necessary to us (20 mL), either directly in the mouth, placing the analyzing part of the appliance in the mouth under the tongue. To determine the acidity of the plaque, we need to stop saliva access to the tooth in order to avoid mistakes. Determination of the viscosity of saliva is also an indicator prekarioznogo state. This is due to the fact that viscous saliva difficult purification processes of hard tooth tissue, promotes adhesion of microorganisms, food residues, facilitating the conditions of formation of dental plaque and caries development. Saliva Viscosity is defined as the ratio of the saliva to the time viscometry viscometry water.

When periodontal disease is mandatory identification of premature contacts of teeth and their elimination. Unless this stage all other treatment would be meaningless. To detect premature contacts, we need to take a plate of wax, a few pre-soften it. It is also possible to use silicone impression material. Suprakontakty (premature contacts), in which there is the greatest concentration of the chewing load, on a wax plate will manifest absence of wax. It is necessary

to make visualization of premature contacts by applying them to the jaw model or on the teeth in order to then perform selective prishlifovyvanie on these sites.

Determining the presence of dental plaque is also mandatory step in periodontal diseases, since the main factor in the development of the latter are microorganisms, these dental deposits contained. For one reason or another in the cervical area of the teeth occurs plaque and tartar. To create an environment favorable for microbial life. They secrete substances that have a toxic effect on the fabric. To determine the presence of dental plaque in the most simple case one can use a dental probe that when conducting the cervical region of the teeth will retard plaque on itself or delayed in tartar. Various health indices in periodontal diseases is also absolutely necessary. Making the determination of these indices involves staining of dental plaque in certain teeth by means of special dyes. Dyes may be used Schiller Pisareva solution (composed of 1 g of crystalline iodine, 2 g of potassium iodide, 40 ml of distilled water), 5.6% strength solution of erythrosine, erythrosine tablet form, 5% alcoholic fuchsin solution, a solution of Lugol, tablets "Dina". Fedorov-Volodkina index estimated six teeth on the lower jaw 43, 42, 41, 31, 32, 31. When applying the vestibular surfaces of the teeth is dental plaque visualization. In the absence of plaque tooth receives a score of 1 point. In the presence of plaque on the tooth surface of the quarter is estimated at 2 points. 3 points match half staining surface, 4 points - 3/4 of the surface, 5 - whole coloring surface of the tooth. The value of the index will be the average value obtained by summing all the scores and dividing this sum by the number of teeth examined. Hygiene in the evaluation of this index can be considered as good, fair, poor, bad or very bad. Good hygiene corresponds to the index in the range of 1.1-1.5. Shall be deemed satisfactory index values in the range 1.6-2.0, unsatisfactory - 2.1-2.5. 2.6-3.4 in the index indicators characterize the level of oral hygiene as the bad, and 3.5-5.0 - it is very bad. satisfactory, unsatisfactory, poor or very poor. Good hygiene corresponds to the index in the range of 1.1-1.5. Shall be deemed satisfactory index values in the range 1.6-2.0, unsatisfactory - 2.1-2.5. 2.6-3.4 in the index indicators characterize the level of oral hygiene as the bad, and 3.5-5.0 - it is very bad. satisfactory, unsatisfactory, poor or very poor. Good hygiene corresponds to the index in the range of 1.1-1.5. Shall be deemed satisfactory index values in the range 1.6-2.0, unsatisfactory - 2.1-2.5. 2.6-3.4 in the index indicators characterize the level of oral hygiene as the bad, and 3.5-5.0 - it is very bad.

Green-Vermillion index involves staining vestibular surfaces 16, 11, 26, 31 teeth, the lingual surfaces of teeth 36,46 to determine the level of hygiene. This index can be used to determine the plaque, tartar, or both of them together. In identifying the plaque: lack of staining will correspond to 0 points, third tooth surface staining - 1 point, coloration in the range of from 1/3 to 2/3 of the surface - 2 points, staining of the tooth surface within a surface of 2/3 - 3 points.

In determining the amount of tartar his absence on probing valued at 0 points. Upon detection of tartar located above the gingival edge and occupies a surface within its third section, placed 1 point. In the presence of dental calculus above the gums layer occupying from 1/3 to 2/3 of the tooth surface, or a small amount of tartar is placed below the gingival margin 2 points. A significant amount of plaque, both above and below the gum level is estimated at 3 points.

plaque or tartar index will be measured as the ratio of the sum of the values of estimates of a particular type of dental plaque to the total surface of the teeth, which produced the index definition. The results are evaluated as follows: the index value of from 0.0 to 0.6 corresponds to a good level of hygiene. From 0.7 to 1.8 - oral hygiene is satisfactory. On poor hygiene level, say at the index value in the range from 1.9 to 3.0.

Depending on the presence of inflammation in the gums or other portions are three degrees of severity of periodontal disease. Their definition is possible using the index (papillary-marginal-alveolar index). Determination is based on its known fact disturbances of carbohydrate metabolism, the formation and accumulation of glycogen in the inflammation. When stained with this chamber via Schiller Pisareva portion of this solution there is a color change to a brownish color due to the interaction of glycogen with iodine. Depending on the gingival areas, color as a result of the index, the following options. In the absence of coloring, and hence the

inflammatory changes in the gingiva of land valued at 0 points. When painting only area papilla say the assessment of the site at 1 point, field papilla and marginal gingiva - about 2 points. If the distribution of staining observed, and hence the inflammatory process, in addition to the papilla and marginal gingiva, as the alveolar part of the gums, this area should be evaluated in 3 points. the index value is calculated as the ratio of the sum of scores to three times the number of teeth and is determined as a percentage. There are three degrees of severity: mild characterized index values in the range of less than 30%, the average - from 30% to 60%, a value above 61% is typical for severe process gravity. the index value is calculated as the ratio of the sum of scores to three times the number of teeth and is determined as a percentage. There are three degrees of severity: mild characterized index values in the range of less than 30%, the average - from 30% to 60%, a value above 61% is typical for severe process gravity. the index value is calculated as the ratio of the sum of scores to three times the number of teeth and is determined as a percentage. There are three degrees of severity: mild characterized index values in the range of less than 30%, the average - from 30% to 60%, a value above 61% is typical for severe process gravity.

Roussel (1956) proposed a so-called periodontal index. The basis of this index are personality changes in a particular tooth. If periodontal examination in the area of the tooth revealed no changes, you must put a score of 0 points. In the presence of mild pronounced inflammatory reaction in the gingiva-tooth, which will be interpreted as a light gingivitis score is 1 rating. In identifying the signs of gingivitis, combined with the absence of clinically defined pockets assessment must be 2 points. If there are still pockets expressed clinically, - 6 points. If there is a change in the presence of periodontal tissues, if the tooth has acquired pathological mobility, rate of 8 points. The value of the periodontal index score is calculated as the ratio of the sum of the total amount of the patient's teeth. On the basis of the index there are three degrees of severity of inflammation in the periodontium. When the index values in the range of 0.1-1.0 indicate the presence of low severity, with values ranging from 1.5 to 4.0 - of moderate. Index values between 4.0 and 8.0 are characteristic of advanced stages of periodontitis.

vascular condition also have a certain value. The development of the inflammatory process leads to a change in its properties, including an increase in permeability. It is important to exit the blood vessels of blood cells - white blood cells that perform a protective function. Accordingly, the presence of inflammation in the periodontal vascular permeability increases. It can be set using the machine, creating a difference in pressure and leads to the development of hematoma. The rate of formation of the last criterion is the change in vascular permeability.

State of the vascular system of the periodontal tissues can be analyzed using the method as biomicroscopy gums. With this method it is possible to determine the presence or expand narrowing of the vascular lumen, their location, particularly blood.

Investigation of gingival fluid in periodontal diseases as necessary. In the presence of the inflammatory process observed increase of gingival fluid due to increased vascular permeability and passing therethrough the liquid portion of the blood into the periodontal pocket or sulcus. Also during inflammation naturally creates an acidic environment (in the area of inflammation is a disturbance of metabolism, accumulation of large amounts of various acids), respectively acidity gingival fluid is also reduced. you can get all of these indicators in a quantitative form.

Microscopic examination reveals the microorganisms that are in the periodontal pocket, to determine whether they have resistance to antimicrobials and thus accelerate and improve the treatment effect.

Can be carried out cytology gingival fluid to determine the cells contained therein. In inflammatory processes in the periodontium in gingival fluid naturally revealed a significant increase in the number of leucocytes (and primarily due to neutrophils and macrophages).

The examination of the patient with mucosal pathology oral desirable to carry out the cytological, histological, microbiological studies holding allergy testing. Cytological examination is used to detect any cells characteristic of the disease. For example, when pemphigus cytology reveal the presence of so-called acantholytic cells or, as they are called,

Ttsanka cells. In conducting cytology smear done. There smears, for which glass is pressed against the mucosa, comprising lesion element. If this is not possible due to the relief of the mucous or site location features possible to obtain smear-reprint. Taking sterile rubber band, it is applied to the mucosa in the desired location, and then - the glass.
Microbiological testing is important in carrying out, as a number of diseases caused by infectious agents mucosa, which with this method can distinguish, identify and determine the susceptibility to act on them various antibacterial drugs.
Histological examination is of great importance within the framework of oncological alertness. For histological studies need to get a sample of the abnormal area of tissue together with a fragment of the unaltered tissue. This method is called a biopsy. There are several types of biopsy. Open biopsy performed during surgery and does not require a puncture or trepanation. Puncture (aspiration) is performed by puncture biopsy and aspiration of material. Burr biopsy requires the prior of trepanation. By biopsy can finally make conclusions about the presence of tumor, to distinguish between proper condition and precancerous cancer, detect the degree of differentiation of tumor cells, metastases, etc. D.
Fluorescent Diagnostics suggests a study in the ultra-violet rays of the mucosa and the vermilion border. Under the influence of these rays lesions in this location create glow different for different pathologies.

Complete blood count should be performed for patients with disease of the oral mucosa with suspected blood disorder. Biochemical analysis of blood is needed to carry out a suspected diabetes, hyperthyroidism, liver pathology, and so on. D. In order to properly diagnose, select appropriate in the case of treatment method to achieve good results, you must be fully, properly and accurately perform a survey of the patient .

Basic methods of examination

The survey is customary to begin with the survey, which involves obtaining data on complaints, disturbing the patient, medical history, history of life. Complaints of the patient can be classified as primary (or main) additional complaints on violation of general condition. The main complaint of the patient concerned mainly in the first place. These complaints point to the disease. For example, when deep caries is the presence of the chief complaint of pain when exposed to all kinds of stimuli. Thermal, chemical, mechanical impacts will trigger the pain, quickly passing after their elimination. In acute pulpitis patients will complain of spontaneous nocturnal paroxysmal pain; prolonged painful attacks when exposed to different stimuli, do not disappear after cessation of exposure. In acute periodontitis is characterized by a constant nojushchej clearly localized pain that is at a pressure on the tooth to be amplified. Additional complaints are usually not related to the underlying disease. For example, the patient may also complain of a violation of the function of organs of the gastrointestinal tract. Furthermore, additional application may be the result of the presence of underlying disease.

Once the information is received about the complaints of the patient, it is necessary to get the data history of the disease. Investigates the estimated time of onset of the disease, the complaint that the patient in this case is presented. It is necessary to identify the dynamics of the disease. For example, if the patient has chronic granulating periodontitis he will probably tell you that before the tooth was ill, react to changes in temperature, exposure to different stimuli; then these effects subsided. The patient may suggest the cause of the disease or aggravation of the disease. For example, exacerbation of chronic pulpitis, chronic periodontitis may be associated with hypothermia, stress transferred disease, which led to a decrease in reactivity. If the patient was examined and received treatment regarding this disease, it is necessary to ask him about the events,

Life history, we need to find out what role in the development of the disease play factors affecting external factors external and internal environment (eg, hereditary factors). It is necessary to indicate the conditions of the patient's life, particularly his professional activity, the presence of harmful factors acting on it by virtue of profession, work and rest. It is also important to note the presence of bad habits in a patient (smoking, alcohol abuse, and so on. D.). Refined family history, because some diseases are hereditary or there is a genetic predisposition to it. Figuring allergoanamneza is also a very important item on the history of life. During reception of the dentist to the patient to interact with a large number of different allergens. Allergic reactions can be very serious, lead to the development of severe complications and even fatal. The most common allergic reactions occur in response to administration of various anesthetics that are widely used in dental reception. Furthermore, some diseases of the oral mucosa are allergic nature, therefore it is necessary to find out the availability of allergic reactions to foods, household, natural allergens.

After polling the patient proceeds to the objective examination, the first step of which is the inspection. At external examination paying attention to psycho-emotional state of the patient, clarify its general condition at the moment. Type constitution, face configuration, its symmetry, speech changes, breathing than normal and draw attention to themselves, are recorded in the medical card. Examined the skin of the face and visible mucous membranes (mucous membranes of the nose, the eye) for the availability of these various types of lesion elements. It determines the status of the peripheral lymph nodes by means of palpation. It must be remembered that the facial lymph nodes palpable bimanual, submental lymph nodes are palpated with the index finger of his left hand when the head is tilted downward and anteriorly, submandibular - in series with three fingers of his left hand when the head is tilted in the appropriate direction, palpable cervical lymph nodes at the front and rear edge of the sternocleidomastoid muscle on tilting the head forward and to the side opposite palpable lymph nodes. Parotid lymph nodes are palpated anterior to the tragus of the ear.

Also conduct palpation studies condition of the temporomandibular joint is necessary. Palpation can be carried out in two ways: external, in which the doctor's fingers are placed posterior to the tragus of the ear, and the inner in which the study is carried out through the external auditory canal. Palpation of the temporomandibular joint is carried out by opening and closing the mouth patients. In the absence of pathological changes articular head movement smooth, symmetrical, synchronous, painless, range of motion is not limited, clicks crunch is not determined.

After visual inspection the state estimated red border. Normally, the lips are pink color, do not contain elements to defeat interlock on the line of Klein (Klein line is considered to be the transition line of the skin of the lips in the mucous membrane). The mucosa of the vestibule of the oral cavity as in normal light pink color, no swelling, no fingerprint crowns of teeth. Attention is drawn to the depth of the vestibule of the oral cavity, location features bridles upper and lower lips, strands vestibule. The depth of the vestibule of the oral cavity is defined as the distance from the free to the attached mucosal (from the gingival margin to the transitional fold). Depending on the resulting numerical value is produced on separation shallow (5 mm), medium (from 5 to 8 mm) deep (greater than 8 mm) threshold. Assessment of bridles upper and lower lips abduction performed at the lip to the horizontal level. At the same time should not celebrate their whitening. Mucous strands are determined at the level of the canines and premolars, molars at the jaws. At the level of the upper second molars determined parotid duct or, as it is called by author - Stenon duct. It should be noted the absence of signs of inflammation in the area of it, the lack of various kinds of protrusions and any others. Pathologic changes. Evaluated characteristics released by the saliva stimulation, quantitative and qualitative. The stimulation of

parotid salivary gland is made by her massage in which normally occurs excretion secretion droplets. Mucous strands are determined at the level of the canines and premolars, molars at the jaws. At the level of the upper second molars determined parotid duct or, as it is called by author - Stenon duct. It should be noted the absence of signs of inflammation in the area of it, the lack of various kinds of protrusions and any others. Pathologic changes. Evaluated characteristics released by the saliva stimulation, quantitative and qualitative. The stimulation of parotid salivary gland is made by her massage in which normally occurs excretion secretion droplets. Mucous strands are determined at the level of the canines and premolars, molars at the jaws. At the level of the upper second molars determined parotid duct or, as it is called by author - Stenon duct. It should be noted the absence of signs of inflammation in the area of it, the lack of various kinds of protrusions and any others. Pathologic changes. Evaluated characteristics released by the saliva stimulation, quantitative and qualitative. The stimulation of parotid salivary gland is made by her massage in which normally occurs excretion secretion droplets. It should be noted the absence of signs of inflammation in the area of it, the lack of various kinds of protrusions and any others. Pathologic changes. Evaluated characteristics released by the saliva stimulation, quantitative and qualitative. The stimulation of parotid salivary gland is made by her massage in which normally occurs excretion secretion droplets. It should be noted the absence of signs of inflammation in the area of it, the lack of various kinds of protrusions and any others. Pathologic changes. Evaluated characteristics released by the saliva stimulation, quantitative and qualitative. The stimulation of parotid salivary gland is made by her massage in which normally occurs excretion secretion droplets.

Investigation actually oral examination includes mucosal language state, excretory ducts submandibular sublingual salivary glands, frenum, condition arches and tonsils.

On examination of individual teeth pay attention to the usefulness of their anatomic shape, the presence or absence of hard tissue defects, classifying them according to a particular characteristic, the presence of seals, their marginal seal, discoloration of teeth, the nature of surfaces, change in the ratio of intra-and EXTRACORONAL parts of the tooth, exposure of the necks of the teeth, their mobility, change of position. In the absence of teeth to draw attention to the location of the defect of dentition, its extent, the presence of structures that replace the defects of their usefulness, the restoration of the anatomic form, the degree of immersion into the periodontal sulcus. Teeth can be mobile for one reason or another. By DA Entin are three degrees of freedom: at first there is mobility in vestibulooralnom direction (ie.. using dental forceps, we can more or less move the tooth in the direction of the cheeks and the mouth). At the second degree mobility of the tooth can be shifted in and vestibulooralnom mediodistalnom directions. When third-degree tooth has mobility in all three directions, ie. E. Also joins the vertical mobility.

Inspection dentition includes determining the shape of the dental arch. Normally dentition of the upper jaw has the form of a semiellipse, the bottom - of the parabola. In the absence of the teeth, increased abrasion, malocclusions and a number of others. Reasons may identify dentition deformations which must be evaluated by the location on the jaw, in a plane relative to which the deformation is defined. Dentition may also be symmetrically or asymmetrically tapered.

Evaluated type clamping dentition in this arrangement the lower jaw when the largest number of teeth is in contact, ie. E. Character occlusion estimated. To determine the nature of the closure of the patient's dentition are asked to touch the tongue to the sky, swallow saliva and to close the tooth rows. The teeth in this case is closed, in centric occlusion position at which it is determined and the type of occlusion. It decided to subdivide kinds of bite on the physiological, at which there is no violation of the functions and pathological, in which there are functional disorders. Physiological types of malocclusion include orthognathic, direct, and biprognatichesky

opistognatichesky. The most common is orthognathic bite. Character occlusion determined presence attributes. These symptoms are usually divided into those which characterize the interdigitation or tooth; those which characterize the state of the chewing muscles (or muscle); those which characterize the state of the temporomandibular joint (in particular, relationships articular head and the articular tubercle), or joint.

When viewed from the gingival margin pay attention to its color: in periodontal diseases are observed cyanotic, swelling of the marginal gingiva, gingival papillae, due to impaired blood circulation processes in the vessels of the periodontal tissues. Consequently swelling and possible reshaping interdental gingival papilla, which are normally in the anterior teeth have a triangular shape, and in the posterior teeth - trapezoidal. Papilla often also loosely arranged with respect to the teeth, whereas normally they have a snug fit. When a loss of outflow of purulent content from the periodontal pocket can be formed periodontal abscess.

Palpation is a digital research, the feeling of different organs and tissues. With this method is possible to determine the magnitude, density, texture, topography organs, tissues, different entities of a different origin, their mobility, pain sensitivity, the presence of fluctuations foci. Palpation study used during the examination of the lymph nodes, the temporomandibular joint, masticatory muscles, mucous membrane mobility, its pliability, bone relief. Furthermore, it is extremely important is palpation various pathological elements neoplasms. It should be remembered that the digital examination, we are not starting from abnormal tissue and from healthy.

The use of such a survey method as percussion, reveals the presence of pathological changes in the tissues of the periodontium. In horizontal percussion, which is performed by tapping on the tooth tool in a horizontal plane, determine the presence of changes in periodontal edge. With vertical percussion (produced by tapping tool tooth vertical (downward)) determined for changes in the apical portion of the tooth, the tissues that surround it.

Probing - survey method in which the physician using the dental probe evaluates the status of hard tooth tissue, the presence of demineralization lesions, cavities, softened dentin posts cavity with the cavity of a tooth, pain in the dental hard tissues of the tooth pulp. If you use the method of sensing (it uses no ordinary dental and special periodontal probe), it is possible to assess the condition of periodontal tissues, the depth of the periodontal pocket, the presence or absence of bleeding after probing. Determination of the depth of the periodontal pocket is produced in single rooted teeth at four points - from all sides of the tooth, and in multi-rooted teeth - in six locations: in the vestibular and oral surfaces - at two points on the contact surfaces - one.

lecture №3

Subject: Clinical and dif.diagnostika different kinds of dental caries.

1.1. Technological models for education

The lesson of 80 minutes	**Number of students**
Type of classes	**News Introduction of lectures**
Plan of the lecture:	***pery hour*** 1. Master the clinic all kinds of dental caries ***The second hour.*** 2. Dif.diagnostiku master all kinds of dental caries
The task of the	Inform students to give a full explanation of the clinic and

training session	dif.diagnostike different types of tooth decay.
Teaching methods	Conversation, visual aids for lectures
Type of classes	total-collective
Visual aids on	Textbook, lecture material, projector, computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

1.2Tehnologicheskaya card lectures

stages of work	**Teacher**	**Student**
1.Etapy training (10 minutes)	1. Aims classes 2. Preparation of slides for lecture material 3.Literatura Related 11. Harald O. Heymann Sturdevant's Art and Science of Operative Dentistry, 6e (Roberson, Sturdevant's Art and Science of Operative Dentistry), 2015 12. Kamilov HP va b. - «Stomatologik asbob va ashyolar» - Tashkent 2005 th. 13. Kamilov HP va b. «Terapevtik stomatologiya propedevtikasi" -Tashkent, 2006y. 14. Borovsky EV "Therapeutic dentistry". - M., 1989. 15. Magid EA, Mukhin NA "Phantom of the therapeutic courseDentistry. Atlas". M .: Medicine 1987. Borovsky EV "Dentistry. Guide to practical training. " - M., 1987	Listens to and records
2.Vvedenie (10 minutes)	***1. Aims and objectives of the lecture material:*** **Goal:** Master dif.diagnostiku clinic and all kinds of dental caries. **Task:** Inform students to give a full explanation of the clinic and dif.diagnostike all kinds of dental caries. **Questions on the topic**	listen Answers the students' questions
3.BASIC stage (50 minutes)	1. Introduction to the theme with the indication slides	Listen and write
4.Zaklyuchitelny step (10 minutes)	1. Conclusion.	Listen and write

The text of the lecture

An important role in the occurrence of caries play oral health, kind of bite, tooth arrangement density, nature and intensity of salivation, quality oral care. Frequency caries of teeth of different groups varies. Most often affects the first molars, then second molars, premolars and incisors, canines. Theories of dental caries. Chemical-parasitic theory of Miller (1884). According to this theory, carious tooth decay occurs two step:

Demineralization of dental hard tissues.

Microbial degradation.

1-step lactic acid dissolves inorganic substances enamel and dentine.

2-dentin destruction of organic matter by proteolytic enzymes that are produced by microorganisms.

The author has confirmed this theory by experiment, which consisted in the fact that he prevented extracted teeth on different dates in a mixture of saliva with a well-chewed bread and meat with the addition of 2-4% sugar. After a certain time after incubation of the mixture at a temperature of-37C enamel demineralization observed, similar to that which occurred when dental caries in human mouth. Thus, the author of the theory of chemical and bacterial tries to represent complex pathobiological process in a simple chemical reaction between the salt and acid. Such mechanical explanation completely ignores the body part in a process of tooth decay is formed.

No less important was the event of bacterial theory, according to which many types of bacteria found in the mouth, are the causative agents of caries. In accordance with this theory, the bacteria penetrate the thickness, enamel destroy organic, its proteinaceous substance.

The resulting disrupted communication organic composition enamel inorganic consequence of this is the occurrence of a defect of enamel, dentin and then.

Essentially both of these theories is narrowly lokalisticheskimi and mechanical. Based on these theories, it is impossible to find an explanation for the fact many manifestations and course of the caries process. You can not focus on theory, viewing the process in a living organism is the last connection. In the body there are so many factors of neutralizing the action of various chemical and physical influences.

Physico-chemical theory DA Entin The physicochemical properties of saliva and teeth. He believed that the dental tissues are semipermeable biological tissues, which are capable of passing through the osmotic currents. Due to the presence of osmotic pressure between the pulp of the tooth and oral cavity. According to Entin osmotic currents have a centripetal direction and ensure normal supply conditions of dentin and enamel. Those. pulp-crown-tooth and saliva. He denies the return receipt micronutrients. According to a result of endogenous Entina environmental changes umenshaetsa motion intensity thereby deteriorating tooth tissue metabolism varies permeability currents tooth tissues.

However, in theory, there are many unclear Entin for specific mechanisms of caries process. Recently experimentally proved that the metabolism is not only a pulp but oral supplied significant amounts of organic and inorganic substances. This is proven by a radiometric survey.

IG Lukomsky proposed biological theory of caries. The basis of this theory is the concept of providing for inclusion of the enamel as a living tissue in a general system of neuro-trophic connection with the organs and systems of the body as a whole and the physiological relationship between the tooth enamel and the body. The caries process is not considered as a chemical or physical process, as well as a biological process. According to this theory, exogenous factors cause the body's violation of mineral metabolism, causing fatigue occur first, followed by debility odontoblasts, whose main role is to implement the trophic functions.

Thus the development of dental caries is represented by Lukomsky as pathobiological complicated process, the cause of which is a combination exo and endogenous factors when overall health plays a decisive role in the formation of conditions against which the possible development of the disease.

noteworthy **EE theory Platonov**Which considers tooth caries as a result of changes in neural regulation leading to trophic razrascheniem tooth tissues and especially enamel.

1949 AE Sharpinyak cause of tooth caries explained local depletion of enamel proteins that can occur when the accelerated flow deceleration resynthesis protein in one or the other simultaneously. Slowing resynthesis Belkova structures, according to the theory of the author and is due both to the lack of, or low in one of the essential amino acids in the human diet, in particular lysine, arginine.

Currently there are over 400 theories of caries. One of the latest concepts proposed Rybakov AI and V.S.Ivanovym 1973.

(Concept of counter effects on the pulp).

According to this concept the cause of occurrence and the development of dental caries is associated with many aspects, including the age aspects of the tooth-jaw system, influenced by

endogenous and exogenous factors during the formation of the jaws and teeth, the relationship of the teeth-jaw system with internal organs and systems of the body, and pulp state.

The author believes that the etiology of dental caries is polietiologichesky origin.

Dental caries is divided according to localization, depth of lesions, clinical course and other features.

The clinic use topographic classification at which distinguish spots step surface caries, secondary caries, deep caries. All four stages of the decision to integrate into the group of simple or complicated caries. Complicated caries is called pulpitis and periodontitis, ie, inflammatory diseases of the pulp and periodontal.

Caries treatment consists of the activities of general and local character. General Events are not etiological, and aim to improve the defenses of the organism resistance and the tooth tissues. appointed vitamins and mineral components this purpose.

Patient complaints with initial caries usually has. Detection of caries at a stage of spot chewing teeth group on the oral surfaces of the front teeth often happens during the routine inspection. When the location of the carious spots on the visible surfaces of the front teeth can appear on a complaint aesthetic disadvantage. Spot at initial caries can be classified as white spot and as a pigmented. Sometimes there may be unpleasant (but not yet painful) sensation when exposed to the lesion chemical stimuli from food. Probing the affected area usually does not reveal the presence of roughness of enamel in the art. When carrying out a dental probe on enamel surfaces in the spot changes not defined. At the same time, and perhaps a certain roughness, but the degree of its severity nevertheless minimal. The absence of roughness will be defined by the presence of an unmodified surface layer of enamel structure is subjected to reduction due remineralizing properties of saliva.

Of additional methods of examination should be noted holding method of vital staining. By increasing the permeability of the enamel becomes possible passage therethrough of molecules of dyes. Thus, the application of a dye solution (e.g., methylene blue) staining is observed in the enamel carious spots in dye color area varying degrees of intensity. Other additional methods are not noted for changes.

Initial caries should not be confused with non-carious lesions such as enamel hypoplasia and fluorosis. Both the data non-carious lesions, cavities and the stains in the step may be characterized by the appearance on the surface of the enamel lesion as a spot. At the same time, there are certain features that are not necessary to forget in their delimitation. Enamel hypoplasia and fluorosis are non-carious lesions arising to teething. In the presence of non-carious spots on the origin of the visible surface of the patient usually can point to their extremely long-term presence. The caries process is associated with the action of a number of factors, chief among which are carbohydrate food microbes and their interaction. Their effects on the enamel can be carried out only after the eruption of the teeth. Accordingly, the caries develops already after teething. If you suspect a lesion dental fluorosis sure to assess medical history. Development of this type of non-carious lesions characteristic for areas where the fluorine content in the water that people use as drinking or cooking, is greater than 1.5 g in 1 l. The fluorine content in drinking water is considered to be optimal at a concentration of 1.0 g in 1 l water. At the same time, the water content in fluorine concentration at promotes caries process. This is attributed to the fact that fluorapatite formed upon incorporation of fluorine into the structure of hard tooth tissue, enamel imparts strength, it becomes more resistant to damaging factors. If you suspect a lesion dental fluorosis sure to assess medical history. Development of this type of non-carious lesions characteristic for areas where the fluorine content in the water that people use as drinking or cooking, is greater than 1.5 g in 1 l. The fluorine content in drinking water is considered to be optimal at a concentration of 1.0 g in 1 l water. At the same time, the water content in fluorine concentration at promotes caries process. This is attributed to the fact that fluorapatite formed

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Since hypoplasia and fluorosis to develop teething characteristic will location of the pathological process to the enamel surfaces of teeth, which are developed at one time. Surfaces on which lesions are located, do not contribute to the retention of plaque (vestibular surface protuberances posterior teeth), dental plaque is not a factor in facilitating the carious lesions. The caries process is not characterized by such features. Carious spots usually located on the enamel surfaces in the unit quantity. This is not the spots at hypoplasia and fluorosis. Basically in these diseases it is marked on the tooth surface a large number of spots. An important diagnostic principle is vital dye staining enamel solutions.

2. The clinical picture of a superficial caries

Superficial caries is characterized by a significant lesion which affects also the surface layer of enamel. Patient with a surface caries nothing can disturb. He may also complain of the presence of cosmetic defects in the form of spots on the surface of the teeth. Perhaps hearth caries detection during inspection, its detection on radiographs (contact surfaces). At the same time quite often a superficial caries observed the appearance of pain in response to chemical stimuli in the course of the meal, which is the reason for treatment to the dentist. The pain may also occur in response to one or another temperature if localized lesion is cervical area of the teeth. In the cervical region layer of hard tissues is significantly less than the remaining portions of the tooth surface, the pulp chamber is located much closer. This determines the fact that in the fifth grade at Black's very likely the presence of pain in response to stimuli, even when the temperature surface caries. It is also important to note that the pain reaction in response to irritants is a concomitant and passes at its termination.

When the inspection chamber at a superficial caries is detected spot. It is the same as for initial caries, can be white or pigmented. The process involves the superficial layer of enamel, in this connection, when carrying out such determination sensing rough surface in this area. Additional tests suggest mandatory TERMOTEST. Perhaps the absence of pain reaction or its availability, especially at the location of the carious focus in the cervical region. In carrying out the vital dye staining characteristic lesion dye. The color intensity can be varied. Carrying elektroodontometrii does not detect changes in the indices at electroexcitability pulp surface caries.

For diagnosis surface caries necessary to differentiate it from other forms of caries (primary and secondary) and non-carious lesions (such as hypoplasia, fluorosis, erosion wedge defect). With all these nosology detected lesions affecting the enamel surface.

From the anamnesis of patients with hypoplasia and fluorosis is characterized by the presence of the identification of long-term injury elements, and changes in these elements is observed. When hypoplasia and fluorosis due to the fact that the causative agent was acting on the teeth at a time when there was their formation, will be those slain by the teeth, which during this period were developed. Accordingly, detection of foci characteristic of carious lesions on the teeth that are approximately the same periods eruption. Caries is characteristic is not. Also, when there is no symmetry of caries lesions, which is natural for hypoplasia and fluorosis. Wedge-shaped when viewed from the defect is detected as a defect in the form of a wedge located in the cervical region of the teeth. Sensing in the presence of a defect bottom surface caries reveals a rough surface, whereas when hypoplasia, fluorosis and initial caries this will not be detected. They are characterized by a smooth surface in the area of the defect, brushed with an initial caries and shiny with carious lesions. Location of the lesion with dental caries often reflects the relationship with its main etiological factor - the entrapment of plaque. For non-carious lesions of this relationship is not observed. When surface caries characteristic is the presence of hyperesthesia, m. E. Improve the sensitivity of the teeth to the influences to which under normal conditions of indifferent teeth. Staining dye solution will indicate the presence of caries process,

3. The clinical picture in the middle caries

With an average caries process extends even further. If the initial and surface caries lesions are observed, affecting only the enamel cover, with an average caries lesion is deeper, there is destruction of the enamel-dentine connection and involvement in the process of dentin. Formed cavities.

Asymptomatic with average caries is less common. The characteristic appearance are complaints of pain when exposed to stimuli lesion chemical nature or temperature.

In carrying out basic techniques examination indicated the presence of cavities, already detectable at the examination. Carious cavity and has an average depth dotted modified tissues in the form of the softened pigmented dentin. Sensing detects the presence of pain in moving the dental probe on the enamel-dentine connection. Percussion is not accompanied by the occurrence of pain, as in periodontal involvement process does not occur.

Additional tests suggest holding TERMOTEST, elektroodontometrii. TERMOTEST detects the presence of pain when exposed to the lesion Kholodov or thermal stimuli. Carrying elektroodontometrii does not detect changes in indicators electroexcitability pulp. X-rays used for the diagnosis of caries at the location of its contact surfaces.

lecture №4

Subject: Methods of conservative treatment of caries. caries prevention.

1.1. Technological models for education

The lesson of 80 minutes	**Number of students**
Type of classes	**News Introduction of lectures**
Plan of the lecture:	***pery hour***

	1. Methods To study the conservative treatment of caries. ***The second hour.*** 2. caries prevention.
The task of the training session	Inform students to give a full explanation of the prevention of dental caries.
Teaching methods	Conversation, visual aids for lectures
Type of classes	total-collective
Visual aids on	Textbook, lecture material, projector, computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

1.2Tehnologicheskaya card lectures

stages of work	**Teacher**	**Student**
1.Etapy training (10 minutes)	1. Aims classes 2. Preparation of slides for lecture material 3.Literatura Related 1. Harald O. Heymann Sturdevant's Art and Science of Operative Dentistry, 6e (Roberson, Sturdevant's Art and Science of Operative Dentistry), 2015 2. Kamilov HP va b. - «Stomatologik asbob va ashyolar» - Tashkent 2005 th. 3. Kamilov HP va b. «Terapevtik stomatologiya propedevtikasi" -Tashkent, 2006y. 4. Borovsky EV "Therapeutic dentistry". - M., 1989. 5. Magid EA, Mukhin NA "Phantom of the therapeutic courseDentistry. Atlas". M .: Medicine 1987. Borovsky EV "Dentistry. Guide to practical training. " - M., 1987	Listens to and records
2.Vvedenie (10 minutes)	***1. Aims and objectives of the lecture material:*** **Goal:** Methods of medical treatment of caries. caries prevention. **Task:** Inform students to give a full explanation of the prevention of dental caries. **Questions on the topic**	listen Answers the students' questions
3.BASIC stage (50 minutes)	1. Introduction to the theme with the indication slides	Listen and write
4.Zaklyuchitelny step (10 minutes)	1. Conclusion.	Listen and write

The text of the lecture

dental caries (K02 ICD-10) - non-specific infection of teeth occurring due to disturbances of homeostasis in the mouth towards bacterial acid production processes and manifest in the form of enamel demineralization lesions on the teeth or cavities.

Currently, dental caries is the most common disease of the dental system in children. Already at the three year olds celebrated the defeat of dental caries, the prevalence of the disease is 32%.

According to data obtained in different cities of Russia, the prevalence of dental caries in children aged 6-7 years increased to 65%, while in 55.7% of children have dental caries in permanent teeth. Fissure caries in children under six years of age there is approximately 50% sluchaev.V further with increasing age the situation worsens. In 12-year-old deteykarioznye defeat recorded in 73%, and among 15-year-olds caries lesion reaches 80.2%.

Dental caries at untimely or incorrect treatment may result in the development of inflammatory diseases and periodontal pulp, tooth loss, formation malocclusions, of inflammatory diseases of the maxillofacial area. Dental caries - are potential hotbeds of infectious intoxication and sensitization.

About 50% of all cases of child population claims for outpatient care is associated with dental diseases and mainly dental caries and its oslozhneniyamivo all age groups. The need for rehabilitation in children 12-15 years up to 100% in some regions of Russia.

Dental caries a direct impact on health and quality of life of children, and thus suffers from the quality of life of their families. The defeat of dental caries leads to violations not only in the functional state of the dental system, also suffers the emotional sphere of the child's life and social adaptation in a group of peers.

Etiology and pathogenesis

Caries (K02 ICD-10) - multifactorial process. The immediate cause demineralization of enamel and caries formation chamber are organic acids (mainly lactic) which are formed during the fermentation of carbohydrates plaque microorganisms.

Children carious process is more aggressive, due to the unfinished process of mineralization of hard tissue of teeth within a few years after their eruption.

The etiopathogenesis of early childhood caries is a leading factor in the wrong diet, with frequent and prolonged use legkofermentiruemyh carbohydrates and sugars, especially at night. This process occurs at an early background Streptococcusmutans sensitization and unfinished mineralization of hard tissue temporary teeth.

Microorganisms mouth nature and diet, the resistance of enamel, the quantity and quality of mixed saliva, general state of organism, exogenous effects on the body, the fluoride content in the drinking water influence the occurrence hearth demineralization of enamel of temporary and permanent teeth during the caries process and the possibility of its stabilization at older children.

The permanent teeth erupt with unfinished mineralization processes and is connected with this first permanent fissure susceptibility molyarov.V period mineralization of solid teeth tissues permanent noted greatest susceptibility to dental caries, which is accompanied by a very low acid resistance enamel.

The initial stages of carious lesions formed on the background of lack of hygienic care and inefficient use of carbohydrate foods. Thus on the tooth enamel surface is the formation of dental plaque comprising cariogenic microorganisms. As a result, the enzymatic activity of dental plaque bacteria organic acids are formed, the local izmeneniepH the acid side, develops focal demineralization, poyavlyayutsyamikrodefekty subsurface layers of enamel. At this stage the process is reversible. Subsequently broken connection and microscopic cracks appear along the enamel prisms, then the formation of the cavity and the underlying layers and engagement tooth tissues.

Stabilization of the process is possible in children of school age, there may be marked clinically obrazovaniempigmentirovannogo spots in the enamel, existing for years.

CLINICAL PICTURE dental caries

The clinical picture of dental caries in children is characterized by variety and depends on the age of the child.

When early childhood caries deciduous teeth are affected almost immediately after their eruption, the carious process is characterized by the speed of the current, multiple lesions of teeth in the order of their eruption. Early carious lesions are detected on the vestibular surface of the incisors of the upper jaw in the cervical oblasti.Kak Typically, the process is asymptomatic, especially in the early stages. Nareztsa upper jaw in the cervical area appearing chalky color

portions (focal demineralization). These centers very quickly (2-3 months) acquired a light yellow color, against this background there are carious defekty.V incisors and canines prevails circular caries, leading to otlomu crowns (in the field of cutting tools). Molar meets defeat both smooth and okklyuzionnyhpoverhnostey.

Features of a current of caries of temporary teeth in children older than 3 years are as follows: notes defeat caries process aproksimalnyhpoverhnostey and fissure caries of temporary molars, affects the interproximal surfaces of the front teeth of the group. Characterized by a less aggressive caries process than in infancy, can be compensated, including the formation of substitution dentin. Most marked asymptomatic, therefore detection of carious lesions occurs at a later stage, and the most frequently diagnosed forms of caries in children in this age group is caries of dentin, which is characterized by the location of the cavities in the surface and middle layers of dentin (low caries). Cavities can be characterized as "typical": small inlet in a cavity, overhanging edge enamels,

Caries dentin characterized carious lesions propagating into the deeper layers of dentin (deep caries) in temporary teeth rare, due to the peculiarities of the structure (a small thickness of hard tissue, large volume of the cavity of the tooth, the pulp projecting horns, wide and short in the dentinal tubules).

Carious process in the erupting permanent teeth takes place against the background of low mineralization of fissures and cervical region. Since the period of ripening solid tkaneydlitelny may caries in step teething. Characteristic for rapid caries process. Cavities without evidence of pigmentation, enamel and dentin light, soft, easily cleaned excavator. There is a tendency to restrict the pathological process.

With increasing depth cavity patients experience an increased sensitivity to chemical, thermal and mechanical stimuli. The pain from stimuli short-lived, after removal of the stimulus passes quickly. Perhaps the lack of pain response. Caries in posterior teeth causes the chewing function disorders, patients complain of pain when eating disorders and aesthetics.

Classification of dental caries

The International Statistical Classification of Diseases and Related Health World Health Organization, Tenth Revision (ICD-10) caries is highlighted in a separate rubrication.

K02.0 enamel caries. Step "White (chalk) spots" [initial caries] K02.1 Caries dentinaK02.2 Caries tsementaK02.3 suspend caries zubovK02.4 OdontoklaziyaK02.8 Another caries zubovK02.9 caries, unspecified

Topographic caries classification

Caries vstadii spots (maculacariosa)
Surface caries (cariessuperficialis)
Middle caries (cariesmedia)
Deep caries (cariesprofunda)

Modified classification of carious lesions by localization (for Black)

Class I - a cavity located in the region of natural fissures and recesses incisors, canines and molars premolyarov.Klass II - a cavity arranged on the contact surface of the molars and premolyarov.Klass III - a cavity located on a contact surface of incisors and canines without breaking cutting edge. class IV - a cavity located on a contact surface of incisors and canines with violation of the angle of the tooth crown and the cutting kraya.Klass V - a cavity located in the cervical area of all groups zubov.Klass VI - a cavity located on the hills mo lyarov and premolars and the cutting edges of the incisors and canines.

Step spot corresponds to the code in ICD-S K02.0 - "Step enamel caries." White (opaque) spots "[initial caries]". Caries in step stains characterized arisen due to demineralization color changes (mat surface), and then the texture (roughness) in the absence of enamel carious cavity, or the presence of small defects enamels, do not extend beyond the enamel-dentine compound (superficial caries).

Step dentin caries (medium and deep caries) corresponds to the code ICD K02.1-C and is characterized by destructive changes in enamel and dentin-enamel transition

dentinnogosoedineniya however pulp closed more or less layer of dentin and stored without signs of hyperemia.
Step cement caries code corresponds to the ICD-S K02.2 and characterized by lesions of the exposed surface of the tooth root in the cervical region.
Step suspend cavities corresponds to the code ICD K02.3-C and is characterized by dark pigmented spots within the enamel (enamel demineralization alopecia).
ICD-C 1 - International Classification of dental diseases based on ICD-10.

GENERAL APPROACHES TO DIAGNOSIS dental caries in children

Diagnosing dental caries is produced by collecting the history, clinical examination and additional methods of examination:
sensing (not sharp probe) to evaluate the surface state of the enamel (at caries in step spots enamel is smooth, with surface caries enamel rough), detect a cavity and to determine the pain in the enamel-dentine compound (at srednihporazheniyah) and / or bottom of the cavity (at deep lesions)
vital staining enamel (caries detectors dyes) is carried out after cleaning of plaque and helps to identify portions of demineralized enamel and dentin
temporary separation - increases the possibility Imaging carious lesions contact teeth surfaces,
X-rays help reveal hidden cavities on aproksimalnyhpoverhnostyah,
transillumination, lyuministentnayastomatoskopiya, laser fluorescence, optical kongerentnaya tomography, a combination of photothermal radiometry and luminescence, LED and other technologies make it possible to improve the diagnosis of dental caries, especially in cases of hidden caries,
electric pulp test (EDI) in childhood primenyaetsyaogranichenno, only permanent teeth, using the method in children with persistent unformed teeth must be considered that the sensitivity of the pulp in these teeth may be lower (values EDI above), so to get reliable data necessary to compare the measure with same tooth opposite side of the jaw,
definition indexes CP and CPU, caries increment over the last year, it helps to assess the activity of caries in children.
The main task in diagnostics is to identify caries, determining the stage of the pathological process, and select the appropriate treatment. Diagnosis is made for each tooth individually.
In the process of examination of children is also necessary to identify the factors that hinder the immediate beginning of treatment. Such factors may include:
presence of intolerance of medicines and materials used at this stage of treatment;
comorbidities aggravating treatment;
inadequate psycho-emotional condition of the child prior to treatment, the need for anesthetic;
acute injury to the oral mucosa and the vermilion border;
acute inflammatory diseases of organs and tissues of the mouth;
acute life-threatening condition / disease or exacerbation of chronic diseases which have developed in less than 6 months before the treatment for a given dental care;
disease of periodontal tissue in the acute stage;
unsatisfactory hygienic conditions of the mouth;
refusal to treat a child older than 15 years or parents of a child under 15 years.

GENERAL APPROACHES TO TREATMENT caries

The principles of treatment of children with dental caries involve the simultaneous solution of several problems:
elimination of factors causing demineralization process;
preventing the further development of the pathological process of caries;
preservation and restoration of the anatomic form carious tooth and the functional capacity of the entire dental system;
preventing the development of pathological processes and complications;
improving the quality of life of children.
Treatment of dental caries may include:

eliminating microorganisms from dental surfaces (occupational health);
remineralizing therapy;
fluorination of hard tooth tissue;
preservation as far as possible the healthy hard tissue, if necessary excision of abnormal tissue with subsequent restoration of a tooth crown.
The treatment process is completed recommendations for timing re-treatment and prevention.
Treatment is carried out for each carious tooth irrespective of the degree of damage and the treatment of other teeth.
In the treatment of dental caries apply only those dental materials and drugs that are approved for use in the Russian Federation in accordance with established procedure.

Organization of medical care for patients with dental caries

Treatment of patients with dental caries is held in the children's dental clinic (office), dental pediatric clinic (department), the dental office of educational organizations, as well as in medical institutions providing care for children with dental zabolevaniyami.Kak rule, treatment is carried out as an outpatient conditions.
List of dental materials and tools needed for the work of the doctor, is presented in Appendix 1.
Assisting patients with dental caries performed stomatologamidetskimi-doctors, dentists, dentists. In the process of helping participating nursing personnel, including dental hygienists.

VI. Performance requirements

6.1. patient model

nosological form: Enamel caries
StageStage of "white (Cretaceous) spots" (initial caries)
Phase: any
Complication: Without complications
Code ICD-10: K02.0

6.1.1.1 The criteria and characteristics that define the patient model

Children with temporary teeth.

Tooth without visible damage and cavities.
Tooth with a healthy pulp and periodontium.
Focal demineralization of the enamel without forming a cavity, are centers of demineralization - white matte spots. When probing defined smooth or rough enamel surface of the tooth without disturbing the enamel-dentine compound.
Healthy periodontium and oral mucosa.

6.1.1.2 To enable the patient to the Protocol

The child's condition meets the criteria and features of the patient's diagnosis model.

6.1.1.3. Requirements to diagnosis outpatient

The code	**Title**	**multiplicity performance**
B.01.064.003	Admission dentist children's primary	1
A01.07.001	Medical history and complaints	1
A01.07.002	visual examination	1
A01.07.005	External examination of the maxillofacial region	1
A02.07.001	Inspection by means of additional tools	1
A01.07.004.001	Percussion	1
A 02.07.002	A study using a dental probe	1
A02.07.006	definition of bite	according to the algorithm
A05.07.001	Elektroodontometriya	on demand

A.02.07.005	thermodiagnostics	on demand
A03.07.002	Translyuminestsentnayastomatoskopiya and other additional diagnostic methods	on demand
A06.07.004	orthopantomography	on demand
A06.07.003	Sighting intraoral radiography contact	on demand
A06.07.007	Intraoral radiography in bite	on demand
A06.07.001	Panoramic radiography maxillary	on demand
A06.07.002	Panoramic radiography of the mandible	on demand
A06.07.008	Radiography of the upper jaw oblique projection	on demand
A06.07.009	Radiography of the lower jaw in lateral projection	on demand
A12.07.001	Vital staining of dental hard tissue	according to the algorithm
A12.07.003	Determining the health indices	according to the algorithm

6.1.1.4. Characteristic features of algorithms and perform diagnostic activities

The survey is aimed at establishing a diagnosis, an appropriate model of the patient, with the exception of complications, determining the possibility to start treatment without additional diagnostic and therapeutic measures.

To this end, all the sick children required to produce a medical history, physical examination, as well as other necessary studies, the results of which are entered in the medical card dental patient (form 043 / y).

anamnesis

When taking the history to find out from the presence of the parents complaining of pain from the chemical and thermal stimuli, allergic history, the presence of somatic diseases.

Purposefully reveal complaints of pain and discomfort in a specific tooth, jam cooking, changing the appearance of a tooth, the timing of complaints.

Find out, is there adequate hygienic oral care, childbirth and regions of residence (endemic fluorosis areas).

In the presence of caries in the stage of spot on temporary teeth of a child under 3 years pay attention to diet, particularly on the use of carbohydrate-containing beverages and mixtures of at night.

Visual inspection, an external inspection of the maxillofacial area, check with the help of additional tools

On examination, assess the state of dentition, paying attention to the intensity of caries (presence of seals, their degree of fit, the presence of defects in hard tissues of teeth, the number of extracted teeth). Determine the state of the mucous membrane, its color, moisture, presence of pathological changes.

Inspection is required for all teeth begin inspection with right upper molars and molars lower right end. Thoroughly examine all surfaces of each tooth, pay attention to color, relief enamel, the presence of plaque, the presence of stains and their state after drying the tooth surface defects.

Pay attention to the presence of white matt stains on the visible surfaces of the teeth, area, shape, edges, surface texture, density, symmetry and a plurality of lesions with a view to establishing its degree of change and development process speed, dynamics of the disease.

Differential diagnosis with non-carious lesions. To confirm the diagnosis can be used lyuminestsentnayastomatoskopiya and other additional methods of examination (if necessary).

*Vital staining of dental hard tissue*is carried out for the differential diagnosis with carious lesions. When receiving a negative result is carried appropriate treatment (other model of the patient).
health indices determined before and after treatment teaching oral hygiene, for the purpose of control. In children with temporary dental hygiene index is used by Fedorov-Volodkina at an early age - EM Index Kuzminoj (see. App. Indices by definition).

6.1.1.1.5. treatment requirements ambulatory polyclinic

The code	Title	multiplicity performance
A13.30.007.001	Health Education in the child	according to the algorithm
A14.07.004	Controlled teeth cleaning	according to the algorithm
A16.07.082	Sanding hard tooth tissues	1
A16.07.051	occupational health	according to the algorithm
A11.07.012	Fluorination of hard dental tissue	according to the algorithm
A16.07.057	Hermetic sealing of fissures of the tooth	According vremennyemolyary needs
A25.07.001	Purpose drug therapies for diseases of the oral cavity and teeth	according to the algorithm
A25.07.002	Purpose dietary therapy in diseases of the oral cavity and teeth	according to the algorithm

6.1.1.6 Characteristics of algorithms and features of the implementation of non-pharmacological aid

Non-pharmacological aid aims at ensuring adequate oral hygiene in order to prevent the development and progression of caries process, consists of three main components: training of oral hygiene, brushing teeth controlled and professional oral hygiene and teeth (See. Appendix 2).
Professional oral hygiene comprises removing from the surface of the tooth dental plaque and to prevent the development of dental caries and periodontal inflammatory diseases (convincing evidence level A).
Learning algorithm oral hygiene is described in Appendix 3, By grinding techniques dental hard tissue and sealing fissurgermetikom - in Appendix 4.

6.1.1.7. to pharmaceutical care requirements of outpatient

name of group	Multiplicity (duration of treatment)
Means for treatment of diseases of the gastrointestinal tract *Preparations for the prevention of dental caries*	according to the algorithm
Antiseptics and disinfectants *antiseptics*	on demand

6.1.1.8. Characteristic features of the algorithms and the use of medicines

The main methods of treatment of caries in enamel stains step is fluorination and remineralizing therapy (level conclusive evidence).
In children with temporary teeth at the initial forms of caries possible application of the technique of impregnation lesion preparations containing a compound of silver (silver plating method).
Algorithms remineralizing therapy, application of fluorine-containing formulations and methods described in the silvering Appendix 5.

6.1.1.9. Requirements for working and resting, treatment and rehabilitation

Children with caries of deciduous teeth enamel in the stage of spot must attend a specialist once every three months to monitor, repeated courses of treatment.

6.1.1.10. to patient care requirements and supporting procedures

Parents are encouraged to bring their children to the doctor, the dentist at least once every six months (optimally once in three months) for routine inspections, hygiene measures and preventive procedures.

6.1.1.11. Requirements for dietary purposes and limitations

After the completion of each treatment is recommended not to eat or rinse your mouth for 2 hours (if there are no other recommendations in the instructions to use the drug).

Limiting foods and drinks with low pH values of consumption (juices, soft drinks), a decrease in the frequency of consumption of foods and beverages that contain easily digestible carbohydrates, thoroughly rinsing the mouth after priema.U children under 3 years old is especially important to exclude the use of sugar-containing beverages and foods (milks, yogurt, kefir) at night.

Carbohydrate Restriction stay in the mouth (to exclude sucking, chewing candy).

6.1.1.12. The form of voluntary informed consent of the patient when the Protocol

Cm. Annex 7.

6.1.1.13. Additional information for the patient and his family

Cm. Appendix 8.

6.1.1.14. Rules changes in the performance requirements of the Protocol and the termination of the Protocol's requirements

At revealing in the process of diagnosing symptoms requiring preparations for the treatment of the child is transferred to the protocol of management of patients corresponding to detection of the disease and complications.

If there are signs of another disease requiring diagnostic and therapeutic measures, along with signs of caries enamel, child care is provided in accordance with the requirements of:

a) section of this protocol management of patients, management of the corresponding enamel caries, b) protocol management of patients diagnosed with the disease or syndrome.

6.1.1.15. The possible outcomes and their characteristics

outcome name	**The rate of%**	**Criteria and Signs**	**Approximate time to reach an outcome**	**Continuity and stages of health care**
compensation function	thirty	Recovery tooth appearance	2 months	Dynamic observation 2 times a year
Stabilization	60	The absence of both positive and negative dynamics	2 months	1 dynamic monitoring every three months
Development of iatrogenic complications	5	The appearance of new lesions or complications caused by ongoing therapy (eg allergic reactions)	At any stage	Medical care according to the protocol of the particular disease
Development of new disease associated with primary	5	Recurrence of caries and its progression	After 6 months. after treatment in the absence of dynamic observation	Medical care according to the protocol of the particular disease

6.1.1.16. Cost characteristics Protocol

Cost characteristics determined in accordance with the requirements of regulatory documents.

6.1. 2. The patient model

nosological form: Enamel caries
StageStage of "white (Cretaceous) spots" (initial caries)
Phase: any
Complication: Without complications
Code ICD-10: K02.0

6.1.2.1 The criteria and characteristics that define the patient model

Children with permanent teeth.

Tooth without visible damage and cavities.

Tooth with a healthy pulp and periodontium.

Focal demineralization of the enamel without forming a cavity, are centers of demineralization - white matte spots. When probing defined smooth or rough enamel surface of the tooth without disturbing the enamel-dentine compound.

Healthy periodontium and oral mucosa.

6.1.2.2 To enable the patient to the Protocol

The child's condition meets the criteria and features of the patient's diagnosis model.

6.1.2.3. Requirements to diagnosis outpatient

The code	Title	multiplicity performance
A01.07.001	Medical history and complaints during oral pathology	1
A01.07.002	Visual examination of the mouth with the oral pathology	1
A01.07.004.001	Percussion	1
A 02.07.002	A study using a dental probe	1
A01.07.005	External examination of the maxillofacial region	1
A02.07.001	Inspection of the oral cavity by using additional tools	1
A02.07.006	definition of bite	according to the algorithm
A03.07.002	Translyuminestsentnayastomatoskopiya and other additional diagnostic methods	on demand
A05.07.001	Elektroodontometriya	on demand
A06.07.004	orthopantomography	on demand
A06.07.003	Sighting intraoral radiography contact	on demand
A06.07.007	Intraoral radiography in bite	on demand
A06.07.001	Panoramic radiography maxillary	on demand
A06.07.002	Panoramic radiography of the mandible	on demand
A06.07.008	Radiography of the upper jaw oblique projection	on demand
A06.07.009	Radiography of the lower jaw in lateral projection	on demand
A12.07.001	Vital staining of dental hard tissue	according to the algorithm
A12.07.003	Determination of oral hygiene index	according to the algorithm

6.1.2.4. Characteristic features of algorithms and perform diagnostic activities

The survey is aimed at establishing a diagnosis, an appropriate model of the patient, with the exception of complications, determining the possibility to start treatment without additional diagnostic and therapeutic measures.

For this purpose all patients children necessarily produce anamnesis, examination of the mouth and teeth, as well as other necessary studies, the results of which are entered into the dental patient medical record (form 043 / y).

anamnesis

When taking the history to find out from the child's parents and the availability of complaints of pain from the chemical and thermal stimuli, allergic history, the presence of somatic diseases.

Purposefully reveal complaints of pain and discomfort in the specific tooth to jam food, changing the appearance of a tooth, the timing of complaints.

Find out, is there adequate hygienic oral care, childbirth and regions of residence (endemic fluorosis areas).

Visual examination, external examination maxillofacial, oral examination using additional tools

On examination, assess the condition of the oral dentition, paying attention to the intensity of caries (presence of seals, their degree of fit, the presence of dental hard tissue defects). Determine the state of the oral mucosa, its color, moisture, presence of pathological changes.

Обследованию подлежат все зубы, начинают осмотр с правых верхних моляров и заканчивают правыми нижними молярами. Детально обследуют все поверхности каждого зуба, обращают внимание на цвет, рельеф эмали, наличие налета, наличие пятен и их состояние после высушивания поверхности зубов, дефектов.

Обращают внимание на наличие белых матовых пятен на видимых поверхностях зубов, площадь, форму краев, текстуру поверхности, плотность, симметричность и множественность очагов поражения с целью установления степени выраженности изменений и скорости развития процесса, динамики заболевания.

Проводят дифференциальную диагностику с некариозными поражениями. Для подтверждения диагноза может применяться люминесцентнаястоматоскопия и другие дополнительные методы обследования (при необходимости).

*Витальное окрашивание твердых тканей зубов*проводят для дифференциальной диагностики с некариозными поражениями. При получении отрицательного результата проводят соответствующее лечение (другая модель пациента).

Индексы гигиены полости рта определяют до лечения и после обучения гигиене полости рта, с целью контроля. У детей с постоянными зубами используется индекс гигиены по Грин-Вермилиону – OHI-S.

6.1.2.5. Требования к лечению амбулаторно-поликлиническому

Код	**Название**	**Кратность выполнения**
A13.30.007.001	Обучение гигиене полости рта у ребенка	Согласно алгоритму
A14.07.004	Контролируемая чистка зубов	Согласно алгоритму
A16.07.082	Сошлифовывание твердых тканей зуба	По потребности
A16.07.051	Профессиональная гигиена полости рта и зубов	Согласно алгоритму
A11.07.012	Фторирование твердых тканей зубов	Согласно алгоритму
A16.07.057	Запечатывание фиссуры зуба герметиком	Согласно алгоритму
A25.07.001	Назначение лекарственной терапии при заболеваниях полости рта и зубов	Согласно алгоритму
A25.07.002	Назначение диетической терапии при заболеваниях полости рта и зубов	Согласно алгоритму

6.1.2.6 Характеристика алгоритмов и особенностей выполнения немедикаментозной помощи

Немедикаментозная помощь направлена на обеспечение адекватной гигиены полости рта с целью предупреждения развития и прогрессирование кариозного процесса, включает три основных компонента: обучение гигиене полости рта, контролируемая чистка зубов и профессиональная гигиена полости рта и зубов.

С целью выработки навыков чистки зубов и максимально эффективного удаления мягкого зубного налета обучают детей и их родителей приемам гигиены полости рта. Технику чистки зубов демонстрируют на моделях.

Индивидуально подбирают средства гигиены полости рта, с учетом возраста. Обучение навыкам гигиены полости рта способствует предупреждению развития кариеса зубов (уровень убедительности доказательств В).

Под контролируемой чисткой зубов подразумевается чистка, которую ребенок осуществляет самостоятельно в присутствии специалиста (врач-стоматолог детский, врач-стоматолог, гигиенист стоматологический) в стоматологическом кабинете или комнате гигиены полости рта, при наличии необходимых средств гигиены и наглядных пособий. Цель данного мероприятия - контроль эффективности чистки зубов ребенком, коррекция недостатков техники чистки зубов. Контролируемая чистка зубов позволяет добиться эффективного поддержания уровня гигиены полости рта (уровень убедительности доказательств В).

Профессиональная гигиена полости рта включает удаление с поверхности зуба зубных отложений и позволяет предотвратить развитие кариеса зубов и воспалительных заболеваний пародонта (уровень убедительности доказательств А).

Алгоритм обучения гигиене полости рта

Первое посещение

Врач или гигиенист стоматологический определяет гигиенический индекс, затем демонстрирует ребенку технику чистки зубов зубной щеткой и зубными нитями, используя модели зубных рядов, или другие демонстрационные средства.

Чистку зубов начинают с участка в области верхних правых жевательных зубов, последовательно переходя от сегмента к сегменту. В таком же порядке проводят чистку зубов на нижней челюсти.

Обратить внимание на то, что рабочую часть зубной щетки следует располагать под углом 45° к зубу, производить очищающие движения от десны к зубу, одновременно удаляя налет с зубов и десен. Жевательные поверхности зубов очищать горизонтальными (возвратно-поступательными) движениями так, чтобы волокна щетки проникали глубоко в фиссуры и межзубные промежутки. Вестибулярную поверхность фронтальной группы зубов верхней и нижней челюстей очищать такими же движениями, как моляры и премоляры. При чистке оральной поверхности ручку щетки располагать перпендикулярно к окклюзионной плоскости зубов, при этом волокна должны находиться под острым углом к зубам и захватывать не только зубы, но и десну.

Завершают чистку круговыми движениями зубной щетки при сомкнутых челюстях, осуществляя массаж десен, справа налево. Длительность чистки составляет 3 мин.

Для качественной чистки контактных поверхностей зубов необходимо использовать зубные нити.

Индивидуальный подбор средств гигиены полости рта осуществляется с учетом стоматологического статуса ребенка (состояния твердых тканей зубов и тканей пародонта, наличия зубочелюстных аномалий, съемных и несъемных ортодонтических конструкций) (Приложение 2).

Следующее посещение

С целью закрепления полученных навыков проводится контролируемая чистка зубов.

Алгоритм контролируемой чистки зубов

Первое посещение

Обработка зубов ребенка окрашивающим средством, определение гигиенического индекса, демонстрация пациенту с помощью зеркала мест наибольшего скопления зубного налета.
Чистка зубов ребенком в его обычной манере.
Повторное определение гигиенического индекса, оценка эффективности чистки зубов (сравнение показателей индекса гигиены до и после чистки зубов), демонстрация ребенку с помощью зеркала окрашенных участков, где зубной налет не был удален при чистке.
Демонстрация правильной техники чистки зубов на моделях, рекомендации ребенку по коррекции недостатков гигиенического ухода за полостью рта, использованию зубных нитей и дополнительных средств гигиены (специальных зубных щеток, зубных ершиков, монопучковых щеток, ирригаторов - по показаниям).

Следующее посещение

Определение гигиенического индекса, при неудовлетворительном уровне гигиены полости рта - повторение процедуры.
Родителей и ребенка инструктируют о необходимости являться на профилактический осмотр к врачу не реже 1 раза в полгода

Алгоритм профессиональной гигиены полости рта и зубов

Этапы профессиональной гигиены:
выявление зубных отложений;
обучение ребенка и родителей индивидуальной гигиене полости рта;
удаление зубных отложений;
полировка поверхностей зубов;
устранение факторов, способствующих скоплению зубного налета;
реминерализирующая и фторидсодержащая терапия;
мотивация ребенка и родителей к профилактике и лечению стоматологических заболеваний.
Процедура проводится в одно посещение. У детей с постоянными зубами удаление зубных отложений проводится с использованием вращающихся щеточек и полировочных паст, а также с использованием ультразвуковых аппараты.
Для удаления налета и полировки гладких поверхностей зубов рекомендуется использовать резиновые колпачки, жевательных поверхностей - вращающиеся щеточки, контактных поверхностей - флоссы и абразивныештрипсы.
Необходимо устранять факторы, способствующие скоплению зубного налета: удалять нависающие края пломб, проводить повторную полировку пломб.
Периодичность проведения профессиональной гигиены полости рта и зубов зависит от стоматологического статуса ребенка (гигиенического состояния полости рта, интенсивности кариеса зубов, состояния тканей пародонта, наличия несъемной ортодонтической аппаратуры).
Минимальная периодичность проведения профессиональной гигиены - 2 раза в год.

Сошлифовывание твердых тканей зубов

Сошлифовывание проводят перед началом курса реминерализирующей терапии при наличии шероховатых поверхностей.

Запечатывание фиссуры зуба герметиком

Герметизация, или запечатывание фиссур, является основным этиотропным методом профилактики фиссурного кариеса. Этот метод заключается в обтурациифиссур и других анатомических углублений здоровых зубов адгезивными материалами с целью создания барьера для внешних кариесогенных факторов (микроорганизмов и углеводов), наряду с этим снижается общий риск возникновения кариеса зубов, происходит ускорение минерализации эмали в области фиссур при применении стеклоиономерных цементов и компомерныхгерметиков.
Неинвазивная (простая герметизация) — изоляция фиссур герметиками с целью ограничения реальных зон риска от действия кариесогенных факторов полости рта.

Показания:
прорезывающиеся и находящиеся на стадии созревания моляры и премоляры с высоким исходным уровнем минерализации фиссур;
прорезывающиеся и находящиеся на стадии созревания моляры и премоляры со средним исходным уровнем минерализации фиссур после курса местной реминерализирующей и фторсодержащей профилактики, направленной на ускорение процессов созревания эмали;
постоянные моляры и премоляры у детей с прогнозируемым высоким риском кариеса перед фиксацией несъемной ортодонтической техники;
постоянные моляры и премоляры у детей 14-18 лет старшего возраста при риске возникновения кариесогенной ситуации в полости рта;
верхние первые постоянные моляры нередко прорезываются с добавочными небными буграми, фиссуры, окаймляющие небный бугор, также подлежат герметизации; кроме того, герметизация подлежат и щечные ямки прорезывающихся нижних первых постоянных моляров и небные ямки верхних боковых резцов.
Методика проведения (применение светоотверждаемого герметика):
Механическая очистка зуба с помощью механической щетки и полировочной пасты.
Изоляция зуба от ротовой жидкости и протравливание 30-37% раствором либо жидкотекучим гелем низкой вязкости фосфорной кислоты в течение 60 секунд.
Удаление протравочного агента с помощью струи воды в течение 40-60 секунд. Высушивание зуба.
Внесение герметика с помощью зонда, канюли. Материал тщательно распределяется зондом или кисточкой канюли во избежание образования пор. Герметик размещается только в ямки и фиссуры, нельзя покрывать материалом скаты бугров. Избыточное нанесение материала приводит к нарушениям окклюзии. При этом кусочки герметика скалываются, а по краям отломов создаются новые ретенционные участки для скопления бактериального зубного налета.
Верхние первые постоянные моляры нередко прорезываются с добавочными небными буграми, фиссуры, окаймляющие небный бугор, также подлежат герметизации. Кроме того, герметизации подлежат и щечные ямки прорезывающихся нижних первых постоянных моляров и небные ямки верхних боковых резцов.
Фотополимеризация в течение 60 секунд.
Контроль окклюзии. При правильном нанесении герметика контроля окклюзии не требуется, если требуется коррекция герметика – используются алмазные боры, финиры и полиры.
Местное фторирование.
Если у ребенка прорезывающиеся постоянные моляры и премоляры со средним и низким исходным уровнем минерализации фиссур предпочтительнее использовать для герметизации стеклоиономерныу герметики икомпомерные герметики.
Особенности проведения технологии.
При работе со стеклоиономерными герметиками не проводится этап протравливания с применением фосфорной кислоты. Перед нанесением стеклоиономерного герметика возможно применение дентин-кондиционеров (при хороших условиях работы).
Все компомерные герметики используются с самопротравливающими адгезивными системами. После их нанесения не требуется их смывание и высушивание. Они наносятся на очищенную жевательную поверхность зуба, далее наносится герметик, затем осуществляется полимеризация.
При невозможности полноценной изоляции от ротовой жидкости прорезывающихся моляров и премоляров, для герметизации фиссур у детей можно использовать стеклоиономерные цементы.
Методика проведения:
Механическая очистка зуба с помощью механической щетки и полировочной пасты.
Изоляция зуба от ротовой жидкости.

Высушивание зуба.
Внесение стеклоиономерного цемента с помощью зонда, канюли. Материал тщательно распределяется зондом или кисточкой канюли во избежание образования пор. Герметик размещается только в ямки и фиссуры, нельзя покрывать материалом скаты бугров. Избыточное нанесение материала приводит к нарушениям окклюзии. При этом кусочки герметика скалываются, а по краям отломов создаются новые ретенционные участки для скопления бактериального зубного налета.Распределение материала по фиссурам возможно с помощью пальцевого прижатия стеклоиономерного цемента (60 сек.)
Фотополимеризация в течение 60 секунд.при использовании гибридного стеклоиономерного цемента.
Контроль окклюзии. При правильном нанесении герметика контроля окклюзии не требуется, если требуется коррекция герметика – используются алмазные боры, финиры и полиры.
Местное фторирование (фторидный лак играет роль изолирующего покрытия).
Инвазивная герметизация – герметизация с предварительным расширением наиболее глубоких, узких фиссур, а также фиссур с начальным кариозным поражением эмали.
Показания:
начальный фиссурный кариес;
труднодоступные узкие и глубокие фиссуры в зубах на стадиях созревания эмали.
Методика проведения:
При проведении инвазивной герметизации чаще используются композиционные герметики. После очистки зуба расширяется вход в фиссуру с помощью алмазных копьевидных или небольших фиссупных и шаровидных боров путем снятия твердых тканей в области стенок фиссур. После расшлифовки дно и стенки фиссуры должны быть доступны для осмотра, а твердые ткани – плотными при зондировании.
При проведении инвазивной герметизации рекомендовано использование композиционных герметиков либо жидкотекучих композитов, при невозможности хорошей изоляции от ротовой жидкости показано применение стеклоиономерных цементов.

6.1.2.7. Требования к лекарственной помощи амбулаторно-поликлинической

Наименование группы	Кратность (продолжительность лечения)
Средства для лечения заболеваний желудочно-кишечного тракта *Препараты для профилактики кариеса*	Согласно алгоритму
Антисептики и средства для дезинфекции *Антисептики*	По потребности

6.1.2.8. Характеристика алгоритмов и особенностей применения медикаментов
Основными методами лечения кариеса эмали в стадии пятна является реминерализирующая терапия и фторирование (уровень убедительности доказательств В).
У детей с постоянными зубами при начальных формах кариеса возможно применение методики инфильтрации кариеса.
Реминерализующая терапия
Проводится с применением препаратов кальция и фосфатов (гели, растворы, кремы)
Перед началом лечения при наличии шероховатых поверхностей проводят их сошлифовывание. Приступают к курсу реминерализирующей терапии.
Реминерализирующее средство наносится на поверхности всех зубов после чистки зубов утром и вечером, а также в течение дня. При активном течении кариеса аппликации препаратов проводят 3-4 раза в день в течение месяца.
После проведения процедуры ребенку рекомендуется не принимать пищу в течение 1-2 ч.

Через месяц после начала реминерализирующей терапии обязательно необходимо провести стоматологическое обследование ребенка для оценки достигнутого результата.
Критерием эффективности курса реминерализующейтерапии является уменьшение размера очага деминерализации вплоть до его исчезновения, восстановление блеска эмали или менее интенсивное окрашивание очага деминерализации (по 10-балльной шкале окрашивания эмали) красителем, улучшение показателей других дополнительных методов диагностики (флуоресцентный метод и др.).

Фторирование твердых тканей зубов

Нанесение на зубы фторидсодержащихлаков, осуществляется до, в процессе и после окончания курса реминерализирующей терапии. После аппликации ребенкудаются рекомендации в соответсвии с инструкцией к препарату. Курс применения фторидсодержащиго лака на участки деминерализации составляет 2-3 процедуры в течение недели, повторение курса – через 1-2 месяца.

Кариес и его разновидности Кариес — одно из самых распространенных заболеваний полости рта. При его возникновении повреждается сначала зубная эмаль, а затем, если не начать лечение, и дентин (твердая ткань зуба). Первый признак кариеса — темное пятно на эмали. Если игнорировать его появление, то пятно может увеличиться в диаметре, а затем патология распространяется глубже в ткань зуба, в результате чего образуется «дырка». Когда кариес разрушает эмаль и поражает дентин, то добирается до пульпы (мягкой ткани зуба), что может привести к очень серьезным последствиям. По степени поражения зуба это заболевание разделяют на кариес в стадии пятна (изменение цвета эмали), поверхностный кариес (поражение эмали), средний кариес (разрушение верхнего слоя дентина) и глубокий кариес (когда дентин разрушен почти до пульпы). Также различают кариес эмали, дентина и цемента корня — в этом случае заболевание возникает под десной. В зависимости от места поражения классифицируют фиссурный кариес (возникает в углублении зуба), апроксимальный (на стыках зубов) и пришеечный кариес (рядом с десной или под ней). Также бывает кариес передних зубов, что особенно сильно ударяет по эстетике улыбки. Обычно в последнем случае с обращением к стоматологу не тянут даже те, кто панически боится врачей. Чтобы избежать визита к специалисту, стоит регулярно осматривать полость рта самостоятельно. Если заметить кариес на самой ранней стадии, избавиться от него можно без помощи стоматолога. Признаки кариеса зубов Понять, что у вас кариес, очень просто. Изменение цвета эмали (пятно может быть и темным, и светлым) или ее структуры, например появление шероховатости, — явные признаки начала заболевания. Болезненная реакция зубов на пищу, особенно на сладкую, холодную и горячую, или боль, возникающая беспричинно, тоже сопутствуют кариесу. Неприятный запах изо рта также может быть симптомом заболевания. Если болезнь уже перешла на среднюю стадию, в зубе можно заметить углубление — обычно оно легко прощупывается языком. Однако следует помнить, что «дырка» может возникнуть не только вследствие кариеса: точный диагноз поставит врач. Причины кариеса Главная причина кариеса — это бактерии, которые вырабатывают кислоты, вымывающие фтор и кальций из ткани зуба. Микроорганизмы начинают размножаться и разрушать зуб уже через 1–2 часа после чистки полости рта, приводя к образованию зубного налета. Недостаточное слюноотделение тоже может способствовать развитию кариеса. Дело в том, что минеральные вещества слюны способны частично нейтрализовать вырабатываемые бактериями кислоты — когда слюны образуется мало, кислоты быстрее разрушают зубы. Также слюна частично смывает налет. Ксеростомия («сухость» во рту) может быть следствием сахарного диабета, гипертонии, нарушений носового дыхания при различных заболеваниях. Кроме того, причиной кариеса может стать частое употребление сладкого, причем воздействие оказывает не количество съеденной глюкозы, а время ее соприкосновения с зубами. Неправильное питание вообще отрицательно сказывается на здоровье полости рта. Кстати Кариес, помимо всего прочего, может быть вызван нарушением работы иммунной системы. Причиной сбоя может стать стресс. Последний,

кстати, также способен замедлить процессы минерализации в полости рта. При обнаружении признаков кариеса нужно скорректировать питание, уделить усиленное внимание гигиене полости рта, отдать предпочтение зубным пастам с повышенным содержанием кальция или фтора. В обязательном порядке необходимо обратиться к стоматологу. Только своевременное лечение кариеса поможет сохранить зуб. Лечение кариеса зубов Если кариес находится на стадии пятна, зубы достаточно насытить фтором и кальцием. Если же болезнь находится на поверхностной, средней или глубокой стадии, без бормашины, скорее всего, не обойтись. Чтобы вылечить кариес, нужно удалить пораженную часть зуба и восстановить его естественную форму путем пломбирования. Глубокий кариес лечится, как правило, за два посещения — сначала ставят временную пломбу, затем постоянную. В случае если кариес возник под пломбой, для диагностики применяют рентгенографию. Существуют два основных способа лечения кариеса — неинвазивный (без «сверления») и инвазивный (с удалением пораженных тканей). Выбор метода зависит от стадии заболевания. Консервативная терапия без препарирования Это лечение кариеса без «сверления». Такой метод используется в том случае, если болезнь находится на начальной стадии, то есть изменился цвет эмали или пациент в силу особенностей организма (например, аллергической реакции) не сможет перенести анестезию, а лечение без нее невозможно. Сущность неинвазивного метода заключается в удалении мягкого налета и минерализации эмали. Лечение осуществляется в несколько этапов: обследование, изоляция десны и нанесение необходимых материалов. Длительность процедуры — около часа, в зависимости от оборудования и квалификации врача. Стоимость в среднем по Москве — от 1500 рублей. Если лечение было проведено качественно, то болезнь отступит и дополнительных манипуляций не потребуется. Лечение с препарированием твердых тканей зуба Представляет собой аппаратную обработку пораженных частей зуба с анестезией. Этапы лечения зависят от стадии заболевания. Средний кариес лечат по следующей схеме: обезболивание; механическая и медикаментозная обработка; установление защитной подкладки; восстановление зуба путем пломбирования; подгон формы пломбы; шлифовка и полировка. Лечение глубокого кариеса перед установлением подкладки требует проверку уровня обработки, то есть выяснения, насколько близко находится чувствительная пульпа. Это делают для того, чтобы исключить возможность возникновения болей после лечения. Длительность лечения среднего и глубокого кариеса — свыше часа, иногда доходит до двух часов. Средний кариес, как мы уже говорили, обычно лечится за одно посещение, глубокий — требует двух посещений, в особо сложных случаях — трех и более. Эффективность лечения зависит от качества используемых препаратов, квалификации специалиста и индивидуальных особенностей организма. При неправильном питании и плохой гигиене, а также низком иммунитете, болезнь может вернуться через некоторое время. Стоимость инвазивного лечения в Москве — от 2500 рублей. Инвазивное лечение кариеса при помощи бормашины — не единственный способ решить проблему. Существует множество более современных методов лечения, не уступающих в эффективности. Современные подходы в лечении кариеса Один из самых новых методов — химико-механический. Он заключается в нанесении на пораженную часть специальных препаратов, затем — удалении больной части зуба и пломбировании. Плюсы метода — безболезненность и образование меньшей по размеру полости (в сравнении с инвазивным вмешательством), которая требует пломбирования. Пораженную ткань также можно удалить мощным потоком воздуха, воды и специального порошка, что исключает повреждение здоровой части зуба. Но этот метод эффективен только на начальных стадиях кариеса. Больные участки можно удалять лазером. Он распознает пораженные ткани и испаряет их. Все эти методы хороши тем, что они менее болезненны, чем лечение бормашиной, а иногда и вовсе не причиняют неприятных ощущений. Но такие процедуры обойдутся пациенту на несколько тысяч дороже классического лечения, и не в каждой клинике найдется соответствующее оборудование для передовой терапии. Профилактика

кариеса Чтобы уберечь зубы от кариеса, необходимо их чистить выметывающими движениями. Тратить на эту процедуру нужно не менее трех-пяти минут утром и вечером. Не следует забывать и о чистке языка. После еды рекомендуется полоскать рот. Питание также влияет на возможность возникновения кариеса. После употребления сладкого или очень кислого (зеленых яблок, лимона) попейте воды или прополощите рот. Ешьте больше овощей и фруктов, содержащих витамины С и D, а также продукты богатые кальцием и фтором. Особенно благотворно влияет на здоровье зубов сырая морковь. Посещать стоматолога следует раз в полгода, чтобы обнаружить кариес на ранней стадии и предотвратить его развитие. Зачастую кариес может стать причиной более серьезных заболеваний зубов, поэтому необходимо внимательно относиться к здоровью полости рта, применять меры профилактики и не пренебрегать визитами к стоматологу. Красивыми могут быть только здоровые зубы, поэтому важно следить за их состоянием, а в случае необходимости выбирать хорошую клинику с передовыми технологиями и квалифицированными специалистам.

Лекция №5

Тема: Методы хирургического лечения разных видов кариеса.

1.1. Технологические модели по образованию

Время занятия 80 мин	**Количество студентов**
Вид занятия	**Введение новостей по лекции**
План лекции:	***Перый час*** 1. Изучить методы хирургического лечения разных видов кариеса зубов ***Второй час.*** 2. Дать правильный хирургический подход каждому виду кариеса зубов
Задача учебного занятия	1. Информировать студентов, дать полное объяснение методу хирургического лечения разных видов кариеса зубов
Методы обучения	Беседа, наглядные пособия по лекции
Вид занятия	общий-коллективный
Наглядные пособия по теме	Учебное пособие, лекционный материал,проектор, компьютер
Обстановка для проведения занятия	Методическая оборудованная аудитория
Мониторинг и критерии оценок	Устный опрос

1.2Технологическая карта лекционных занятий

Этапы работы	**Преподаватель**	**Студент**
1.Этапы подготовки (10 минут)	1.Цель занятия 2.Подготовка слайдов по лекционному материалу 3.Литература по теме 1. Harald O. Heymann Sturdevant's Art and Science of Operative Dentistry, 6e (Roberson, Sturdevant's Art and Science of Operative Dentistry), 2015 2. Kamilov H. P. va b. - «Stomatologik asbob va ashyolar » -Ташкент, 2005 й. 3. Kamilov H. P. va b. «Terapevtik stomatologiya	Слушает и записывает

	propedevtikasi"-Ташкент, 2006й. 4. Боровский Е.В. «Терапевтическая стоматология». - М.,1989г. 5. Магид Е.А., Мухин Н.А. « Фантомный курс терапевтической стоматологии. Атлас». М.: Медицина, 1987. Боровский Е.В. «Стоматология. Руководство к практическим занятиям ». - М.,1987 г.	
2.Введение (10 минут)	***1.Цель и задачи лекционного материала:*** **Цель:** 1. методы хирургического лечения разных видов кариеса зубов **Задача:** 1. Информировать студентов, дать полное объяснение методам хирургического лечения разных видов кариеса зубов **Вопросы по тема**	Слушают Отвечает на вопросы студентов
3.основной этап (50 минут)	1. Ознакомление темы с показанием слайдов	Слушают и записывают
4.Заключительный этап(10 минут)	1. Заключение.	Слушают и записывают

Текст лекции

Препарирование — воздействие на твердые ткани зуба с целью удаления патологически измененных тканей и создания формы полости, обеспечивающей удобное и технологичное пломбирование, сохранение прочностных характеристик зуба, а также прочность, надежную фиксацию, эстетичность и медицинскую эффективность пломбы.
В настоящее время существуют различные способы препарирования твердых тканей зуба:
- механический — с применением боров и ручных инструментов. Этот способ в настоящее время является наиболее распространенным и популярным.
- химико-механический — использование систем, разрушающих пораженные кариозным процессом ткани, которые затем удаляют ручными инструментами. Примером системы для химико-механического препарирования полости может служить «Carisolv». Гель «Carisolv» изготовлен на основе 0,95% гипохлорита натрия и смеси аминокислот (лейцин, лизин, глютаминовая кислота). Гель вносится в кариозную полость, затем полость очищается специальными ручными инструментами и пломбируется (рис.1);[18]

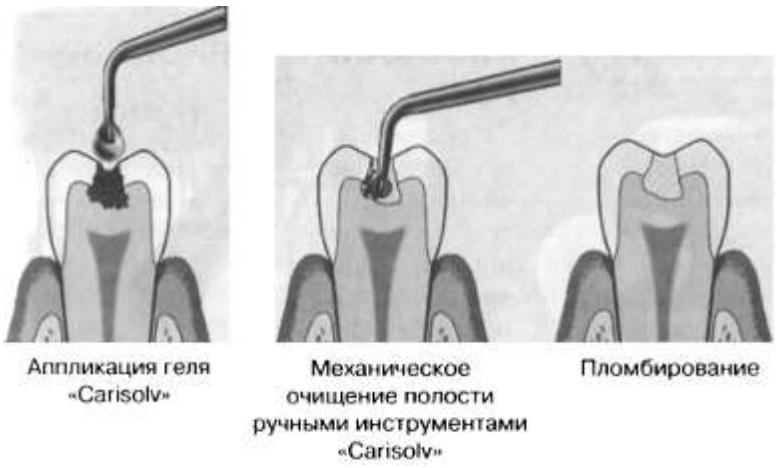

Рис.1 Клинические этапы применения системы «Carisolv»

- кинетический, или воздушно-абразивный способ реализует в стоматологии метод пескоструйной обработки твердых поверхностей. Этот способ заключается в направленной подаче на препарируемые ткани зуба через специальные наконечники (рис.2,3) реактивной струи аэрозоля, содержащего воду и абразивное средство. Активным компонентом аэрозоля, применяемого для препарирования твердых тканей зуба, является абразивный порошок, состоящий из частиц окиси алюминия повышенной абразивности. Воздушно-абразивный способ препарирования применяется для обработки фиссур перед герметизацией, для устранения глубоких пигментаций эмали, при препарировании небольших кариозных полостей и для подготовки адгезионных поверхностей к нанесению адгезивной системы композита. Воздушно-абразивная обработка дает возможность добиться минимального иссечения тканей, что невозможно сделать даже самым маленьким бором. Кроме того, абразивное воздействие аэрозоля создает свободную от загрязнений шероховатую поверхность с максимальной площадью контакта, не требующую, в силу этого, дополнительного химического протравливания;[18]

Рис.2 Аппарат для воздушно-абразивного препарирования твердых тканей зуба

Рис.3 Наконечник для воздушно-абразивного препарирования твердых тканей зуба

- ультразвуковой - использование ультразвуковых наконечников и специальных насадок к ним с алмазным покрытием рабочей части. Кончик насадки при работе совершает микроскопические вибрирующие движения по овальной траектории, обрабатывая стенки полости (рис.4);

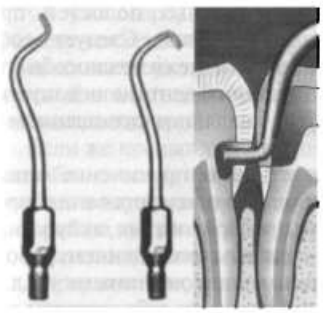

Рис.4 Ультразвуковой способ препарирования кариозной полости специальными насадками с алмазным покрытием рабочей части

- лазерный — использование специальных лазеров, предназначенных для обработки кариозных полостей и твердых тканей зуба (рис.5).[18]

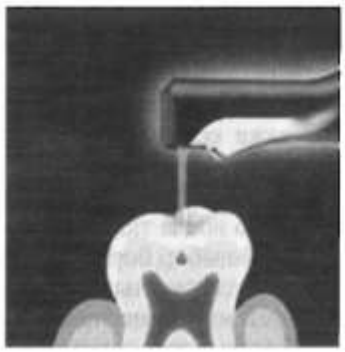

Рис.5 Лазерный способ препарирования кариозной полости

1.2 Принципы препарирования

При препарировании кариозных полостей рекомендуется руководствоваться рядом принципов.
Принцип медицинской обоснованности и целесообразности.
Этот принцип предусматривает отказ от шаблонного подхода к выбору метода препарирования и пломбирования полости. Иссечение тканей зуба должно проводиться с учетом степени распространенности кариозного процесса, состояния индивидуальной кариесрезистентности пациента, прогноза течения «кариозной болезни». В соответствии с этим принципом все пораженные кариозным процессом, нежизнеспособные ткани зуба должны быть иссечены. Тактику в отношении фиссур, контактных поверхностей и т.д. выбирают с учетом индивидуальных особенностей пациента на основе концепции профилактического пломбирования. При этом учитывается риск развития рецидивного кариеса и кариеса на соседних, не пораженных на момент лечения участках зуба.
Принцип щадящего отношения к тканям зуба.
Этот принцип подразумевает выбор тактики лечения, позволяющей максимально сохранить ткани, не пораженные кариозным процессом. В первую очередь это означает отказ от формирования обширных ящикообразных полостей при небольших по объему кариозных поражениях. Следует особо подчеркнуть, что оставление в полости нежизнеспособного, инфицированного, деминерализованного дентина недопустимо, даже если оно мотивируется «щадящим отношением к тканям зуба».
Этот принцип предусматривает также причинение минимального вреда тканям зуба в процессе препарирования: правильный выбор боров и режимов препарирования, аккуратная работа с адекватным воздушно-водяным охлаждением, работа острыми инструментами, исправными наконечниками и т.д.[3]
Принцип безболезненности всех лечебных, диагностических и профилактических манипуляций.
Необходимо помнить, что необоснованное причинение пациенту болевых ощущений недопустимо. Поэтому все потенциально болезненные стоматологические вмешательства (в том числе препарирование кариозных полостей) должны проводиться с адекватным обезболиванием. Наиболее распространенным методом обезболивания в практической терапевтической стоматологии на сегодняшний день является инъекционная анестезия.
Если же препарирование по каким-либо причинам проводится без анестезии, следует соблюдать условия безболезненной обработки кариозных полостей:
- работа острыми борами и исправными, без «биения», наконечниками;
- прерывистые, «гладящие» движения бора;
- достаточное воздушно-водяное охлаждение;

- использование высокоскоростных наконечников;
- особая осторожность при работе и области наиболее чувствительных зон зуба — эмалево-дентинной границы и околопульпарного дентина;
- психологическая, психотерапевтическая и медикаментозная подготовка пациента.

Принцип соблюдения правил асептики и антисептики.

В процессе препарирования (как и при всех остальных манипуляциях) необходимо обеспечить не только медицинскую и технологическую эффективность проводимых процедур, но и их эпидемиологическую безопасность. Следует помнить, что препарирование полости — инвазивная процедура, связанная с обработкой сильно инфицированных тканей. Согласно санитарным нормам, стерильными должны быть все инструменты, соприкасающиеся с твердыми тканями зубов и слизистой оболочкой рта, контактирующие со слюной и кровью, а также применяемые для инъекционного введения лекарственных препаратов. По мере загрязнения и инфицирования рабочей части бора его заменяют на новый.[3]

Кроме защиты пациента от возможного инфицирования, в процессе препарирования должны предприниматься меры для защиты и сохранения здоровья врача и другого медицинского персонала.

Мы рекомендуем всем врачам-стоматологам-терапевтам во время работы пользоваться защитными очками, масками и перчатками.

Принцип визуального контроля и удобства работы.

Этот принцип основан на том, что врач должен хорошо видеть, что и как он делает. Необходим визуальный контроль качества выполнения каждой манипуляции, правильности проведения каждого этапа. Улучшению условий визуального контроля и обеспечению удобства работы способствует применение различных эргономических приемов, инструментов и приспособлений:

- эргономичное положение врача и пациента;
- работа «в четыре руки»;
- применение эффективной аспирационной системы (слюноотсос, «пылесос», мультисептор) (рис.6);

Рис.6 Слюноотсос-мультисептор

- достаточное освещение рабочего поля: правильное расположение и направление света светильника установки, работа наконечниками с подсветкой, дополнительная подсветка рабочего поля специальными приспособлениями;
- достаточное раскрытие кариозной полости, обеспечивающее визуальный контроль состояния всех стенок полости, применение стоматологического зеркала для подсветки и осмотра труднодоступных участков полости;[3]
- использование увеличительных линз или стоматологического микроскопа для контроля качества препарирования;
- применение специальных красителей (кариес-маркеров) для объективною контроля состояния тканей зуба;
- использование ретракторов десневого края (рис.7), роторасширителей, коффердама, держателей губ, щек и языка (рис.8) для отведения мягких тканей на необходимую дистанцию от препарируемой полости;

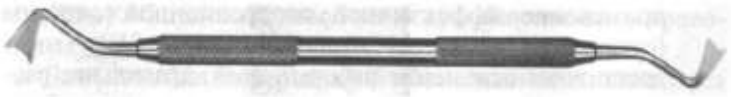

Рис.7 Ретрактор десневого края (гингивоэлеватор)

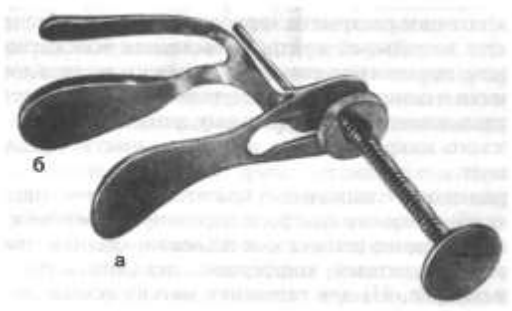

Рис.8 Валикодержатель: а) подбородочный упор; б) держатель для языка и ватных валиков

- при необходимости - иссечение или коагуляция вросшего в контактную полость десневого сосочка или гипертрофированной десны при наличии полости V класса.

Принцип сохранения целостности соседних зубов, пародонта и тканей полости рта.

При препарировании полостей, особенно расположенных в непосредственной близости от десневого края, необходимо осторожное и аккуратное выполнение всех манипуляций, что позволяет избежать механического или химического травмирования слизистой оболочки и маргинального периодонта.[3]

Кроме того, при препарировании, особенно контактных кариозных полостей, следует избегать повреждения эмали соседних зубов, применяя для этого соответствующие приспособления (рис.9) и технические приемы.

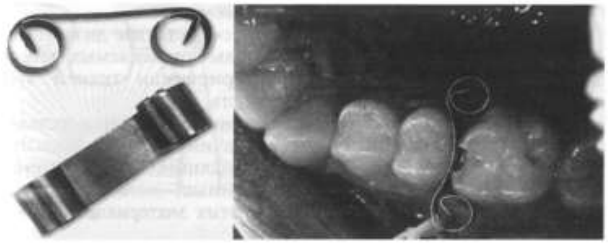

Рис.9 Приспособление для защиты тканей соседнего зуба от повреждения в процессе препарирования

Принцип рациональности и технологичности манипуляций.
Этот принцип предусматривает выбор наиболее эффективных и рациональных методик, инструментов и приемов препарирования кариозной полости. Кроме того, следует осознавать, что препарирование кариозной полости является технологическим процессом, успех которого в большой мере определяется тем, насколько точно врач выполняет рекомендации по использованию боров, выбору наконечника, соблюдению режимов препарирования, выполнению каждого этапа лечения и т.д.
Принцип ретенции и резистентности.
Важнейшими условиями эффективного и качественного препарирования является создание ретенционной и резистентной формы полости.
Под резистентностью понимают устойчивость тканей зуба к механическим нагрузкам и кариссогенным воздействиям. Механическая резистентность зуба обеспечивается минимальным иссечением здоровых тканей, а кариес-резистентность — проведением препарирования и пломбирования до «иммунных» зон. Ретенция - обеспечение прочной и надежной фиксации пломбы в полости.[11]
Принцип биомеханического соответствия.
Этот принцип предусматривает соответствие дизайна полости физико-механическим свойствам применяемых материалов и биомеханическим характеристикам тканей зуба, окружающих сформированную полость.
Например, при пломбировании амальгамой или вкладками сформированная полость должна иметь ящикообразную форму, параллельные или слегка сходящиеся к дну стенки, прямые углы (рис.10а).
Ослабленные, истонченные жевательные бугры при применении этих материалов должны иссекаться (рис.10б).

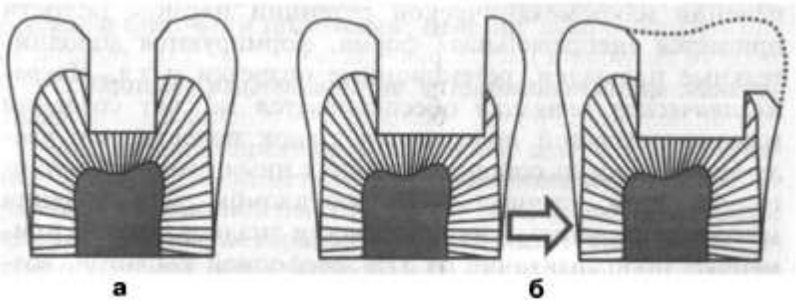

Рис.10 Дизайн внутренних контуров полости при пломбировании амальгамой и вкладками

При пломбировании стеклоиономерными цементами, композитами и компомерами создание внутренних контуров полости осуществляется с учетом их физико-механических свойств и особенностей пространственной организации. При этом не рекомендуется формировать прямые и острые углы. Контуры полости делаются сглаженными, между дном и стенками формируются плавные переходы (рис.11а). Полости придается слегка грушевидная форма, при необходимости дно может делаться ступенчатым. При этом следует помнить, что в участках, подверженных повышенным нагрузкам, слой композита должен быть не менее 2 мм (рис.11б). Допускается оставление ослабленных, истонченных жевательных бугров с последующим укреплением их композитом (рис.11в).[11]

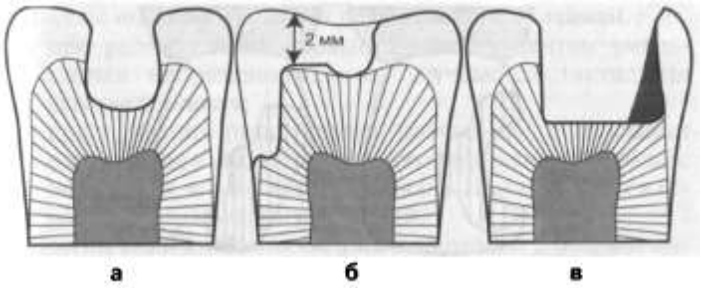

Рис.11 Дизайн внутренних контуров полости при пломбировании стеклоиномерными цементами, композитами и компомерами

Принцип создания условий для эстетического восстановления зуба.
Этот принцип основывается на том, что современные материалы позволяют восстанавливать и даже улучшать эстетические свойства зуба. Соединяясь с тканями зуба за счет адгезии, они образуют с ними единую оптическую систему. Основными характеристиками ее являются цветовая гамма, степень прозрачности, отражение и преломление света. Поэтому, при препарировании полостей, особенно во фронтальных зубах, необходимо дополнительно руководствоваться требованиями эстетики: полностью иссекать пигментированный дентин; обрабатывать эмаль таким образом, чтобы обеспечить адекватное отражение и преломление света на границе реставрационного материала с тканями зуба (рис.12); иссекать участки, ухудшающие эстетический результат реставрации (например, пигментированные трещины эмали). Для улучшения эстетического результата пломбирования допускается оставление на вестибулярной поверхности фронтальных зубов непораженной эмали, не имеющей под собой дентинной основы.[11]

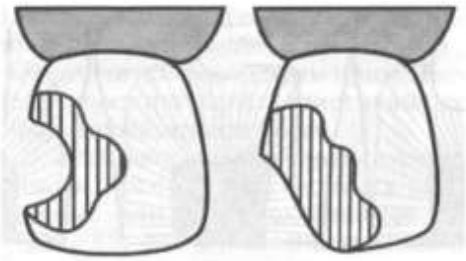

Рис.12 Создание главного, волнистого скоса эмали на вестибулярной поверхности (3-4 волны) для достижения наилучшего эстетического результата

Принцип эргономики.
Эргономика - наука, изучающая функциональные возможности человека в трудовых процессах с целью создания для него оптимальных условий труда. Задача эргономики, с одной стороны, - сделать труд высокопроизводительным и эффективным, с другой, — обеспечить человеку удобство работы, сохранение его сил, здоровья и работоспособности.[3]

2. Классификация кариозных полостей по Блэку

Различают пять классов дефектов твердых тканей зуба кариозного поражения, различающихся локализацией. Эта классификация впервые была предложена американским врачом-стоматологом Дж. Блэком. Ею руководствуются при препарировании полостей и при выборе пломбировочного материала (рис.13).

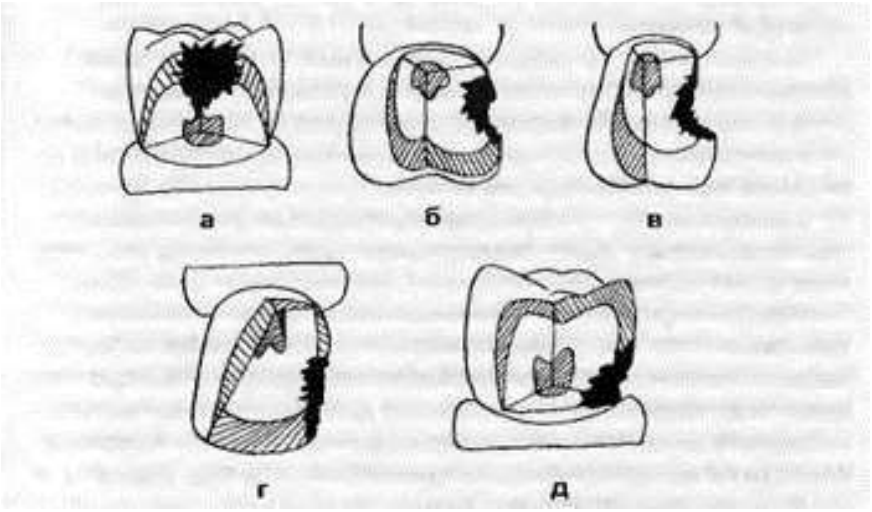

Рис.13 классификация кариозных полостей по Блеку: а) 1 класс; б) 2 класс; в) 3 класс; г) 4 класс; 5) класс

I класс — полости локализуются в фиссурах, в слепых ямках моляров, премоляров, резцов и клыков. Таким образом, пломба по первому классу может находиться на окклюзионной, щечной или язычной поверхности.
II класс — полость захватывает как минимум две поверхности: медиальную или дистальную и окклюзионную поверхности у моляров и премоляров. Таким образом, пломба по второму классу может располагаться, например, на медиально-окклюзионной поверхности (МО) премоляра или на медиально-окклюзионно-дистальной поверхности (МОД) моляра.
III класс — полости локализуются на медиальной и дистальной поверхности резцов и клыков.
IV класс — полости локализуются там же, где и полости III класса, но с нарушением угла коронковой части зуба или его режущего края.[20]
V класс — полости локализуются в пришеечной области всех групп зубов.
Таким образом, пломба по пятому классу может находиться, например, на вестибулярной поверхности резца верхней челюсти в пришеечной области или на язычной поверхности моляра нижней челюсти в пришеечной области.
Позже был также выделен VI Класс — полости атипичной локализации: режущие края фронтальных и бугры жевательных зубов (рис.14).[19]

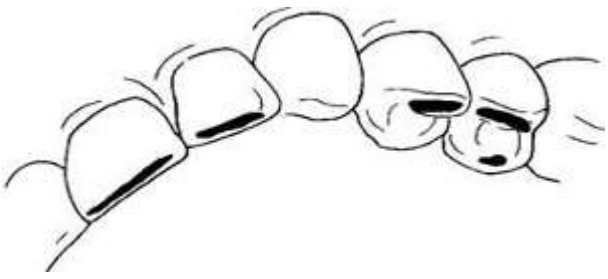

Рис.14 Полости 6 класса

3. Основные этапы препарирования твердых тканей зубов

При препарировании необходимо достичь цели препарирования - создания полости, не только удобной для наложения пломбы, но и обеспечивающей ее надежную фиксацию.
В понятие сформированной полости включаются следующие элементы: края, стенки, углы, дно. Стенки полости имеют названия в зависимости от поверхности коронки, к которой они прилежат. Углы между параллельными отвесно стоящими стенками являются главными элементами фиксации пломбировочного материала. Дном полости принято считать поверхность, обращенную к пульпе зуба, независимо от локализации кариозной полости (рис.15).[13]

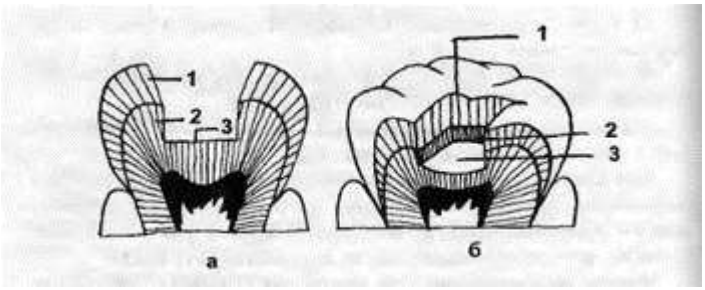

Рис.15 Основные элементы сформированной кариозной полости: а) вид сбоку: 1-финированная эмаль,2-стенка полости,3-дно полости (плоское); б) вид сверху: 1-входное отверстие,2-стенка полости,3-дно полости

Рассмотрим этапы обработки кариозных полостей при использовании рекомендации Блэка.

3.1 Раскрытия кариозной полости

Целью этого этапа является создание доступа к пораженным тканям и выяснение объема кариозного процесса. Раскрытие осуществляется с помощью конического или пламевидного алмазного бора при высокой скорости их вращения. Бор ведут вдоль краев полости, иссекая эмалевые навесы.[12]
Далее применяют шаровидный бор небольшого размера в соответствии с размерами входного отверстия кариозной полости и осторожными движениями расширяют полость до тех пор, пока она не будет доступна обзору (рис.16а).

3.2 Расширение кариозной полости

Расширение кариозной полости осуществляется конусовидными, пламевидными или фиссурными борами среднего размера. Выравнивают края эмали, иссекают пораженные кариесом фиссуры (рис. 16б).

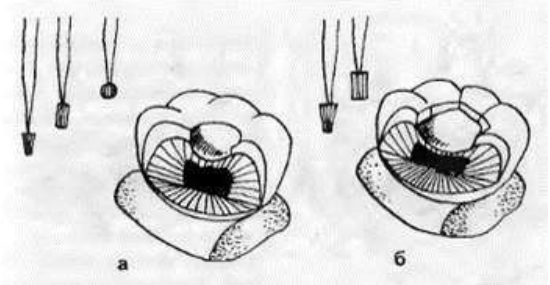

Рис.16 Этапы препарирования кариозной полости: а)раскрытие полости; б)расширение полости

По принципу биологической целесообразности (Лукомский, 1955) ткани эмали и дентина иссекаются экономно, до видимого здоровых тканей зуба.

3.3 Некрэктомия

Некрэктомия предусматривает удаление некротизированного, размягченного дентина. Осуществляется обычно экскаватором и шаровидными борами различного размера на небольшой скорости вращения. Наиболее размягченные ткани удаляют экскаватором. Шаровидным бором сначала препарируют стенки, затем дно. Для избежания повреждения пульпы зуба, движения бора должны быть направлены от центра полости к наружной поверхности зуба (рис.17а).[12]

3.4 Формирование кариозной полости

Формирование кариозной полости является одним из важнейших приемов, обеспечивающих надежную фиксацию пломбы. В процессе обработки полость должна приобрести ящикообразную форму при поверхностном и среднем кариесе. Стенки должны быть параллельны друг другу и перпендикулярны дну. При глубоком кариесе дно оставляют выпуклым в участках, близких рога пульпы. Для придания полости требуемой формы лучше использовать цилиндрические (формирование стенок), обратноконусные (формирование плоского дна) и грушевидные боры с обязательным водяным охлаждением, поскольку формирование полости осуществляется в непосредственной близости с пульпой зуба. В этом случае перегрев твердых тканей может привести к развитию воспаления. При глубоком кариесе дно формируется большими шаровидными борами. Стенки полости по возможности следует оставлять достаточно толстыми, чтобы они не отламывались при нагрузке во время жевания. С целью снижения деформационных напряжений в пломбировочном материале углы между гранями полости необходимо формировать закругленными.
При формировании полости в дентине с помощью колесовидных боров создают ретенционные пункты в виде бороздок, которые обеспечивают дополнительную фиксацию пломбы (рис.17б).[16]

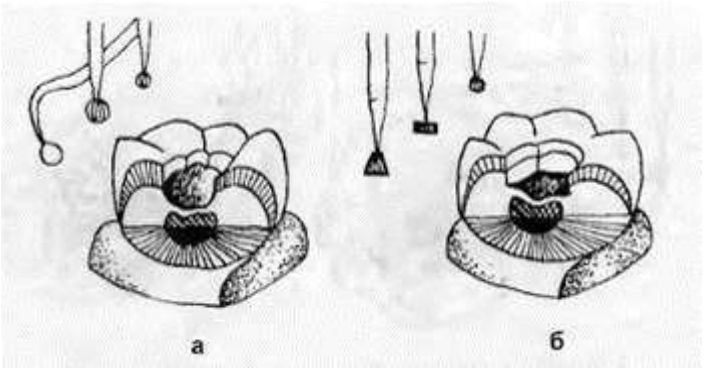

Рис.17 Некрэктомия(а) и формирование полости(б)

3.5 Обработка краев эмали (финирование)

Обработка краев эмали (финирование) является заключительным этапом формирования полости. Оно проводится с целью обеспечения надежного краевого прилегания и предупреждения развития вторичного кариеса. Наружная часть эмалевых призм у входного отверстия в кариозную полость не имеет опоры со стороны подлежащего дентина и является участком наименьшего сопротивления жевательному давлению. Отлом их ведет к появлению вторичного кариеса.

При препарировании предусматривается создание по краю полости скоса (фальца) под углом 45 градусов. Кроме того, полученный скос увеличивает площадь контакта пломбировочного материала с эмалью и предохраняет пломбу от осевого смещения во время воздействия жевательного давления. Сглаживание краев эмали и создание скоса проводят с помощью алмазных боров игловидной, пламевидной или конусовидной формы на высокой скорости вращения с использованием водяного охлаждения (рис.18).[16]

Рис.18 Финирование краёв эмали

Заключение

Техника препарирования зубов, пораженных кариесом, является предметом постоянной, широкой дискуссии.
С появлением новых видов композиционных материалов, имеющих эмаль-и-дентин связывающие компоненты, возникла возможность пересмотра позиций относительно правил формирования полости. При низкой активности кариозного процесса, постоянном использовании противокариозных средств, своевременном лечении начальных форм заболевания проводить профилактическое растирание не требуется.
Исчезает необходимость значительного увеличения размеров препарируемой полости с целью придания ей традиционной «ящикообразной» формы. Образовав полость округлой формы, послойно заполнив ее композитом с учетом адгезии материала к дентину и эмали, можно обеспечить надежную фиксацию пломбы к тканям зуба.

Лекция №6

Тема: Некариозные заболевания возникающие до прорезования зубов. Наследственные заболевания. Этиология, патогенез, клиника, диагностика, лечение и профилактика.

1.1. Технологические модели по образованию

Время занятия 80 мин	**Количество студентов**
Вид занятия	**Введение новостей по лекции**
План лекции:	***Перый час*** 1. Изучить методы некариозных заболевания возникающие до прорезования зубов. Этиология, патогенез, клиника, диагностика, лечение и профилактика.. ***Второй час.*** 2. Наследственные заболевания. Этиология, патогенез, клиника, диагностика, лечение и профилактика..
Задача учебного занятия	2. Информировать студентов, дать полное объяснение некариозным заболеваниям возникающие до прорезования зубов зубов
Методы обучения	Беседа, наглядные пособия по лекции
Вид занятия	общий-коллективный
Наглядные пособия по теме	Учебное пособие, лекционный материал,проектор, компьютер
Обстановка для проведения занятия	Методическая оборудованная аудитория
Мониторинг и критерии оценок	Устный опрос

1.2.Технологическая карта лекционных занятий

Этапы работы	**Преподаватель**	**Студент**
1.Этапы подготовки (10 минут)	1.Цель занятия 2.Подготовка слайдов по лекционному материалу 3.Литература по теме 1. Harald O. Heymann Sturdevant's Art and Science of Operative Dentistry, 6e (Roberson, Sturdevant's Art and Science of Operative	Слушает и записывает

	Dentistry), 2015 2. Kamilov H. P. va b. - «Stomatologik asbob va ashyolar » -Ташкент, 2005 й. 3. Kamilov H. P. va b. «Terapevtik stomatologiya propedevtikasi"-Ташкент, 2006й. 4 Боровский Е.В. «Терапевтическая стоматология». - М.,1989г. 5 Магид Е.А., Мухин Н.А. « Фантомный курс терапевтической стоматологии. Атлас». М.: Медицина, 1987. Боровский Е.В. «Стоматология. Руководство к практическим занятиям ». - М.,1987 г.	
2.Введение (10 минут)	***1.Цель и задачи лекционного материала:*** **Цель:** 1. Некариозные заболевания возникающие до прорезования зубов. Наследственные заболевания. Этиология, патогенез, клиника, диагностика, лечение и профилактика. **Задача:** Информировать студентов, дать полное объяснение некариозным заболеваниям возникающие до прорезования зубов. Наследственные заболевания. Этиология, патогенез, клиника, диагностика, лечение и профилактика. **Вопросы по тема**	Слушают Отвечает на вопросы студентов
3.основной этап (50 минут)	1. Ознакомление темы с показанием слайдов	Слушают и записывают
4.Заключительный этап(10 минут)	1. Заключение.	Слушают и записывают

Тема лекции:

Некариозные поражения твердых тканей зубов представляют собой не очень многочисленную, однако разнообразную но клиническому проявлению и происхождению группу заболеваний. Большинство из них изучены недостаточно, что затрудняет проведение лечения и особенно профилактики. В последнее время наметился определенный успех в изучении этиологии и патогенеза некариозных поражений.

Разнообразие этиологических факторов, клинических проявлений препятствуют созданию всеобъемлющей клинической классификации некариозных поражений зубов.

По предложению В. К. Патрикеева (1968), некариозные поражения зубов соответственно времени их возникновения следует подразделить на две основные группы:

1. Поражения зубов, возникающие в период фолликулярного развития их тканей, т. е. до прорезывания зубов:

▲ гипоплазия;
▲ гиперплазия эмали;
▲ эндемический флюороз зубов;
▲ аномалии размера и формы зубов;
▲ изменения цвета зубов;
▲ наследственные нарушения развития зубов.

2. Поражения зубов, возникающие после их прорезывания:

▲ пигментация зубов и налеты;

▲ стирание твердых тканей;
▲ клиновидный дефект;
▲ эрозия зубов;
▲ некроз твердых тканей зубов;
▲ травма зубов;
▲ гиперестезия зубов.

С учетом международной классификации болезней (ВОЗ) и отечественных клинических классификаций принято следующее деление некариозных поражений зубов:

I. Нарушения развития в прорезывания зубов.

1. Аномалии размера и формы — сращение зубов, слияние зубов, инвагинация зубов, эмалевая капля.

2. Крапчатые зубы — эндемическая крапчатость эмали (флюороз).

3. Нарушения формирования зубов гипоплазия эмали (пренатальная гипоплазия, неонатальная гипоплазия, зубы Турнера).

4. Наследственные нарушения структуры зубов — несовершенный амелодентино- и одонтогенез.

5. Врожденный сифилис — зубы Гетчинсона, тутовые моляры.

6. Другие нарушения развития зубов — изменение цвета зуба в результате резус-конфликта, порока развития билиарной системы, приема тетрациклина.

II. Поражение твердых тканей зубов.

1. Чрезмерное стирание.

2. Истирание зубов — в результате чистки зубов, вредных привычек, профессиональных вредностей и народных обычаев.

3. Эрозия.

4. Изменение цвета твердых тканей зуба после прорезывания — металлы и металлические включения, кровоизлияние в пульпе.

5. Другие поражения твердых тканей зуба — изменение в эмали в результате облучения, чувствительность дентина.

III. Повреждение внутренних структур органов полости рта.

1. Перелом коронки зуба в пределах эмали, в пределах дентина, вскрытие пульпы.

2. Перелом корня зуба.

3. Вывих зуба.

5.1. ПОРАЖЕНИЯ ЗУБОВ, ВОЗНИКАЮЩИЕ В ПЕРИОД ФОЛЛИКУЛЯРНОГО РАЗВИТИЯ ИХ ТКАНЕЙ

5.1.1. Гипоплазия

• Гипоплазия (hypoplasia) — порок развития, заключающийся в недоразвитии зуба или его тканей. Крайним выражением гипоплазии является аплазия — врожденное отсутствие зуба, части или всей эмали.

В практике стоматолога чаще всего встречается гипоплазия эмали зуба (рис. 5.1). Это одно из наиболее часто встречающихся поражений зубов некариозного происхождения.

По мнению некоторых авторов, гипоплазия твердых тканей зуба возникает в результате нарушения как формирования эмали энамелобластами, так и ослабления процесса минерализации эмалевых призм.

В. К. Патрикеев (1967) считает, что при гипоплазии нарушены не только процессы минерализации, но в первую очередь построение белковой матрицы эмали зуба в результате недостаточной или замедленной функции энамелобластов.

М. И. Грошиков (1985) считает, что гипоплазия тканей зуба возникает при нарушении метаболических процессов в зачатках зубов под влиянием нарушения минерального и белкового обмена в организме плода или ребенка или местнодействующей на зачаток зуба причины. Недоразвитие эмали при гипоплазии необратимо, т. е. гипопластические

дефекты не претерпевают обратного развития и остаются на эмали зубов на весь период жизни.

Часто гипоплазия эмали сопровождается нарушениями строения дентина и пульпы зуба.

Гипоплазия наблюдается на молочных и постоянных зубах, но гипоплазия молочных зубов встречается реже. Обусловлено это сроками формирования зубов.

Гипоплазия молочных зубов, формирующихся во внутриутробный период, обусловлена нарушениями в организме беременной женщины, а гипоплазия постоянных зубов, которые начинают формироваться на 5—6-м месяце жизни ребенка, обусловлена нарушениями обменных процессов в детском организме. Но так как заболевания у ребенка отмечаются значительно чаще, чем у плода, то гипоплазия постоянных зубов встречается чаще, чем молочных.

В настоящее время гипоплазия молочных (временных) зубов наблюдается чаще, чем раньше, что объясняется успехами в снижении перинатальной смертности. Чаше же гипоплазия молочных зубов встречается при заболеваниях ребенка в первые недели и месяцы его жизни, что отражается на формировании временных резцов, клыков и больших коренных зубов.

Рис. 5.1. Системная гипоплазия эмали

В литературе отмечено, что чем выше заболеваемость в детском возрасте, тем значительнее частота поражения зубов гипоплазией. Так у детей, страдающих хроническими соматическими заболеваниями, сопровождающимися нарушением обмена веществ (начавшимися до или вскоре после рождения), гипоплазия зубов наблюдается в 50 % случаев.

Гипоплазия на молочных резцах наблюдается у детей, матери которых в период беременности перенесли такие заболевания, как краснуха, токсоплазмоз и токсикоз. Гипоплазия наблюдалась у недоношенных, у детей с врожденной аллергией, перенесших гемолитическую желтуху, возникшую в результате несовместимости крови матери и плода по резус-фактору, перенесших родовую травму, родившихся в асфиксии. При гемолитической болезни новорожденных гипоплазия эмали в большинстве случаев развивается внутриутробно (на 25—32-й неделе беременности), а иногда в течение 1-го месяца жизни ребенка.

Гипоплазия постоянных зубов развивается под влиянием различных заболеваний, возникших у детей в период формирования и минерализации этих зубов. Гипоплазию находят у детей, перенесших рахит, тетанию, острые инфекционные заболевания, болезни желудочно-кишечного тракта, токсическую диспепсию, алиментарную дистрофию, страдающих заболеваниями эндокринной системы, врожденным сифилисом, мозговыми нарушениями. Около 60 % гипопластических дефектов постоянных зубов развивается в первые 9 мес жизни ребенка, когда адаптационные и компенсаторные возможности выражены слабо.

Локализация гипоплазии на коронке зуба, так же как и групповая принадлежность пораженных зубов, во многом зависит от возраста, в котором ребенок перенес заболевание. Так, при болезни ребенка в первые месяцы жизни гипоплазия развивается в области режущего края центральных резцов и бугров шестых зубов, так как их формирование начинается на 5—6-м месяце после рождения. На 8—9-м месяце жизни формируются вторые резцы и клыки. При заболевании ребенка в этот период участки гипоплазии у боковых резцов и клыков будут у режущего края, в то время как у центральных резцов и шестого зуба участки недоразвитой эмали будут примерно на уровне экватора (так как половина коронки уже сформировалась).

В тех случаях, когда заболевание ребенка продолжается в течение длительного времени, изменения эмали занимают значительные участки по длине коронки на поверхности зуба. В некоторых случаях наблюдается неровная структура эмали всей коронки определенной группы зубов, что указывает на длительное течение перенесенного заболевания.

Выраженность гипоплазии зависит от тяжести перенесенного заболевания — при слабовыраженных нарушениях обмена веществ могут образовываться только меловидные пятна, а при тяжелых заболеваниях имеет место недоразвитие эмали вплоть до полного ее отсутствия (аплазия эмали).

Гипоплазию твердых тканей зубов, формирующихся в один и тот же промежуток времени, называют системной. Гипоплазию одиночного зуба называют местной.

5.1.1.1. Системная гипоплазия

Клинически различают три формы системной гипоплазии: 1) изменение цвета; 2) недоразвитие; 3) отсутствие эмали.

Слабая степень недоразвития эмали может проявиться в виде пятен чаще белого, реже желтоватого цвета, с четкими границами и одинаковой величины на одноименных зубах. Пятна обычно обнаруживаются на вестибулярной поверхности и не сопровождаются какими-либо неприятными ощущениями. Характерной особенностью пятна при гипоплазии является то, что наружный слой эмали не окрашивается красителями. В течение жизни размеры, форма и цвет пятна обычно не изменяются. Толщина эмали в области пятна такая же, как и на участке интактной эмали рядом с ним. На рентгеновском снимке эта форма гипоплазии обычно не выявляется.

Более тяжелой формой гипоплазии эмали является ее недоразвитие, которое проявляется по-разному (волнистая, точечная, бороздчатая эмаль).

Волнистая эмаль выявляется при высушивании поверхности, когда при осмотре можно различить небольшие валики, между которыми имеются покрытые неизмененной эмалью углубления.

Чаще других встречается форма гипоплазии в виде точечных углублений в эмали, расположенных на вестибулярной и язычной поверхности на различном уровне у различных групп зубов. Со временем эмаль в месте углублений постепенно пигментируется. Эмаль в углублениях остается плотной и гладкой. Иногда гипоплазия проявляется в виде одиночной поперечной борозды на коронке (перехват). Эту форму гипоплазии некоторые называют бороздчатой. Таких борозд может быть несколько, они чередуются с неизмененными тканями зуба. Редко наблюдаются случаи, когда на всей высоте коронки некоторых групп зубов имеются борозды. Такую форму называют «лестничной» гипоплазией. Характерно, что даже при тяжелых проявлениях гипоплазии (бороздчатой и лестничной) целостность эмали не нарушена.

Наиболее редко встречающейся формой гипоплазии является ее отсутствие (аплазия) на определенном участке. При этой форме могут быть жалобы на болевые ощущения от раздражителей, которые проходят после их устранения. Клинически это проявляется отсутствием эмали на части коронки, но чаще — на дне чашеобразного углубления или в борозде, охватывающей коронку зуба.

При гистологическом исследовании в случае гипоплазии выявляются увеличенные межпризменные пространства, расширенные линии Ретциуса; границы призм теряют четкость очертаний. Степень изменений зависит от тяжести процесса. Так, при точечной форме уже более заметны изменения в дентине: увеличивается зона интерглобулярных пространств, наблюдается интенсивное отложение заместительного дентина. В пульпе уменьшается количество клеточных элементов. В нервных элементах пульпы определяются дегенеративные изменения.

Рис. 5.2. Аномалии развития зубов (схема), а, б — зубы Гетчинсона, в — зуб Фурнье.

При электронно-микроскопическом исследовании эмали обнаруживаются нарушение ширины призм, ориентации кристаллов гидроксиапатита, структуры дентинных трубочек.

Одной из разновидностей системной гипоплазии являются зубы Гетчинсона, Пфлюгера и Фурнье, имеющие своеобразную форму коронок.

Зубы Гетчинсона — верхние центральные резцы с отверткообразной и бочкообразной формой коронки (размер у шейки больше, чем у режущего края (рис. 5.2, а), и полулунная

выемка может быть покрыта эмалью, но иногда эмаль наблюдается только на углах зуба, а в средней части дентин не покрыт эмалью (рис. 5.2, б).

Зубы Фурнье — это центральные резцы с отверткообразной формой коронки (такой же, как и зуб Гетчинсона), но без полулунной выемки по режущему краю (рис. 5.2, в).

Ранее полагали, что зубы Гетчинсона и Фурнье характерны для врожденного сифилиса. Этот признак входит в триаду врожденного сифилиса: паренхиматозный кератит, врожденная глухота и гетчинсоновы зубы. Однако в дальнейшем было установлено, что указанная аномалия зуба может наблюдаться не только при сифилисе.

Зубы Пфлюгера — первые большие коренные зубы (моляры), размер коронки у которых около шейки больше, чем у жевательной поверхности, а бугры недоразвиты и, сходясь, придают зубу вид конуса. Развитие зубов Пфлюгера объясняют действием сифилитической инфекции.

Дифференциальная диагностика. Гипоплазию эмали дифференцируют от начального и поверхностного кариеса.

При кариесе белое пятно обычно одиночное на поверхности зуба у шейки, при гипоплазии белые пятна множественные и располагаются на любом участке коронки. Кроме того, при гипоплазии пятно не окрашивается 2 % раствором метиленового синего, а при кариесе окрашивается.

От поверхностного кариеса гипоплазию дифференцируют на основании того, что при ней поверхность эмали гладкая, а при поверхностном кариесе целостность эмали нарушена, поверхность шероховатая (при зондировании).

Лечение. Своевременная лечебная помощь при гипоплазии имеет большое не только эстетическое, но и психологическое значение, так как способствует устранению нежелательных эмоциональных наслоений. Характер вмешательства зависит от клинического проявления. Так, при одиночных белых пятнах лечение можно и не проводить. Но если пятна локализуются на вестибулярной поверхности резцов и видны при разговоре и улыбке, то необходимо этот дефект устранить. Хорошие результаты достигаются пломбированием композитными материалами. При изменении структуры эмали (точечные углубления, перехваты и др.) также производится устранение дефекта современными пломбировочными материалами. При выраженных изменениях, наблюдаемых при гипоплазии эмали и дентина, возникают показания к ортопедическому лечению.

Профилактика. Профилактикой системной гипоплазии является предупреждение системных заболеваний, сопровождающихся выраженным нарушением обменных процессов.

«Тетрациклиновые» зубы. Отдельно следует рассмотреть такой вид системной гипоплазии, как «тетрациклиновые» зубы. Это зубы, имеющие измененную окраску в результате приема тетрациклина в период формирования и минерализации тканей зуба. Тетрациклин откладывается в эмали и дентине развивающихся зубов, а также в костях плода или ребенка в случае введения в организм беременной или ребенка тетрациклина в качестве терапевтического средства при различных заболеваниях. Тетрациклин может вызвать не только окрашивание зубов, но и гипоплазию эмали. Характер изменения зависит от дозы и вида препарата. При введении небольших доз изменяется цвет, а при введении очень больших доз наряду с изменением цвета происходит недоразвитие эмали. В случае приема диметилхлортетрациклина изменение окраски более значительное, при получении окситетрациклина окраска менее интенсивная.

Лечение беременной тетрациклином приводит к изменению окраски у ее ребенка передних зубов, а именно 2/3 коронок резцов, начиная от режущего края и жевательной поверхности больших коренных зубов. Полагают, что тетрациклин проникает через плацентарный барьер. Применение тетрациклина у ребенка, начиная с 6-месячного возраста, вызывает окрашивание не только молочных больших коренных зубов, но и

постоянных зубов, формирующихся в эти сроки. Окрашивается, как правило, не вся коронка зуба, а только ее часть, которая формируется в этот период.
Интенсивность окраски зубов от светло-желтой до темно-желтой также зависит от вида тетрациклина и его количества. Зубы, окрашенные тетрациклином в желтый цвет, обладают способностью флюоресцировать под влиянием ультрафиолетовых лучей. Это свойство можно использовать для дифференциации от окраски зубов, вызванной другими причинами, например билирубином при гемолитической болезни новорожденного.

Due to the fact that tetracycline staining tooth enamel resistant to further whiten the tooth tissue is impossible, tetracycline, children and pregnant women should be used only for health reasons.
local hypoplasia
This disturbance to the formation of permanent teeth enamel resulting involvement in the inflammatory process tooth primordia or mechanical injury of the developing follicle.
Local hypoplasia manifests in the form of spots - from white to yellow-brown and often in the form of point recesses, which are located on all surfaces.

Local hypoplasia - chalk-like spots on the central upper incisors.
In severe cases it may be aplasia (absence) of enamel. Sometimes enamel tooth crown can be partially or completely absent. These teeth are called Turner teeth.
Local hypoplasia is more common on small permanent molars, the beginnings of which are located between the roots of the milk teeth.
This disease can be prevented by the wide implementation of preventive measures against dental caries of deciduous teeth or treat them at an early stage of the lesion, in order to prevent the occurrence of periodontal inflammation.
As for the local treatment of hypoplasia, in the case preference is given defect enamel composite filling materials, and at considerable deformation crown shown orthopedic treatment.

5.1.2. hyperplasia enamel
• Hyperplasia of enamel - is excessive formation of dental tissues during its development.
"Enamel drop" are observed in 1.5% of patients. Their diameter ranged from 1 to 4.2 mm. They are located in the neck of a tooth on the border of enamel and cement, sometimes in the bifurcation area (trifurcation) roots. "Enamel drops" are composed of dentine, enamel-coated, inside which there is often a cavity filled with pulp (Fig. 5.4).

Fig. 5.4. Hyperplasia enamel - "enamel drop".
Hyperplasia clinically usually does not manifest itself, and does not cause any functional impairment.
Essentially these formations closer to another form of anomalies - coalescing crowns or tooth roots are well formed. It is believed that this is due to the close proximity of the rudiments of teeth zuboobrazovatelnoy plate. Most often there is a fusion of the central incisors to the side, at least - the merger of the normal and supernumerary teeth.

5.1.3. Endemic dental fluorosis
• Fluorosis - endemic disease caused by intoxication with fluorine, resulting from the consumption of drinking water with a high fluorine content. One of the earliest signs of dental fluorosis of the teeth is defeated.
Yet in 1890 for the change of teeth with fluorosis has been described as a painted or discolored teeth. Subsequently, these teeth were called "spotted with", "mottled enamel", "mottled enamel". Last name given to Black in 1916, found the most widespread in the literature. Only in 1931 it was found that in the drinking water of settlements, where there is mottling of enamel, was increased content of the trace element fluorine.

It was later established that the loss of teeth with fluorosis - not the only sign of the disease. At high concentrations fluoro able to destroy human skeleton and bone.

Many researchers consider dental fluorosis as a hypoplasia of a specific origin.

Fluorine is widely distributed in nature. The earth's crust contains 1.06 * 10-2% fluorine. Most often it occurs as fluoro fluorides in conjunction with metals. The greatest number is found in its mineral springs. Fluoride is an important biological element, performing a physiological role in the body. Fluoride is a part of all human organs, but it is mainly found in bones and teeth

An adult receives an average of groceries 0.5-1.1 mg of fluoride per day with food and 2.2-2.5 mg of water. Almost all foods contain greater or lesser amounts of fluoride. Especially a lot of it in products such as marine fish (sturgeon, sardines, saffron cod, herring, sprat), meat products (lamb, liver, beef, and pork fat, bone marrow), and also in the yolk of eggs and some plants (rye, wheat, cabbage, beet, tea, etc.). fluorine concentration in fruit is relatively small. Characteristically, fluoro food absorbed worse than fluorides are soluble in water. The more fluoride in drinking water, the more common and less fluorosis - tooth decay. Fluorosis is primarily manifested in the maxillary incisors and premolars, at least on the incisors of the lower jaw and molars. It was found that most of the fluoride,

The exact mechanism of occurrence of dental fluorosis is still not fully understood. More reasonably be regarded as representation of hematogenous toxic effect of fluoride on ameloblast during the development of dental epithelial organ, leading to incorrect formation of enamel.

According to most authors, the prevalence of dental fluorosis in the population endemic foci increases in accordance with increase in the fluorine concentration in water (Table. 5.1).

Along with this, in the presence of the majority of people endemic areas significant changes in the teeth, some people have an easy defeat. Moreover, in these areas there are children whose teeth are perfectly healthy. This means that for the same fluorine concentration in the water body can respond differently at its delivery. Thus, the severity of dental fluorosis another organism is determined by the degree of sensitivity to fluoride toxicity and its ability to withstand this impact.

It is believed that fluorine, poison being enzymatically reduces phosphatase activity and thereby gives mineralization of enamel.

Table 5.1. The prevalence of dental fluorosis in the population at different fluorine content in water

Fluorine content in water, mg / l	Affected fluorosis%
0.8-1.0	10-12
1.0-1.5	20-30
1.5-2.5	30-40
over 2.5	more than 50

■ In accordance with government standards defined allowable concentration of fluoride in the source water - 1.5 mg / l.

Note that at this concentration often observed dental fluorosis. When the fluorine concentration in the water - 1.0-1.5 mg / l fluorosis observed in 30% of the population, with 1.5-2.0 mg / l - 30-40%, with 2.0-3.0 mg / l fluorosis occurs in 80-90% of the population of endemic area (VK Patrickeyev). The use for a long time with a high water content of fluorine does not cause color change in the adult dental enamel formed. The concentration of fluor in water exceeding 6 mg / l, can cause changes in the already formed teeth (Novick IO).

In areas with a hot climate may experience dental fluorosis expressed at moderate fluorine content in drinking water (0.5-0.7 mg / l). This is due to the increased introduction of water into the body. On the territory of Russia fluorosis occurs in the Moscow region (Kolomna), Tver, Tambov and other areas.

Based on clinical observations revealed that the optimum content of fluorine in drinking water is 1 mg / l, with a concentration rarely observed fluorosis (or manifested as mild form) and there is a pronounced effect kariesostatichesky.

The clinical picture. Fluorosis affects mainly children's permanent teeth (milk rarely), living with a birth in the focus of endemic fluorosis or settled there at the age of 3-4 years. It found that in endemic foci fluorosis among preschool children 3-5 years of age incidence of early forms of temporary dental fluorosis can reach 50%.

With a slight excess of fluoride in drinking water affects only the incisors, with a large - all the teeth.

tooth enamel in the affected areas loses luster and transparency becomes dull and lifeless like becomes whitish background that explain features refractive enamel, which structure is broken due to chronic fluoride intoxication.

Patients with milder forms of fluorosis single small spots detected in limited areas of the labial surface of the tooth crown. Such changes often occur at low concentrations of fluorine in water (1 mg / l). At the same concentration of fluoride from other children multiple spots, capture a significant portion of the enamel and can be seen when viewed with the naked eye crowns. When the fluorine concentration of 1.5 mg / L can be observed spots of light yellow color. If the fluorine content is 1.5-2 mg / l, the lesion may be in the form of multiple point undulations or erosion (mottling).

Spots of dark brown color, located near the cutting edge of the cutting tools, create a picture of "burnt" crowns. At higher concentrations of fluorine erosion point "merge" with each other and with pigment and a chalk-like spots give pitted enamel "speckled" appearance.

According to the observations Ovrutsky GD (1976), some form of dental fluorosis is maintained for life and a form of spotting is not transferred to another, regardless of the fluorine saturation of the new water source.

A common feature of expressed stages of the disease is the loss of teeth of different groups of the same patient fluorosis various degrees (forms). Location flyuoroznyh changes in tooth enamel is in full compliance with the terms of violations of its mineralization.

Clinical manifestations of endemic fluorosis of the teeth almost all authors are classified according to ascending powers. Thus, R. D. Gabovich (1949) distinguishes between four degrees of destruction of the teeth, IO Novick (1951) and G. D. Ovrutsky (1962) are three stages lesion dental fluorosis. PT Maksimenko and AK Nikolishin (1976), distinguishing between four degrees of fluorosis, at the same time offer to divide its limited and widespread (generalized). Abroad has been widely used classification of the Dean, who proposed to distinguish between the seven degrees of fluorosis.

Fig. 5.5. dental fluorosis, and - spotted enamel; b - chalky enamel.

The most popular classification of dental fluorosis, the proposed VK Patrikeyev (1956). It varies depending on the severity of symptoms dental fluorosis following forms: dashed, spotted, melovidnokrapchatuyu, erosive and destructive.

The first three forms occur without loss of tooth tissue and erosive and destructive - with the loss.

Dashed shape fluorosis characterized chalky appearance of small strips - lines arranged in the subsurface layers of enamel. The strips can be labeled good, but they are often mild and occur during drying of the tooth surface. Merging bands leads to the formation of spots, which nevertheless distinguishable bands. Dashed form often seen on the facial surface of the maxillary incisors, at least - at the bottom.

Spotted form is characterized by well-defined spots without chalky bands. Chalky stains multiple, located across the surface of the teeth. Sometimes they merge to form a larger spot size. Chalky-modified enamel portion gradually passes into the normal enamel (Fig. 5.5, a). Mottled enamel loss observed in many teeth, but especially expressed on the incisors of the upper and lower jaws. Sometimes changing the color of the affected area - a spot becomes light brown. A feature of this form of dental fluorosis is that enamel stains in smooth and shiny.

Chalky-speckled form is characterized by a significant variety. Usually all the enamel surface has a matte finish, and against this background, there are well-defined pigmented spots. Sometimes yellowish enamel with the presence of multiple spots, dots (Fig. 5.5, b). In some cases, instead of points, there are superficial lesions with diminution of enamel (diameter 1.0-1.5 mm and a depth of 0.1-0.2 mm) - speckles. The bottom of a light-yellow or dark in color. When chalky-speckled form a rapid erasure of exposing the enamel dentine pigmented a dark brown color.

Erosive form is characterized by the fact that against the background of a pronounced pigmentation of enamel, there are significant areas in which it is not, different shape defects - erosion. In contrast to the speckles of erosion may have a different shape. When expressed erasing erosive form of enamel and dentin.

Payload form is characterized by impaired form crowns of teeth due to the erosive destruction and erasure of hard tissues. Payload form is observed in areas where water sources are fluorine content of greater than 10 mg / l. In this form of tooth tissue fragile, often seen them break off. However, the tooth cavity is not opened by the deposition of substitution dentin.

Pathoanatomical picture. Character changes largely depends on the shape of the clinical lesions (severity of change). In the initial form of the disease (dashed and spotted form) are found in the subsurface modified portions of various sizes and shapes. Gunter pronounced band - Shregera which are arcuately bent and extend to the enamel well visible line Retzius. The enamel surface along with smooth outline has separate bulges and depressions. Dentinoemalevoe compound has a sawtoothed shape. The surface enamel layer has a moire pattern (Fig. 5.6) due to the increase mezhprizmennyh spaces due to partial resorption enamel prisms, hypo- and gipermineralizatsii zones.

Fig. 5.6. dental fluorosis ("moire enamel") x 350.

With microradiography spots at the site of fluorosis outer layers clearly revealed density decrease, indicating a decrease in mineralization. These data explain why enamel pigmentation. This occurs by the penetration of coloring agents in the enamel portions with high permeability. This is confirmed by the fact that portions of the teeth pigmentation flyuoroznyh contain more nitrogen-containing organic substances.

Under an electron microscope at a mild lesions observed emphasize structures hydroxyapatite crystals. In severe forms structures clarity decreases.

By means of polarization microscopy installed most pronounced changes in the outer layers of enamel. The areas mostly affected spots flyuoroznogo mezhprizmennoe space.

Differential diagnosis. Fluorosis spots on stage differentiated from dental caries, which is characterized by solitary lesion in typical caries sites (cervical area, the contact surface). When multiple fluorosis lesions, located on the buccal and lingual surfaces. Furthermore, since fluorosis manifested teething. Light displays fluorosis also have similar clinical picture with spotty form of enamel hypoplasia. More severe forms of fluorosis, accompanied by the formation of erosion and other defects of tooth crowns, subject to differentiation of a vast range of non-carious and carious formations the origin (on the surface of caries, erosion, necrotic, wedge defect, etc.).

Treatment. Therapy with fluorosis depends on the stage of the pathological process. When fluorosis, accompanied by only changes color enamel (dashed, spotty, chalky-speckled form), gives a positive effect of topical treatment, which essentially consists in the subsequent bleaching with remineralizing therapy. EV Bohr (1978) recommends bleaching solutions of inorganic acids. After isolation from the saliva of the tooth surface with a cotton swab tooth is dried and treated with a solution of 20-30% acid (hydrochloric or phosphoric) for 2-3 min before bleaching enamel. Thereafter, the tooth surface is washed with water and dried. It is important that after acid treatment and drying of the tooth is no contact with the saliva. Is then applied to the teeth 10% solution of calcium gluconate for 15-20 min. At the next visit (not earlier than after 1-2 days), the procedure is repeated with the only difference being that the treated acid

solution only changed in color enamel portions. The course of treatment consists of 10-15 procedures. During treatment, it is recommended to take into calcium gluconate, glycerophosphate. As shown by clinical observation, lasting effect (recovery natural gloss enamel) is observed within 6-8 months. Repeated courses of treatment should be carried out with the appearance of pigmented spots (usually 6-8 months). Recommended strict personal hygiene. Dentifrice paste is used remineralizing action (containing fluorine). During treatment, it is recommended to take into calcium gluconate, glycerophosphate. As shown by clinical observation, lasting effect (recovery natural gloss enamel) is observed within 6-8 months. Repeated courses of treatment should be carried out with the appearance of pigmented spots (usually 6-8 months). Recommended strict personal hygiene. Dentifrice paste is used remineralizing action (containing fluorine). During treatment, it is recommended to take into calcium gluconate, glycerophosphate. As shown by clinical observation, lasting effect (recovery natural gloss enamel) is observed within 6-8 months. Repeated courses of treatment should be carried out with the appearance of pigmented spots (usually 6-8 months). Recommended strict personal hygiene. Dentifrice paste is used remineralizing action (containing fluorine).

Recently, acid etching the enamel fluorosis when trying to replace its surface layer by grinding. For this purpose, T. P. Kroll (1990) proposes a technique microabrasion flyuoroznyh spots using a paste containing hydrochloric acid, silicon carbide and silicon gel.

As bleaching preparation most commonly used solutions of hydrogen peroxide in concentrations of 6% and 30% (perhydrol). Currently, for this purpose use steel carbamide peroxide concentration of 10%. A preparation in the form of a gel applied to the individual spoon silicone, which is placed on the teeth of the upper or lower jaw for 30 min. The course of treatment consists of 3-4 procedures.

When erosive and destructive forms lesions accompanied by disturbances of intact enamel whitening produces a smaller effect. Are widely used methods of reconstructing the shape and color of the tooth crown. For this purpose, the composite filling materials allow to restore the shape of the crown without dissection of tissues. At the same time to restore damaged teeth crowns are often used orthopedic treatments. In some cases, broken off bits or destruction to a significant portion of the pins are used for fixing.

Prevention. Prevention fluorosis should be carried out wherever there is a high content of fluorine in water sources. Particular attention should be given to the areas where the water contains more than 2 mg / l of fluoride. According to present views, fluoro, being absorbed in the gastrointestinal tract by hematogenous ameloblasts reaches and acts on them, disrupting the formation and mineralization of enamel. In this regard, intensive preventive measures should be carried out during the period of bookmarks and mineralization of teeth.

Preventive measures are divided into collective action to reduce the content of fluoride in drinking water, and individual prevention measures.

Reducing the amount of fluorine in drinking water can be achieved by replacing the water source or to reduce the fluorine content by mixing with water sources, such as wells and glacier water in highlands. There are methods of purifying drinking water by excess fluoride. However, it should be borne in mind that fully provide the population of endemic areas with drinking water free of fluorine is not possible, although small child population contingents can do it.

Individual prevention measures should be carried out from the moment of birth. First, we should avoid artificial feeding and early introduction of complementary foods to the child. With the introduction of complementary foods a major amount of water in the diet should be replaced with milk and juices. Clinical observations showed that the addition of food of vitamin C, D, calcium gluconate greatly minimizes fluorosis. Important part of the diet. In particular, it should exclude or restrict the ingestion of products containing fluorine (sea fish, animal oil, spinach, etc.). Of particular importance in the prevention of dental fluorosis is taking children to summer from an endemic area. Clinical observations have shown,

5.1.4. Developmental abnormalities, teething, change their colors

Changes in the shape, size, color, and the number of teeth can result from various pathological states of the organism.
Delayed eruption of teeth observed in the disease rickets, tuberculosis, damage to the nervous and endocrine systems, as well as in cases of improper location of the rudiments of teeth, periodontitis of deciduous teeth, abnormal development of the jaws. More often than other teeth are subject to retention of permanent maxillary canines, premolars and molars third large lower jaw.
Less frequent are cases of premature eruption of teeth, which is associated with acceleration.
Supernumerary teeth are usually found in permanent dentition. These teeth often have an irregular shape, at least - normal; may be in the dentition or located outside it. A satisfactory explanation of these anomalies do not, although, apparently, this pathology should be considered as a result of increased production zuboobrazovatelnoy plate.
There are cases reduce the total number of teeth - edentia. Extremely rarely edentulous, which may be caused by imbalance of the hereditary nature; often edentia is partial.
The most common dental anomaly is a change in shape, number and size of the roots of teeth, which may be due to genetic factors and endocrine disorders.

Fig. 5.7. Merging bits central and lateral maxillary incisors.
Violations of the shape of the individual teeth (Hutchinson teeth Fournier, Pfluger and Turner) have already been mentioned previously. cases of fusion and merging of teeth are also observed (Fig. 5.7), abnormal development of the shape of their roots and even intussusception teeth (Fig. 5.8).
Color change (bits) of primary teeth (yellow, gray-yellow, dark brown, yellow-green, brown, green, black, brown, gray, blue-gray, green, blue, purple, black) is observed in children with haemolytic syndrome hemolytic jaundice and various etiologies. Formed by hemolysis of erythrocytes and indirect bilirubin is deposited in the tissues of the tooth causes staining of the teeth in a different color and may influence the process histogenesis, leading to maldevelopment enamel - systemic hypoplasia. Unlike systemic hypoplasia caused by other diseases, hypoplasia after hemolytic jaundice caused by the incompatibility between the blood of mother and child on the Rh factor, necessarily combined with a change in color of crowns of milk teeth.
Changes the color of teeth can occur due to genetic disorders caused by structural tissue of a tooth or the infiltration of the colorant (tetracycline).
Erythrocyte congenital porphyria - a very rare anomaly, may also cause tooth discoloration.
One of the clinical signs of this anomaly is eritrodontiya. When irradiated with ultraviolet light of such teeth are marked with their red fluorescent glow.

Fig. 5.8. teeth invagination.
If salts of the gallbladder bile duct anomalies fall in a large amount in blood, they are absorbed by the tissues of the teeth, which leads to the appearance of green spots on them.
Marble bone disease (osteopetrosis), disease or Albers-Schonberg - congenital osteosclerosis family. It is a rare disease characterized by diffuse sclerosis most bones of the skeleton.
The disease is characterized by partial or continuous hardening of cancellous bone more frequently in the entire skeleton. In the early phase of development of sclerotic bone disease only in the metaphyses of long bones; on the rest of the bone over the spongy structure is preserved. Revealed uneven seal skull. Sinuses typically sclerotic (mostly basic and frontal).
Along with the entire skeleton sclerosis marked sclerosis of the maxilla, anomalies teething. tooth enamel immediately after eruption has chalky hue, and then becomes loose and easily lost. Teeth are rapidly destroyed. The only possibility to save teeth with marble disease - timely orthopedic treatment.

5.1.5. Hereditary disorders of tooth development

Of great importance in medicine and dentistry becoming hereditary diseases. These diseases, which are the causative factor mutations. Pathological expression of mutations is not dependent on environmental influences. Medium only acts on the severity of symptoms.

Hereditary diseases, depending on the level of destruction of mutation genetic structures are divided into two main groups: genetic and chromosomal disorders. Unlike chromosomal disease gene mutations are passed from generation to generation without any changes and their inheritance can be traced by studying the genealogy of the proband. Gene mutations can affect the development of the hard dental tissues - enamel and dentine.

Depending on the number of genes involved in a mutation process, distinguish monogenic and polygenic disease. When monogenic disease affects one locus, and these diseases are inherited in full compliance with the laws of Mendel. If one considers that the person about 100 thousand. Genes and each gene is the average of the 500 pairs of DNA nucleotide sequences, it becomes clear how a large number of mutations can be, and consequently the genetic disease. When polygenic disease mutation affecting several chromosomes loci, and these diseases are usually characterized by a genetic predisposition (diabetes, arteriosclerosis, gout, epilepsy, peptic ulcer disease, schizophrenia, etc.). To detect the action of a mutant gene in such diseases require a certain state of the body caused by exposure to harmful environmental factors.

By the nature of inheritance of monogenic diseases can be divided into 3 groups:

▲ autosomal dominant;

▲ autosomal recessive;

▲ sex-linked.

Hereditary diseases teeth are transmitted across all three types of inheritance: the autosomal dominant inheritance type symptoms (disease) is determined autosomal dominant genes, with autosomal recessive - autosomal recessive genes; sex-linked dominant inheritance is determined and recessive genes borne sex chromosomes.

One of the primary and at the same time the most universal of human genetics is a genealogical method (pedigrees method), consisting of 2 stages: drawing up family trees and genealogical analysis. The method allows us to trace the disease in the family or genus, indicating the type of kinship between members of the pedigree.

Clinical-genetic testing of the proband of the family begins with a detailed family scheme, including information on the disease in at least 3-4 generations of families. All family members must be examined by a doctor - dentist personally. Obtained from the patient data on relatives should be supported by cross-examination of other family members. Information should be obtained on both parental lines, and in the analysis of genetic material should always bear in mind the peculiarities of the frequency display (penetrance) and severity (expressivity) of hereditary traits.

When genealogical analysis shows the type of inheritance, refined diagnosis, prognosis is determined for posterity.

In the case of autosomal recessive mode of inheritance analysis is always more complicated, as a pathological recessive gene is often the case in the heterozygous state and is "disguised" a dominant normal gene, or transmitted in a number of generations, pretending to dominant inheritance.

When the X-linked inheritance of the dominant type of disease is manifested equally in both women and men (e.g., smooth defective amelogenesis). But later the woman transmits the disease half of daughters and sons and daughters of all man, but none of his sons.

When X-linked recessive inheritance type Sons patients receive a single X chromosome containing the mutant gene, only from the mother. Disease from his father's sons never sent, as the paternal X chromosome is passed only daughters. Women are sick less often than men, as for the manifestation of a recessive gene need to be in each of the two chromosomes. In men, it displays enough for the presence of a recessive gene in only one X-chromosome, since allelic area has Y-chromosome.

5.1.5.1. Formation of defective enamel

Some gene mutations that contribute to changes in the structure or the chemical composition of the enamel, usually cause changes that can only be found in the enamel. Other mutations may also lead to changes in other tissues or metabolic processes. In general, these mutations lead to one of the following effects: insufficient degree of enamel (hypoplasia), appreciable initial failure of calcification of the organic matrix (hypocalcification); defects in the formation of apatite crystals in the various components of the enamel prisms (giposozrevanie); deposition of exogenous material, often wearing pigmented character; the combination of these disorders.

Hereditary defects of enamel, non-common disorders are considered inferior species Amelogenesis. In the general population the defective amelogenesis all types occur with a frequency of about 1:14 000. The most common type of defective Amelogenesis - inherited in an autosomal dominant hypocalcification type of enamel, which occurs with a frequency of 1:20 000.

Hypoplastic defective amelogenesis. This form includes such disorders, the thickness of all or part of the enamel does not reach during normal development of magnitude. Clinically, this manifests itself in the form of a thin enamel of the teeth, which on the sides not in contact with each other, as well as holes, vertical and horizontal grooves on the enamel.

Autosomal dominant hypoplastic patching defective amelogenesis. In this variety of defective Amelogenesis enamel both temporary and permanent teeth generally normal thickness but at its surface randomly scattered small holes.

Enamel erupted teeth solid yellow-white color. Staining pits occurs after the teeth are exposed to the oral environment, which gives teeth a dark gray, speckled appearance. The pits affect labial surfaces to a greater degree than the lingual. There is a trend to the location of the pits vertical columns.

Patching a defective amelogenesis hypoplastic inherited in an autosomal dominant manner. In groups of relatives of the transfer of this trait is observed from man to man. It's a pretty well-established pattern observed sporadically.

Autosomal dominant local gipotastichesky defective amelogenesis. When this sort of defective Amelogenesis hypoplastic defect expressed by a number of horizontal holes, linear depressions. This is most clearly the defects occur on the vestibular surface of the tooth enamel and affect 1/3 of the central part, although in some cases the damage is localized closer to the cutting edge. This defect can occur as milk and permanent teeth. Can be affected by all the teeth, but within the same family typically dominated by variations in the number of teeth affected and degree of damage to tissue. defect formation does not correspond to any specific period in the development of teeth.

Autosomal dominant hypoplastic smooth defective amelogenesis. This species is accompanied by a defective Amelogenesis thin and hard enamel. The teeth have a smooth shiny surface. Color erupted teeth may vary from opaque white to translucent brown. The thickness of the enamel is about 1/4 - 1/3 of the normal thickness. Side contacts are missing teeth. Some sections may be missing enamel, especially on the cutting edge and the chewing surfaces.

This state is inherited in an autosomal dominant manner and is characterized by high penetrance; It is noted in large groups of people related to each other.

Autosomal dominant hypoplastic rough amelogenesis defective. For this species is characterized by defective Amelogenesis hard enamel with a rough, granular surface. This enamel more broken off from the underlying dentin than erased, as is observed in smooth enamel. The teeth are white and yellowish-white color after the eruption. The thickness of the enamel is 1/4 - 1/3 of the normal thickness of enamel, thereby creating the impression that the teeth have to grind a crown. Sometimes a tooth may have thicker enamel in the neck area.

Autosomal recessive rough defective amelogenesis (incomplete development of the enamel). Incomplete development enamel erupted teeth have a yellow color. Tooth surface rough and granular, reminiscent of ground glass. There is an almost complete absence of the formation of enamel. Teeth are rare. All patients with this form of enamel defects observed open bite. Among

erupted many missing teeth. Affected as milk and permanent teeth. This form of defective Amelogenesis rare.

X-linked (dominant) amelogenesis smooth defective. The clinical picture of enamel in men different from the picture enamel women. Deciduous and permanent teeth are affected equally often in both sexes. The men celebrated smooth, shiny and thin enamel with a yellow-brown tint. Teeth have side contacts. There is an increased blurring of the cutting edges and occlusal surfaces, especially in adults.

Women enamel defect arises from the fact that the vertical strip enamel almost normal thickness are interspersed with stripes hypoplastic enamel. Sometimes at the bottom of the grooves can be seen hypoplastic dentin. Vertical stripes are randomly distributed and are of different thicknesses. In the structure of the defect in the homologous teeth left and right symmetry is absent.

As with other forms of defective Amelogenesis, often marked by open bite. This defect is inherited as an X-linked trait, which is consistent with the effect lionizatsii gene on the X chromosome in heterozygous women.

Gipomaturatsionny (unripened) amelogenesis defective. Gipomaturatsionnye form defective Amelogenesis clinically characterized by having enamel coated speckles and having a brown-yellow color. The enamel usually normal thickness, but softer than normal, and tends to chipping from dentine. According to the degree of permeability to X-rays close to the enamel dentine.

X-linked (recessive) gipomaturatsionny amelogenesis defective. When this defective Amelogenesis affected as milk and permanent teeth. There is a different clinical picture in both men and women.

In men, the permanent teeth are covered with speckles, and have a yellow-white color, but with age as a result of adsorption spots may darken. The thickness of the enamel approaching normal. Enamel soft, and the probe tip can pierce the surface. Despite the fact that these teeth are more prone to chipping and abrasion than healthy enamel loss is slow. Appearance of milk teeth in boys resembles a ground-frosted white glass. Sometimes there is a slight yellowing of the temporary teeth. tooth surface is relatively smooth.

Women as milk and permanent teeth are seen alternating vertical stripes matovobeloy normal enamel and translucent enamel. These bands come in different widths and randomly distributed in the crown. Symmetry homologous teeth on the right and on the left is missing.

Autosomal recessive pigmented gipomaturatsionny defective amelogenesis. For this form of disease is characterized by loss of primary and permanent teeth. Enamel erupted teeth or lustrous milky brown color, but the color may become deeper after contacting with exogenous substances. Enamel has a normal thickness and is prone to chipping from dentin, especially around the places untreated. Resorption enamel on the cutting edge or chewing surface of a tooth can occur before teething. For patients with this defect is characterized by a large amount of tartar, which fluoresces bright red and purple.

"Snow" teeth. "Snow" teeth - a fairly common disorder in which different parts of the enamel are matt white. Matte White enamel may be continuous or spotted. The boundary between the matt white enamel and translucent enamel is quite sharp. The teeth of the upper jaw are affected, usually to a greater degree than the lower teeth. A defect in the teeth from the front to the chewing, looks like teeth dipped in white paint,

In matt white enamel no iridescent luster that is observed in white enamel with fluorosis. Affected deciduous and permanent teeth.

Gipokaltsifitsirovanny defective amelogenesis. In this form there are such violations, when the entire enamel or its parts do not reach the normal hardness. Clinically, it manifests in the form of aplasia of enamel on the outer surface of the crown of the tooth to the dentin hyperesthesia open areas.

Autosomal dominant gipokaltsifitsirovanny defective amelogenesis. In this form the thickness disturbances erupted teeth enamel normal, although the middle third of the vestibular surface portions are sometimes observed hypoplasia enamel. However, enamel is so soft that it is shortly

after the eruption may be lost, and consists of one bit dentin. In enamel texture, like cheese, and it can be easily scraped off or an excavator to get through it the probe. The color of the enamel coating after the eruption of the teeth may be dull white or yellow-orange-brown. On the softer outer portions of the enamel quickly lost, leaving open the dentin surface, which can be extremely sensitive. Many teeth may not erupt or erupt with a noticeable delay.

Fig. 5.9. Imperfect amelogenesis.

■ thus imperfect amelogenesis - is a devastating disorder amelification, expressed in a system violation structure and mineralization of deciduous and permanent teeth, color change and subsequent partial or complete loss of tissue (Figure 5.9.).

In order to preserve the existing enamel remineralization recommended systematic processing solutions and 0,2-0,05% sodium fluoride. When a significant change in the enamel is carried orthopedic treatment.

5.1.5.2. Hereditary disorders affecting dentin

Currently, there are three types of defective dentinogenesis:

Type I is one of several common skeletal manifestations of the disease, called defective osteogenesis. Distinguish congenital and late defective bone formation. In both types there may be defects in the teeth with dentin. Teeth as dairy and constants, possess surprising succinic translucency. However, there is considerable variation in the severity of the disease from the destruction of all the teeth to the unit in which only a slight discoloration is observed. Enamel on such teeth breaks off easily, which contributes to more rapid abrasion exposed dentine. When defective dentinogenesis I type baby teeth struck stronger than constants.

Fig. 5.10. Dentinogenesis imperfecta type II (Stainton syndrome - Kandepona).

Type II, referred to in the literature hereditary opalescent dentin or syndrome Stainton - Kapdepona has basically the same clinical features as type I. The main reasons for this type of highlight in a separate form, as follows:

▲ there is evidence of a large number of families, many of whose members are amazed defective dentikogenezom type II, but do not show any signs of defective bone formation;

▲ intra correlation of extent of disease, coloring and erasing in type II high, whereas there is considerable phenotypic variants defective in dentinogenesis type I;

▲ at a defective dentinogenesis type II equally affects both dairy and permanent teeth entirely healthy teeth can not be found (Fig. 5.10).

Type III is characterized by lesions of teeth by types I and II as the color and shape. However, within this type there is considerable phenotypic variation. The most frequently observed clinical manifestations - opalescent color of the teeth, type of domed crown, defeated both milk and permanent teeth, and definition of X-ray examination of so-called shell teeth. This term is used to describe the tooth dentin formation that occurs after forming the mantle dentin.

Treatment. It involves great difficulties, effective orthopedic techniques.

The lecture №7.

Subject: non-carious disease arising after prorezovaniya teeth. Etiology, pathogenesis, clinical manifestations, diagnosis, treatment and prevention.

1.1. Technological models for education

The lesson of 80 minutes	**Number of students**
Type of classes	**News Introduction of lectures**
Plan of the lecture:	***pery hour*** 1. Examine methods carious diseases arising after prorezovaniya teeth. Etiology, pathogenesis, clinical

	manifestations. ***The second hour.*** **2.** Examine methods carious diseases arising after prorezovaniya teeth. Diagnosis, treatment and prevention.
The task of the training session	3. Inform students to give a full explanation of non-carious disease occurs after prorezovaniya Tooth
Teaching methods	Conversation, visual aids for lectures
Type of classes	total-collective
Visual aids on	Textbook, lecture material, projector, computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

1.2.Tehnologicheskaya card lectures

stages of work	**Teacher**	**Student**
1.Etapy training (10 minutes)	1. Aims classes 2. Preparation of slides for lecture material 3.Literatura Related 1. Harald O. Heymann Sturdevant's Art and Science of Operative Dentistry, 6e (Roberson, Sturdevant's Art and Science of Operative Dentistry), 2015 2. Kamilov HP va b. - «Stomatologik asbob va ashyolar» -Tashkent 2005 th. 3. Kamilov HP va b. «Terapevtik stomatologiya propedevtikasi" -Tashkent, 2006y. 4. Borovsky EV "Therapeutic dentistry". - M., 1989. 5. Magid EA, Mukhin NA "Phantom of the therapeutic courseDentistry. Atlas". M .: Medicine 1987. Borovsky EV "Dentistry. Guide to practical training. " - M., 1987	Listens to and records
2.Vvedenie (10 minutes)	***1. Aims and objectives of the lecture material:*** **Goal:** 1. Nekarioznye disease arising after prorezovaniya teeth. Etiology, pathogenesis, clinical **Task:** 2. Inform students to give a full explanation of non-carious disease occurs before prorezovaniya teeth. Diagnosis, treatment and prevention. **Questions on the topic**	listen Answers the students' questions
3.BASIC stage (50 minutes)	1. Introduction to the theme with the indication slides	Listen and write
4.Zaklyuchitelny step (10 minutes)	1. Conclusion.	Listen and write

The text of the lecture

The teeth are constantly exposed to many external factors: mechanical, chemical, thermal, etc. In some cases these effects are mild, non-damaging.. In other cases, there are certain changes of

hard tissues. Knowledge of pathological changes and their causes, it is necessary for the proper prevention and treatment.

5.2.1. Pigmentation teeth and raids

Healthy teeth normally have a white color with various kinds of hues of bluish white (milk or temporary teeth) to a white-yellowish gray and even (fixed teeth).

The change in tooth color is affected by many endogenous factors. Thus, the teeth are painted in pink color with hemorrhages in the pulp as a result of difficult flowing viral hepatitis or cholera. Acquire a yellow tinge teeth during penetration pigments in jaundice. Long-term use of tetracycline group of antibiotics of the future mother (in the last 6 months of pregnancy), as well as preschool children helps to change the color of milk and permanent teeth of the child in a grayish-yellow color. Discoloration of teeth occurs after pulp necrosis, as a result of the penetration of products ichorization through dentinal tubules (tubules) of the tooth enamel becomes more dull.

The external factors that can change the color of tooth enamel for a particular period include food (coffee, tea) and drugs. Berries (blueberry, cherries) stained teeth in a blue-black color. Medicinal substances used mouthrinse or mouth trays, also for short periods attach the teeth and oral mucosa yellow or brown shade (ethacridine lactate, potassium permanganate), black pigment delayed chlorhexidine mouth rinse. Lead imparts necks of teeth purple.

A number of drugs that use the dentists to perform endodontic procedures may also be a long term change the normal color of enamel and dentin. The orange color of dental hard tissues can occur after the application of resorcinol-formalin method with the aim of medicinal treatment of root canals of small and large molars or canal filling these teeth resorcinol-formalin paste and paratsinom.

To a tooth crown color black causes poor insulation cushioning material in dental tissues (varnish fosfattsement) when filling with copper or silver amalgam.

The tooth may also darken due to oxidation in the channel of small metal fragments endodontic instruments (root needle pulpekstraktory et al.) Or by using filling pins for channels from base metals.

Brown and even black plaque on the teeth observed in smokers.

Treatment. Thick plaque and plaque is removed smokers excavator teeth, followed by purification special brush with abrasive paste and rubber cups. It should warn against frequent and excessive use of pumice for cleaning the teeth from plaque because it damages the enamel. After polishing is conducted antiseptic gingival margin hydrogen peroxide or an alcoholic solution of iodine.

Dental bleaching pulp without live crown with change color with use of concentrated solutions of hydrogen peroxide and heat gives a good result.

5.2.2. Erasing hard tooth tissues

Erasing the tissues of the tooth occurs in every human being, which is the result of the physiological function of chewing. Manifests physiological erasing primarily on the hills of the chewing surface of the small and large molars, as well as cutting edge and hillocks canines. Furthermore, physiological tooth surface normal leads to the formation of small pads on the convex portion of the crown at the point of contact (point contact) with the adjacent tooth.

Physiological erasing teeth observed both in time and in permanent occlusion. In the time bite incisors are erupting on the cutting edges 3 cloves that by the age of 2-3 years are erased.

Fig. 5.11. Erasing teeth.

Depending on the degree of the physiological age abrasion of teeth increases. If up to 30 years Erase confined to enamel, then to 40 years involved in the process and the dentin, which is due to the exposure of pigmented yellow. By age 50, the erasure process of dentin is enhanced and it takes a brown pigmentation. For 60 years and there is a significant blurring of the front teeth, and

by age 70 it often spreads to the coronal tooth cavity, ie. E on the erased sometimes visible surface contours of the cavity filled with the newly formed tertiary dentin.
Along with physiological common pathological blurring when there is intense hard tissue loss in one, in a group or all of the teeth (Fig. 5.11).
The clinical picture. Pathological effacement (abrasion) of hard tissue of teeth is quite common and occurs in 11.8% of the people. Full Erase chewing mounds of large and small molars and partial effacement of the cutting edges of the front teeth is more common in men (62.5%). In women, this process occurs much less frequently (22.7%). Causes of high erasure may be an occlusion condition, overload due to the loss of teeth, improper prosthesis construction, household and professional adverse effects, and the formation of defective tissue structures.
In direct occlusion abrasion exposed occlusal surface side and the cutting edge of the front teeth.
As soon as the erasure occurs with age hillocks masticatory surface, incisors abrasion progresses rapidly. Length crowns of incisors and decreases to 35-40 years it decreases to 1 / 3-1 / 2. In this case, instead of the cutting edge on the incisors produce large area in the center of which can be seen the dentin. After exposure of dentine its erasure is more intense than the enamel, the resulting enamel are formed sharp edges which frequently injure the mucosa of the lips and cheeks. If untreated, it progresses rapidly erasing tissue and dental crowns are much shorter. In such cases, there are signs of decreasing the lower third of the face, which is manifested in the formation of creases at the corners of the mouth.
With further progression of the process comes to erasing cutters necks. In such cases, dentine through rayed tooth cavity, but its opening does not occur due to the deposition of substitution dentin.
When deep bite lip surface of the lower incisors is in contact with the palatal surface of the maxillary incisors and these surfaces are substantially erased.
The most pronounced blurring is observed in the absence of tissue of the teeth. In particular, in the absence of the molars, which normally define the ratio of dentition, there is intensive erasure incisors and canines, since their overload occurs. Furthermore, due to overload may occur misalignment of teeth, bone resorption at the tops of the roots, interdental partitions. Often erasing teeth caused improper design of removable and fixed prostheses. When using a clasp tooth without artificial crown often comes erasing enamel and dentin at the neck. Typically, the patients complain of severe pain from mechanical and chemical irritants.
As is known, the specific conditions of certain industries are the cause of occupational diseases. At a number of plants observed tooth loss and frequent erasing them. Workers involved in the production of organic and inorganic acids, especially under examination revealed a greater or lesser degree of uniform erasing all the groups of teeth, no sharp edges. Mostly seen naked tight smooth dentin. Individuals with a long experience in enterprises for the production of acids teeth erased until the neck. One of the earliest signs of erasure by acid enamel appearance is feeling on edge, the surface roughness of teeth. Change sense of soreness of the mouth pain indicates the progression of the process. May change the terms of chewing food. On examination revealed the loss of the natural color of the tooth enamel,
Persons working in enterprises where the air are abundant mechanical particles, also observed an increased blurring of the teeth.
Often an increased dental abrasion occurs in a number of endocrine disorders - violation of the thyroid, parathyroid, pituitary and other erasure mechanism thus resistance due to lower structural tissues.. In particular, increased abrasion is observed at fluorosis, marble disease syndrome Stainton - Kandepona, primary hypoplasia of enamel and dentin.
For restorative dentistry, according to MI Groshikova most useful clinical and anatomical classification based on the location and degree of erasure.
Degree I - a slight blurring enamel mounds and cutting edges of the crowns of the teeth.
Degree II - effacement enamel mounds canines, small and large molars and incisors of cutting edges exposing the surface layers of dentin.
Degree III - erasing enamel and dentin significant part to the level of the coronal tooth cavity.

Abroad, the most widespread classification of Bracco. He distinguishes the degree of erasure 4: characterized by first erasing enamel mounds and cutting edges, the second - the complete erasure hillocks exposing the dentin to 1/3 the height of the crown, a third - a further reduction in the height of the crowns with the disappearance of the whole middle third bit, the fourth - the proliferation process to cervix level tooth.
The initial clinical manifestation erasure teeth is their sensitivity to thermal stimuli. With the deepening of the process can join pain from chemical irritants, and then mechanical.
In most patients, despite the pronounced degree of erasure, pulp sensitivity is maintained in the normal range or slightly reduced. So 58% of the patients with dental pulp effacement response to electric current was normal in 42% - reduced to various levels (in the range of 7 to 100 mA or more). Most often decrease electroexcitability teeth is from 6 to 20 microamps.
Pathoanatomical picture. Pathological changes are dependent on the degree of erasure. At initial manifestations, when there is only a slight blurring on the hills and on the cutting edge, indicated respectively portion erasure more intense deposition of substitution dentin. When erasing more pronounced along with a significant deposition of substitution dentin observed obturation of dentinal tubules. Pronounced changes occur in the pulp: loss of odontoblasts, their vacuolization, reticulated atrophy. In the central layers of pulp, especially in the root, are observed petrifikaty.
When there is erasure III degree expressed hardening dentin tooth cavity in the crown part is almost entirely filled substitution dentin, pulp atrophic. Significantly reduced the number of odontoblasts, degenerative processes occurring therein. Channels bad passable.
Treatment. The degree of erasure hard tooth tissues largely determines the treatment. Thus, when I and II degree erasure primary goal of treatment is to stabilize the process, the prevention of further progression erasure. To this end, the teeth-antagonists are generally large molars, the tabs can be manufactured (preferably from alloys), a long time is not amenable to abrasion. You can make and metal crowns (better alloys). If erasure is caused by removing a significant amount of teeth, the need to restore the dentition prosthesis (indication removable or non-removable).
Often erasing tooth tissues accompanied by hyperesthesia that requires appropriate treatment (see. Hyperesthesia dental hard tissues).
Considerable difficulties arise when treating III degree of erasure, accompanied by a pronounced decrease in the height of the bite. In such cases the height of the previous bite is reduced by fixed or removable dentures. Direct indication to this are complaints of pain in the temporomandibular joints, a burning sensation and pain in the language, which is a consequence of changing the position of the joint head in the glenoid fossa.

Figure 5.12. The wedge-shaped tooth defect, and - circuit; b - exterior.
Treatment usually orthopedic, sometimes long, with an intermediate manufacturer of medical devices. The main goal - to create a situation of dentition, which would ensure a physiological position of the joint head in the glenoid fossa. It is important that in the future this position of the jaw has been preserved.

5.2.3. The wedge-shaped defect (abrasion)
The name of this pathological change caused by the shape defect of dental hard tissues (the wedge). The wedge-shaped defect is localized at the necks of the teeth of the upper and lower jaws, to the buccal and labial surfaces (see Fig. 5.12). Often it starts after exposure of the tooth neck, which was the basis for the assertion that a wedge-shaped defect - this is one of the clinical manifestations of periodontal disease. In fact, direct relationship is not established, although, according to some authors, the wedge-shaped defect in 8-10% of patients is a symptom of some periodontal disease, when there is exposure of the tooth necks.
This type of non-carious lesions of dental hard tissues bowl occurs in middle-aged and elderly.
Previously, there were different assumptions about the cause of this defect. Currently, the increasing recognition of the view that the wedge-shaped defect occurs due to mechanical influences. In particular, it is believed that the defect is formed by the impact of the toothbrush.

This is confirmed by the fact that it is most pronounced in the canines and premolars - teeth protruding from the dentition. Clinical observations have revealed that people who have more developed right hand (right-handed), defects are more pronounced on the left, as they are more intense brush their teeth left. Left-handers who brush their teeth more intensely on the right side, the defects are more pronounced on the right. It should be noted that the orbicularis oris muscle and bolus during chewing also act apparently can abrade hard tissues anterior teeth.

Objection to the mechanical theory serve as evidence that the wedge-shaped defect does not occur in all individuals, using brushes. Undoubtedly, this argument should be considered. If you consider that the vast majority of the population while brushing produces abnormal movements, the mechanical factor comes in first place in the formation of a wedge-shaped defect. Undoubtedly, that a certain role belongs to the structure of the tissues and the environment tooth.

Claims that in the event of a wedge-shaped defect important role belongs to acids, are not very convincing, as in other areas, including cervical interdental defects do not occur. However, the acid entering the oral cavity, may contribute to the rapid progression of abrasion of the tooth has already arrived at the neck tissues.

The clinical picture. The wedge-shaped defect in most cases is not accompanied by pain. Sometimes patients indicate only tissue defect at the neck of the tooth. Generally it progresses slowly, but at the recess contour is not changed and there is no softening and disintegration. In rare cases, there is rapidly passing pain from thermal, chemical and mechanical stimuli. Quiet during or appearance of pain depends on the rate of loss of hard tissue. In slow abrasion when heavily delayed dentin vicarious pain do not arise. In those cases where dentine substitutive delayed slower than attrition occurs tissues arise pain.

Wedge-shaped defects can be single, but more often they are multiple, is located on the symmetrical teeth.

The defect is formed gingival plane which is horizontal, and a second plane disposed at an acute angle. Wall defect dense, shiny, smooth. In cases where the defect comes close to the tooth cavity, seen its contours. However, the tooth cavity is never revealed. The wedge-shaped defect may reach such a depth that under the influence of mechanical loading can occur broke off the tooth crown. In most cases, sensing painless, but pain may occur at the time of the stimulus.

Furthermore hypersensitivity or pain in the affected dental necks, patients complain of inferior aesthetic appearance of the front teeth.

Differential diagnosis. Differentiate wedge defect of non-carious diseases origin: erosion of tooth hard tissue necrosis cervical enamel caries (even surface and an average).

Differentiation of caries is necessary to consider the typical localization wedge defect on exposed tooth necks and more diverse localization of carious lesions. Also characteristic wedge shape when expressed hard tissue abrasion. Initial manifestation of these two diseases are very similar, and expressed in roughness and minor loss of tooth tissue. However, when gradually tapered defect roughness is smoothed, and the sides and bottom are sealed at surface caries recess demineralization chamber accompanied by the formation of the softened tissue with jagged as would podrytymi edges enamel. On the surface caries is more typical pain from chemical factors, and with wedge-shaped defects - from all kinds of stimuli.

More complex differential diagnosis wedge defect and erosion of dental hard tissues. And one, and other disease subside dental tissue is not accompanied by a softening of the bottom and walls of element destruction. Both diseases are often accompanied by hyperesthesia hard tissue.

The difference for these diseases is the localization of the lesion and its appearance. The wedge-shaped defect never distributed throughout the vestibular surface of the tooth crown, as is sometimes observed in erosions. The shape defect at a typical erosion saucer, with a wedge-shaped defect hard tissue abrasion is V-shaped. mandibular incisors erosions are not affected, and when the wedge abrasion defects noted on these teeth.

Treatment. In the initial defect manifestations take measures to stabilize the process. For this, use drugs that increase resistance of dental hard tissues (application of 10% calcium gluconate solution, 2% sodium fluoride solution, fluoride 75% paste). Also, take precautions to reduce the

mechanical action on the teeth. Dentifrice soft brushes are used, use of paste containing fluorine or having remineralizing effect. Movement of the toothbrush should be made vertically and be circular.
filling recommended when expressed hard tissue defects. As the filling material are the most convenient composite filling materials, which can be sealed cuneate defects without preparation. With deep defects need to manufacture artificial crowns.

5.2.4. dental erosion
Erosion ● - progressive decline dental tissues (enamel and dentin) not enough clarified etiology.
Some authors thought that erosion of teeth as the wedge-shaped defect arises solely from mechanical action of the toothbrush and powder. Others believe that the occurrence of erosion is caused by the ingestion of large amounts of citrus fruits and their juices.
YM Maksimovskiy (1981) an important role in the pathogenesis of dental erosion removes hard tissue and endocrine disorders, such as hyperthyroidism. According to them, one of the symptoms of this disease is increased secretion of saliva and oral fluid viscosity reduction, which may not affect the condition of dental hard tissues. It was found that erosion of teeth in patients with hyperthyroidism occurred in 2 times more likely than those with normal thyroid function. Even with increasing duration of the disease at 1 year (3 to 4 years) patients with the number of hard tissue erosions increased by 20%.
YA Fedorov et al. (1990) also found that erosion of teeth is more than 40-50% of the cases detected, with increased thyroid disorders and its functions.

Fig. 5.13. Enamel erosion.
Erosion of dental hard tissues appear predominantly on symmetrical surfaces central and lateral maxillary incisors and canines and small on the molars of both jaws. Are almost no erosion on the incisors and large molars of the lower jaw. Defeat occurs mainly in middle-aged individuals and is characterized by a prolonged course - up to 10-15 years. With age, there is involvement in the process a large number of teeth. Currently, due to the impact of adverse environmental factors, including the Chernobyl disaster, the number of cases of dental erosion in young adults (18-25 years).
The cause of enamel erosion not been definitively established, but, undoubtedly, an important role belongs to the chemical factors in combination with the mechanical action. At the same time we can not exclude the weakening remineralizing action of the oral fluid.
The clinical picture. Erosion is a rounded or oval defect of the enamel disposed transversely most convex portion of the vestibular surface of the tooth crown. The bottom of the erosion of smooth, hard and shiny (Fig. 5.13). Gradual erosion of the recess and extending boundaries leads to the loss of all vestibular tooth enamel surface and the dentin portion. Sometimes erosion takes less regular shape, which is compared with a fluted drill bit, ie. E. Lesions element slightly concave, and the edge erosion gradually moving on the intact surface of a tooth crown. This form of enamel lesions due to the fact that dentine central portion of the crown wears faster, since it is limited to the edges of the contact surfaces preserved enamel tooth crown.
Lesions are two stages: primary (enamel erosion) and pronounced (erosion of enamel and dentin).
According to the depth of destruction are three degrees of erosion:
grade I, or initial, - defeat only the surface layers of enamel;
degree II, or an average, - defeat the whole thickness of the tooth enamel cover up to the enamel-dentine compound;
grade III, or deep, - when the affected surface layers and the dentin.
EV Borovsky et al. (1978), and YM Maksimovskiy (1981) proposes to distinguish two clinical stages of erosion - an active and stable, although in general any erosion of the enamel and dentin is characterized by a chronic course.

For typical active stage of rapidly progressive decline of dental hard tissue which is accompanied by an increased sensitivity of the affected area to various kinds of external stimuli (hyperesthesia phenomenon).
Stabilized stage is characterized by a sustained erosion and a steady flow. Another feature is the lack of plaque and hyperesthesia tissues. There preserve the shiny surface of the enamel lesion site. A transition phase stabilized erosion in activity.
Enamel erosion as opposed to other types of attrition in most cases characterized by pain expressed under the action of various kinds of factors, especially cool air and chemical stimuli. In the active stage of complaints more than in stabilized.
Pathoanatomical picture. Microscopic study site enamel erosion, changes are observed in the surface layer. In polarization microscopy revealed changes in the form of a dark strip on the surface of the enamel without any changes in the subsurface characteristic of caries. Electron microscopic studies revealed the presence of an organic film on the surface lesions, loss of enamel clear crystal structures and occurrence of significant amorphous regions.
In polarization microscopy revealed a significant difference in the nature of focal demineralization during initial caries and erosion. So. if caries stains under typical partial subsurface demineralization, erosion occurs at the surface just as if layered enamel demineralization.
Changes in the dentin and localized in the surface layers of the affected area. Dentinal tubules filled crystalline structures, mezhkanaltsevyh portions broken correct orientation of crystals increased size nonstructural regions.
Differential diagnosis. Erosion of the enamel should be differentiated from dental caries and the tapered surface defect. Erosion different from the localization of caries lesions form, and most importantly - the surface (if erosion is smooth and rough at caries). The wedge-shaped defect differs from the form of erosion lesions localized in the neck on the border of the enamel cement, often with exposed roots.
Treatment. Treatment of tooth erosion tissues should be performed with the activity of the process and the nature of concurrent somatic diseases.
In complex dental treatment should not forget the general treatment involving administering inward calcium and phosphorus with a decrease in their levels in the blood of patients. Useful and vitamins alone or in combination with trace elements.
Treatment of dental erosion stabilized stage, which is often accompanied by a change in color enamel lesion site must consist of several procedures to depigmentation tissues. For this purpose it is necessary for two-three counter treating the affected surface of the abrasive paste, also containing up to 1.23% of fluorine. In the following two visits to erosion should be applied Fluoro-fluoro-gel or varnish.
In the active stage of the disease the task of stabilizing the pathological process. This can be achieved with additional mineralization of solid teeth tissues by applications or calcium electrophoresis. To replenish the tooth tissue salts of calcium and phosphorus in patients with erosion of dental hard tissues administered 3-4 daily (or every other day) paste application with a duration of 15-20 minutes procedures. In the following three visits to the area the erosion is applied for 2-3 minutes, acidified fluoro-gel in 0.1 M phosphoric acid solution. Ends affected surface treatment coating fluoride varnish. When multiple lesions erosions teeth convenient fluoro-gel applied using spoons made individually, while single lesions can use a soft brush. Also, when erosion of dental hard tissues suggest to use for the purpose of remineralization of 10% calcium gluconate solution and a 2% sodium fluoride solution. When the application method the number of visits 15-20. It is possible to recommend a hard tissues remineralization bicomponent remineralizing solution consisting of 10% solutions of calcium nitrate and ammonium dihydrogen phosphate.
Electrophoresis 10% solution of calcium gluconate in the erosion region is performed after the isolation of the teeth from saliva, the liberation of plaque from tooth crowns and drying. The active electrode is mounted on the seat erosion, and a passive clamp arm.

In carrying out this procedure may also be used for apparatus electroanesthesia (ELOZ-1) at a current value in the range of 30-50 microamps and Procedures 5-10 min duration. After electrophoresis, the area of erosion at 2-3 min should impose a swab moistened with 2% sodium fluoride. The course of treatment erosion by electrophoresis is 10-15 procedures.
According YM Maximovsky (1981), fillings for erosions often ineffective due to frequently occurring disturbances of fit of seals and seal formation around the defect. In this regard, it is recommended before filling erosion perform re mineralizing therapy for one of the above methods. The composite materials should be used as a filling. When a large area affected by erosion of the tooth crown is more expedient production of artificial crowns.

5.2.5. Necrosis hard dental tissue
The clinical picture. Manifestation Necrosis begins with the loss of gloss enamel and chalky appearance of spots which then become dark brown. In the center of the lesion observed softening and defect formation. In this case the enamel becomes fragile, breaks off excavator. Dentin is also pigmented. Usually it affects a lot of teeth. In this case, patients complain of pain from thermal, mechanical and chemical stimuli, quickly passing after their elimination.
It is believed that these symptoms occur in the background disorder or adjustment functions of the endocrine glands (thyroid, sex), pregnancy, and others.
Characterized by the formation of foci of necrosis of tissue at the facial surface in the necks of incisors, canines, bicuspids and much less of the molars.
Pathological anatomy. For cervical necrosis zones characterized by the appearance of typical surface demineralization. In the study of thin teeth with a white spot with polarizing microscopy are expressed subsurface changes when preserved outer enamel layer, we are well visible line Retzius determined central dark area with lighter portions on the periphery, ie. E. Characteristic signs of caries. On this basis, we can assume that the necrosis of the enamel is none other than the rapidly progressing caries process.
Differential diagnosis. Differentiate necrosis has developed cervical enamel be expressed by the wedge defect stages and erosions, since both diseases are similar only in the location of the lesion on the neck of the tooth elements or near it. However, the appearance of the lesions at all three types of disease is essential and characteristic features.
Treatment. If any lesions are taking measures to eliminate hypersensitivity, strengthen the tissues of the teeth. With significant destruction shown orthopedic treatment of the teeth.
5.2.5.1. Acid necrosis teeth
The acid (chemical) necrosis of the teeth is the result of local effects. Ego loss is usually observed at long working in manufacturing of inorganic (hydrochloric, nitric, sulfuric) and several less common organic acids. One of the first clinical signs of necrosis are acidic feeling on edge, increased sensitivity to thermal and mechanical stimuli. Sometimes it manifests a feeling of teeth sticking with their closing.
Occurrence of said pathology is primarily attributed to the direct influence of acids on the enamel of the tooth. In shops such productions in the air accumulate pairs acids, hydrogen chloride gas, which, falling into the mouth, dissolve in saliva. The latter becomes acidic and decalcifying dental hard tissue.
Progression chemical necrosis of dental hard tissue changes the appearance of the front teeth enamel: it becomes rough and matte. Sometimes the enamel gets dirty gray shade or other dark pigmentation. Pronounced blurring tooth tissues.
In acid necrosis of the most severely affected incisors and canines. Disappears in enamel crowns cutting edges; thus formed sharp, easily break off the tooth crown portions. Then, the process of degradation and erasure extends to enamel and dentin vestibular not only, but also a lingual surface of incisors and canines. The crowns of the teeth are shortened, the cutting edge becomes oval and the crown takes the form of a wedge. Gradually crowns of the front teeth to the gingival margin destroyed and premolars and molars group is subjected to heavy abrasion.

Mild forms of acid necrosis may occur in patients with gastritis ahilicheskim which to treat forced to ingest 10% hydrochloric solution (hydrochloric acid). While noting the increased blurring of the cutting, the edges of the incisors and chewing surfaces of the molars.
To prevent this, it is recommended to take acid through glass or plastic tubes.
Treatment. Same as in necrosis of solid teeth tissues.
Prevention. Prevention of acid necrosis teeth carried primarily by designing ventilation in the shops in which the columns are set to alkaline water for frequent mouthwash. Observations showed that the workers must carry out this procedure every 1 1/2 - 2 hours.
All the workers of chemical plants should be at the dispensary. Prophylactic treatment fluoride preparations remineralizing solution and tooth is carried out in the process of clinical examination.

5.2.6. Traumatic damage to teeth
There are acute and chronic injuries.
5.2.6.1. acute trauma
Cause acute injury is a blow to the tooth in case of accidental fall, sports and so on. D.
Acute injury in 32% of cases causes the destruction and loss of anterior teeth in children.
The baby teeth is most frequent dislocation of the tooth, and then fractured, rarely broke off the crown. The permanent teeth broke off frequency follow part of the crown, then dislocation, injury and fracture of the tooth root of the tooth. Trauma of teeth happens with children of different ages, but the baby teeth bowl injured between the ages of 1 to 3 years, and permanent in 8-9 years.
MI Groshikov gives the following classification of acute dental trauma:
Bruising I. tooth (without injury or damage to neurovascular bundle).
II. Dislocation of the tooth:
▲ incomplete (without damage or injury NVB): mixing with crown towards the occlusal surface; • offset from the crown toward the vestibule of the oral cavity; • crown with a shift toward the adjacent tooth; • crown with an offset in the palatal side; • with the rotation about the axis; • Combined;
▲ impacted;
▲ full.
III. fracture:
▲ crown: enamel in the zone; • in the area of the enamel and dentin without opening or cavity of the tooth with the opening;
▲ tooth neck: above the bottom gingival sulcus; • below the bottom of the gingival sulcus;
▲ tooth root with a gap or without gap at the fracture site pulp (without shift or with a mix of fragments): transverse, oblique, longitudinal, comminuted, in the cervical, the apical and middle parts of the tooth.
IV. Combined injury.
V. Injury tooth germ.
Bruising of the tooth. In the first hours there is considerable pain, aggravated by biting. Sometimes, as a result of vascular injury occurs beam gap may be hemorrhage pulp. The state of the pulp is determined by measuring its electroexcitability, which is carried out within 2-3 days after the injury.
Injury should differentiate tooth from root fracture, wherein the may be the same clinical picture, however fractured tooth root clearly determined by X-ray.
Treatment consists in the creation of the rest tooth. This is achieved by excluding from the diet of solid food. Young children can be turned off from the tooth contact by grinding the cutting edge of the crown of the antagonist. Ground off edge permanent tooth crown desired.
When irreversible Abuse affected pulp of the tooth crowns are shown trephination, and removal of the lost pulp canal filling. If there is a darkening of the crown, then before filling ce bleach gidroperita.

Dislocation of the tooth. This offset of the tooth in the socket, which occurs when the lateral or vertical direction traumatic forces. In the normal state of periodontal it requires considerable effort for tooth displacement. However, when resorption of bone tissue dislocation may occur with a slight impact, for example by mastication rigid food. Dislocation can be accompanied by damage to the integrity of the gums.
Distinguish dislocated complete, incomplete and impacted. Dislocation may be isolated or in combination with a fractured tooth root, alveolar bone or jaw body.
Complete dislocation of the tooth is characterized by loss of its wells.
Subluxation - a partial displacement of the root of the alveoli and is always accompanied by rupture of periodontal fibers to a greater or lesser extent.
Impacted dislocation manifested by partial or complete displacement of the tooth from the hole towards the jaw body, which leads to considerable destruction of bone tissue.
The patient complains of pain on one tooth or group of teeth, the occurrence of significant mobility. Accurately indicates the time of occurrence and the cause.
First of all you must decide whether to save this tooth. The main criterion is the condition of the bone tissue at the root of the tooth. At its integrity for at least half the length of the tooth root should be retained. First set tooth on the former place (under anesthesia), and then create rest tooth - preclude its mobility. For this purpose carried splinting (fast-hardening wire or plastic). You then define the state of the dental pulp. In some cases, the mixing occurs root gap neurovascular bundle, but sometimes the slurry remains viable. In the first case, in necrosis, the pulp must be removed, and seal the channel in the second case the pulp is retained. To determine the status of the pulp determine its response to electrical current. The reaction of the pulp on the current 2-3 mA points to its normal state. However, it should be remembered that in the first 3-5 days after the trauma reduction of excitability of the pulp can be a response to a traumatic impact. In such cases it is necessary to check the condition of the pulp in the dynamics of (re). Recovery of excitability indicates a normal state recovery.
If the tooth is the re-testing responds to a current of 100 mA or more, it indicates necrosis of the pulp and the need for its removal.
When injury may Welding of the root of the tooth to the jaw, which is always accompanied by the rupture of the neurovascular bundle. This condition is accompanied by pain and the patient points to the "shortened" tooth. In this case, the tooth is fixed in the correct position and immediately remove necrotic pulp. It is recommended to remove as soon as possible in order to prevent decay and staining of the tooth crown in black.
In acute injury may be a complete dislocation (tooth bring the hands or fallen tooth is inserted into a hole). Treatment consists tooth replantation. This operation can be successful in the periodontal tissues unaltered. It is carried out in the following sequence: trepanning tooth pulp is removed and seal up the channel. Then, after processing the root and the wells antiseptic solutions administered tooth in place and fix it (in some instances splinting is optional). If no complaints of pain carried out observation and X-ray control.
Tooth root replanted in the first 15-30 minutes after the injury, slightly resorbed and the tooth retained for many years. If replantation held at a later date, the resorption of the root radiographically determined already within 1 month after replantation. Root resorption progresses, and by the end of the year resorbed much of it.
tooth fracture. Perhaps it broke off part or all of bits (Fig. 5.14) and a fractured tooth root.
Break off the crown is not difficult to diagnose (Fig. 5.15).

Fig. 5.14. Types of fractures of tooth crowns (a, b).

Fig. 5.15. Break off the crown of the tooth.
The scope and nature of therapeutic intervention depends on the loss of tissue. When broken off part of the crown its cavity without opening the pulp is reduced using the composite filling material. Exposed dentine covered with an insulating gasket, and then placing a seal. Best results

are obtained when restoring the crown by a cap. If the conditions are not sufficient to fix the seal, then parapulparnye pins are used.
If at the time of the injury revealed the cavity of the tooth, it is primarily produce anesthesia and the removal of the pulp, if there is no evidence and the conditions for its preservation and seal up the channel. In order to improve the conditions for fixing the seal may be formed pin which is fixed in the channel. Lost part of the crown is reduced composite filling material with the cap. In addition, the tab can be manufactured or artificial crown.
When fully broken off bits should decide on the possibility of using the root for the manufacture of pin tooth or an artificial crown. A prerequisite is the filling channel. At sealing expedient to leave space for the pin, ie. E. Filling material filled in the apical part of the root canal (1 / 3-1 / 4 of the root length).
It should be remembered that the restoration of the broken-off part of the tooth should be performed in a few days after the injury, since in the absence of contact with an antagonist in a short time occur movement of the tooth and the slope of adjacent teeth in the direction of the defect, which will not allow further implement prosthesis without orthodontic treatment .
Fracture of the tooth root may be transverse, longitudinal, oblique, comminuted (Fig. 5.16). The type of fracture and the place depends on diagnosis, and most importantly, the ability to save and use the root. Decisive in the diagnosis of a chest X-ray (Fig. 5.17).
The most unfavorable are longitudinal, diagonal oblique and comminuted fractures in which the roots can not be used for support.
In transverse fractures, much depends on his level. If transverse fracture occurred at the boundary of the top 1 / 4-1 / 3 of the root length, or in the middle, then after removal of the tooth pulp trephination and seal up the channel, and the fragments are combined with special pins, or pins of klammernoy wire. It is important that the pin is securely countersigned fragments. In transverse break off in the near to the top quarter of the root canal to seal up sufficiently larger broken off. Apical part of the root can be left without intervention.
After filling the channels it is important to restore the correct position of the tooth and the exclusion of injury during closure of the jaws.
5.2.6.2. chronic injury
Chronic injury is quite common in daily practice and often results in severe damage to the tissues of the tooth. Thus, the formation on the incisors Uzury, hard tissue abrasion is a consequence of long-acting mechanical factors.

Fig. 5.16. Types of fractures of tooth root (a, b, c)

Fig. 5.17. Fracture of the root of the upper central incisor on the left.
Chronic trauma can be caused by occupational factors, or other habits. So described Uzury appearance on the incisors smokers holding the mouthpiece tube, blowers, tailors nibble thread teeth, and in other cases. Education Uzury and irregularities usually not accompanied by pain.
Treatment. It is to eliminate the defect. In some cases it is sufficient by grinding, in other - restore the shape of tooth filling. Importance is the elimination of the traumatic factor.

5.2.7. dental hypersensitivity
• hyperesthesia - hypersensitivity of tooth tissue to mechanical, chemical and thermal stimuli.
Most often this phenomenon is observed in the pathology of non-carious tooth tissue of origin, as well as dental caries and periodontal diseases.
When caries Hypersensitivity may be any one site. Very often hypersensitivity observed in tissue abrasion tooth enamel when the decline reaches dentinoemalevoy border. However, not for all kinds of wear expressed hypersensitivity same. Thus, when enamel erosion hypersensitivity is observed frequently, while at the wedge-shaped defects it almost does not occur. Sometimes a sharp sensitivity observed in outcrop has little necks of the teeth (1-3 mm).

Besides dental pain reaction resulting from the action of local irritants (so-called non-systemic hyperesthesia), pain in the teeth can also occur in connection with some pathological conditions of the organism (systemic or generalized, hyperesthesia). Last seen in 63-65% of patients with an increased pain response teeth. So, sometimes recorded pain in the teeth with psychoneurosis, endocrinopathy, diseases of the gastrointestinal tract, menopause, metabolic disorders, infections and other comorbidities or transferred.

The clinical picture. Hypersensitivity manifests itself variously. Typically, patients complain of intense pain but quickly passing by the action of temperature (cold, warm), chemical (acid, sweet, salty), or mechanical irritants. Patients say that they can not breathe in the cold air, taking only slightly heated food and can not eat sour, sweet, salty, fruit. As a rule, these effects are permanent, but sometimes there may be a temporary lull or cessation of pain (remission).

In some cases, there are difficulties in determining the patient's teeth as the pain radiates to the adjacent teeth.

On examination, usually identified changes in the structure of dental hard tissue or periodontal condition. Most often observed decline in hard tissue on the chewing surface or at the cutting edge. Often, however, the decline of tissue may be on the vestibular surface of the incisors, canines, and premolars.

In all cases, the exposed dentin is hard, smooth, shiny, sometimes slightly pigmented. When the sensing portion exposed dentine occurs pain, sometimes very intense, but quickly passing subjected to cold air, as well as acid or sweet cause pain response.

Sometimes there is a small outcrop of the neck of the teeth only from the vestibular surface, but pain pronounced. However, there may be significant and exposure of roots, but increased sensitivity, as a rule - in one place. Sometimes hypersensitivity observed in root bifurcation.

There are several classifications of hypersensitivity. More detailed classification developed hypersensitivity YA Fedorov et al. (1981).

A. As the prevalence of:

I. Limited form usually occurs in individual or several teeth, usually in the presence of single cavities and defects of the wedge, as well as after the preparation under the artificial tooth crowns, inlays.

II. Generalized form manifests itself in most or all of the teeth, usually when laid bare necks and roots of the teeth during periodontal disease, abnormal wear of the teeth, with multiple dental caries, as well as multiple and progressive form of tooth erosion.

B. By origin:

I. dentin hyperesthesia associated with the loss of dental hard tissues;

a) in the cavities;

b) occurs after tooth preparation tissue under artificial crowns, inlays and m. p .;

a) wear of related pathological hard tissue and cuneate defects;

g) erosion of dental hard tissues.

II. Dentin hyperesthesia not associated with the loss of dental hard tissues:

a) exposed dentin hyperesthesia necks and roots of teeth with periodontitis and other periodontal diseases;

b) intact dentin hyperesthesia teeth (functional) related disorders in a common body.

B. The clinical course:

grade I - tooth tissues respond to temperature (cold, heat) stimulus; threshold electroexcitability dentin is 5-8 mA;

grade II - tooth tissues respond to thermal and chemical (salty, sweet, sour, bitter) stimuli; threshold electroexcitability dentin 3-5 mA;

grade III - tooth tissues respond to all kinds of stimuli (including tactile); electroexcitability dentin threshold reaches 1.5-3.5 mA.

According to the authors, using this classification, it is possible to facilitate the differential diagnosis and to determine the selection of the most efficient methods for the elimination of hyperesthesia of hard dental tissues.

Differential diagnosis. Hyperesthesia of hard tissues in the first place must be differentiated from acute pulpitis, since similarity is the presence of acute pain and the difficulty of determining the patient's tooth. Diagnosis is based on the duration of pain (with pulpitis is prolonged, there is a night), the state of the pulp (pulpitis with tooth reacts to currents above 20 mA, and is not changed when the pulp hypersensitivity reaction to current - 2-6 uA).

Treatment. Therapy with hyperesthesia of hard tissues of the tooth has its own history. Proposals for the use of many drugs in order to eliminate hypersensitivity indicate insufficient ce efficiency. Applied substances that destroy organic substance hard tooth tissues. This group includes the solutions of silver nitrate and zinc chloride. When hyperesthesia hard tissues have been widely used a paste composed of alkali: sodium hydrogen carbonate, sodium carbonate, potassium, magnesium, and substances capable restructure hard tooth tissues: sodium fluoride, strontium chloride, calcium preparations, etc. According to present views,. fluoride ion capable of replacing the hydroxyl group in the hydroxyapatite, transforming it into a more stable compound - fluorapatite. Really, after applying the 75% of fluoride toothpaste on the dried portion of the sensitive dentin comes anesthesia, and pain after 5-7 treatments may disappear. However, after a short period of pain occur again, which is a significant drawback of the method. For the purpose of removing pain sensitivity used dikainovaya liquid proposed EE Platonic. After 1-2 minutes after application of the liquid becomes possible tissue dissection. However, the analgesic effect is short-lived.

A more efficient method of removal of hypersensitivity has been proposed later YA Fedorov and VV Volodkina.

For topical exposure they applied a paste of calcium glycerophosphate in glycerine (treatments 6-7), along with oral glycerophosphate or calcium gluconate 0.5 g three times a day within a month, multivitamin (3-4 dragees per day), fitoferolaktola (1 g per day) for one month. Scheme proposed by the authors propose to use 3 times a year.

The therapeutic effect has systematic application remineralizing paste "pearls."

At present, the hypersensitivity of the tooth tissue remineralizing therapy is widely used. The theoretical basis of the method is that in some types of hypersensitivity, in particular in the erosion of hard tissues, detected surface demineralization. In the case of this method, the teeth are isolated from saliva, thoroughly dried with a cotton swab and remove plaque from the surface of the enamel. Then 5-7 minutes the solution was applied to 10% calcium gluconate solution or Remodent. During the third visit, each after two applications remineralizing liquid surface treated with 2.1% sodium fluoride. Instead of sodium fluoride can be used fluorine-lacquer. Inside designate calcium gluconate 0.5 g three times a day for a month. In addition, it is recommended to eliminate as far as possible from the diet juices, all sour, and dentifrice to use the fluorine-containing paste. Usually, 5-7 treatments already start to improve, and in 12-15 hypersensitivity procedures disappears. It should be borne in mind that in 6-12 months hypersensitivity may occur repeatedly. In such cases it is recommended to repeat the treatment completely.

№8 lecture

Subject: Tooth whitening. Indications and contraindications.

1.1. Technological models for education

The lesson of 80 minutes	**Number of students**
Type of classes	**News Introduction of lectures**
Plan of the lecture:	***pery hour*** 1. Explore whitening methods. ***The second hour.*** 2. Indications and contraindications
The task of the	3. Inform students to give a full explanation of teeth

training session	whitening. Indications and contraindications.
Teaching methods	Conversation, visual aids for lectures
Type of classes	total-collective
Visual aids on	Textbook, lecture material, projector, computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

1.2.Tehnologicheskaya card lectures

stages of work	**Teacher**	**Student**
1.Etapy training (10 minutes)	1. Aims classes 2. Preparation of slides for lecture material 3.Literatura Related 1. Harald O. Heymann Sturdevant's Art and Science of Operative Dentistry, 6e (Roberson, Sturdevant's Art and Science of Operative Dentistry), 2015 2. Kamilov HP va b. - «Stomatologik asbob va ashyolar» -Tashkent 2005 th. 3. Kamilov HP va b. «Terapevtik stomatologiya propedevtikasi" -Tashkent, 2006y. 4. Borovsky EV "Therapeutic dentistry". - M., 1989. 5. Magid EA, Mukhin NA "Phantom of the therapeutic courseDentistry. Atlas". M .: Medicine 1987. Borovsky EV "Dentistry. Guide to practical training. " - M., 1987	Listens to and records
2.Vvedenie (10 minutes)	***1. Aims and objectives of the lecture material:*** **Goal:** 1. Explore whitening methods. **Task:** 2. Indications and contraindications **Questions on the topic**	listen Answers the students' questions
3.BASIC stage (50 minutes)	1. Introduction to the theme with the indication slides	Listen and write
4.Zaklyuchitelny step (10 minutes)	1. Conclusion.	Listen and write

The text of the lecture

Staining of teeth it can be classified in several ways
(B. Touati et al, 2004):
- according to the origin: external; interior;
- with color;
- with a pathological or non-pathological nature.

Discoloration of teeth most often it refers to the internal and can occur for the following reasons:
- dental caries;
- pulp disease;
- medical errors endodontic treatment;
- the use of materials, coloring a tooth;

- disorders of formation of dental hard tissues (enamel localized hypoplasia). Dental caries is a major cause unaesthetic pigmentation (Feinman et al, 1987). The color change can occur either through internal cavity pigmentation and surface changes (white spot caries or brown color). Cavities before restoration must be thoroughly cleaned, however, in some cases infiltration of pigments can permanently cover the dentin and emal.Izmeneniya tooth color may occur due to an injury or infection in the pulp. Acute injury, chronic less (e.g., orthodontic treatment), resulting in damage to the blood vessels pulpy.Krovoizliyanie causes penetration into the dentinal tubules where it releases hemoglobin. Disintegrating, hemoglobin releases ions Fe2 +, which contacting with oxygen to form iron oxide. Sometimes oxides combine with sulfur to form a dark gray iron sulfide. If the tooth is viable, can appear gray or orange shades (the latter are associated with secondary dentin). Significant bleeding tooth changes color from red to pink and orange. The subsequent necrosis of the pulp tissue and iron compounds give a brown, blue and finally gray okrashivanie.Nelechenye teeth with pulp that has lost viability due to infection (pulp necrosis, apical periodontitis) can significantly iz Significant bleeding tooth changes color from red to pink and orange. The subsequent necrosis of the pulp tissue and iron compounds give a brown, blue and finally gray okrashivanie.Nelechenye teeth with pulp that has lost viability due to infection (pulp necrosis, apical periodontitis) can significantly iz Significant bleeding tooth changes color from red to pink and orange. The subsequent necrosis of the pulp tissue and iron compounds give a brown, blue and finally gray okrashivanie.Nelechenye teeth with pulp that has lost viability due to infection (pulp necrosis, apical periodontitis) can significantly iz
change color in the gray-brown tonah.Chasto cause staining of teeth is iatrogenic factor.
To avoid this problem during endodontic treatment is necessary to observe the following rules:
- should be removed undercuts the roof cavity of the tooth and the entire coronal pulp. This is especially significant for the first maxillary incisors, in which the closer to the cutting edge or side portions of the tooth pulp cavity remains, which decomposition products are stained tooth;
- tooth restoration after endodontic treatment must be performed in the next visit;
- materials for filling a tooth root canal must be within the channel, its mouth is to be opened (free of gutta percha and sealer) and securely sealed. For anterior teeth intracanal filling material shall be projected onto the gums at or near the apex kornya.Nesoblyudenie above rules is the most frequent cause staining pulpless teeth. Uncured root canal sealer makes impossible the adhesion of restorative or cushioning material in the tooth cavity. As a rule, the situation is complicated plohoobrezannaya, charred gutta-percha, formed after the restoration of the free space in which the infection develops actively. These errors, in the best case, is tooth-colored, however,
kanalu.K tooth root of the tooth can cause staining of some use for root canal sealers, such as resorcinol-formalin paste, a paste having a composition of iodoform, «Endomethasone» (not «Endomethasone ivory»), especially if these substances are left in the cavity tooth. Using silver pins may cause black coloration due okisleniya.Chasche often affects root zuba.Primenenie as amalgam restorative material may cause pigmentation dentin and impart a bluish-gray tint zubu.V some cases, due to ion displacement or corrosion may change the color of the surrounding tooth mucosa shell.
In particular, it is promoted defects dental abrasion exposing dentin. Furthermore, organic elements mezhprizmennyh pro-
enamel spaces capable of reacting with hydroxyl and amino groups
dyes. Binding pigments with calcium ions forms the dental tissue
new molecules that differ in size and give other optical ef-
fect. For instance, quercetin pigment contained in tea, has five hydro
ksilnyh groups forming stable attachment to mezhprizmennym
organic substances. In this case the mechanical cleansing of the tooth is not Dos
tatochno efficiently to eliminate such coloration is necessary chemical
cal whitening.
Sources of pigmentation are:

- all forms of tobacco (cigarettes, pipe tobacco, chewing);
- drinks and food with natural or artificial colors
(Coffee, tea, red wine, blueberries, blackberries, soy sauce, etc...);
- local effect drugs (chlorhexidine);
- chromogenic bacteria that cause green, brown or black
staining (usually in the cervical area in children);
- metal oxides exhibit significant exo- and coloring endogenous activity (chronic mercury poisoning, mercuric chloride, lead).***Age-related changes in tooth color*** является наглядным примером комбинированного воздействия различных причин. Оно включает в себя физиологическое изменение структуры зуба плюс длительно действующие химические и механические факторы. Возрастные изменения затрагивают всю структуру зуба. Эмаль истончается, местами до полного исчезновения, становится менее прозрачной. Полость зуба уменьшается в размере, дентин подвергается изменениям. В твердых тканях зуба относительно увеличивается содержание неорганических веществ, в пульпе — волокнистых структур. Обнажение дентина, многочисленные трещины эмали, рецессия десны, долговременное воздействие пищевых пигментов, табака, прием лекарств способствуют изменению всех параметров светодинамики зубов. Может изменяться цветовой тон зуба (например, с «A» на «D» или «C»), увеличиваться интенсивность цвета (например, с «A3» до «A4»), уменьшаться яркость. Прозрачность фронтальных зубов увеличивается за счет стираемости и убывания органики в тканях зуба.

Indications and contraindications for tooth whitening

Решение отбеливать зубы или нет, зависит от эстетических потребностей пациента. Кроме этого, для изменения цвета зуба в большинстве случаев возможно применение альтернативных химическому отбеливанию методик или их комбинаций, поэтому показания к данному методу всегда являются относительными. Чаще всего к отбеливанию зубов прибегают те, у кого зубная поверхность имеет стойкий неестественный цвет.Используя современные методы отбеливания можно значительно изменить цвет зубов. Мероприятия по улучшению цвета зубов могут быть направлены как против внешнего, так и против внутреннего окрашивания, а так же на улучшение естественного цвета зубов. Эффективность отбеливания в значительной мере зависит от причины, вызвавшей нарушение цвета. Хорошо поддаются отбеливанию нарушения цвета зубов, связанные с поверхностным окрашиванием (пигментные налеты, зубные отложения), возрастными изменениями, окрашиванием дентина со стороны пульпарной камеры. К числу клинических ситуаций, хуже поддающихся отбеливанию, относятся врожденные нарушения цвета тканей зуба, высокая прозрачность тканей, окрашивание обнаженного дентина со стороны полости рта.Процедуру химического отбеливания зубов относят к разделу эстетической стоматологии. Она не направлена на восстановление жевательной функции зуба или зубного ряда в целом, не способствует первичной, вторичной или третичной профилактике стоматологических заболеваний. Вместе с тем,отбеливающие методики в ряде случаев способны устранить эстетический недостаток, тем самым повысить уровень социальной адаптации и качество жизни человека. В ряде случаев у пациента может возникнуть потребность в осветлении неокрашенных зубов. У большинства европейцев зубы относятся к тону (оттенку) «A» и имеют интенсивность A3–A3,5 в зависимости от групповой принадлежности и челюсти, однако, пациенты имеющие такие зубы или даже более светлые, могут требовать отбеливания. Обычно эта потребность возникает из-за профессиональных или социальных причин. Например, максимально светлые зубы могут быть необходимы эстрадному исполнителю или в социальной группе с высокими доходами принято иметь «белозубую» улыбку.Вместе с этим увеличению случаев применения химического отбеливания неокрашенных зубов может способствовать продвижение данной методики частными стоматологами среди своих пациентов.Таким образом, химическое отбеливание зубов может проводиться в следующих случаях:

1. Цвет одного зуба пациента отличается от соседних зубов.
2. Имеется окрашивание всех или группы зубов.
3. Окрашивание зубов отсутствует, пациент желает иметь более светлые зубы.
Однако необходимо отметить, что процедура отбеливания зубов подходит не всем.
Противопоказаниями к отбеливанию являются:
– тяжелые общие заболевания (сахарный диабет, нервно-психические и онкологические заболевания);
– множественный кариес;
– заболевания тканей периодонта, которые необходимо лечить;
– наличие протезов, коронок, реставраций из фотополимера на фронтальном участке;
– значительная потеря эмали в результате патологической или возрастной стираемости, глубокие трещины на ее поверхности;
– наличие обнаженных придесневых участков зубов, эрозий и др. (в этом случае отбеливание приведет к развитию повышенной чувствительности зубов);
– прохождение пациентом курса ортодонтического лечения (зубы отбелятся неравномерно);
– курение (после отбеливания может происходить еще более сильное изменение цвета);
– беременность и период кормления грудью;
– несовершеннолетние пациенты;
– пациенты, имеющие аллергические реакции на используемые препараты и материалы (главным образом, на перекисные соединения и латекс).Внешнее окрашивание зубов устраняется с помощью профессиональной гигиены. Профилактика образования зубного налета и зубного камня должна проводиться всем пациентам. Эта процедура очень часто позволяет достичь хорошего эстетического результата, хотя и не является отбеливанием. Если же имеет место внутреннее окрашивание, либо после проведенного снятия зубных отложений пациент не удовлетворен цветом зубов, следует применять отбеливание.

КЛАССИФИКАЦИЯ МЕТОДОВ ОТБЕЛИВАНИЯ

В настоящее время в стоматологической практике применяются следующие методы изменения цвета естественных зубов:
– микроабразия;
– химическое отбеливание;
– прямая композитная реставрация;
– непрямая реставрация:
– винирами (керамическими, композитными);
– коронками (металлокерамическими, металлокомпозитными, цельнокерамическими, композитными, пластмассовыми).
Выбор методики зависит от нескольких параметров:
– интенсивность окрашивания зубов;
– распространенность окрашивания;
– глубина окрашивания;
– причина окрашивания;
– уровень потребности пациента в изменении цвета зубов;
– стоимость лечения.
Нередко для значительного изменения цвета зубов пациенту необходимо последовательно применить две или более из перечисленных методик (например, микроабразия, химическое отбеливание, изготовление виниров).Современные методики химического отбеливания зубов классифицируют следующим образом:
– профессиональное отбеливание:
– внешнее (на витальных зубах);
– внутреннее (девитальные зубы);

– домашнее отбеливание;
– смешанное отбеливание.
Отбеливающие вещества отличаются друг от друга различной консистенцией и концентрацией агента, временем его экспозиции на зубах, а также использованием дополнительного физического фактора, активизирующего отбеливающий компонент (лазер, УФ-лучи, галогеновый свет, тепло).
Суть всех современных методик сводится к одному: вещества, при разложении которых выделяется кислород, проникают в твердые ткани зуба (дентин и эмаль) и окисляют органические вещества, окрашивающие зуб, а
также денатурируют белки, входящие в пигменты, делая ткани зуба менее
прозрачными и оптически более светлыми. Этот процесс в корне отличается
от действия кислот, деминерализующих зубные ткани.
ПРОФЕССИОНАЛЬНОЕ ОТБЕЛИВАНИЕ
Значительная часть пациентов предпочитает отбеливание в условиях стоматологического кабинета, чем домашнее отбеливание. Их привлекают быстрота достижения результата и эффективность процедуры. Часть пациентов не способна правильно проводить отбеливание с использованием капп в домашних условиях по причине своей занятости, небрежности и т. п. Отличие профессионального отбеливания от домашнего заключается не только в концентрации препарата (10–20 % вместо 35–40 %), но и в длительности процедуры.
Профессиональное отбеливание проводится в клинике высокими концентрациями перекисных соединений и приводит к более быстрым результатам.
Показаниями к его проведению могут быть следующие:
1) если необходим быстрый результат;
2) пациент хочет, чтобы отбеливание проводилось в клинике;
3) требуется отбелить отдельные зубы;
4) наблюдается выраженное или сложное для устранения окрашивание;
5) у пациента повышенные глоточные рефлексы;
6) у пациента бруксизм или расстройства ВНЧС.
Успех отбеливания зависит от тщательно проведенной диагностической процедуры с выяснением этиологии пигментации зубов, индивидуальной симптоматики и с определением правильной терапевтической методики, которая позволит наиболее эффективно устранить данный дефект.Существуют различные методы отбеливания зубов в условиях стоматологического кабинета. Для отбеливания применяют различные препараты, все они основаны на использовании высококонцентрированного раствора или геля перекиси водорода. Одни гели и растворы активируются в результате только химической реакции, другие — под действием тепловых или световых источников энергии. Кроме того, существующие методики отбеливания в условиях стоматологического кабинета обеспечивают разный по эффективности результат.
К профессиональным методам относятся отбеливание депульпированных зубов (внутреннее) и витальное (наружное) отбеливание.Профессиональное отбеливание производится в стоматологическом кабинете. Для этого метода чаще применяются гели или растворы 30–37 % концентрации перекиси водорода с защитой слизистой оболочки полости рта. В основе химического отбеливания лежат окислительные процессы, возникающие в результате воздействия атомарного кислорода на естественные ткани
зубов. Кроме этого, для активации отбеливающего агента стоматолог может использовать лазер или специальные лампы. Лазерная технология включает применение аргонового или диодового лазеров, и позволяет получить более светлый оттенок эмали без вреда для ее строения и химического состава. Следует знать, что лазер не отбеливает зубы, он просто ускоряет окислительное действие перекиси водорода. Поскольку используются ее высокие концентрации, полость рта должна быть тщательно подготовлена к процедуре.

Курс может включать несколько сеансов, хотя отбеливающий эффект у большинствапациентов обычно виден уже в первое посещение. Этот процесс может быть применен как к зубной дуге в целом, так и к отдельному зубу. При наружном отбеливании на изолированную поверхность зубного ряда наносят отбеливающее средство, которое затем освещают галогеновой лампой, создающей эффект слабо ощутимого нагревания.

ВНУТРЕННЕЕ ОТБЕЛИВАНИЕ ОДНОГО ЗУБА

Относится к профессиональному отбеливанию. Отбеливание депульпированных зубов проводят со стороны пульпарной камеры. Техника основана на заполнении пульпарной камеры зуба, измененного в цвете, пастообразной смесью. Необходимость в нем возникает, если имеется травма зуба, изменение цвета в результате использования серебряных штифтов, ранее проведенного эндодонтического лечения. Первые опыты внутреннего отбеливания неживых зубов проводились практически так же давно, как и попытки на живых зубах. Garreton предложил химическое лечение на основе гипохлорита натрия еще в 1895 г. Spasser (1961) ввел в практику смесь пербората натрия и воды, на основе работы Sylva, который первым достиг клинического успеха с этим отбеливающим агентом в 1938 г. Grogan также подтвердил окисляющие качества перборатанатрия в 1946 г. В 1958 г. Pearson использовал теплоактивируемую перекись водорода, тогда как Nutting и Po (1967) описывали свою комбинированную методику, смешивая перекись водорода и перборат натрия. Последняя разно-

видность амбулаторного лечения использовалась длительное время, но многие авторы отмечали опасность этой процедуры (Rotstein et al, 1991). Согласно этим авторам, при определенных обстоятельствах, все еще остающихся неясными, после лечения происходит резорбция шейки, затрагивая 10–15 % обработанных зубов. Точная причина этой резорбции все еще не ясна, но, видимо,ответственность за это лежит на перекиси водорода или скорее на кислом pH,который она придает раствору. Эта резорбция появляется только через 5–15лет после лечения. Ввиду всех этих сведений и особенно в свете современных знаний, следует проявлять осторожность при использовании перекиси водорода. Пациенты, леченные только перборатом натрия, не пострадали от тех же недостатков. Авторы одновременно прекратили использование перекиси водорода более 5 лет назад в пользу смеси пербората натрия и воды, предложенный Spasser (1961). Это простая методика, включающая несколько этапов.Последовательность манипуляций при внутреннем отбеливании следующая: необходимо плотно до верхушки обтурировать корневой канал, с обязательным рентгенологическим контролем. Хорошо почистить зуб и определить его цвет. В корневом канале делается углубление на уровне десневого края, канал герметизируется стекло-иономерным цементом. В полости зуба оставляют тампон с отбеливающим веществом. Затем зуб закрывается герметичной повязкой из цемента на 3–5 дней. В следующее посещение контролируется результат. При необходимости процедуру повторяют, пока врач не добьется желаемого результата. Окончательное лечение данного зуба (реставрация) проводится не раньше, чем через неделю после завершения отбеливания.

Следует указать, что внутреннее отбеливание может привести к фрактуре коронки зуба или резорбции корня у десны (высокие концентрации, температура, отсутствие прокладки).В связи с тем, что не во всех случаях можно провести отбеливание (существуют противопоказания, о которых говорилось ранее), прибегают к прямой реставрации зубов — восстановление цвета, прозрачности, формы с помощью композиционных пломбировочных материалов или к изготовлениюортопедических конструкций.

ЭНЕРГЕТИЧЕСКИЕ МЕТОДЫ ОТБЕЛИВАНИЯ ЗУБОВ

Под энергетическим отбеливанием понимают отбеливание зубов в условиях стоматологического кабинета с использованием источников световой или тепловой энергии. Одним из старейших методов энергетического отбеливания является процедура, применяемая уже более 30 лет, при которой используется 30–35%-ный раствор перекиси

водорода и сильный источник светового и теплового излучения. В качестве такого источника некоторые врачи используют фотолампу большой мощности, другие — специальный отбеливающий инструмент «Иллюминатор» (Union Broach). Несмотря на эффективность, этот метод постепенно уходит в историю— в связи с тем, что в результате перегрева пульпы зубов возникает большое количество осложнений.Пульпа зубов, являясь чувствительной к желтому и красному спектру света,активно поглощает тепловую энергию, выделяемую иллюминатором, что зачастую приводит к ее перегреву с последующей некротизацией. Современные источники производят свет синего спектра, к которому пульпа зуба наименее чувствительна. Процедура отбеливания состоит из общих элементов, тщательное выполнение которых необходимо для успеха лечения.Существуют определенные этапы процедуры отбеливания независимо от метода.Этап 1. После изготовления фотографий улыбки пациента и определения цвета необходимо очистить зубы от поверхностного налета. Это можно достичь путем чистки зубов зубной щеткой и пастой, либо можно использовать аппарат пескоструйной обработки. Если пациент только что закончил ортодонтическое лечение, проводимое с использованием брэкет системы, важно тщательно очистить зубы от возможных остатков цемента и композитного бондинга.

Этап 2. Изоляция десны, слизистой оболочки полости рта и мягких тканей языка, губ и щек осуществляется с помощью кофердама, специального адгезивного воска, полимерных блокирующих материалов и ретрактора щек и языка. Применение подобных барьеров способствует отграничению операционного поля, предупреждает проникновение перекиси водорода в периодонтальные пространства зубов, защищает ткани полости рта от воздействия отбеливающих агентов, теплового и светового излучения. В некоторых случаях показано применение противозагарного крема, который наносится на поверхность губ, щек, десен, а также на кожные покровы вокруг полости рта. Глаза пациента защищаются очками с оранжевыми фильтрами. Процедура отбеливания зубов, как правило, не причиняет большого дискомфорта или сильных болевых ощущений. При этом применение любого вида анестезии противопоказано, т. к. врачу необходимо знать ответную реакцию и ощущения пациента во время процедуры отбеливания. В случае нарушения герметичности изоляции возникает вероятность затекания перекиси водорода под барьер. В этом случае пациент может чувствовать жжение на десне или даже болевые ощущения. При возникновении подобных симптомов врач легко может устранить возникший дефект.Этап 3. Техника нанесения отбеливающего раствора или геля. На зубы наносят раствор перекиси водорода кисточкой или накладывают марлевую салфетку, обильно пропитанную перекисью. Некоторые методики предусматривают смешивание перекиси водорода с бустером, который образует вязкую пену, упрощающую технику нанесения раствора на зубы. Нанесение отбеливающего геля, как правило, не представляет никаких технических трудностей. Большинство компаний выпускают гели, непосредственно готовые к употреблению. Гель наносится на зубы прямо из шприцов, в которые он упакован. Другие гели необходимо приготовить непосредственно перед употреблением. Чаще всего необходимо смешать два или три компонента. Такие гели наносятся с помощью кисточки или специального аппликатора. Гели наносятся равномерным слоем толщиной 2–5 мм. Как правило, большинство методик предусматривает повторное нанесение отбеливающего агента. В этом случае необходимо удалить отработанный гель, промыть зубы водой и нанести новую порцию геля.

Этап 4. Активация перекиси водорода светом или теплом. В случае применения ламп для светоотверждения композитных материалов, некоторых коммерческих аппаратов и лазеров каждый зуб обрабатывается светом отдельно в течение 1–5 минут. Современные установки, такие как BriteSmile, LumaArch, Zoom, освещают обе зубные дуги одновременно. Время экспозиции составляет от 8 до 20 минут за цикл. Целый ряд компаний выпускает отбеливающие гели, не требующие активации световой или тепловой

энергией.К ним относятся Virtuoso Lightning Gel, Hi-Lite, Illumine In-Office и другие. Процесс отбеливания происходит в основном за счет химической реакции.

Этап 5. После завершения отбеливания отработанный гель, барьер и все изолирующие материалы удаляются изо рта. Зубы и полость рта обильно промываются водой. В некоторых случаях зубы можно отполировать полировочными дисками и головками. С целью профилактики повышенной чувствительности зубов, особенно при многократном отбеливании, целесообразно использовать гель 1,1 % neutral sodium fluoride. После процедуры пациенту должны быть даны подробные рекомендации о характере питания в последующие 24–48 часов. Воздержание от курения и употребления чая, кофе, красного вина и других продуктов, окрашивающих зубы в течение двух дней,является непременным условием сохранения хорошего результата отбеливания.

СИСТЕМЫ, ПРИМЕНЯЕМЫЕ ДЛЯ ОТБЕЛИВАНИЯ ЗУБОВ В УСЛОВИЯХ СТОМАТОЛОГИЧЕСКОГО КАБИНЕТА

LaserSmile. Современная методика лазерного отбеливания зубов. Лазерный луч активирует специальный светочувствительный отбеливающий гель, состав которого является секретом компании. Удобный наконечник позволяет отбелить зубы верхней и нижней челюстей за 45 минут, не причиняя пациенту никакого дискомфорта. Система пригодна не только для отбеливания, но и для работы на мягких тканях полости рта.

BriteSmile. Технология Professional Teeth Whitening разработана около пяти лет назад бывшими специалистами NASA. Фоточувствительный отбеливающий гель содержит 15 % перекиси водорода. Установка продуцирует свет голубого спектра и позволяет одновременно отбеливать зубы обеих челюстей,включая вторые премоляры, процедура занимает около полутора часов. Благодаря широко рекламируемой маркетинговой программе компании, этот вид отбеливания проводят более 3700 дантистов как в США, так и за рубежом.PowerGel. В настоящее время выпускается в четырех разновидностях:

PowerGel Arch, PowerGel Diode, PowerGel Halogen, PowerGel Plasma Arc. Каждый гель рассчитан на применение с определенным спектром света, выделяемым аппаратом для отбеливания зубов. Рецептура каждого геля позволяет ему оптимально проводить тепло для собственной активации и одновременно снижать абсорбцию зубом теплового излучения. Фоточувствительный активатор изменяет окраску геля, указывая на прекращение его отбеливающего действия. Rembrandt Virtuoso Lightening Gel. Содержит 35 % перекиси водоро-

да, фтор и ингредиенты, снижающие повышенную чувствительность зубов.

Мягкие ткани полости рта изолируют с помощью Paint-on Dental Dam — полимерного светоотвердевающего материала. Этот блокирующий материал обладает высокой текучестью, поэтому, после его нанесения вокруг зуба необходима световая обработка в течение 5–10 с. Гель наносится непосредственно из шприца, в котором он хранится, слоем толщиной не менее 1 мм. Гель активируют с помощью лампы, предпочтительно типа plasma arc, применяемой для светоотвердевания композита в течение 5 с на каждый зуб. Активацию повторяют еще семь раз, добавляя новые порции геля на те участки, где это требуется. Необходимо провести три таких цикла, после чего удалить гель и прополоскать полость рта. В ходе процедуры повышенная чувствительность зубов отмечается крайне редко. В настоящее время компания работает над выпуском специальной plasma arc установки_____, которая позволит быстрее проводить обработку геля светом. Opalmence Xlra. 35%-ный гель перекиси водорода содержит каротин, который придает ему ярко-оранжевый цвет, что теоретически должно способствовать лучшему поглощению света и увеличивать активность перекиси водорода.

White Glitter OpalDem blocking material hardens under the action of light. The material is applied directly around one tooth of a syringe and treated with light for several seconds. After applying the block on all teeth made light treatment for 20 s. After the procedure insulating material is easily separated from the teeth and mucosa in one block. The gel is also in a syringe,

from which is applied to the teeth. In this case layer thickness must be at least 1 mm. The gel is activated for any 20-30 c using a halogen lamp, or a 3-5 - by using plasma arc lamps. After light activation for 10-15 minutes the gel is removed and the mouth is rinsed with water. It is recommended to carry out three cycles. During the procedure, increased tooth sensitivity occurs relatively rarely. Illumine. The bleaching gel of the 30% solution of hydrogen peroxide being in the same syringe, and the mixture kopolimernogo powder maleik anhydrate and ester metilvenilovogo located in another syringe. When mixing the substances from the two syringes in the hydrolysis is produced a semi-solid from which easily and quickly released hydrogen peroxide. Both syringe interconnected. For kneading required some skill. It should squeeze the contents of one syringe (hydrogen peroxide) to the other, where the powder. Then all contents of the second syringe is sucked back into the first syringe, which was originally hydrogen peroxide. This procedure is repeated several times. After mixing concentration of the active gel becomes equal to 15%. The syringe is detached from the gel, and its contents are squeezed out in a matrix. After about 2 minutes, the gel becomes cloudy and gradually begins to harden. In this step, a matrix is applied to the teeth. Because the gel has a sufficiently thick, rezinoobraznuyu consistency, then for proper installation of matrix necessary to apply a certain force. Excess gel cleaned using a trowel so that the gel is not in contact with the gum. Exposure time - 30-45 minutes. At this time, the patient may be out of the office, that is. To. Any special monitoring him from the staff not trebuetsya.Posle after 45 minutes of the matrix are removed. Typically, the gel remains on the teeth in the form of rezinoobraznoy mass and require 15-20 minutes to clean teeth using hand tools and floss. The mouth is rinsed with water. In conducting the hypersensitivity of the teeth occurs frequently. In the study, held Reality, tooth hypersensitivity was observed in almost 50% patsientov.Zoom. The new system of teeth whitening in the dental office, established by DISCUS DENTAL. It uses a 22% hydrogen peroxide gel with a photosensitive activator. The light source can simultaneously activate the gel on the teeth of both jaws. The kit also includes a bleaching materials for home whitening gel. First, it provides a thorough insulation oral soft tissue and skin to prevent active substances. Then, the teeth are covered with special preparations that contain mineral substances (calcium fluoride). These substances penetrate into hard tissue of the teeth by preventing the occurrence of hypersensitivity, which in rare cases can occur after the bleaching procedure.

Special svetoaktiviruemy catalyst. Stationary lamp that
emits light of a certain wavelength is set so
that the light flux covers simultaneously the upper and lower teeth.
The procedure lasts one hour. Thereafter teeth again coated preparation
based on calcium and fluoride.
LumaWhite. 30-35% solution of hydrogen peroxide gel for use with
Luma Arch system. The gel is prepared by mixing the peroxide solution vo
portly powder whose composition is not reported to yield zheleobraz-
hydrochloric consistency. whitening procedure takes about half an hour.
In order to keep the acquired white teeth after the procedural
fools bleaching as long as possible, it is necessary to strictly observe good oral hygiene, and, on the recommendation of the attending physician, periodically (1 time in 6-12 months) use a tray with a special gel at home. Within 48 hours after bleaching is necessary to observe the so-called "transparent" diet, ie to abandon coloring products -.. Tea, coffee, red wine, chocolate and berries.

COMPOSITION OF tooth whitening

Within a decade after the emergence of materials for home whitening they have been many changes. first-generation materials were presented liquid form, they did not stay in the CVR for a long time and require constant refilling. The second generation, are still available on the market, more viscous gels, and presented in order to prevent leakage of material out and as a consequence of soft tissue irritation. They also contain varying concentrations of active substances. The third generation of dental bleaching agents is diverse carriers and colors. Overall

improvement in the quality control of dental manufacturers and companies, together with qualitative changes of packaging and instructions for patients, making these drugs much more "friendly" to the buyer.

Content bleaching gels:

- carbamide peroxide;
- hydrogen peroxide and sodium hydroxide;
- materials that do not contain hydrogen peroxide, sodium perborate ie,..
- zagustitel- Carbopol or Polyx;
- urea;
- nositel- glycerol, glycol, dentifrices;
- surfactants and pigment dispersants;
- preservatives;
- flavoring agents;
- fluorides (in some products to reduce the possible increased sensitivity).

COMPONENTS OF BLEACH GELS

carbamide peroxide

Carbamide peroxide (CH6N2O3) in 10% aqueous solution is used in most home bleaching kits. It decomposes to 3.35% strength solution of hydrogen peroxide (H2O2) and 6.65% strength solution of urea (CH4N2O). 15 and 20% solutions of carbamide peroxide are available for home whitening under the supervision of a physician. A 15% carbamide peroxide releases 5.4% hydrogen peroxide and 20% -naya- one allocates 7% hydrogen peroxide (Fasanaro, 1992). 35% carbamide peroxide solution is available as a product Quickstart (Den Mat Corp. Santa Ana, CA) and Opalescence Quick (Ultra dent Products Inc., South Jordan, UT). They are positioned in the market as

preparations for whitening treatments in the doctor's office prior to use by patients home whitening kit. From such a 35% strength solution obtained 10% solution of hydrogen perekici. Because of the possibility of damage to soft tissue, they should be used with rubber dam or insulator soft tissues. The difference in bleaching efficiency of different concentrations of drugs is not yet fully explored until the end (Haywood and Heymann, 1991).

lECTURE №9

Topic: The main stages of restoration of dental hard tissues modern composites. Indications and contraindications.

1.1. Technological models for education

The lesson of 80 minutes	**Number of students**
Type of classes	**News Introduction of lectures**
Plan of the lecture:	***pery hour*** 1. Learn the basic stages of restoration. ***The second hour.*** 2. Indications and contraindications
The task of the training session	3. Inform students to give a full explanation of dental restorations. Indications and contraindications.
Teaching methods	Conversation, visual aids for lectures
Type of classes	total-collective
Visual aids on	Textbook, lecture material, projector, computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

1.2.Tehnologicheskaya card lectures

stages of work	Teacher	Student
1.Etapy training (10 minutes)	1. Aims classes 2. Preparation of slides for lecture material 3.Literatura Related 1. Harald O. Heymann Sturdevant's Art and Science of Operative Dentistry, 6e (Roberson, Sturdevant's Art and Science of Operative Dentistry), 2015 2. Kamilov HP va b. - «Stomatologik asbob va ashyolar» -Tashkent 2005 th. 3. Kamilov HP va b. «Terapevtik stomatologiya propedevtikasi" -Tashkent, 2006y. 4. Borovsky EV "Therapeutic dentistry". - M., 1989. 5. Magid EA, Mukhin NA "Phantom of the therapeutic courseDentistry. Atlas". M .: Medicine 1987. Borovsky EV "Dentistry. Guide to practical training. " - M., 1987	Listens to and records
2.Vvedenie (10 minutes)	***1. Aims and objectives of the lecture material:*** **Goal:** 1. Learn the basic stages of restoration. **Task:** 2. Indications and contraindications **Questions on the topic**	listen Answers the students' questions
3.BASIC stage (50 minutes)	1. Introduction to the theme with the indication slides	Listen and write
4.Zaklyuchitelny step (10 minutes)	1. Conclusion.	Listen and write

The text of the lecture

Restoration - recovery process and correction of aesthetic and functional parameters of a tooth in the oral cavity directly in a single visit by composite materials.
Differences sealing of the restoration:
- when filling occurs mainly functional recovery characteristics of the tooth, and at the lost tooth restoration material replenished tissue simulates dentin and enamel, their transparency and color gamut;
- filling a medical procedure, and restoration combines elements of medical and artistic works.

Contraindications to the restoration:
1. The presence of a pacemaker patient heart rate, the so-called "Pass - Maker", when fotopolimerizator can disrupt the device and the pulse frequency vozmlzhna cardiac arrest.
2. The patient's allergic reaction to the adhesive elements of the system or in the composite, which is extremely rare.

Key factors in the oral cavity, considered in a restoration:
- the suitability of the roots of the teeth or for recovery, i.e. their viability. Due to the adhesive of the fourth-generation systems to be virtually re-establishment of any root is sealed with a high quality root canal. A prerequisite is stored circular tooth ligament;
- the state of periodontal tissues. With periodontitis possible after restoration konservanivnogo and surgical treatment in combination with splinting teeth;

- patient hygiene skills. When brushing teeth irregular boundary marked pigmentation and loss of surface gloss restoration;
- a correct choice of the composite material and the adhesive system, providing sufficient adhesion to the tooth capable of withstanding the load of chewing and possessing good aesthetic characteristics.

Indications for restoration:
dental caries in all stages of tooth decay;
non-carious lesions (erosion of enamel abrasion necks and occlusal surfaces of teeth, enamel hypoplasia, dental fluorosis et al.);
anomalies shape and color of teeth (spinous, tetracycline teeth, Stanton syndrome - Kapdepona);
dental injuries;
change in the color of the teeth after trauma or endodontic treatment;
anomalies of the teeth, including pan, tilt, dystopia, the presence of three and diastema.

Restoration process can be executed:
seals;
crown;
bridge constructions;
tabs (direct method);
artificial teeth.

Conditions of work with composites.
1. Work in "four hands" with the dentist assistant. His duties are:
- conducting teeth cleaning before restoration;
- Participates in the identification of colors and shades;
- participates in the application of the rubber dam;
- monitors the condition of the patient;
- provides a dry working area;
- assisting in the construction of the restoration;
- conducting polymerization composite lamp;
- controls the working area purity;
- polishes teeth restored.
2. Equipment of working place:
- dental unit should be oil-free compressor, vacuum cleaner and saliva ejector. Dissection of the tissue of the tooth tip turbine is made with a mandatory water supply that provides protection against overheating of the tooth;
- chair should be unfolded, because Restoration takes time;
- temperature in the cabinet 21 - 23 ° C. At a lower temperature composite materials lose ductility at higher - become flowable, viscous and poorly amenable to plastic working;
- presence of a cofferdam, retraction filaments insulating vestibular matrices in combination with the interdental wedges;
- fotopolimerizator with wavelength 450 - 500 nm. It is recommended to check it weekly tester such as "Cure-Rite" for the early detection of decreasing wavelength. Contamination of the surface of the fiber lead-out leads to a decrease in the lamp power to 30%;
- when working fotopolimerizatorom eyes should be protected by special glasses with glass of orange or orange spectrum plexiglass shield, as a direct effect of the rays are extremely harmful to the eye.

The standard technique of working with composites

The main requirement of the reduction of light-cured dental composite materials is the accurate and methodical compliance instructions. Only when all of the process steps is achieved the necessary adhesion of the composite to the tooth structure and get a good cosmetic result. Despite some differences in the use of composites of different companies, there are general principles at work.

Stages of restoration

Stage 1 - preparation for restoration.
Assistant conducts professional hygiene. It is known that in addition to the tooth surface is pellicle plaque, excluding direct contact of the gel and acid components of the adhesive system with enamel. It is necessary to produce mechanical removal of the plaque and brushes preventive rubber cups, filled with cleaning pastes containing no fluorine (increases the acid resistance of enamel) and oil (restorative pollute surface and degrade the adhesion). Optimum results are achieved by using Handy - blaster removing plaque using an abrasive powder (based on the soda), applied to the tooth surface with water under pressure.
By indications carried anesthesia, after which the tooth is isolated from saliva using a rubber dam, which provides absolute dry working area, protects the patient from inhaling various substances used in the treatment and ingestion tools. The use of rubber dam is a guarantee of the quality of work of the doctor.

Stage 2 - preparation.
Preparation guidelines when working with fotokompozitami znachitelbno differ from the principles of preparation for Black: it must be gentle. When dissection decalcified enamel must be removed and changed in color enamel. Held removing necrotic dentin softened and pigmented. It is performed on the enamel seam, i.e. at an angle of 45 ° bevel around the edge of the cavity for vertical prisms disclosure. It is used to increase adhesion and masking the transition line "enamel - composite."
Drills used for the preparation and processing of surface restoration, are divided into two groups: carbide having a different number of blades, and diamond burs of different sizes. Bora-only preparation have black, blue and green stripes on the leg. Finishing burs with a red stripe rough surface is used for treatment and disposal of excess material, a yellow - grinding surface restoration, a white stripe - to create an ideal surface for polishing the finished plastic heads and pastes.
Stage 3 - the imposition of pads.
The purpose - protection against possible neblpgopriyatnogo pulp exposure from composite. Gaskets may be of 2 types: therapeutic and insulating.
Therapeutic superimposed with deep caries (the gentle preparation processes lead to injury of odontoblasts, and also a direct impact on the microbial metabolic products of pH drop in vasodentin) or to the exposed accidentally tooth point cavity without pulpitis symptoms. In order to provide an anti-inflammatory action on the pulp and stimulation of odontoblasts to enhance the mineralization and deposits of substitution dentin functions use the calcium-containing paste, for example, "Dycal" (Dentsply), "Life" (Kerr), "Calcimol" (Voko), which impose on the problem areas bellied probe as enough of a trace amount for medical treatment of the pulp. A thick layer of the material worsen the adhesion of the seal.
Isolate medical need gasket glass ionomer cement, if used adhesive system comprises acetone which is partially destroys materials based on calcium hydroxide. The insulating spacer may be of two types: linear and volumetric. Linear pad only performs an insulating function and volume, in addition to insulating, has yet a second function - volume recovery of lost dentin after preparation (technique "Sandwich"). Application of the adhesive last generation systems (Prime & Bond 2.1 and Prime & Bond NT "Dentsply" firm) eliminates the insulating spacers due to

penetration of adhesive systems deep in the dentinal tubules (not less than 100 microns) and their subsequent polymerization. It is impossible to apply as the insulating gasket phosphate cement,

Stage 4 - etching of enamel and dentin.
Purpose: to carry out the cleansing of the cavity surface and improve adhesion of the composite to the tooth hard tissue.
After conditioning the enamel improved wettability enamels, increases the surface area of the composite compound and enamel. During etching to cut enamel prisms are formed grooves that improve mikroretentsiyu composite by creating mikrouderzhivayuschego relief. etching technique has been proposed in 1955 by M. Buonokore.
During etching of enamel lost irretrievably enamel layer about 10 microns thick. Changes in the enamel (holes, slots) reach a depth of 30 - 50 microns. The etched enamel, not composite-coated, easily colored ekzokrasitelyami.
Advantages of dressing:
good marginal adaptation;
sufficient adhesion to the enamel composite;
strengthening mounds deprived of dentin resulting from the preparation.
The etching process starts with enamel and lasts 30 seconds. The enamel has a 36% orthophosphoric acid, and after 15 seconds. acid applied to the dentin for 15 seconds. Then all of the acid washed with copious amounts of water for 30 seconds. Then the enamel and dentin light dried air jet directed on the enamel, and better conduct removal of water vacuum. You can not overdry dentin, as there will be a collapse, that is, disorientation, collagen fibers and deteriorate the adhesion to dentin. The latter should not be on the surface free of water droplets, but should be moist ("sparkling dentin").
The purification occurs during etching of the cavity surface on which during preparation formed a so-called "smear" layer consisting of dentin debris, desquamated epithelial cells and microorganisms. Smear layer is topographically divided into proper and smear layer plugs which seal dentinal tubules. Located on the surface of the dentin smear layer lowers its permeability and prevents the formation of a hybrid zone. If it is left to be degraded and the composite adhesion occurs secondary caries due to the development of microorganisms. When etching dentin acid causes dissolution of smear layer and plugs disclosed dentinal tubules, dentin permeability increases for adhesive systems. Hydroxyapatite crystals are dissolved and converted into the dentin structure
It should be noted that the etching overdried laying of glass ionomer is unacceptable, because it leads to the creation of a depot acid seal to the development of serious complications. A sign of delamination is overdried glass ionomer lining edges of the cavity walls.
Enamel after etching and drying looks matte and dentin - sparkling.

Step 5 - priming dentin and enamel surfaces.
The composite material due to its hydrophobic properties is capable of forming a compound with moist dentin. Ensure their connection can chereh pad of glass ionomer or compomer, or via a primer, which promotes the formation of dentin hydride zones and seals the dentin, i.e. It protects it from temperature and other effects due to blockage of the dentinal tubules. Adhesive - the second component of the bonding system - primer provides a compound treated dentin and etched enamel composite material. The adhesive layer should ideally be about 30 microns. Visually, it looks like a slightly damp surface.
The term "priming" refers to greater use in the bonding systems of the 4th generation (ProBond type) when the dentin primer and adhesive were in different bottles. Currently there are 5 Bondingovye generation system (Prime & Bond 2.1 and Prime & Bond NT firm "Dentsply") in one bottle. This universal linking system for enamel and dentin in its composition has PENTA phosphate ester type, that connects directly to the tooth calcium. Hydrophilic properties of these systems provide a good penetration into the dentin layer and the formation of a hybrid resin and

dentin. Acetone, part of the systems, is a carrier polymer matrix and better hydrophilic carrier particles.
Thus, the essence of this stage is to apply the adhesive to the enamel and dentin with a brush or sponge for 30 seconds. for its penetration in the dentinal tubules. Next, the removal (drying) excess acetone contained in the adhesive system, a jet of air from an air gun or using a vacuum cleaner and polymerization for 10 seconds. The strength of the bond of the adhesive and the dentin with properties equivalent to the strength of dentin tear. According to A. Gryuttsner ("DentArt" №2 - 96, S. 33), "more likely to happen razrvyv in the dentin than in the place of attachment of the adhesive to the dentin, that is, the mechanical properties of the dentin even inferior strength of the adhesive attachment to dentin."

Stage 6 - the introduction of a portion of the composite and its plastic modeling.
Adding the composite tool made from Teflon or titanium coated with trowelled more plugger.
Light curing composites superimposed portions of no more than 2-3 mm thick. Layered polymerization allows you to:
arrest shrinkage, as microlayers give significantly lower total shrinkage than a thicker layer of composite;
obtain more complete the polymerization (polymerization maximum is 70% - 80%). The greater the percentage of the polymerization, the less "is not wired" in the chain of monomer molecules that may have a toxic effect on the tooth pulp;
assess the correctness of the choice of colors and in a timely manner to correct it if necessary.

Adhesive Technology - this construction restoration tooth composite by gluing fragments using surface layer inhibited by oxygen. The surface layer is formed by the polymerization shrinkage of the composite and the composition resembles unfilled adhesive system. The surface layer is completely inhibited by oxygen, i.e. the polymerization reaction in this layer no longer possible. The surface of the polymerized with access air composite portion is obtained shiny, "wet" and is easy to remove the tool or glove. Layer inhibited by oxygen, as a by-product of polymerization, and plays a positive role, creating the conditions for good composite portion of the compound introduced with a previously polymerized surface (adhesive system or composite).
If the polymerization is carried out without oxygen access (by the polymer matrix), the surface layer has a smooth glossy surface, but is permeable to dyes and easily damaged tool. According to the requirement of the standard techniques to be removed throughout the restoration surface. If such a layer is inside the structure - is a line of mechanical weakness, staining food dyes and separation as a result of the impact of chewing loads.
Control test:
Checking layer inhibited oxygen
The prepared surface looks shiny, "wet" gloss can be easily removed.
Adding composite portions
When making portions of the composite pressure created locally removes layer inhibited by oxygen, and a portion of the composite is adhered to the prepared surface, breaking away from the tool. If the composite reaches for the tool, this means that the glued surfaces contaminated gingival or oral liquid or offline layer thereon inhibited by oxygen. The insertion portion of the composite should be removed and repeat processing adhesive bonding surface.
Plastic forming the composite portion
When trying to separate the composite tool portion from the bonding surface it is deformed, but not separated. If it separates - plastic processing in such a case should be continued until a complete gluing.
When filling the cavities of the first class of material need to impose slanting layers: the first - from the middle bottom of the cavity to the edge of the masticatory surface. Glare initially conducted through the enamel to the vestibular or oral side, then - perpendicular to the surface of the composite. The next layer is applied in an oblique direction other and glare produced with

opposite side. Thus it is achieved a good marginal seal and prevents separation from the composite enamel due to shrinkage.

Step 7 - polymerisation of the composite portion.
In the curing of any composite material shrinkage occurs. In composites chemical curing shrinkage is directed towards the highest temperature, ie. E. To a pulp. Shrinkage light-cured composites is directed to the light source, i.e., the lamp.
Initial curing composite portion visible blue light in a predetermined direction is performed (obtaining directional shrinkage with the possibility of further compensation) for 10 seconds. Checking the probe, it is necessary to make sure that it is solid. After the main shrinkage polymerizable composite portion is irradiated by placing the optical fiber at the minimum possible distance, measured perpendicular to the surface. The purpose of this stage is to achieve the highest possible degree of polymerization for the remaining irradiation time (polymerization time required is generally defined only manufacturer's instructions applied composite). The polymerization layer is formed, inhibited by oxygen on the outer surface and thus creates conditions for making a new composite portions.
CONTROL TEST
When finishing
A compound composite and monolithic dental tissue looks at the surface and in depth restoration no white tear strip therebetween.

Step 8 - finishing restoration.
Finishing restoration consists of:
a) modeling a restoration surface shape;
b) forming the surface of the restoration.

9 stage - control tests and the restoration of correction.
Restorations examined by a doctor in natural daylight and artificial light. Attention is drawn to the tooth shape, color, transparency and surface quality. It should be no visible cracks or air pores. When detecting any - or their defects should be eliminated by repeating the steps from standard techniques of restoration etching (if the defect borders enamel) or adhesive application, if the defect is only in the composite.
Upon detection of the optical border seal in the form of a visible crack it better to "broaden" boron and again to perform all phases of work.

10 stage - polishing.
Polishing pastes produced Enhens system and rubber head.
1. Polishing paste Prisma Gloss:
a) 30 seconds. each surface without water;
b) 30 sec. each surface, with the addition of water dropwise until frothing paste.
After compliance polishing paste time wash with water and dry the surface of the restoration. Already at this stage should be restored luster surface. The contact surfaces are polished using a strip and floss.
2. Polishing paste Prisma Gloss Eksta Fine:
a) 30 seconds. each surface without water;
b) 30 sec. each surface, with the addition of water dropwise.
After this paste is washed with water, dried surface of the restoration. The criterion of good polishing - gloss is the same as the gloss polished enamel ("dry" shine). If such brilliance not, it is better to repeat polishing.

Stage 11 - Polymerization finish.

There is no consensus on the final polymerization is not. If carried out, then each surface shine restoration for 1 minute. The maximum effect is achieved when the light beam perpendicular position relative to the surface of the tooth.

Practical lesson №1

Topic: Dental offices (therapeutic, surgical, parodontolonicheskoe, physiotherapy, etc.). Responsibilities Jr. med.personala. Documentation. Sterilization.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Examine dental offices (therapeutic, surgical, parodontolonicheskoe, physiotherapy, etc.). Responsibilities Jr. med.personala. Documentation. Sterilization.
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and attendance 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened interactive method 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

The use of "dark LOSCHADKA":

To carry out the game you need:

1. Printed on sheets of options issues (10 options).
2. Number plates on the number of issues of options (10).
3. Number plates to draw students.

Test questions on employment:

1. What are the offices in the dental office?
2.Ploschad dental office.
3.Vysota dental office.
4.Osveschenie dental office.
5.Osnaschenie dental office.
6.Obyazannosti doctor.

answers:

1. What are the offices in the dental office?

Dental offices compartment contains the following: a therapeutic, surgical, orthopedic, periodontal, radiological, bell, physiotherapy.

2.Ploschad dental office.

According to the status quo, dentist per doctor should occupy a minimum area of 14 square meters. meters. For each additional seat is allocated 7kv. meters. In the presence of additional seats for universal installation area increases to 10 m² .metrov.

3.Vysota dental office.

Height dental office must Bat least 3 meters, and the depth at unilateral daylight should not exceed 6 meters. Walls, floors must be smooth, without cracks (in connection with the use of amalgam), painted in bright colors.

4.Osveschenie dental office.

In the dental office should be plenty of natural light, preferably on the north side in order to avoid significant differences in the brightness

jobs, as well as overheating in the summer. Illuminated ratio (glazed window surface to floor area) should be 1: 4-1: 5.

Cabinet should have a general artificial lighting and local as a reflector of the dental unit. Working with amalgam should be done in a fume hood where and amalgamosmesitel.

5.Osnaschenie dental office.

Dental office must have the following equipment:

In the dental office should be a separate place for the doctor honey. sisters, orderlies. Doctor workplace provides dental unit, chair, table for drugs and materials, spiral chair. Workplace nurses should include a table for sorting tools, Dry-air cabinet, sterilizer, sterile table and screw the chair. Workplace nurse -table used for sorting tools, tools for sink cleaning.

The office should be the cabinet "A" and "B", as well as a desk.

Cabinet ventilation should be provided, having inlets and transoms.

6.Obyazannosti doctor.

The doctor in charge of the whole process of the treatment and its outcome.

The text of the practical classes

-Height dental office must Bat least 3 meters, and the depth at unilateral daylight should not exceed 6 meters. Walls, floors must be smooth, without cracks (in connection with the use of amalgam), painted in bright colors.

-In the dental office should be plenty of natural light, preferably on the north side in order to avoid significant differences in the brightness of jobs, as well as overheating in the summer. Illuminated ratio (glazed window surface to floor area) should be 1: 4-1: 5.

Cabinet should have a general artificial lighting and local as a reflector of the dental unit. Working with amalgam should be done in a fume hood where and amalgamosmesitel.

-Stomatologichesky cabinet must have the following equipment:
In the dental office should be a separate place for the doctor honey. sisters, orderlies. Doctor workplace provides dental unit, chair, table for drugs and materials, spiral chair. Workplace nurses should include a table for sorting tools, Dry-air cabinet, sterilizer, sterile table and screw the chair. Workplace nurse -table used for sorting tools, tools for sink cleaning.
The office should be the cabinet "A" and "B", as well as a desk.
Cabinet ventilation should be provided, having inlets and transoms.
-Doctor in charge of the whole process of the treatment and its outcome.
-Sanitarka has the following duties:
1.Do started and 3-4 times during the working day wet cleaning cabinet using disinfecting solution.
2. After each patient to wash glasses and clean spittoon, disinfecting solution processing.
3.Soglasno instructions to carry out decontamination of instruments and preparing them for sterilization.
4.Soderzhat clean workplace dentist.
5.Soblyudat safety and fire safety regulations.
6. In the end of the shift handle office disinfecting solution.
-Medsestra has the following duties:
1.Kontrol the storage and consumption of drugs.
2.Vypolnenie aseptic and antiseptic rules.
3.Provodit sterilization of dental instruments and cotton rolls
4.Ezhedzhnevnoe filling ostomy documentation. office
A) Drug consumption in the closet magazine A and B
B) sterilization monitoring log
B) Journal of passive and active immunization
5.Kontrol for the shelf life of drugs
6.Kontrol for the protection of property
7.Podgotovka office to receive patients
8.Soglasno instructions maintain control of nurses.
-In the clinic for each diseased plants medical history (form №043 / y). Monthly records of patients filled in the form №39-ostomy.
At the reception history of the plant's disease (a form №043 / y), which puts the number recorder history and fills the passport of the (full name, date of birth, address, place of work). A doctor in the medical diagnosis records complaints, patient transferred and related diseases, the history of the disease, the objective data of the external inspection and oral health. Filled dental formula: Missing teeth are designated - "O", the presence kariesa- "C" pulpita- "P" periodontita- «Pt», plomby- "P", periodontitis and periodontal - "A", the degree of mobility of the teeth - " I, II, III », the presence of the crown -" K "artificial zub-" I ". Determined and recorded bite of the patient, the condition of the oral mucosa .If necessary, according to indications, the patient is a radiograph, and data is recorded in the history of the disease.
-Have the following types of sterilization:
Boiling, pressurized steam, dry heat and cold sterilization types.
-Kipyachenie used to sterilize instruments tselnometollicheskih. To reduce the formation of scale in the sterilizer poured into distilled water and baking soda are added. Duration of not less than 30 minutes from the start of boiling.
Pairs pressurized sterilized dressings, linen, cotton balls, turundy in steam autoclaves or electrical. Shelf life of the material after sterilization, no more than 3 days.
- Dry heat sterilization is used to neutralize all-metal tool within 40 minutes, of which 25 minutes is necessary to heat the tools to a predetermined temperature and for 15 minutes-neutralization.
- cold sterilization is used for the processing of cutting tools and dental mirrors. They are immersed in 96% alcohol for 2 hr. Store tools in a triple solution:

Rp: Formalini 20,0
Ac.carbolici 50,0
Natrii hydrocarbonatis 15,0
Aq. destillatae ad 1000 ml
DS: For the dental office.
For cold sterilization can use 1% chloramine solution of 6% hydrogen peroxide solution, 3% formalin solution, 1% chlorhexidine solution, 10% solution Dimexidum et al.
Best Mode for sterilizing handpieces - boiling in liquid paraffin, followed by centrifugation. But this method of sterilization is used in maxillofacial surgery. In offices TC disinfection lugs carried by carefully wiping the outer parts of a double channel and boron sterile cotton-gauze pad moistened with 1% solution of chloramine, 3% formaldehyde solution or in the ternary solution for cold sterilization. Duration cold sterilization using chloramine solutions of formaldehyde and 30 minutes, and the ternary solution is -45 minutes.
-As dental office cabinet should be "A" cabinet for toxic and "B" for potent drugs (arsenious paste acid).
-Working place dentist's office includes a drill, a chair, a table, a chair screw. -Working place nurses includes: a table for sterile instruments, wardrobe "A" and "B", sterilizer, cabinet for storing tools. -Method chemical (cold) sterilization sterilized dental instruments such as dental mirror, a plastic spatula.
-The best one is sterilize tips boiling them in vaseline oil.
-Vatnye tampons turundy, rolls, gauze sterilized by autoclaving.

Clinical activity №1

Topic: Inspection of the vestibule of the mouth.

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Requirements to stom.kabinetu, physician responsibilities, nurses, orderlies, documentation, sterilization types.
The task of the training session:	Teach students to correctly and consciously observe the necessary precautions while in the dental office. Especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking, responsible approach to their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of the organization and equipment of the dental cabinet, sterilization techniques, record keeping is essential in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

№2 practical lesson

Topic: Survey Methods stomatologicheskiz patients. Disease history.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Examine odontogenic tumors and tumor formation (ameloblastoma, odontoma, odontogenic fibroma, cementoma). Cysts of the jaws.
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnкm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

The use of "Daisy"

Test questions on employment:

1. What are methods of inspection?
2. Basic methods of examination.
3.Provedenie anamnesis.
4. Conducting questioning.
5. How to inspect the oral cavity?
6. How is held percussion?

answers:

1. What are methods of inspection?
In dentistry allocate basic and advanced methods of examination of the patient.
2. Basic methods of examination.
Basic methods of examination: questioning the patient (medical history), physical examination (external inspection, the inspection of the oral cavity, teeth: percussion, palpation, probing).
3.Provedenie anamnesis.
Questioning the patient -sobiranie anamneza- is the first and very important stage of examination of the patient. In addition to identifying complaints that indicate signs of disease, questioning allows to evaluate the course of the disease and the treatment.
4. Conducting questioning.
On questioning the patient to find out: the patient's complaints, past illnesses, conditions, allergic analysis. Properly conducted questioning of the patient in most cases, allows to correctly guess the diagnosis. Which in the future must be confirmed by objective methods of research. However, one should not overestimate the role of questioning.
5. How to inspect the oral cavity?
Inspection starts with the oral vestibule of the mouth during examination of closed jaws and relaxed lips.

Primarily visiting red border of the lips and corners of the mouth. Pay attention to the color. Education scales, crusts. Then inspect the inner surface of the cheeks define a bite, visiting gum. Then proceed to study the actual oral cavity. Produce a general inspection, paying attention to the color and moisture of the mucous membrane. On examination, pay attention to the language of its size, shape, condition papillae. When viewed from the bottom of the oral cavity pay attention to the mucosa.
6. How is held percussion?
Percussion-tapping on zubu- used to determine the status of periodontium. Forceps or pen tip tapped on the cutting edge or chewing surface of a tooth. If there is no periodontal inflammation focus, percussion painless. Distinguish vertical percussions when the direction coincides with the punches and the horizontal axis of the tooth

The text of the practical classes

In dentistry allocate basic and advanced methods of examination of the patient.
-Basic methods of examination: questioning the patient (medical history), physical examination (external inspection, the inspection of the oral cavity, teeth: percussion, palpation, probing).
-Rasspros patient -sobiranie anamneza- is the first and very important stage of examination of the patient. In addition to identifying complaints that indicate signs of disease, questioning allows to evaluate the course of the disease and the treatment.
-On questioning the patient to find out: the patient's complaints, past illnesses, conditions, allergic analysis. Properly conducted questioning of the patient in most cases, allows to correctly guess the diagnosis. Which in the future must be confirmed by objective methods of research. However, one should not overestimate the role of questioning.
-Inspection starts with the oral vestibule of the mouth during examination of closed jaws and relaxed lips.
Primarily visiting red border of the lips and corners of the mouth. Pay attention to the color. Education scales, crusts. Then inspect the inner surface of the cheeks define a bite, visiting gum. Then proceed to study the actual oral cavity. Produce a general inspection, paying attention to the color and moisture of the mucous membrane. On examination, pay attention to the language of its size, shape, condition papillae. When viewed from the bottom of the oral cavity pay attention to the mucosa.
-Percussion-tapping on zubu- used to determine the status of periodontium. Forceps or pen tip tapped on the cutting edge or chewing surface of a tooth. If there is no periodontal inflammation

focus, percussion painless. Distinguish vertical percussions when the direction coincides with the punches and the horizontal axis of the tooth when the punches have lateral direction.
-Probing -determination, with the presence of pain cavity walls and the bottom of the cavity. Held angle probe.
-Palpatsiya- oschupyvanie- used to determine the swelling tumor seal motility of organs or tissues of the mouth. tooth mobility is determined by rocking the forceps. There are 3 degrees of mobility 1 in the vestibular--smeschenie oral napravlenii.2 - in the vestibular-oral and 3- laterally on the tooth axis (vertical direction)
-K Additional tests include elektroodonto- diagnostics (EDI).
EDI provides a more comprehensive state of Repose of the pulp and the tissues surrounding the tooth.
Figures set threshold excitation pulp in normal and pathological conditions. Healthy teeth respond to currents of 2-6 mA. Reducing electroexcitability do20-40 microamps indicates the presence of inflammation in the pulp. The reaction slurry on a current of 60 mA points to necrosis of the coronal pulp. If it occurs necrosis and root pulp, the tooth reacts on a current of 100 mA or higher. When expressed morphological changes in periodontal tooth reacts on currents more than 200 mA.
-In dentistry is often used near-focus intrapartum contact radiography. Tremendous help the doctor has radiography in the treatment of root canals (determined by an X-ray their direction, the filling rate, throughput), when determining the condition of the surrounding tooth root tissue, detection of pathological processes in bone and its structures. The principle of the method consists in the fact that X-rays in dependence on the density of the subject portion to a greater or lesser extent delayed tissues. tooth enamel yields a dense shadow and dentine and cement - less dense than the enamel.
-Thermodiagnostics -determination tooth razdrazhiteli- reaction temperature at one of the oldest physical methods commonly used to determine the state of the pulp. The ester used as an irritant, but usually cold or hot water which is a strong irritant due to the higher heat capacity. The simplest method is to irrigation water from the syringe teeth.
-Laboratory diagnosis is achieved by using both the general clinical and complex biochemical and morphological techniques. In dentistry, microscopic, serological tests are widely used, diagnosis of drug allergy, as well as general clinical (clinical analysis of blood, urine, etc.) Methods.
-As dental practice palpation methods, EDI and percussion setting is used for the purpose of preliminary diagnosis.
-Depth cavity is determined by the probe. -K additional methods of examination in dental practice are allergological and immunological studies.
-By tooth X-ray snapshot can judge the state of dental hard tissues, as well as on the state of the surrounding tooth tissues.

Clinical activity №2

Mavzu: Inspection proper oral

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	To familiarize students with the basic and advanced techniques of dental examination of the patient.
The task of the training session:	To familiarize students with the basic methods of patient examination (questioning, inspection, percussion, palpation). - To familiarize students with additional methods of examination (EDI,

	radiography, thermodiagnostics). - Teach students to correctly and consciously carry out examination of the patient, observe the necessary precautions while in the dental office. Especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking, responsible approach to their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of methods of dental examination of the patient is essential in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical lesson №3

Topic: Caries. Classification. Etiology. Pathogenesis. Clinic.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Examine odontogenic tumors and tumor formation (ameloblastoma, odontoma, odontogenic fibroma, cementoma). Cysts of the jaws.
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria

Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnкm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

The use of "Daisy"

Test questions on employment:

1. The etiology of dental caries
2. Classification of dental caries
3. Differential diagnosis of dental caries
4. The pathogenesis of dental caries

The text of the practical classes

An important role in the occurrence of caries play oral health, kind of bite, tooth arrangement density, nature and intensity of salivation, quality oral care. Frequency caries of teeth of different groups varies. Most often affects the first molars, then second molars, premolars and incisors, canines. Theories of dental caries. Chemical-parasitic theory of Miller (1884). According to this theory, carious tooth decay occurs two step:

Demineralization of dental hard tissues.

Microbial degradation.

1-step lactic acid dissolves inorganic substances enamel and dentine.

2-dentin destruction of organic matter by proteolytic enzymes that are produced by microorganisms.

The author has confirmed this theory by experiment, which consisted in the fact that he prevented extracted teeth on different dates in a mixture of saliva with a well-chewed bread and meat with the addition of 2-4% sugar. After a certain time after incubation of the mixture at a temperature of-37C enamel demineralization observed, similar to that which occurred when dental caries in human mouth. Thus, the author of the theory of chemical and bacterial tries to represent complex pathobiological process in a simple chemical reaction between the salt and acid. Such mechanical explanation completely ignores the body part in a process of tooth decay is formed.

No less important was the event of bacterial theory, according to which many types of bacteria found in the mouth, are the causative agents of caries. In accordance with this theory, the bacteria penetrate the thickness, enamel destroy organic, its proteinaceous substance.

The resulting disrupted communication organic composition enamel inorganic consequence of this is the occurrence of a defect of enamel, dentin and then.

Essentially both of these theories is narrowly lokalisticheskimi and mechanical. Based on these theories, it is impossible to find an explanation for the fact many manifestations and course of the caries process. You can not focus on theory, viewing the process in a living organism is the last connection. In the body there are so many factors of neutralizing the action of various chemical and physical influences.

Physico-chemical theory DA Entin The physicochemical properties of saliva and teeth. He believed that the dental tissues are semipermeable biological tissues, which are capable of passing through the osmotic currents. Due to the presence of osmotic pressure between the pulp of the tooth and oral cavity. According to Entin osmotic currents have a centripetal direction and ensure normal supply conditions of dentin and enamel. Those. pulp-crown-tooth and saliva. He denies the return receipt micronutrients. According to a result of endogenous Entina environmental changes umenshaetsa motion intensity thereby deteriorating tooth tissue metabolism varies permeability currents tooth tissues.

However, in theory, there are many unclear Entin for specific mechanisms of caries process. Recently experimentally proved that the metabolism is not only a pulp but oral supplied significant amounts of organic and inorganic substances. This is proven by a radiometric survey.
IG Lukomsky proposed biological theory of caries. The basis of this theory is the concept of providing for inclusion of the enamel as a living tissue in a general system of neuro-trophic connection with the organs and systems of the body as a whole and the physiological relationship between the tooth enamel and the body. The caries process is not considered as a chemical or physical process, as well as a biological process. According to this theory, exogenous factors cause the body's violation of mineral metabolism, causing fatigue occur first, followed by debility odontoblasts, whose main role is to implement the trophic functions.

Thus the development of dental caries is represented by Lukomsky as pathobiological complicated process, the cause of which is a combination exo and endogenous factors when overall health plays a decisive role in the formation of conditions against which the possible development of the disease.

noteworthy **EE theory Platonov**Which considers tooth caries as a result of changes in neural regulation leading to trophic razrascheniem tooth tissues and especially enamel.
1949 AE Sharpinyak cause of tooth caries explained local depletion of enamel proteins that can occur when the accelerated flow deceleration resynthesis protein in one or the other simultaneously. Slowing resynthesis Belkova structures, according to the theory of the author and is due both to the lack of, or low in one of the essential amino acids in the human diet, in particular lysine, arginine.
Currently there are over 400 theories of caries. One of the latest concepts proposed Rybakov AI and V.S.Ivanovym 1973.
(Concept of counter effects on the pulp).
According to this concept the cause of occurrence and the development of dental caries is associated with many aspects, including the age aspects of the tooth-jaw system, influenced by endogenous and exogenous factors during the formation of the jaws and teeth, the relationship of the teeth-jaw system with internal organs and systems of the body, and pulp state.

The author believes that the etiology of dental caries is polietiologichesky origin.
Dental caries is divided according to localization, depth of lesions, clinical course and other features.

The clinic use topographic classification at which distinguish spots step surface caries, secondary caries, deep caries. All four stages of the decision to integrate into the group of simple or complicated caries. complicationcaries is called pulpitis and periodontitis, ie, inflammatory diseases of the pulp and periodontal.

Caries treatment consists of the activities of general and local character. General Events are not etiological, and aim to improve the defenses of the organism resistance and the tooth tissues. appointed vitamins and mineral components this purpose.

Patient complaints with initial caries usually has. Detection of caries at a stage of spot chewing teeth group on the oral surfaces of the front teeth often happens during the routine inspection. When the location of the carious spots on the visible surfaces of the front teeth can appear on a complaint aesthetic disadvantage. Spot at initial caries can be classified as white spot and as a pigmented. Sometimes there may be unpleasant (but not yet painful) sensation when exposed to

the lesion chemical stimuli from food. Probing the affected area usually does not reveal the presence of roughness of enamel in the art. When carrying out a dental probe on enamel surfaces in the spot changes not defined. At the same time, and perhaps a certain roughness, but the degree of its severity nevertheless minimal. The absence of roughness will be defined by the presence of an unmodified surface layer of enamel structure is subjected to reduction due remineralizing properties of saliva.

Of additional methods of examination should be noted holding method of vital staining. By increasing the permeability of the enamel becomes possible passage therethrough of molecules of dyes. Thus, the application of a dye solution (e.g., methylene blue) staining is observed in the enamel carious spots in dye color area varying degrees of intensity. Other additional methods are not noted for changes.

Initial caries should not be confused with non-carious lesions such as enamel hypoplasia and fluorosis. Both the data non-carious lesions, cavities and the stains in the step may be characterized by the appearance on the surface of the enamel lesion as a spot. At the same time, there are certain features that are not necessary to forget in their delimitation. Enamel hypoplasia and fluorosis are non-carious lesions arising to teething. In the presence of non-carious spots on the origin of the visible surface of the patient usually can point to their extremely long-term presence. The caries process is associated with the action of a number of factors, chief among which are carbohydrate food microbes and their interaction. Their effects on the enamel can be carried out only after the eruption of the teeth. Accordingly, the caries develops already after teething. If you suspect a lesion dental fluorosis sure to assess medical history. Development of this type of non-carious lesions characteristic for areas where the fluorine content in the water that people use as drinking or cooking, is greater than 1.5 g in 1 l. The fluorine content in drinking water is considered to be optimal at a concentration of 1.0 g in 1 l water. At the same time, the water content in fluorine concentration at promotes caries process. This is attributed to the fact that fluorapatite formed upon incorporation of fluorine into the structure of hard tooth tissue, enamel imparts strength, it becomes more resistant to damaging factors. If you suspect a lesion dental fluorosis sure to assess medical history. Development of this type of non-carious lesions characteristic for areas where the fluorine content in the water that people use as drinking or cooking, is greater than 1.5 g in 1 l. The fluorine content in drinking water is considered to be optimal at a concentration of 1.0 g in 1 l water. At the same time, the water content in fluorine concentration at promotes caries process. This is attributed to the fact that fluorapatite formed upon incorporation of fluorine into the structure of hard tooth tissue, enamel imparts strength, it becomes more resistant to damaging factors. If you suspect a lesion dental fluorosis sure to assess medical history. Development of this type of non-carious lesions characteristic for areas where the fluorine content in the water that people use as drinking or cooking, is greater than 1.5 g in 1 l. The fluorine content in drinking water is considered to be optimal at a concentration of 1.0 g in 1 l water. At the same time, the water content in fluorine concentration at promotes caries process. This is attributed to the fact that fluorapatite formed upon incorporation of fluorine into the structure of hard tooth tissue, enamel imparts strength, it becomes more resistant to damaging factors. that people use as drinking or cooking, is greater than 1.5 g in 1 l. The fluorine content in drinking water is considered to be optimal at a concentration of 1.0 g in 1 l water. At the same time, the water content in fluorine concentration at promotes caries process. This is attributed to the fact that fluorapatite formed upon incorporation of fluorine into the structure of hard tooth tissue, enamel imparts strength, it becomes more resistant to damaging factors. that people use as drinking or cooking, is greater than 1.5 g in 1 l. The fluorine content in drinking water is considered to be optimal at a concentration of 1.0 g in 1 l water. At the same time, the water content in fluorine concentration at promotes caries process. This is attributed to the fact that fluorapatite formed upon incorporation of fluorine into the structure of hard tooth tissue, enamel imparts strength, it becomes more resistant to damaging factors.

Since hypoplasia and fluorosis to develop teething characteristic will location of the pathological process to the enamel surfaces of teeth, which are developed at one time. Surfaces on which lesions are located, do not contribute to the retention of plaque (vestibular surface protuberances posterior teeth), dental plaque is not a factor in facilitating the carious lesions. The caries process is not characterized by such features. Carious spots usually located on the enamel surfaces in the unit quantity. This is not the spots at hypoplasia and fluorosis. Basically in these diseases it is marked on the tooth surface a large number of spots. An important diagnostic principle is vital dye staining enamel solutions.

2. The clinical picture of a superficial caries

Superficial caries is characterized by a significant lesion which affects also the surface layer of enamel. Patient with a surface caries nothing can disturb. He may also complain of the presence of cosmetic defects in the form of spots on the surface of the teeth. Perhaps hearth caries detection during inspection, its detection on radiographs (contact surfaces). At the same time quite often a superficial caries observed the appearance of pain in response to chemical stimuli in the course of the meal, which is the reason for treatment to the dentist. The pain may also occur in response to one or another temperature if localized lesion is cervical area of the teeth. In the cervical region layer of hard tissues is significantly less than the remaining portions of the tooth surface, the pulp chamber is located much closer. This determines the fact that in the fifth grade at Black's very likely the presence of pain in response to stimuli, even when the temperature surface caries. It is also important to note that the pain reaction in response to irritants is a concomitant and passes at its termination.

When the inspection chamber at a superficial caries is detected spot. It is the same as for initial caries, can be white or pigmented. The process involves the superficial layer of enamel, in this connection, when carrying out such determination sensing rough surface in this area. Additional tests suggest mandatory TERMOTEST. Perhaps the absence of pain reaction or its availability, especially at the location of the carious focus in the cervical region. In carrying out the vital dye staining characteristic lesion dye. The color intensity can be varied. Carrying elektroodontometrii does not detect changes in the indices at electroexcitability pulp surface caries.

For diagnosis surface caries necessary to differentiate it from other forms of caries (primary and secondary) and non-carious lesions (such as hypoplasia, fluorosis, erosion wedge defect). With all these nosology detected lesions affecting the enamel surface.

From the anamnesis of patients with hypoplasia and fluorosis is characterized by the presence of the identification of long-term injury elements, and changes in these elements is observed. When hypoplasia and fluorosis due to the fact that the causative agent was acting on the teeth at a time when there was their formation, will be those slain by the teeth, which during this period were developed. Accordingly, detection of foci characteristic of carious lesions on the teeth that are approximately the same periods eruption. Caries is characteristic is not. Also, when there is no symmetry of caries lesions, which is natural for hypoplasia and fluorosis. Wedge-shaped when viewed from the defect is detected as a defect in the form of a wedge located in the cervical region of the teeth. Sensing in the presence of a defect bottom surface caries reveals a rough surface, whereas when hypoplasia, fluorosis and initial caries this will not be detected. They are characterized by a smooth surface in the area of the defect, brushed with an initial caries and shiny with carious lesions. Location of the lesion with dental caries often reflects the relationship with its main etiological factor - the entrapment of plaque. For non-carious lesions of this relationship is not observed. When surface caries characteristic is the presence of hyperesthesia, m. E. Improve the sensitivity of the teeth to the influences to which under normal conditions of indifferent teeth. Staining dye solution will indicate the presence of caries process,

3. The clinical picture in the middle caries

With an average caries process extends even further. If the initial and surface caries lesions are observed, affecting only the enamel cover, with an average caries lesion is deeper, there is destruction of the enamel-dentine connection and involvement in the process of dentin. Formed cavities.

Asymptomatic with average caries is less common. The characteristic appearance are complaints of pain when exposed to stimuli lesion chemical nature or temperature.

In carrying out basic techniques examination indicated the presence of cavities, already detectable at the examination. Carious cavity and has an average depth dotted modified tissues in the form of the softened pigmented dentin. Sensing detects the presence of pain in moving the dental probe on the enamel-dentine connection. Percussion is not accompanied by the occurrence of pain, as in periodontal involvement process does not occur.

Additional tests suggest holding TERMOTEST, elektroodontometrii. TERMOTEST detects the presence of pain when exposed to the lesion Kholodov or thermal stimuli. Carrying elektroodontometrii does not detect changes in indicators electroexcitability pulp. X-rays used for the diagnosis of caries at the location of its contact surfaces.

Clinical activity №3
Subject: Implementation of percussion

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Requirements to stom.kabinetu, physician responsibilities, nurses, orderlies, holding percussion.
The task of the training session:	Teach students to correctly and consciously observe the necessary precautions while in the dental office. Especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking, responsible approach to their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of the organization and equipment of the dental cabinet, sterilization techniques, record keeping is essential in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical lesson №4

Topic: Caries in the stage of spot. Clinic, diagnostics, dif.diagnostika.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Teach the diagnosis, differential diagnosis of caries in the stage of spot.
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

The use of "weak link"

Test questions on employment:

1. Definition of the concept "caries".
2. Classification of caries lesion localization.
3. Classification of caries topography.
4.What is complicated by caries?

5. What is uncomplicated caries?
6.Klassifikatsiya caries downstream.
Test questions and answers:
1. Definition of the concept "caries".
Zubov- caries disease process. Manifested after dentition, in which there is a softening and demineralization of hard tooth tissue with the subsequent formation of a defect in the form of a cavity. According to WHO nomenclature for evaluating dental caries using three main indicators: prevalence, the intensity of caries lesions and the incidence or intensity gain. caries prevalence is determined by the percentage of persons with caries, the sealed and extracted teeth. intensity index porazheniya- average number of teeth affected by caries and its complications (K), sealed (P) and remote (Y), the total amount of such teeth is defined as the CPU code and has a certain digital value. High CPU indicators show poor performance.
2. Classification of caries lesion localization.
To localize the lesion to distinguish the following classification:
Cavities in the stain step (enamel lesion is manifested in a change in its normal color in a limited area and the appearance of opaque, white, light brown spots).
Surface caries (enamel is damaged)
Middle caries (violates the integrity of the dentine-enamel compound, but is retained on tooth cavity sufficiently thick layer of dentine unaltered.
Deep caries (affects deeper layer of dentin, there are changes in the pulp).
3. Classification of caries topography.
caries classification WHO topography, 9 revision:
1-enamel caries, including the "chalky spot"
2-caries of dentin
3-caries cement
Intermediate 4-caries
5-deep caries
A distinction is also a topographic classification of dental caries by Black:
-1 Molar and premolars and the contact surfaces
-2 on the chewing surfaces of molars and premolars
-3 incisors and canines without damaging the cutting edge
-4 incisors and canines with damage to the cutting edge
-5 cervical area of the teeth.
4.What is complicated by caries?
Complicated caries called periodontit- pulpitis and inflammatory diseases which arise due to progression of caries. When complicated caries noted halitosis, it found large cavity sizes. Sheer wall of the cavity and is typically bottom roughness in varying degrees pigmented. A cavity in the dentin of irregular shape, filled with dirty gray decay, rough bottom, stepwise. electroexcitability dental pulp significantly reduced.
5. What is uncomplicated caries?
In uncomplicated caries violated the integrity of the enamel-dentine compound, but the pulp is stored over a thick layer of dentine unaltered. Complaints can not be. On examination revealed shallow carious cavity filled pigmented softened dentine, which is determined when sensing. The cavity has a wide inlet opening of regular shape, steep edges, dense and pigmented bottom and walls. In acute uncomplicated caries can be reduced electroexcitability pulp.
6.Klassifikatsiya caries downstream.
Adrift caries is chronic and acute. During the chronic form defects do not cause subjective sensations, observed
some discomfort (jam food). The acute form occurs with a decrease in pulp sensitivity.

The text of the practical classes

-Karies zubov- pathological process. Manifested after dentition, in which there is a softening and demineralization of hard tooth tissue with the subsequent formation of a defect in the form of a cavity. According to WHO nomenclature for evaluating dental caries using three main indicators: prevalence, the intensity of caries lesions and gain
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-By localization of the lesion to distinguish the following classification:
Cavities in the stain step (enamel lesion is manifested in a change in its normal color in a limited area and the appearance of opaque, white, light brown spots).
Surface caries (enamel is damaged)
Middle caries (violates the integrity of the dentine-enamel compound, but is retained on tooth cavity sufficiently thick layer of dentine unaltered.
Deep caries (affects deeper layer of dentin, there are changes in the pulp).
-Classification caries WHO topography, 9 revision:
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2-caries of dentin
3-caries cement
Intermediate 4-caries
5-deep caries
A distinction is also a topographic classification of dental caries by Black:
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-2 on the chewing surfaces of molars and premolars
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-4 incisors and canines with damage to the cutting edge
-5 cervical area of the teeth.
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-When uncomplicated caries violated the integrity of the enamel-dentine compound, but the pulp is stored over a thick layer of dentine unaltered. Complaints can not be. On examination revealed shallow carious cavity filled pigmented softened dentine, which is determined when sensing. The cavity has a wide inlet opening of regular shape, steep edges, dense and pigmented bottom and walls. In acute uncomplicated caries can be reduced electroexcitability pulp.
-By river caries is chronic and acute. During the chronic form defects do not cause subjective sensations, there is some discomfort (jam food). The acute form occurs with a decrease in pulp sensitivity.
-Klinicheski emit white spot caries, which is converted into the surface cavities, at the expense of compromising the integrity of the surface layer, or a pigmented spot, due to demineralization.
-Gipoplaziya enamel is characterized by symmetrical lesions of similar teeth, due to the simultaneity of their bookmarks, development and mineralization .. The cause may be infectious diseases when receiving large doses of antibiotics. May develop in the womb, it may lack the enamel.
-Klinicheski, demineralization of enamel occurs in step a white pigmented spots and, depending on the intensity of the process may progress carious process or stabilize (to become chronic). In some areas of enamel fragmentation occurs crystals enamel prisms, formation of a homogeneous fine-grained substance and the disappearance of the prism boundaries.

Dentinal tubules filled with a crystalline mass.
-When there are multiple fluorosis both white and brown spots, which are located on the surface of all the groups of teeth. At a high content of fluorine in drinking water spot size increases and the pattern of change is more pronounced: the entire enamel tooth crown may have a brown color. For fluorosis is characterized by endemic porazheniya- manifestation of the majority of the inhabitants of a region-or.
-When surface caries diagnosis are staining with 2% solution of methylene blue.
-Karies differentiate under the heel with diseases such as: hypoplasia and fluorosis.
-Klinicheski at caries stains in step characterized by chalky spots.
-Depending on the lesion tissue are distinguished caries tooth enamel, dentine and cement caries.
-Progressiruyuschy carious process can lead to pulpitis and periodontitis.
-Appearance cavity next to the previously imposed indicates the appearance of recurrent caries.

Clinical activity №4

Subject: Implementation of remineralization therapy on stage of the spot

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Classification of caries, clinic and differential. Diagnosis of caries in the stage of spot. Staining carious spots 2% solution of methylene blue in the diagnosis and treatment of caries in the stage of spot.
The task of the training session:	Teach students to correctly classify dental caries, to familiarize with the clinic and the differential diagnosis of caries in the stage of spot. Consciously abide by the necessary precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking, responsible approach to their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of classification of dental caries, clinical and differential diagnosis of caries in the stage of spot, it is important in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical lesson №5

Topic: Methods of treatment of patients with acute and chronic caries. Formulation.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Learned to treat patients with acute and chronic caries.
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Brainstorm"

Test questions on employment:

1. From what constitutes treatment of caries?
2. As a general goal event?
3.What preparation is recommended to increase the resistance of tooth tissues?
4.Ot what determines the nature of the topical treatment?
5. An indication of that is white carious spot?
6.Priznakom which are brown and black spots?

Test questions and answers:
1. From what constitutes treatment of caries?
caries treatment consists of the activities of general and local character
2. As a general goal event?
General measures to the goal to increase the body's defenses and resistance tooth tissues.
3.What preparation is recommended to increase the resistance of tooth tissues?
To increase the resistance of tissue tooth administered vitamin B, D, E, and mineral components: glycerophosphate, lactate, calcium gluconate, phytin. (1 tablet 3 times a day for 4-6 weeks with a break of 1-2 months)
4.Ot what determines the nature of the topical treatment?
Character topical treatment of dental caries depends on the degree of change in tooth tissues. In the initial form -treatment is performed without preparation.
5. An indication of that is white carious spot? White spot color is a sign of progressive demineralization of enamel and demand remterapii.
6.Priznakom which are brown and black spots?
Brown and black spot color is a sign to stop the process and do not need to conduct reminiralizuyuschey therapy.

The text of the practical classes

caries treatment consists of the activities of general and local character
General -Meropriyatiya aims to improve the body's defenses and resistance tooth tissues.
-To improve the resistance of dental tissues prescribed vitamins, D, E, and mineral components: glycerophosphate, lactate, calcium gluconate, phytin. (1 tablet 3 times a day for 4-6 weeks with a break of 1-2 months)
A character of local treatment of caries depends on the degree of change in tooth tissues. In the initial form -treatment is performed without preparation.
-White spot color is a sign of progressive demineralization of enamel and demand remterapii.
-Brown color and black spots is a sign to stop the process and do not need to conduct reminiralizuyuschey therapy.
Effectively conducted remterapii determined by methylene blue staining of the tooth (some stains disappear or decrease)
-Povtorny remterapii course if necessary.
-Sostavnoy part of complex treatment of caries is oral hygiene and teeth.
-As remineralizing composition solutions include ions of calcium, phosphorous, fluorine "Remodent"
-Preparat introduced by electrophoresis and applique.
-When caries in tooth pulp stage spots, as in normal, responsive to a current of 2-6 mA.
-Karies spots in step differentiate with diseases such as: fluorosis. hypoplasia.
-For caries in the stage of spot characteristic white spots.
-When conducting remineralizing therapy occurs disappearance of the white spots, characteristic for caries stains step.
-Preparat "Vitaftor" is used inside the body.

Clinical activity №5

Subject: Treatment of fluoride varnish on the stage of the spot

Technological models for education

class time: 160 minutes	The number of students 8-10

Type of activity:	clinics activity
Plan:	treatment of caries in the stage of spot acute and chronic course.
The task of the training session:	- Teach students to conduct tvèrdyh remineralization of tooth structure. - To familiarize students with remineralizing solutions. - Teach students to correctly and consciously treat acute and chronic forms of dental caries in the stage of spot. Observe the necessary safety precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking in the treatment of acute and chronic caries in the stage of spot responsibly for their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of the treatment of acute and chronic caries in the stage of spot, it is important in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him successfully
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical lesson №6

Topic: Surface caries. Acute and chronic. Diagnosis and dif.diagnostika.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Explain to students the clinical manifestations of superficial caries, learn how to diagnose each form.
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes	1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans.	Listen to write. Define, ask questions,

10 minutes 5 minutes 45 min 10 minutes	1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Brainstorm"

Test questions on employment:

Acute 1.Klinika flow surface caries.
2.Klinika chronicity surface caries.
3.Dif. Diagnosis of surface caries with hypoplasia.
4.Dif. diagnosis of superficial caries erosion.
5.Dif. Diagnosis of surface caries with a wedge-shaped defect.
6. What is characteristic color enamel defect in chronic superficial caries.
Test questions and answers:
Acute 1.Klinika flow surface caries.
Clinically in acute enamel surface defect is detected during caries. Typically enamel defect has a round or oval shape, the uneven edges of the color hardly differs from the unaffected enamel. The bottom wall and dense. When probing detected roughness. It can be painful reaction when subjected to thermal stimuli and sensing.
2.Klinika chronicity surface caries.
Clinically, chronic superficial enamel caries current detected defect. No subjective sensations. Most affected molars, premolars. With the localization of the defect on the proximal surface of the tooth may appear complaints about food getting stuck. The walls and the bottom of the defect brown solid, painless when probed. Typically, the defect has clear sfiricheskie shape.
3.Dif. Diagnosis of surface caries with hypoplasia.
Through differential. diagnosis of surface enamel caries with hypoplasia must be remembered that when hypoplasia enamel surface smooth, without softening, defects localized at different levels of symmetrical teeth and not characteristic for caries tooth crown surfaces.
4.Dif. diagnosis of superficial caries erosion.
Through differential. diagnosis caries surface erosion of dental hard tissues, it must be remembered that the erosion of hard tissue is cup-shaped, the bottom of its smooth, shiny. Most often affects the neck. Erosion is often combined with hyperesthesia.
5.Dif. Diagnosis of surface caries with a wedge-shaped defect.
Through differential. diagnosis of caries with a tapered surface defect must be remembered that the wedge-shaped defect is localized exclusively in tooth neck has a thick wall and a characteristic of the defect shape.

6. What is characteristic color enamel defect in chronic superficial caries.
During the chronic superficial defect enamel caries color - brown.

The text of the practical classes

-Klinicheski in acute enamel surface defect is detected during caries. Typically enamel defect has a round or oval shape, the uneven edges of the color hardly differs from the unaffected enamel. The bottom wall and dense. When probing detected roughness. It can be painful reaction when subjected to thermal stimuli and sensing.
-Klinicheski chronic superficial enamel caries current detected defect. No subjective sensations. Most affected molars, premolars. With the localization of the defect on the proximal surface of the tooth may appear complaints about food getting stuck. The walls and the bottom of the defect brown solid, painless when probed. Typically, the defect has clear sfiricheskie shape.
Seeing-diff. diagnosis of surface enamel caries with hypoplasia must be remembered that when hypoplasia enamel surface smooth, without softening, defects localized at different levels of symmetrical teeth and not characteristic for caries tooth crown surfaces.
Seeing-diff. diagnosis caries surface erosion of dental hard tissues, it must be remembered that the erosion of hard tissue is cup-shaped, the bottom of its smooth, shiny. Most often affects the neck. Erosion is often combined with hyperesthesia.
Seeing-diff. diagnosis of caries with a tapered surface defect must be remembered that the wedge-shaped defect is localized exclusively in tooth neck has a thick wall and a characteristic of the defect shape.
-When chronic course of surface enamel caries color defect - Brown.
-Atipichnymi cavities for all forms of cavities are cavities arranged in the incisal edge of incisors and canines, as well as in the field cusps of molars and premolars.
A symmetric lesions characteristic of acute forms of tooth decay.
-From the kinds of chemical and temperature stimuli.
-Poverhnostny caries is characterized by short-term pain. -When surface caries pulp reacts to a current of 2-6 mA.
-Poverhnostny caries differentiate with diseases such as: hypoplasia enamel erosion wedge and hard tissue defect.
-Klinovidny defect usually localized at the neck of the teeth.
-Eroziya often accompanied by hyperesthesia.
-When hypoplasia enamel surface is smooth.
-Klinicheski wedge defect characterized by a dense walls and a characteristic form of defect.

Clinical activity №6

Subject: Processing of methylene blue 2%

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Diagnostic methods for diagnosis surface caries.
The task of the training session:	- To teach the students to carry out examination of the patient with superficial caries. - teach students differential diagnosis surface caries with hypoplasia, cuneate defects, erosion of tooth tissue tvèrdyh - To teach the students to carry out the method of vital staining with methylene

	blue 2%. - Teach students to probing enamel defect. - Teach students to correctly diagnose superficial caries of acute and chronic forms of the disease to know the clinic. Consciously abide by the necessary precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking during dif.diagnostiki surface caries, responsible approach to their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues clinics, differential. surface caries diagnosis, is important in the formation of future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him successfully
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical exercise №7

Topic: The clinical course of the surface caries

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Students explain clinical manifestations surface caries.
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation

5 minutes 45 min 10 minutes	1.5. It is explained the plan and structure of the practice session 1.6.Peremena	criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Chamomile"

Test questions on employment:

Acute 1.Klinika flow surface caries.
2.Klinika chronicity surface caries.
3. What color defect enamel characterized in chronic superficial caries.
Test questions and answers:
Acute 1.Klinika flow surface caries.
Clinically in acute enamel surface defect is detected during caries. Typically enamel defect has a round or oval shape, the uneven edges of the color hardly differs from the unaffected enamel. The bottom wall and dense. When probing detected roughness. It can be painful reaction when subjected to thermal stimuli and sensing.
2.Klinika chronicity surface caries.
Clinically, chronic superficial enamel caries current detected defect. No subjective sensations. Most affected molars, premolars. With the localization of the defect on the proximal surface of the tooth may appear complaints about food getting stuck. The walls and the bottom of the defect brown solid, painless when probed. Typically, the defect has clear sfiricheskie shape.
3. What color defect enamel characterized in chronic superficial caries.
During the chronic superficial defect enamel caries color - brown.

The text of the practical classes

Complaints and clinical manifestations
Patients may disturb causative tooth hypersensitivity by chemical and thermal stimuli, but more often this pathology takes asymptomatic treatment. Some find themselves in the pits changing color of the tooth and do tell your doctor.

Reveal surface damage, you can use the inspection and sensing. If the probe is stuck in fissures, we can talk about the presence of cavities. Much depends on the color and density of the bottom and walls of a cavity. Softened light fabric tooth talking about dental caries active current, which may soon spread to the dentin. Thick and pigmented (dark brown) of the cavity wall - this is a sign of chronic caries, which can not be transformed into medium or deep caries when adequate hygiene.

Termoproba may be either positive or negative (depending on individual sensitivity of the patient), percussion painless, EDI within the normal range (2-6 uA.). However, such elements are colored dyes.

Differences from other pathologies

Surface carious lesion should be distinguished from erosion of enamel, wedge-defect marked hypoplasia and fluorosis steps.

Erosion is usually formed on the incisors and canines of the upper jaw in the cervical area. It has a characteristic bowl shape with smooth dense walls. The reason erosions - Influence of chemicals on the enamel (citrus acid, working in a chemical plant and others.).

The wedge-shaped defect is generally located in the area on okolodesnevoy canines, premolars and molars top (at least - lower) jaw. Has a triangular shape, the fabric is usually not changed in color. The cause of these defects - the patient's excessive force during brushing.

Fluorosis and hypoplasia usually occur in unusual places for caries localization - on the cutting edge of the incisors and canines, as well as mounds of molars and premolars. They are not stained, unlike the cavities.

Clinical activity №7

Subject: Processing of methylene blue 2%

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Clinic surface caries.
The task of the training session:	- To teach the students to carry out examination of the patient with superficial caries. - teach students differential diagnosis surface caries with hypoplasia, cuneate defects, erosion of tooth tissue tvèrdyh - To teach the students to carry out the method of vital staining with methylene blue 2%. - Teach students to probing enamel defect. - Teach students to correctly diagnose superficial caries of acute and chronic forms of the disease to know the clinic. Consciously abide by the necessary precautions while in the dental office,

	especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking during dif.diagnostiki surface caries, responsible approach to their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues clinics, differential. surface caries diagnosis, is important in the formation of future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him successfully
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical exercise №8

Subject: Middle caries. Clinic. Dianogostika and dif.diagnostika.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Teach students the diagnosis, differential diagnosis of caries average, depending on the shape.
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 10 minutes 10 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of	Meet, they write. They work in groups, groups perform

10 minutes 15 minutes	work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	groups perform present

interactive method

Using the method of "The Weakest Link"

Test questions on employment:

1 1.Klinika acute secondary flow caries.
2.Klinika chronicity middle caries.
3. Dif. Diagnosis average caries with deep caries.
4.Dif. Diagnosis average caries with chronic fibrotic periodontitis.
5.Dif. Diagnosis average caries with wedge-shaped defects.
6. How is conducted palpation?
Test questions and answers:
1.Klinika acute over the average caries.
Clinically detected at an acute cavity during secondary caries. Enamel Defect small, not corresponding to the size of the cavity in the dentin. The edges of the defect in the enamel sometimes translucent, brittle (easily break off the excavator). The cavity is detected softened, this mass is often dirty gray, sometimes yellowish. Sensing the bottom of the cavity smoothly. In response to a cold stimulus can be a pain reaction.
2.Klinika chronicity middle caries.
Clinically in chronic middle caries the patient can see a doctor with complaints of food getting stuck. Often there are no complaints. The examination revealed cavity exciting the entire thickness of the enamel and the inlet opening of regular shape, steep edges, thick and pigmented bottom and walls. The cavity-free
softened dentin; Food residues can be found in it. Probing the bottom and walls of a cavity painlessly.
3. Dif. Diagnosis average caries with deep caries.
Through differential. secondary caries diagnosis with deep caries oriented based on patients' complaints and objective examination data. With deep caries there is pain for all kinds of stimuli, as seen when viewed from a deep carious cavity, the bottom of sensing painful.
4.Dif. Diagnosis average caries with chronic fibrotic periodontitis.
Through differential. middle caries diagnosis with chronic fibrotic periodontitis should be remembered that the similarity lies in the absence of complaints. The essential difference between these two diseases that at preparing cavity occurs at the average sensitivity caries and periodontitis response to offline in preparation due to necrosis of the pulp .If average tooth caries is responsive to temperature and chemical factors, and periodontitis response to these stimuli offline . tooth pulp at medium caries responsive to a current of 6.2 mA, periodontitis occurs at a current of 100 microamps. On the radiograph not changed at caries periodontal tissues, and chronic periodontitis found changes in the periodontium.
5.Dif. Diagnosis average caries with wedge-shaped defects.
Through differential. secondary caries diagnosis with wedge defect must be remembered that the wedge-shaped defect is localized exclusively at the neck of the teeth, and has a thick wall defect characteristic shape (wedge-shaped).
6. How is conducted palpation?

Palpatsiya- oschupyvanie- used to determine the swelling tumor seal motility of organs or tissues of the mouth. tooth mobility is determined by rocking the forceps. There are 3 degrees of mobility 1 in the vestibular--smeschenie oral napravlenii.2 - in the vestibular-oral and 3- laterally on the tooth axis (vertical direction)

The text of the practical classes

-Clinically detected at an acute cavity during secondary caries. Enamel Defect small, not corresponding to the size of the cavity in the dentin. The edges of the defect in the enamel sometimes translucent, brittle (easily break off the excavator). The cavity is detected softened,
this mass is often dirty-gray, sometimes yellowish. Sensing the bottom of the cavity smoothly. In response to a cold stimulus can be a pain reaction.
-Clinically in chronic middle caries the patient can see a doctor with complaints of food getting stuck. Often there are no complaints. The examination revealed cavity exciting the entire thickness of the enamel and the inlet opening of regular shape, steep edges, thick and pigmented bottom and walls. The cavity is free of softened dentin; Food residues can be found in it. Probing the bottom and walls of a cavity painlessly.
-Through differential. secondary caries diagnosis with deep caries oriented based on patients' complaints and objective examination data. With deep caries there is pain for all kinds of stimuli, as seen when viewed from a deep carious cavity, the bottom of sensing painful.
-Through differential. middle caries diagnosis with chronic fibrotic periodontitis should be remembered that the similarity lies in the absence of complaints. The essential difference between these two diseases that at preparing cavity occurs at the average sensitivity caries and periodontitis response to offline in preparation due to necrosis of the pulp .If average tooth caries is responsive to temperature and chemical factors, and periodontitis response to these stimuli offline . tooth pulp at medium caries responsive to a current of 6.2 mA, periodontitis occurs at a current of 100 microamps. On the radiograph not changed at caries periodontal tissues, and chronic periodontitis found changes in the periodontium.
-Through differential. secondary caries diagnosis with wedge defect must be remembered that the wedge-shaped defect is localized exclusively at the neck of the teeth, and has a thick wall defect characteristic shape (wedge-shaped).
-Palpatsiya- oschupyvanie- used to determine the swelling tumor seal motility of organs or tissues of the mouth. tooth mobility is determined by rocking the forceps. There are 3 degrees of mobility 1 in the vestibular--smeschenie oral napravlenii.2 - in the vestibular-oral and 3- laterally on the tooth axis (vertical direction)
-Percussion-tapping on zubu- used to determine the status of periodontium. Forceps or pen tip tapped on the cutting edge or chewing surface of a tooth. If there is no periodontal inflammation of the hearth,
percussion painless. Distinguish vertical percussions when the direction coincides with the punches and the horizontal axis of the tooth when the punches have lateral direction.
-Probing -determination, with the presence of pain cavity walls and the bottom of the cavity. Held angle probe.
-Middle caries is differentiated with diseases such as: deep caries, erosion, wedge-shaped defects and chronic fibrotic periodontitis.
-When the chronic form of the flow medium caries patient complains of jams cooking.
-Pain from the cold when the patient complains of acute middle caries flow.
-For the average caries is characterized by short-term pain from thermal stimuli.
-When viewed from a shallow tooth exhibit a cavity filled with a pigmented and softened dentine.
-Carious cavity with average caries is detected with a probe.
-With an average caries tooth pulp reacts to a current of 2-6 mA.

-In dentistry is often used near-focus intrapartum contact radiography. Tremendous help the doctor has radiography in the treatment of root canals (determined by an X-ray their direction, the filling rate, throughput), when determining the condition of the surrounding tooth root tissue, detection of pathological processes in bone and its structures. The principle of the method consists in the fact that X-rays in dependence on the density of the subject portion to a greater or lesser extent delayed tissues. tooth enamel yields a dense shadow and dentine and cement - less dense than the enamel.

Clinical activity №8

Subject: Palpation oral tissues

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Teach students the diagnosis, differential diagnosis of caries average, depending on the shape.
The task of the training session:	Teach students to carry out examination of the patient with secondary caries. - To teach the students to carry out a differential diagnosis with chronic middle caries fibrotic periodontitis, deep caries, wedge-shaped defects. - Teach students to correctly and consciously pursue dif.diagnostiku patients with secondary caries, observe the necessary precautions while in the dental office. Especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking during dif.diagnostiki middle caries, responsible approach to their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues dif.diagnostike middle caries is important in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical lesson №9

Subject: Clinic middle caries and treatment.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Teach students to treat caries average, depending on the shape.

Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "The Weakest Link"

Test questions on employment:

1.Metody secondary caries treatment in acute flow.

In acute during the caries cavity preparation is required, followed by filling of a tooth.

2.Lechenie chronicity middle caries.

During the chronic secondary caries cavity preparation is required with subsequent fillings of cavities.

3.Perechislite 5 classes of cavities by Black.

Distinguish 5 classes cavities by Black:

-1 class - cavities in natural fissures, pits, depressions molars, premolars and the upper lateral incisors.

-2 class -polosti on the contact surfaces of molars and premolars

-3 class - the cavity on the contact surfaces of the incisors and canines without damaging the cutting edge

-4 class - cavity on the contact surfaces of incisors and canines with damage to the cutting edge

Class -5 - cavity in the necks of the teeth groups.

4.Etapy preparation cavities.
Irrespective of the localization of cavities, there are general principles of the preparation of dental hard tissues that are reduced to the anesthesia, the disclosure, expand, forming cavity.
5. Drug treatment of cavities.
Drug treatment is carried out cavity 3% hydrogen peroxide solution, a 1% solution of bleach, 0.1% sodium furatsilina et al. Ends pharmacological treatment cavity thorough drying with warm air (at an average superficial and caries can before this process cavity 96% alcohol, then ether)
6.Metodika overlay insulating gasket.
An insulating gasket applied not only to the bottom, but also along the walls of the cavity to the enamel border. Imposed isolation pads due to the fact that almost all the permanent filling materials can be irritating to the pulp of the tooth.

The text of the practical classes

-Clinically detected at an acute cavity during secondary caries. Enamel Defect small, not corresponding to the size of the cavity in the dentin. The edges of the defect in the enamel sometimes translucent, brittle (easily break off the excavator). The cavity is detected softened,
this mass is often dirty-gray, sometimes yellowish. Sensing the bottom of the cavity smoothly. In response to a cold stimulus can be a pain reaction.
-Clinically in chronic middle caries the patient can see a doctor with complaints of food getting stuck. Often there are no complaints. The examination revealed cavity exciting the entire thickness of the enamel and the inlet opening of regular shape, steep edges, thick and pigmented bottom and walls. The cavity is free of softened dentin; Food residues can be found in it. Probing the bottom and walls of a cavity painlessly.
-Through differential. secondary caries diagnosis with deep caries oriented based on patients' complaints and objective examination data. With deep caries there is pain for all kinds of stimuli, as seen when viewed from a deep carious cavity, the bottom of sensing painful.
-Through differential. middle caries diagnosis with chronic fibrotic periodontitis should be remembered that the similarity lies in the absence of complaints. The essential difference between these two diseases that at preparing cavity occurs at the average sensitivity caries and periodontitis response to offline in preparation due to necrosis of the pulp .If average tooth caries is responsive to temperature and chemical factors, and periodontitis response to these stimuli offline . tooth pulp at medium caries responsive to a current of 6.2 mA, periodontitis occurs at a current of 100 microamps. On the radiograph not changed at caries periodontal tissues, and chronic periodontitis found changes in the periodontium.
-Through differential. secondary caries diagnosis with wedge defect must be remembered that the wedge-shaped defect is localized exclusively at the neck of the teeth, and has a thick wall defect characteristic shape (wedge-shaped).
-Palpatsiya- oschupyvanie- used to determine the swelling tumor seal motility of organs or tissues of the mouth. tooth mobility is determined by rocking the forceps. There are 3 degrees of mobility 1 in the vestibular--smeschenie oral napravlenii.2 - in the vestibular-oral and 3- laterally on the tooth axis (vertical direction)
-Percussion-tapping on zubu- used to determine the status of periodontium. Forceps or pen tip tapped on the cutting edge or chewing surface of a tooth. If there is no periodontal inflammation of the hearth,
percussion painless. Distinguish vertical percussions when the direction coincides with the punches and the horizontal axis of the tooth when the punches have lateral direction.
-Probing -determination, with the presence of pain cavity walls and the bottom of the cavity. Held angle probe.
-Middle caries is differentiated with diseases such as: deep caries, erosion, wedge-shaped defects and chronic fibrotic periodontitis.
-When the chronic form of the flow medium caries patient complains of jams cooking.

-Pain from the cold when the patient complains of acute middle caries flow.
-For the average caries is characterized by short-term pain from thermal stimuli.
-When viewed from a shallow tooth exhibit a cavity filled with a pigmented and softened dentine.
-Carious cavity with average caries is detected with a probe.
-With an average caries tooth pulp reacts to a current of 2-6 mA.
-In dentistry is often used near-focus intrapartum contact radiography. Tremendous help the doctor has radiography in the treatment of root canals (determined by an X-ray their direction, the filling rate, throughput), when determining the condition of the surrounding tooth root tissue, detection of pathological processes in bone and its structures. The principle of the method consists in the fact that X-rays in dependence on the density of the subject portion to a greater or lesser extent delayed tissues. tooth enamel yields a dense shadow and dentine and cement - less dense than the enamel. -When acute course of caries cavity preparation is required, followed by filling of a tooth.
-During the chronic secondary caries cavity preparation is required with subsequent fillings of cavities.
-Distinguish 5 classes cavities by Black:
-1 class - cavities in natural fissures, pits, depressions molars, premolars and the upper lateral incisors.
-2 class -polosti on the contact surfaces of molars and premolars
-3 class - the cavity on the contact surfaces of the incisors and canines without damaging the cutting edge
-4 class - cavity on the contact surfaces of incisors and canines with damage to the cutting edge
Class -5 - cavity in the necks of the teeth groups.
-Irrespective of the localization of cavities, there are general principles of the preparation of dental hard tissues that are reduced to the anesthesia, the disclosure, expand, forming cavity.
-Drug treatment is carried out cavity 3% hydrogen peroxide solution, a 1% solution of bleach, 0.1% sodium furatsilina et al. Ends pharmacological treatment cavity thorough drying with warm air (at an average superficial and caries can before this process cavity 96% alcohol, then ether)
-An insulating gasket applied not only to the bottom, but also along the walls of the cavity to the enamel border. Imposed isolation pads due to the fact that almost all the permanent filling materials can be irritating to the pulp of the tooth.
-As the insulating spacers used: phosphate-cement, adgezor, fuji2, baseline, chemfil superior, chelon fil et al.
-There are the following steps filling the cavity with the caries average light composite material:
1) Anesthesia
2Preparirovanie tooth tissue
3) The imposition of medical and insulating gaskets
4) Etching, washing off the acid, drying tempered
5) Isolation of saliva
6) Overlay primer (as indicated by)
7) Application of adhesive
8) Layered overlay composite and curing
9) Correction occlusion, finishing and polishing
10) Finish glare.
-Hirurgichesky treatment surface caries often used for localization of cavities on the approximal and chewing surfaces.
-When the surface treatment of dental caries as a filling material can be used materials of cements group amalgam, composite and others. Selection of filling material depending on the class of cavities.
-When fillings of cavities 3 class applied to Black "Eviklol".

-K composite materials are light-cured: Valux Plus, Revolucion, Charisma, Filtek Z250, Filtek SupremeXT
-Treatment caries consists of the activities of general and local character
General -Meropriyatiya aims to improve the body's defenses and resistance tooth tissues.
-To improve the resistance of dental tissues prescribed vitamins, D, E, and mineral components: glycerophosphate, lactate, calcium gluconate, phytin. (1 tablet 3 times a day for 4-6 weeks with a break of 1-2 months)
A character of the local average treatment of caries depends on the extent of changes in the tissues of the tooth.

Clinical activity №9

Subject: Treatment of caries average

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	secondary caries treatment methods depending on the form and the clinical course
The task of the training session:	- To teach students to treat caries average, depending on the shape and the clinical course. - To familiarize students with the peculiarities of preparation and drug treatment of cavities under the cement, amalgam, composites. - Features filling cavities various filling materials (cements, amalgams, JRC composite material (light and chemical curing)). - Teach students the imposition of an insulating spacer. - introduce students with filling material used for the insulating spacers (adgezor, Ketac Cem, Fuji et al.). - To teach students methods of treatment of caries average, correctly and consciously observe the necessary precautions while in the dental office. Especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking in the treatment of middle caries, responsible approach to their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of treatment of caries average, it is important in the formation of the future practitioner. The volume resulting theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical class №10

Subject: Deep caries. The clinic, diagnosis and treatment dif.diagnostika.Fizioterapevticheskoe.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Teach students to conduct a clinic dif.diagnostiku and physiotherapy treatment of deep caries
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Brainstorm"

Test questions on employment:

1.Klinika acute course of deep caries.
2.Klinika chronicity of deep caries.
3.Dif. Diagnosis of deep caries with secondary caries.
4.Dif. Diagnosis of deep caries with acute focal pulpitis.
5. Diff. Diagnosis of deep caries with chronic fibrous pulpitis.
6.Pokazateli EDI with deep caries.

Test questions and answers:
1.Klinika acute course of deep caries.
Clinically in acute deep caries within the patient can consult a doctor complaining of the presence of cavities, a significant size, the jam meal, halitosis, a sharp edge of the tooth, intermittent pain from mechanical, chemical, thermal stimuli. The softened carious dentine cavity is detected. Sensing the bottom of the cavity painful.
2.Klinika chronicity of deep caries.
Clinically in chronic deep caries patient may seek medical advice complaining of the presence of cavities, of considerable size, jam meal, halitosis,
the sharp edges of the tooth, intermittent pain from mechanical, chemical, thermal stimuli. The cavity is detected pigmented dentin. The bottom of the dense, dense wall and to varying degrees pigmented.
3.Dif. Diagnosis of deep caries with secondary caries.
Through differential. diagnosis of deep caries with secondary caries oriented based on patients' complaints and objective examination data. Deep caries is characterized by a severe complaints (intermittent pain stimuli from all species) and a depth of cavity (within okolopulpovogo dentin).
4.Dif. Diagnosis of deep caries with acute focal pulpitis.
Through differential. diagnosis of deep caries with pulpitis acute focal oriented on the basis expressed with pulpitis paroxysmal, spontaneous and more prolonged pain by external stimuli. When there is a decrease pulp pulpitis excitability do15-20 mA or more, whereas at caries component EDI is 2-6 mA.
5. Diff. Diagnosis of deep caries with chronic fibrous pulpitis.
Through FiF. Diagnosis of deep caries with chronic fibrotic objective examination. In chronic fibrous pulpitis of history turns out that the tooth previously strongly disturbed. Also in favor of the pulpit indicate paroxysmal, spontaneous pain. electroexcitability do10-12mkA pulp decreases.
6.Pokazateli EDI with deep caries.
With deep caries EDI figures usually are normal, ie, 2-6 uA. Some authors for his research proved electroexcitability decrease to 10-12 mA.

The text of the practical classes

-Clinically in acute deep caries within the patient can consult a doctor complaining of the presence of cavities, a significant size, the jam meal, halitosis, a sharp edge of the tooth, intermittent pain from mechanical, chemical, thermal stimuli. The softened carious dentine cavity is detected. Sensing the bottom of the cavity painful.
-Clinically in chronic deep caries patient may seek medical advice complaining of the presence of cavities, of considerable size, food jam halitosis, a sharp edge of the tooth, intermittent pain from mechanical, chemical, thermal stimuli. The cavity is detected pigmented dentin. The bottom of the dense, dense wall and to varying degrees pigmented.
-Through differential. diagnosis of deep caries with secondary caries oriented based on patients' complaints and objective examination data. Deep caries is characterized by a severe complaints (intermittent pain stimuli from all species) and a depth of cavity (within okolopulpovogo dentin).
-Through differential. diagnosis of deep caries with pulpitis acute focal oriented on the basis expressed with pulpitis paroxysmal, spontaneous and more prolonged pain by external stimuli. When there is a decrease pulp pulpitis excitability do15-20 mA or more, whereas at caries component EDI is 2-6 mA.
-Through FiF. Diagnosis of deep caries with chronic fibrotic objective examination. In chronic fibrous pulpitis of history turns out that the tooth previously strongly disturbed. Also in favor of the pulpit indicate paroxysmal, spontaneous pain. electroexcitability do10-12mkA pulp decreases.

-With deep caries EDI figures usually are normal, ie, 2-6 uA. Some authors for his research proved electroexcitability decrease to 10-12 mA.
-Additional methods of examination refers elektroodonto- diagnostics (EDI).
EDI provides a more comprehensive state of Repose of the pulp and the tissues surrounding the tooth.
Figures set threshold excitation pulp in normal and pathological conditions. Healthy teeth respond to currents of 2-6 mA. Reducing electroexcitability do20-40 microamps indicates the presence of inflammation in the pulp. The reaction slurry on a current of 60 mA points to necrosis of the coronal pulp. If it occurs necrosis and root pulp, the tooth reacts on a current of 100 mA or higher. When expressed morphological changes in periodontal tooth reacts on currents more than 200 mA.
-Thermodiagnostics -determination tooth razdrazhiteli- reaction temperature at one of the oldest physical methods commonly used to determine the state of the pulp. The ester used as an irritant, but usually cold or hot water which is a strong irritant due to greater
heat capacity. The simplest method is to irrigation water from the syringe teeth.
-Deep caries classified with diseases such as: mean caries, pulpitis chronic fibrosing, focal acute pulpitis.
-With deep caries patient complains of intermittent pain from mechanical, chemical and thermal stimuli, going after the removal of the stimulus.
-In the chronic form the patient flow deep caries indicates a complaint such as halitosis, jam meal, intermittent pain of strong irritants, the sharp edge of the tooth.
-Deep caries is characterized by a deep carious cavity is filled with softened dentin.
-To localize the lesion to distinguish the following classification:
Cavities in the stain step (enamel lesion is manifested in a change in its normal color in a limited area and the appearance of opaque, white, light brown spots).
Surface caries (enamel is damaged)
Middle caries (violates the integrity of the dentine-enamel compound, but is retained on tooth cavity sufficiently thick layer of dentine unaltered.
Deep caries (affects deeper layer of dentin, there are changes in the pulp).
-When deep caries tooth polka normally responds to a current of 2.6 microamps but excitability can be reduced (in the range of 10-12 microamps).
-Percussion-tapping on zubu- used to determine the status of periodontium. Forceps or pen tip tapped on the cutting edge or chewing surface of a tooth. If there is no periodontal inflammation focus, percussion painless. Distinguish vertical percussions when the direction coincides with the punches and the horizontal axis of the tooth when the punches have lateral direction.
-Probing -determination, with the presence of pain cavity walls and the bottom of the cavity. Held angle probe.

Clinical activity №10

Subject: Probing

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Of the probes in deep caries
The task of the training session:	- To teach the students to carry out examination of the patient with deep caries. - To teach the students to carry out a differential diagnosis of deep caries with acute partial pulpitis, chronic fibrous pulpitis, caries average. - Teach students to correctly and consciously carry out differential. diagnosis of

	deep caries, observe the necessary precautions while in the dental office. Especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking during the diff. the diagnosis of deep caries and physical examination methods .Otvetstvenno approach their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues clinics and dif.diagnostiki deep caries, it is important in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical class №11

Subject: Methods of treatment of acute deep caries

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Teach students to treat acute deep caries depending on the shape and the clinical course.
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes	2.1. rapid test / FAQ / knowledge is strengthened by	Meet, they write. They work in

15 minutes 30 minutes 15 minutes	interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	groups, groups perform groups perform present

interactive method

Using the method of "Brainstorm"

Test questions on employment:

1.Metody acute treatment of deep caries.
2.Metodika acute treatment of deep caries in one visit.
3.Metodika treatment of acute deep caries in two visits.
4. What restorative material used for therapeutic pads for acute deep caries?
5. As the filling material used for insulating spacers for acute deep caries?
6. What kind of filling material used for permanent fillings in acute deep caries?
Test questions and answers:
1.Metody acute treatment of deep caries.
Acute during deep caries can be treated in one or two visits.
2.Metodika acute treatment of deep caries in one visit.
In the treatment of acute deep caries in one visit under anesthesia produces dissection cavity, pharmacological treatment is applied therapeutic gasket aqueous dentin insulating gasket permanent seal.
3.Metodika treatment of acute deep caries in two visits.
In the treatment of acute deep caries in the first two visits Seen under anesthesia produces dissection cavity, pharmacological treatment is applied therapeutic gasket aqueous dentin dentin-temporary filling of the paste for 5-7 days.
If the tooth is not concerned, then on the second visit the temporary seal is removed from the dentin -pasty superimposed insulating strip, becoming a permanent seal.
4. What restorative material used for therapeutic pads for acute deep caries?
As therapeutic gasket in the treatment of acute deep caries used: calcine, Kalmetsin, zinc-eugenol paste, Kaltsimol, Kaltsipur.
5. As the filling material used for insulating spacers for acute deep caries?
As the insulating gasket in the treatment of acute deep caries used: adgezor, fuji I, fuji II, Ketak Cem et al.
6. What kind of filling material used for permanent fillings in acute deep caries?
The permanent seals in the treatment of acute deep caries used: Composites (chemical and light curing), compomers, glass ionomer cements (JRC) amalgam.

The text of the practical classes

-Clinically in acute deep caries within the patient can consult a doctor complaining of the presence of cavities, a significant size, the jam meal, halitosis, a sharp edge of the tooth, intermittent pain from mechanical, chemical, thermal stimuli. The softened carious dentine cavity is detected. Sensing the bottom of the cavity painful.

-Clinically in chronic deep caries patient may seek medical advice complaining of the presence of cavities, of considerable size, food jam halitosis, a sharp edge of the tooth, intermittent pain from mechanical, chemical, thermal stimuli. The cavity is detected pigmented dentin. The bottom of the dense, dense wall and to varying degrees pigmented.
-Through differential. diagnosis of deep caries with secondary caries oriented based on patients' complaints and objective examination data. Deep caries is characterized by a severe complaints (intermittent pain stimuli from all species) and a depth of cavity (within okolopulpovogo dentin).
-Through differential. diagnosis of deep caries with pulpitis acute focal oriented on the basis expressed with pulpitis paroxysmal, spontaneous and more prolonged pain by external stimuli. When there is a decrease pulp pulpitis excitability do15-20 mA or more, whereas at caries component EDI is 2-6 mA.
-Through FiF. Diagnosis of deep caries with chronic fibrotic objective examination. In chronic fibrous pulpitis of history turns out that the tooth previously strongly disturbed. Also in favor of the pulpit indicate paroxysmal, spontaneous pain. electroexcitability do10-12mkA pulp decreases.
-With deep caries EDI figures usually are normal, ie, 2-6 uA. Some authors for his research proved electroexcitability decrease to 10-12 mA.
-Additional methods of examination refers elektroodonto- diagnostics (EDI).
EDI provides a more comprehensive state of Repose of the pulp and the tissues surrounding the tooth.
Figures set threshold excitation pulp in normal and pathological conditions. Healthy teeth respond to currents of 2-6 mA. Reducing electroexcitability do20-40 microamps indicates the presence of inflammation in the pulp. The reaction slurry on a current of 60 mA points to necrosis of the coronal pulp. If it occurs necrosis and root pulp, the tooth reacts on a current of 100 mA or higher. When expressed morphological changes in periodontal tooth reacts on currents more than 200 mA.
-Thermodiagnostics -determination tooth razdrazhiteli- reaction temperature at one of the oldest physical methods commonly used to determine the state of the pulp. The ester used as an irritant, but usually cold or hot water which is a strong irritant due to greater
heat capacity. The simplest method is to irrigation water from the syringe teeth.
-Deep caries classified with diseases such as: mean caries, pulpitis chronic fibrosing, focal acute pulpitis.
-With deep caries patient complains of intermittent pain from mechanical, chemical and thermal stimuli, going after the removal of the stimulus.
-In the chronic form the patient flow deep caries indicates a complaint such as halitosis, jam meal, intermittent pain of strong irritants, the sharp edge of the tooth.
-Deep caries is characterized by a deep carious cavity is filled with softened dentin.
-To localize the lesion to distinguish the following classification:
Cavities in the stain step (enamel lesion is manifested in a change in its normal color in a limited area and the appearance of opaque, white, light brown spots).
Surface caries (enamel is damaged)
Middle caries (violates the integrity of the dentine-enamel compound, but is retained on tooth cavity sufficiently thick layer of dentine unaltered.
Deep caries (affects deeper layer of dentin, there are changes in the pulp).
-When deep caries tooth polka normally responds to a current of 2.6 microamps but excitability can be reduced (in the range of 10-12 microamps).
-Percussion-tapping on zubu- used to determine the status of periodontium. Forceps or pen tip tapped on the cutting edge or chewing surface of a tooth. If there is no periodontal inflammation focus, percussion painless. Distinguish vertical percussions when the direction coincides with the punches and the horizontal axis of the tooth when the punches have lateral direction.
-Probing -determination, with the presence of pain cavity walls and the bottom of the cavity. Held angle probe. -Ostroe for deep caries can be treated in one or two visits.

-In the treatment of acute deep caries in one visit under anesthesia produces dissection cavity, pharmacological treatment is applied therapeutic gasket aqueous dentin insulating gasket permanent seal.
-In the treatment of acute deep caries in the first two visits Seen under anesthesia produces dissection cavity, pharmacological treatment is applied therapeutic gasket aqueous dentin dentin-temporary filling of the paste for 5-7 days.
If the tooth is not concerned, then on the second visit the temporary seal is removed from the dentin -pasty superimposed insulating strip, becoming a permanent seal.
-As therapeutic gasket in the treatment of acute deep caries used: calcine, Kalmetsin, zinc-eugenol paste, Kaltsimol, Kaltsipur.
-As the insulating gasket in the treatment of acute deep caries used: adgezor, fuji I, fuji II, Ketak Cem et al.
-The permanent seals in the treatment of acute deep caries used: Composites (chemical and light curing), compomers, glass ionomer cements (JRC) amalgam.
-Treatment of the depth of caries consists of the activities of general and local character
-Events general in the treatment of deep caries aims to improve the body's defenses and resistance tooth tissues.
-Drug effects on the pulp of the tooth is required when during the acute deep caries.
-Softened dentin is removed or excavated round bur.
-In the treatment of deep caries seventh lower mandibular tooth use anesthesia.
-Medicamentous treatment cavity in the treatment of deep caries is advantageously carried out with isotonic sodium chloride solution.
-In the treatment of deep caries upper second tooth use local infiltration anesthesia.
-As a permanent filling material in the treatment of deep caries (class 1 according to Blake) use "Adgezor" amalgam, JRC etc.
-For composite materials are light-cured: Valux Plus, Revolucion, Charisma, Filtek Z250, Filtek SupremeXT
-To increase the resistance of tissue tooth administered vitamin B, D, E, and mineral components: glycerophosphate, lactate, calcium gluconate, phytin. (1 tablet 3 times a day for 4-6 weeks with a break of 1-2 months)

Clinical activity №11

Subject: Treatment of acute deep caries in two visits

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Teach students to treat deep caries depending on the shape and the clinical course.
The task of the training session:	- To teach students to treat deep caries depending on the shape and the clinical course. - To familiarize students with the peculiarities of preparation and drug treatment cavities with deep caries. - Features filling cavities with deep caries different filling materials (cements, amalgams, JRC composite material (light and chemical curing)). - Teach students to imposition of medical pads. - Teach students to correctly and consciously to provide treatment to patients with deep caries, observe the necessary precautions while in the dental office. Especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed

	to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking in the treatment of deep caries, take responsibility for their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of treatment of deep caries is important in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical class №12

Subject: Methods of treatment of chronic deep caries.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Teach students to treat chronic deep caries
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the	Meet, they write. They work in groups, groups perform groups perform present

15 minutes	concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	

interactive method

Using the method of "Brainstorm"

Test questions on employment:

1.Metody chronic treatment of deep caries.
2.Metodika chronic treatment of deep caries in one visit.
3.Metodika treatment of chronic deep caries in two visits.
4. What kind of filling material used for permanent fillings in chronic deep caries?
Test questions and answers:
1.Metody chronic treatment of deep caries.
Chronic deep caries can be treated in one or two visits.
2.Metodika chronic treatment of deep caries in one visit.
In the treatment of chronic deep caries in one visit under anesthesia produces dissection cavity, pharmacological treatment is applied therapeutic gasket aqueous dentin insulating gasket permanent seal.
3. What kind of filling material used for permanent fillings in chronic deep caries?
The permanent seals in the treatment of deep caries chronic use: Composites (chemical and light curing), compomers, glass ionomer cements (JRC) amalgam.

The text of the practical classes

deep caries- the last step of the caries process characterized by extensive lesions of dental hard tissues, exciting the deeper layers of dentin. Clinically, the presence of deep caries expressed deep cavity, destruction of tooth crowns, painful sensations when exposed to thermal, mechanical or chemical stimuli. Deep caries is diagnosed on the basis of the inspection data representative of complaints sensing cavity, thermodiagnostics, electric pulp test, radiography. treatment of deep caries preparation comprising the steps cavity, the overlay curative and insulating and sealing gaskets.

deep caries

Deep caries - the most severe stage demineralization and degradation of dental hard tissues. According to topographic classification indentistry isolated following steps uncomplicated caries: Step carious spots, superficial, middle and deep caries. Thus, the term "deep caries" (saries profunda) reflects the depth of lesions and pathologic changes in the progression of degradation of the developing dental hard tissue and lesion vasodentin. When deep caries carious cavity separates the pulp from a thin layer of dentin. The major tasks of the treatment of deep

caries is the preservation of the functional usefulness of tooth decay prevention of morbidity - pulpitis or periodontitis.

Causes of deep caries

Deep caries can be developed primarily as a consequence of the progression of secondary caries untreated or secondary - a tooth previously dissected (under a seal, when defects of treatment, when cleaved seals, etc...). The rest of the causes and mechanisms of development of deep caries are similar etiology and pathogenesis of caries disease in general. The leading role here given to the process of fermentation of carbohydrates, in which the organic acids formed in the oral cavity (eg, lactic acid), causing damage to the tooth enamel and provide access cariogenic bacteria in dentinal tubules. This is accompanied by the release of calcium salts dentin, its softening and destruction of dental hard tissues.

Colonies cariogenic bacteria present in dental plaque which collects in the fissures, interproximal, under the gums, on the tooth surfaces. Therefore, insufficient oral hygiene and plaque removal untimely promotes further progression of caries. The occurrence of deep caries great role character salivation: the quantity and pH of saliva, its remineralizing potential buffering properties of specific and nonspecific protection factors.

Besides local microbial and chemical factors, the occurrence of deep caries may be due to a hereditary predisposition, disturbance of mineral, carbohydrate and protein metabolism in the body, inferiority structure of enamel and dentin, low quality drinking water, malnutrition, especially during periods teething and dentition.

Classification of deep caries

Also primary and secondary (recurrent) deep caries, the differences between which we have identified previously isolated forms of acute and chronic pathologic process. In acute during the carious cavity has a narrow inlet and a wider base; pain caused mainly by thermal or chemical stimuli. The chronic form of deep caries is characterized by a funnel-shaped cavity with a wide inlet and a narrow bottom; pain associated with the mechanical stimulation of the cavity bottom (in contact with food in a deep hollow, probing).

The clinical course distinguish compensated and decompensated forms subcompensated deep caries.

Symptoms of deep caries

Leading clinical manifestation of deep caries is a sharp, but short-term toothacheThat occurs in response to the temperature (hot and cold food and drink), chemical (sour, sweet, salty), mechanical (chewing, entering food remains in the hollow, pressing the bottom of the cavity) stimuli and which disappears immediately after the termination of these and other factors. If food fragments remain in the cavity, aching pain persist for a long time, as long as the mechanical stimuli are removed. In extensive collapse of the cavity or multiple deep caries can be determined halitosis - halitosis.

Formation of the cavity under the seal may occur years in chronic deep caries. In this case there is a long asymptomatic period, and when the destruction of the tooth reaches the bottom dentin appears tenderness on pressure. Seal covering the tooth can break away, to become mobile or drop out altogether.

Diagnosis of deep caries

In carrying out diagnosis of deep caries dentistIt takes into account the patient's complaints, clinical examination and instrumental studies. Dental examination reveals extensive destruction of the tooth crown, causing discomfort during eating and violates the aesthetics of dentition.

In the acute form of deep caries is detected deep carious cavity filled with light softened dentine. Attempting to probe the bottom of the cavity are sensitive or sharply painful. In chronic deep caries cavity walls and bottom are made dense pigmented dentin color which may vary from brown to black. Probing cavity painless, due to the presence of secondary dentin zone. Percussion tooth is not accompanied by pain.

Carrying thermodiagnostics reveals short-term painful reaction to hot and cold, quickly passing after cessation of the stimulus. electric pulp testwith deep caries identifies pulp response to a

current of 2-6 mA; sometimes there is a decrease of excitability of the pulp to 10-12 microamps. For suspected secondary deep caries, which developed under a seal, it is further performedradiography or radioviziografiya.
During the survey it is necessary to carry out a differential diagnosis with respect to other pathological processes, first of all, middle caries, Alopecia, and hypertrophic fibrous pulpitis. chronic periodontitis.
deep caries treatment
deep caries treatmentIt may be carried out in one or two visits to the dentist. Treatment in two steps may be required if the dentist is no confidence in the intactness of the pulp; In this case, at first visit madetooth cavity treatment removing all carious tissue-modified, application of medicinal substances and setting temporary seals. If within 3-4 days do not develop symptoms of pain, then the next visit to a temporary filling is replaced by a constant. In the event that for a period of observation come growing pains, testifying to the infection of the pulp takes holdcomplex treatment of pulpitis.
Milestones simultaneous treatment of deep caries include injection (infiltration or provodnikovuju) anesthesia, Preparation of the tooth cavity, the cavity formed pharmacological treatment, imposition of medical-insulating pads the bottom of the tooth cavity, posing light-curing fillings, Its grinding and polishing. Complications poor treatment of deep caries can become recurrent caries, pulpitis, partially broke off the tooth crown, tooth cavity perforation.
Prediction and prevention of deep caries
The correct and efficient treatment of deep caries allows you to save the tooth, hold it in the future restoration or strengthen crownWhile retaining the aesthetic characteristics and functional purpose. In case of further progression of deep caries or pulpitis developing periodontitis, which may requiretooth extraction.
Prevention of deep caries dental necessitates regular inspections of the oral care (tooth brushing, rinsing the mouth after ingestion of food, the use of dental floss holding occupational health) Limit sugar-containing foods and beverages in the diet, timely middle caries treatment.

Clinical activity №12

Subject: Treatment of chronic deep caries in one visit

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Teach students to treat deep caries depending on the shape and the clinical course.
The task of the training session:	- To teach students to treat deep caries depending on the shape and the clinical course. - To familiarize students with the peculiarities of preparation and drug treatment cavities with deep caries. - Features filling cavities with deep caries different filling materials (cements, amalgams, JRC composite material (light and chemical curing)). - Teach students to imposition of medical pads. - Teach students to correctly and consciously to provide treatment to patients with deep caries, observe the necessary precautions while in the dental office. Especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking in the treatment of deep caries, take responsibility for their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills.

	-Knowledge of issues of treatment of deep caries is important in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical class №13

Subject: Restoration of the cavity of class I for Black.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Teach students to treat conduct restoration cavity 1 class by Black
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnкm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "The Weakest Link"

Test questions on employment:

1. Carrying out the restoration of cavities 1 class Black
2. stages of preparation
3. The expansion of the cavity
4. Nekroektomiya

The text of the practical classes

Cavity preparation class I on Black

Cavity preparation provides consistent implementation of the five stages. Consider the basic rules of their conduct on the example of class I cavities by Black. Remember that for the cavities are class I defects located in pits and fissures on the occlusal surface of premolars and molars, the lingual surfaces of the upper incisors and the vestibular and lingual grooves molars

associated with chewing surface

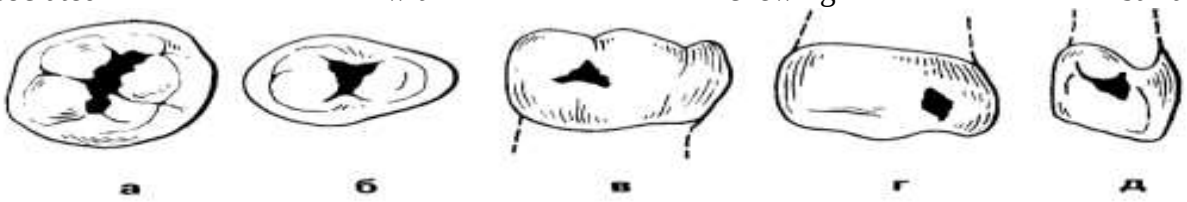


Рис. 99. Полости I класса (схема):
а – жевательная поверхность моляра; б – жевательная поверхность премоляра; в – вестибулярная поверхность моляра; г – язычная поверхность моляра; д – язычная поверхность резца.

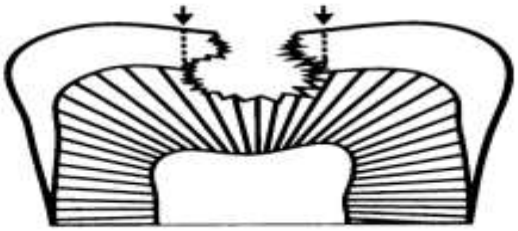


Рис. 100. Раскрытие полости.

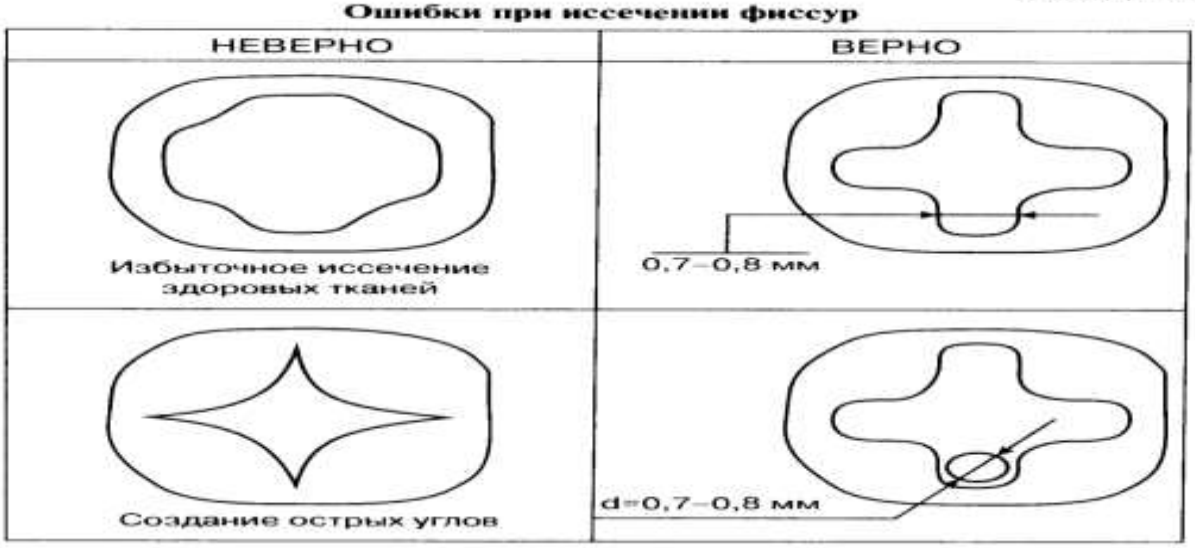
1. Disclosure of the cavity. Cavity preparation begins with the removal of the overhanging edges of enamel and podrytymi without podsobit dense, healthy dentin. As a result of the steep wall must turn dissected The amount of tissue at this stage is determined by the dimensions of the hearth carious dentin destruction. The purpose of this step - to provide access for further manipulation and good oral review. Disclosure of the cavity should be performed fissure or globular carbide or diamond burs, the diameter of the respective inlet opening size of the cavity at high speed (preferably - via the turbine nozzle) with an air-water cooling.

2. Expansion cavity (prophylactic extension). Prophylactic rasshiremie - continuation phase cavity disclosure. Its purpose - to prevent recurrent caries. At this stage, the external cavity outlined final shape. If the cavity under the dissectingby "biological expediency"I.G.Lukomskogo this step is not performed. If the doctor is guided bymethod of "preventive expansion"Black, made a radical excision "kariesvospriimchivyh" sections to "immune" zones. Step expansion cavity when this is done fissure or conical burs (diamond and carbide) tip turbine with air-water cooling at high speed.The method of "preventive sealing"It makes it possible to reduce the loss of healthy tooth substance on the occlusal surface. If the tissue in the cavity on all excised lesion depth, the fissure was excised only the enamel (in fissure depth). The bottom of the cavity in this case is obtained by "nonclassical" forms - rounded or stepped. When "disclose" fissure should not remove large amounts of tissue, sufficient groove width in the enamel of 0.7-0.8 mm and a depth of 1 - 1.5 mm. You should also avoid creating sharp edges (tab. 17). Traditionally, for excision of fissures (fissurotomii) in our country use the narrow cylindrical burs, called fissure. Sometimes opening fissures also produce plamevidnymi

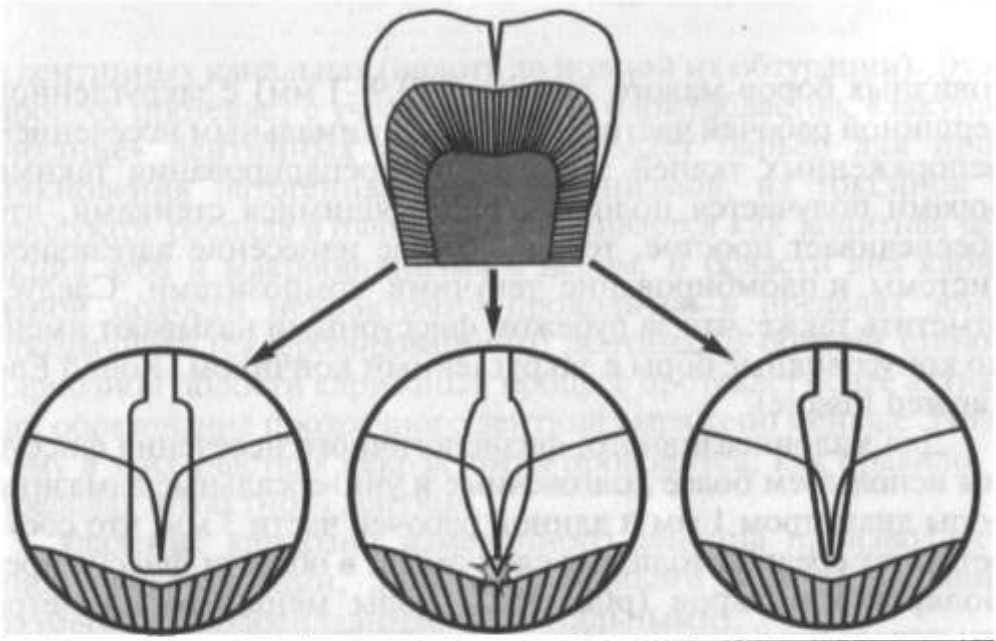
or spear forests.

Таблица 17

Ошибки при иссечении фиссур



It should be noted that such a choice does not correspond to hog the principles of good preparation and careful attitude to the unaffected tooth structure. When using a cylindrical boron excision fissures performed with simultaneous removal of a large amount (Fig. 101) is attached to sound enamel. When conducting fissurotomii plamevidnym diamond grit diamond bur tip with a pointed tool crumble during the first moments of the preparation, and the further process of excision fissures in the working part of the tip of boron converted to simple rubbing with a very low work efficiency and thermal damage to the tooth tissue. Optimal for excision of fissures posterior teeth is the use of conical burs small diameter (0.9-1 mm) with rounded apex working part. Along with minimal excision of uninvolved tissues of the tooth, after preparation such burs obtained cavity with diverging walls, which provides a simple, tech application of the adhesive system and flowable filling composites. It should also be noted that overseas called fissure is conical with a rounded tip drills (Round End Tapered Fissure).



Удаление большого количества здоровой эмали	Участок повышенного трения с низкой эффективностью работы и термическим повреждением тканей зуба	Дизайн полости соответствует форме фиссуры, обеспечивая простое и технологичное пломбирование
Цилиндрический бор – нежелательно	Пламевидный бор – нежелательно	Конусовидный бор с закругленной вершиной рабочей части – оптимально

Рис. 101. Оптимальный выбор конфигурации бора для проведения фиссуротомии.

For minimally invasive, the physiological excision fissures we use a more durable and versatile diamond burs with a diameter of 1 mm and a working portion 3 mm long, which corresponds to the average thickness of the enamel layer in fissures pre-molars and molars .smaller diameter drills we use is limited, because after their application there are technological problems of application of the adhesive system and composite application.

Рис. 102. Конусовидный алмазный бор с закругленным концом рабочей части диаметром 1 мм для турбинного наконечника 849-010M-FG для проведения лечебно-профилактической фиссуротомии (*NTI*).

3. Necrosectomy (necrotomy "caries removal"). This step involves the complete removal of the softened and pigmented dentin of the cavity. From the morphological point of view at this stage decay zone is removed and demineralization. The boundaries of the cavity created in the area of intact dentine and transparent (Fig. 103). Zone transparent dentin represents sclerotic dentin portion between the bottom and the pulp cavity of the tooth. It is formed by deposition of calcium salts dentinal tubules (until their complete obturation). This process takes place with live odontoblasts. "Capping" dentinal tubules creates a barrier to the penetration of pathogens, toxins and their decomposition products in the pulp and is regarded as a defensive reaction tooth and microorganism as a whole. Near the bottom of cavity necrectomy held within a transparent zone (sclerosed) dentin. In the walls of the cavity carious process is more active, transparent dentin formation is less pronounced. Therefore in these sections necrectomy conducted usually within intact dentine.

Рис. 103. Границы иссечения дентина на этапе некрэктомии.

Removal of carious dentin is produced or modified by excavators or spherical burs large (carbide or steel). When there are a large number of cavities softened dentine, its removal is recommended acute excavator. To prevent accidental opening of the cavity of the tooth, the movement of the excavator should be directed from the bottom to the walls. Excavator size should match the size of the cavity. Using too small excavators also increases the risk of accidental opening of the pulp chamber. Necrectomy can also produce spherical or pear-shaped burs large (carbide or steel). Burs intermittent movements should work from the bottom to the walls at a low speed. When particularly in the area of the pulp horns, so as not to expose the tooth cavity and does not lead to a traumatic pulpitis. After removal of diseased dentine apparently recommended round bur at low speed to excise a thin layer (about 1 mm) Edge dentine, which is generally strongly positive. This operation is carried out at a shallow cavities where there is no risk of opening the cavity of the tooth. At work should pay attention to the design features used burs. Cutting faces "standard" spherical boron end on top of the working part of boron at a single point As a result of this cutting portion has properties almost no, this point is "dead". Therefore, such a boron works effectively only in the lateral directions, and to treat them to the bottom of the cavity, boron must be placed at an angle of 45-50 °. After removal of diseased dentine apparently recommended round bur at low speed to excise a thin layer (about 1 mm) Edge dentine, which is generally strongly positive. This operation is carried out at a shallow cavities where there is no risk of opening the cavity of the tooth. At work should pay attention to the design features used burs. Cutting faces "standard" spherical boron end on top of the working part of boron at a single point As a result of this cutting portion has properties almost no, this point is "dead". Therefore, such a boron works effectively only in the lateral directions, and to treat them to the bottom of the cavity, boron must be placed at an angle of 45-50 °. After removal of diseased dentine apparently recommended round bur at low speed to excise a thin layer (about 1 mm) Edge dentine, which is generally strongly positive. This

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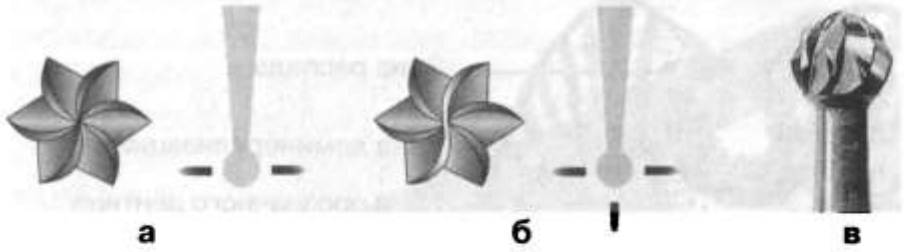


Рис. 104. Варианты шаровидных твердосплавных боров компании *NTI*:
а – бор серии H1 с неактивной верхушкой рабочей части (все грани заканчиваются в «мертвой точке» на вершине бора, бор эффективно работает только в боковых направлениях);
б – бор серии H1S с активной верхушкой рабочей части (имеет S-образную перекрывающую грань на вершине, эффективно работает по всем направлениям);
в – бор H1SX с активной верхушкой рабочей части и дополнительной перекрестной насечкой на режущих гранях (имеет повышенную агрессивность).

Bora active tip are on top of the working portion of a higher S-shaped cutting line that overlaps the "dead point" (see Fig. 104 b). This design allows you to work effectively these burs in all directions. Sometimes, to increase cutting power hog on the verge of their cause cross notch that adds Boram aggressiveness and ensures no vibration during dissection. It should be understood that the active tip drills a working part and additional notches on the edges of more aggressive "standard", so when handling requires care to avoid excessive removal of dental hard tissue and pulp accidental opening. If necrectomy performed poorly, then next to the seal over time the development of carious lesions is observed (ongoing, recurrent caries). When leaving the infected dentin in the bottom cavity can be deeply lying in microbial invasion and tissue development pulpitis. Generally, carious dentin is changed at the bottom of the cavity is easily

recognized and easily removed. Greater difficulty for the doctor are areas affected dentine on the enamel-dentine border along the edges of the cavity. These fragments of softened dentin, hidden with a thick layer of enamel unaffected, often go unnoticed

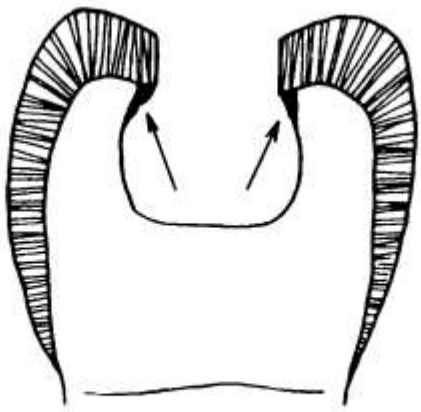


Рис. 105. Типичная локализация участков пораженного дентина в области эмалево-дентинной границы.

In some cases, especially with "chronic" within cavities on the bottom allowed leaving pigmented, but dense dentine. Such tactilely dentin determined: after removal of demineralized dentin surface must be dense and smooth, being left pigmented dentin must be very resistant to removal of an excavator, in the investigation of its probe be krepitiruyuschie sound. At sealing cover we recommend a thin layer of dentin «Vitrebond» (ZM ESPE) glass ionomer cement. Particular caution should be observed when carrying out necrectomy in deep cavities. In such cases, more securely excavating, moving from the bottom to the walls. The bottom cavity is advisable to leave the trough with the topography of the tooth cavity.If removed from the cavity entire softened dentin, sealing treatment is carried out with imposition of the gasket calcium salicylate cement.

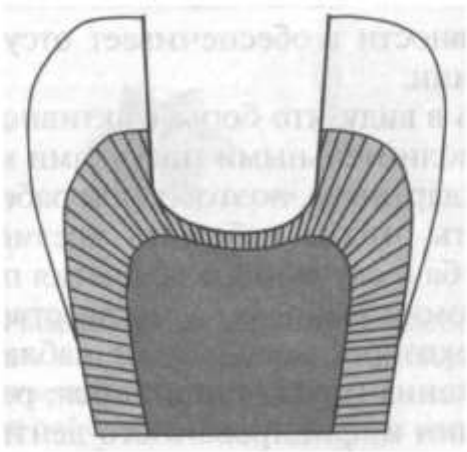


Рис. 106. Корытообразное дно глубокой кариозной полости I класса.

When very deep cavities, especially in young patients when clinical signs are absent pulpit, and the complete removal of softened dentine facing opening of the pulp chamber, allowed the abandonment of the bottom cavity of a small amount of the softened dentin. In this case, treatment of caries is carried out several visits, medical pads superimposed based slurry of calcium hydroxide or tsinkoksidevgenolnogo cement. The cavity of the period of treatment is closed with a temporary filling, and the patient is under the supervision of a dynamic with constant control of the pulp status (PDE thermodiagnostics etc.). After remineralization and diseased dentin formation by substitution dentin pulp superimposed permanent seal. Determination of the optimal amount of dentin to be excision - a problem quite complicated. Of

interest in this regard the work of Professor T.Fusayama (Japan). He found that the modified carious dentin is composed of two layers.

Outer layer - infected and non-viable. He is a painless and non-sensitive to stimuli, it is not possible remineralization; collagen therein irreversibly denatured. This layer is characterized by an active passage dentine caries process, it is usually on the cavity walls. When dissection cavity, this layer must be removed. The inner layer - uninfected, viable may partially demineralized and pigmented, but capable of remineralization; collagen therein may be altered, but reversible. This dentin is usually located at the bottom of cavity. He - a dense, pigmented. Below that is a sclerotic dentin layer (transparent dentin zone). In the treatment of dental caries of dentin retain this layer. However, the boundary between the layers of rough, It does not correspond to the degree of change of color of dentin. Softening of the dentin and change color according to T. Fusayama opinion, is not a reliable criterion in conducting necrectomy. To display layers and determining the level pekrekgomii T.Fusayama proposed preparations based on 0.5% basic fuchsin solution or 1% solution of the acid red in propylene glycol. In Soviet literature indicating irreversibly modified method of carious dentin by means of dyes has been described in detail in 1980 by Professor M.I.Groshikovym in his monograph "Prevention and treatment of dental caries." Preparations for the display of the affected dentine caries is often called markers (caries detectors). Method caries clinical application of markers is as follows. Swab soaked abundantly caries marker is introduced into the prepared and the dried a cavity for 5-10 seconds (no more!). preparation is then washed with water. The outer, non-viable colored dentin layer and an inner, healthy - no. Dyed portions are removed burs or excavators. The method allows the economical exsect tooth tissue by demineralization partial preservation layer. Its use in the clinic gives the practitioner the ability to quickly and reliably carry out quality control of necrectomy. Complete removal of diseased, non-viable dentin reduces the risk of "postoperative sensitivity" recurrent caries, dental pulp inflammation. Caries markers may also be used for indicating plaque. We recommend practical dentists use dental caries markers constantly. preparation is then washed with water. The outer, non-viable colored dentin layer and an inner, healthy - no. Dyed portions are removed burs or excavators. The method allows the economical exsect tooth tissue by demineralization partial preservation layer. Its use in the clinic gives the practitioner the ability to quickly and reliably carry out quality control of necrectomy. Complete removal of diseased, non-viable dentin reduces the risk of "postoperative sensitivity" recurrent caries, dental pulp inflammation. Caries markers may also be used for indicating plaque. We recommend practical dentists use dental caries markers constantly. preparation is then washed with water. The outer, non-viable colored dentin layer and an inner, healthy - no. Dyed portions are removed burs or excavators. The method allows the economical exsect tooth tissue by demineralization partial preservation layer. Its use in the clinic gives the practitioner the ability to quickly and reliably carry out quality control of necrectomy. Complete removal of diseased, non-viable dentin reduces the risk of "postoperative sensitivity" recurrent caries, dental pulp inflammation. Caries markers may also be used for indicating plaque. We recommend practical dentists use dental caries markers constantly. Dyed portions are removed burs or excavators. The method allows the economical exsect tooth tissue by demineralization partial preservation layer. Its use in the clinic gives the practitioner the ability to quickly and reliably carry out quality control of necrectomy. Complete removal of diseased, non-viable dentin reduces the risk of "postoperative sensitivity" recurrent caries, dental pulp inflammation. Caries markers may also be used for indicating plaque. We recommend practical dentists use dental caries markers constantly. Dyed portions are removed burs or excavators. The method allows the economical exsect tooth tissue by demineralization partial preservation layer. Its use in the clinic gives the practitioner the ability to quickly and reliably carry out quality control of necrectomy. Complete removal of diseased, non-viable dentin reduces the risk of "postoperative sensitivity" recurrent caries, dental pulp inflammation. Caries markers may also be used for indicating plaque. We recommend practical dentists use dental caries markers constantly. Its use in the clinic gives the practitioner the ability to quickly and reliably carry out quality control of necrectomy. Complete removal of diseased,

non-viable dentin reduces the risk of "postoperative sensitivity" recurrent caries, dental pulp inflammation. Caries markers may also be used for indicating plaque. We recommend practical dentists use dental caries markers constantly. Its use in the clinic gives the practitioner the ability to quickly and reliably carry out quality control of necrectomy. Complete removal of diseased, non-viable dentin reduces the risk of "postoperative sensitivity" recurrent caries, dental pulp inflammation. Caries markers may also be used for indicating plaque. We recommend practical dentists use dental caries markers constantly.

Рис. 107. Caries Marker, *VOCO*.

In addition, as our experience shows that caries the markers are ideal for training purposes. Students, controlling the quality of their work with these drugs, more attentive and responsible approach to caries treatment, perceiving it as a complex medical procedures. Currently, the Russian market presents the following drugs in this group: «Caries Marker», VOCO.«Seek» and «Sable Seek», Ultradent; "Radsident" Rainbow-P, etc. 4. Formation of the cavity. The purpose of this step - shaping cavity shape conducive to reliable fixing of the seal as well as providing a sealed tooth sufficient strength and resistance at functional loads. This step creates the final exterior and interior of the cavity shape. A step of forming the cavity is performed fissure, conical, pear-shaped and plamevidnymi burs (diamond and carbide) at high speed (turbine tip) with optional air-water cooling. The desired shape of the cavity obtained and with the retention of resistance. Under resistant form realize stability remaining after preparation of the tooth tissue and to seal the superimposed functional loads. Retention is provided by creating additional conditions for fixing the seal, preventing its displacement (retention trimming, additional fields, the convergence of walls, etc.). If it is intended the use of materials that do not have adhesive properties (amalgam, cements, ceramic or metal tabs) formed cavity class I must meet a number of requirements. A. The cavity should have yaschikoobraznuyu shape - flat bottom perpendicular to the direction of chewing pressure and the vertical wall. When the sealing is applied amalgam I generation with low silver content, the angle between the bottom and the walls should be equal to 90 °. In applying amalgam with improved mechanical characteristics (vysokomednye amalgam II and III generations without gamma-2 phase) to improve mechanical retention wall seals made slightly convergent, the angle between the bottom wall and - 70 °. Under tab cavity is formed with a slightly diverging walls.**B.** The cavity is formed within the surface layer of enamel and dentin (no less than 1 - 1.5 mm), even if it necessary to excise healthy tooth tissue .

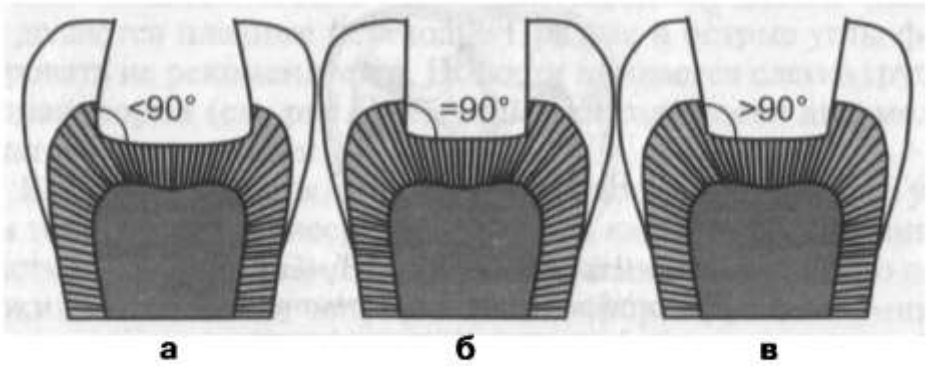


Рис. 108. Варианты формы полости I класса при пломбировании амальгамами (а, б) и вкладками (в).

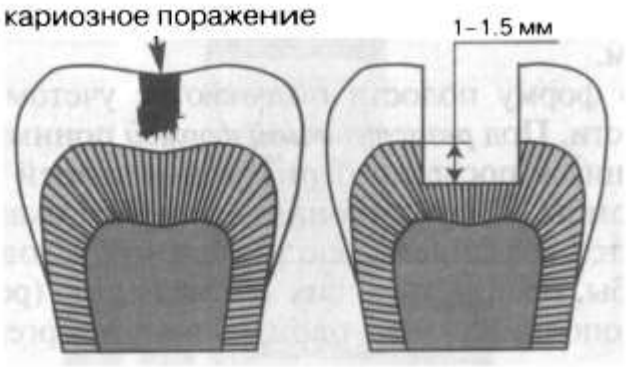
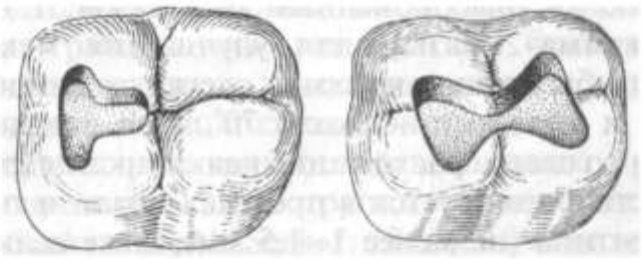
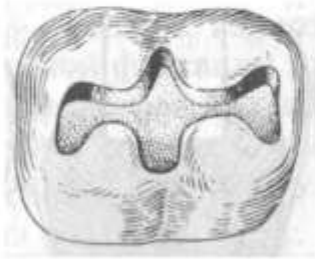


Рис. 109. Минимально допустимая глубина полости при пломбировании амальгамой.

IN. The outlines of the cavity must be complex, which provides stability and retention of mechanical seals. The outer contour of the cavity is created considering the topography and kariesrezistentnyh portions kariesvospriimchivyh



Полости сформированы без учета топографии кариесрезистентных и кариесвосприимчивых участков



Полость сформирована с учетом топографии кариесрезистентных и кариесвосприимчивых участков

Рис. 110. Наружные очертания полости I класса при пломбировании амальгамой.

G. If the size of the cavity is more than half the distance from the center of the fissure to the central protuberance vertices, then, to prevent it broken off, hillock dissected over a height of 2 mm and cover filling material .In the application of amalgam and tabs that rule is mandatory.

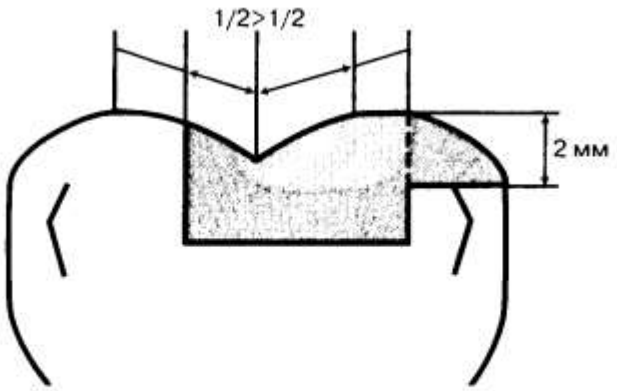


Рис. 111. Перекрывание пломбировочным материалом бугра жевательного зуба в зависимости от размера полости (Макеева И.М., 2003).

When applied for sealing the cavity composites and glass ionomer cements preparation differs substantially from the technique described above. Usually cavity preparation for composite fillings called "adhesive dissection." A. Formation of the internal cavity of contours is performed taking into account the physical and mechanical properties and characteristics of the spatial organization of these materials. The contours of the cavity must be flattened between the bottom and the walls are made smooth transitions. Direct and sharp angles is not suitable for forming. Cavity attached to a slightly pear-shaped form may be made, if necessary, step bottom.

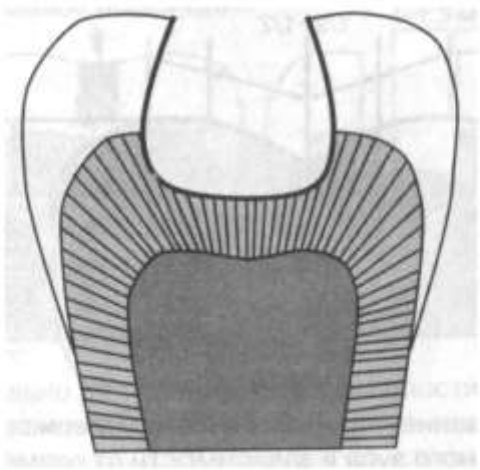


Рис. 112. Формирование закругленных углов между дном и стенками кариозной полости при пломбировании композитами и стеклоиономерными цементами.

B. Creating external contours of the cavity is carried out taking into account the topography and kariesrezistentnyh kariesvospriimchivyh sites .At the same time, as we have repeatedly emphasized, the deep cavity is formed with minimal excision of uninvolved tissues. It has a step, irregular bottom. Excised and sealed, as a rule, all the fissures of the chewing surface. In carious lesions shallow cavity formed in the blind isolated pits in the vestibular surfaces of the lower molars.To maintain the strength of the crown is recommended at preparing fissures first maxillary molars form two separate cavities leaving a zone of resistance -emalevogo ridge extending from the anterior palatal tuber to distobuccal .The same principle applies if the first lower premolar has a central enamel bead between the bumps

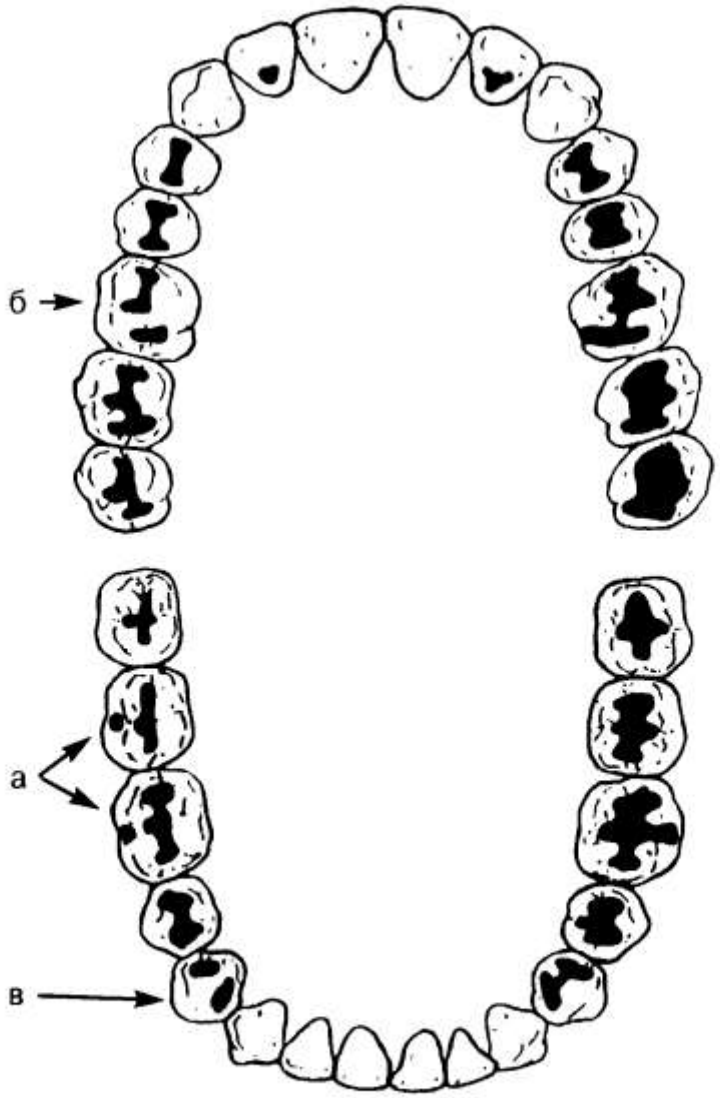


Рис. 113. Варианты границ пломб в полостях I класса при лечении кариеса зубов методом профилактического пломбирования композитами (Петрикас А.Ж., 1997).

IN. The edges of the seal should not get into the space occlusion-onnogo contact with the teeth-antagonists. To fulfill this condition before the cavity preparation is recommended to identify the point of occlusal contacts using carbon paper. In the process of preparation of these areas need to "get." A more favorable embodiment is when the cavity boundaries lie medially from the occlusion points. If the volume of the hearth caries do not allow the cavity "derived" from the occlusal point outwards in such a way that a contact point of the filling material layer was not thinner than 2 mm (see. Fig. 115). It should be emphasized that this rule applies to cases where as a restorative material used amalgam or tab

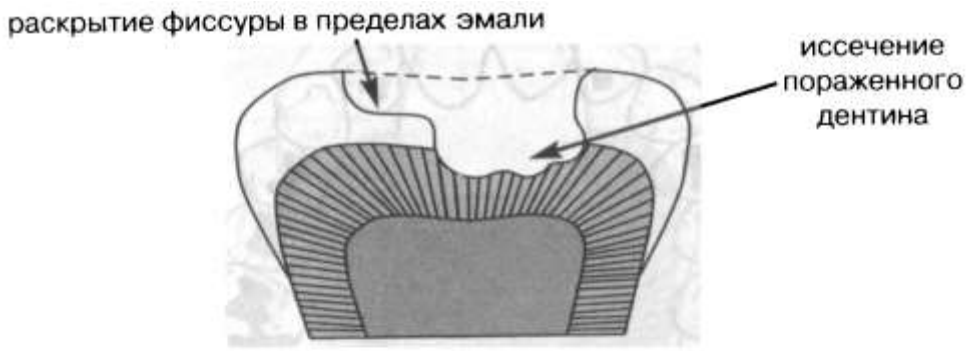


Рис. 114. Дизайн полости I класса при минимальном иссечении тканей вглубь при лечении кариеса зубов методом профилактического пломбирования композитами.

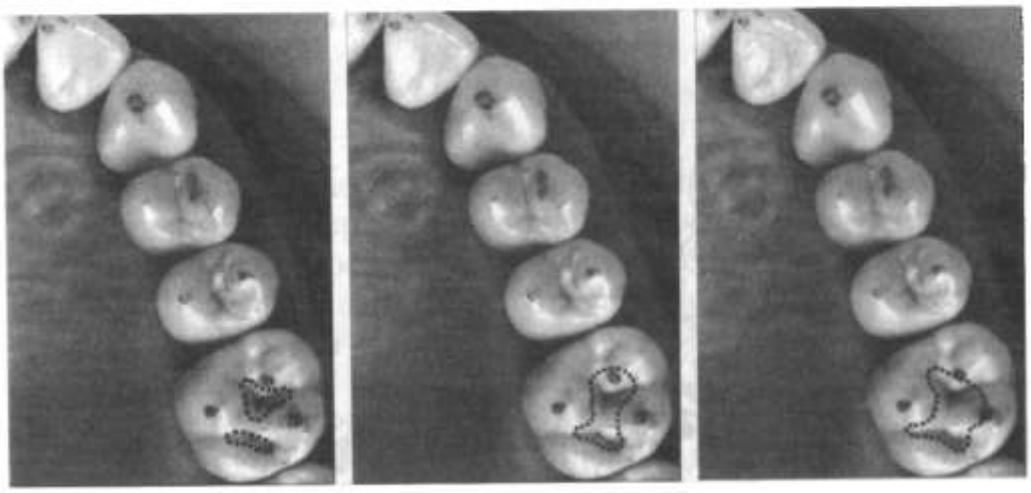


Рис. 115. Расположение границ полости по отношению к точкам окклюзионных контактов.

G.Given the high adhesive properties of advanced composites, glass ionomer cements, additional conditions for fixing the seal within the cavity of class I, e.g., retention trimming create not required. D. Given the fact that the composites due to adhesion and elasticity can be strengthened and "support" loose tooth tissue, leaving allowed thinning weakened chewing hillocks followed by enhancing their composite material by a special method (see. Fig. 116 a). At the same time, in some clinical situations, especially when significant loss of tooth tissue, in order to prevent break off thalamus, it dissected over a height of 2 mm and a composite cover (Fig. 116 b).

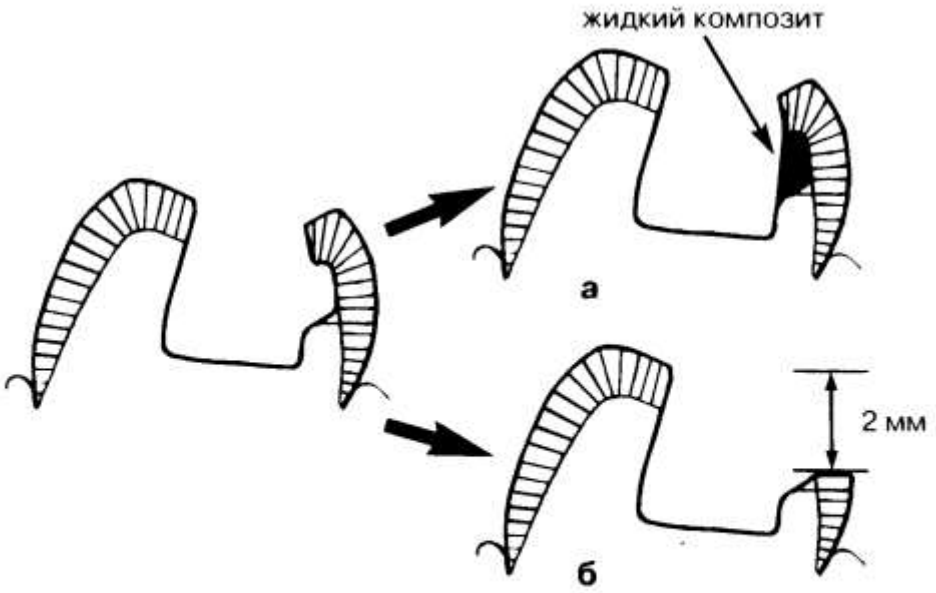


Рис. 116. Тактика в отношении истонченных, ослабленных жевательных бугров:
а – укрепление бугра жидким композитом;
б – иссечение.

If the tooth is sealed cements, this rule is not observed, since cement - materials are less durable than the tooth tissue. Forming of cavity creation bevel enamel (seam). This stage is very important, since the bevel enamel can significantly increase the resistance of tissues and tooth fillings. The outer part of the enamel prisms at the inlet cavity, as a rule, does not have a support portion and is less resistant to chewing pressure. Enamel broken off edges peripherally seals leads to a violation of fit of the seal and the development of recurrent caries. Tactics against beveling enamel depends on the applied filling material. Recommendations for creation of the bevel when filling amalgams are different in different authors. MI Groshikov (1980) E.A.Magid, N.A.Muhin (1987) I.K.Lutskaya, AS Argyushkevich (2000) when filling the cavity with amalgam recommended to make bevel the entire depth of enamel at 45 °. E.Helvig et al. (1999), L.Baum et al. (2005), EV Borovsky (2005), bevel the enamel is not recommended. Tactics in the establishment of the bevel, in this case depends on what will be used for amalgam fillings. If used amalgam I generation (low silver content) is bevel enamel. This is due to the fact that such amalgams have a high ratio of plastic deformation ("creep") and, consequently, increased risk of marginal breakup. In this case, the seal to make a correction is much easier if the bevel has been made. When using amalgams II (with a high copper content) and III (atomic containing copper) generations bevel enamel is not done. This is because, Such amalgams have greater strength, less "creep", the risk of the edge broke off their reduced (Surzhansky SK et al., 2004). When cavity filling with cast metal tabs (materials, stronger than enamel) is half the thickness of the bevel on the enamel at an angle of 45 °. When filling cavities cements - materials, considerably less durable than enamel, a bevel is not done, since a thin layer of filling material is quickly destroyed under the action of chewing pressure. In applying composite unified approach to the creation of the bevel on the enamel occlusal surface until depleted. EV Borovsky (2001) believes that the enamel bevel should be established on a mandatory basis across the edge of the cavity to half the thickness of the enamel. In this case various options bevel: straight, concave, etc. THEM. Makeyev (1997) recommends a bevel teeth on chewing than 45 °, to be able to impose on this region is thicker and durable composite layer. A.Zh.Petrikas (1997) recommends that form a long bevel on the entire enamel wall, sometimes even with the concavity to increase the area of contact adhesive to the tooth structure. The length of contact of the composite with enamel should be at least 1 mm. A.V.Salova (2003) recommends a bevel on the enamel occlusal

surface at an angle of 41-45 ° to the entire thickness of the enamel. At the same time, she noted that from the creation of the bevel should be avoided in areas where the bevel will weaken the tooth (the area of mounds), as well as in patients with increased abrasion of tooth structure and bruxism. B.N.Chilikin (2004) believes that when filling with composites cavities classes I and II enamel bevel should not do. YM Maksimovskiy (2005) for forming the cavity under the composites encourages Enamel do bevel angle of 45 ° by half the tooth enamel thickness. A.E.Davoyan and L.G.Grigoryan (2000), without denying the feasibility bevel enamel, note that when applying the adhesive systems IV-V generations permitted not only to refuse beveling enamel, but also leave the cavity over the overhanging edges of enamel , subsequently creating for them the support of a composite material. According to F.Lutz (1984), bevel enamel provides additional retention and tighter marginal seal of composite fillings that the application of adhesive systems IV-V generations permitted not only to refuse beveling enamel, but also leave the cavity over the overhanging edges of enamel, subsequently placing them for support of composite material. According to F.Lutz (1984), bevel enamel provides additional retention and tighter marginal seal of composite fillings that the application of adhesive systems IV-V generations permitted not only to refuse beveling enamel, but also leave the cavity over the overhanging edges of enamel, subsequently placing them for support of composite material. According to F.Lutz (1984), bevel enamel provides additional retention and tighter marginal seal of composite fillings

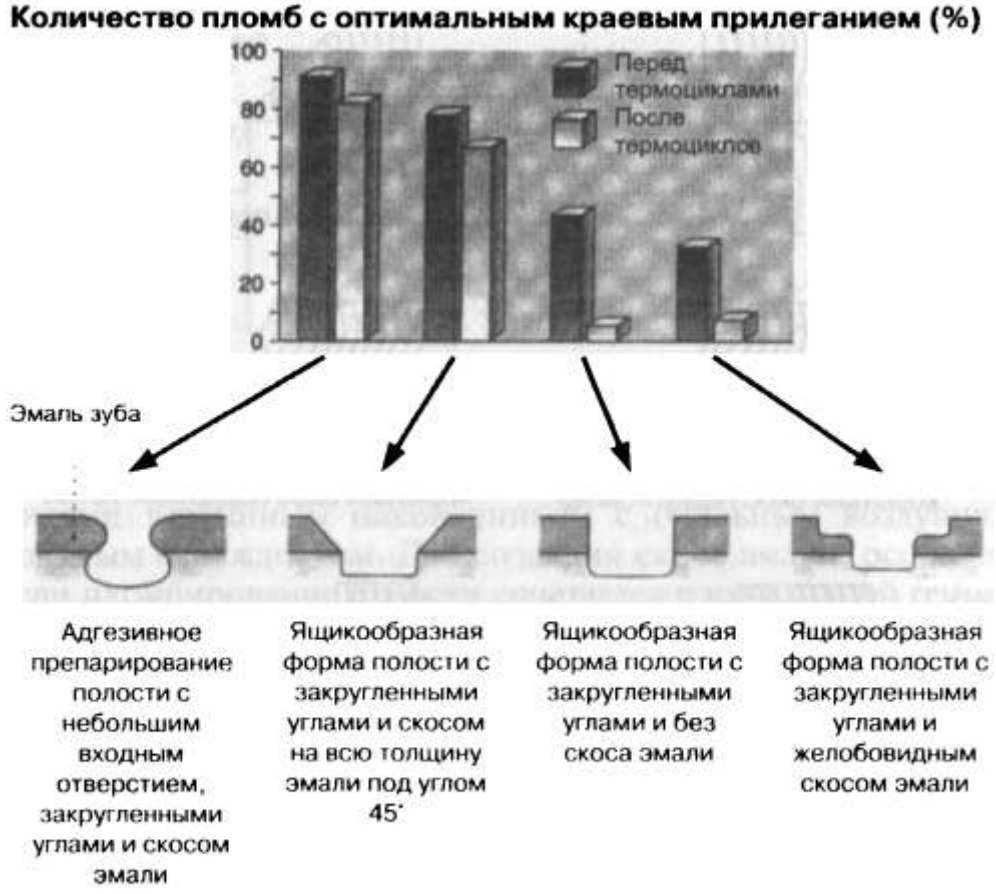


Рис. 117. Количество композитных пломб с оптимальным краевым прилеганием после термоциклирования в зависимости от дизайна краев полости (Lutz F., 1984).

We are guided in this matter L.Baum recommendations et al. (1995): mowing the edges of the cavity is made in all cases when the provided etching enamel during the restoration. In our opinion, the approach to the creation of enamel bevel should be flexible and individualized in each clinical situation. In general, we take the view that the bevel enamel when filling with

composites cavities classes I and II to make appropriate. In this case the bevel angle may vary from 10 to 40 ° depending on the distribution and location of functional loads occlusal contact points. bevel line, just as the boundary fillings with tooth tissues, through the point of occlusal contacts should not be held. Creating bevel enamel is necessary in the end sections of fissures when filling the cavity is combined with their invasive seal. It should be emphasized that the establishment of the bevel enamel should be viewed as an integral element prophylactic expansion cavity. The chamfer may extend the entire thickness of the enamel (long bevel) and can capture only a part of it (a short bevel) (Fig. 118).

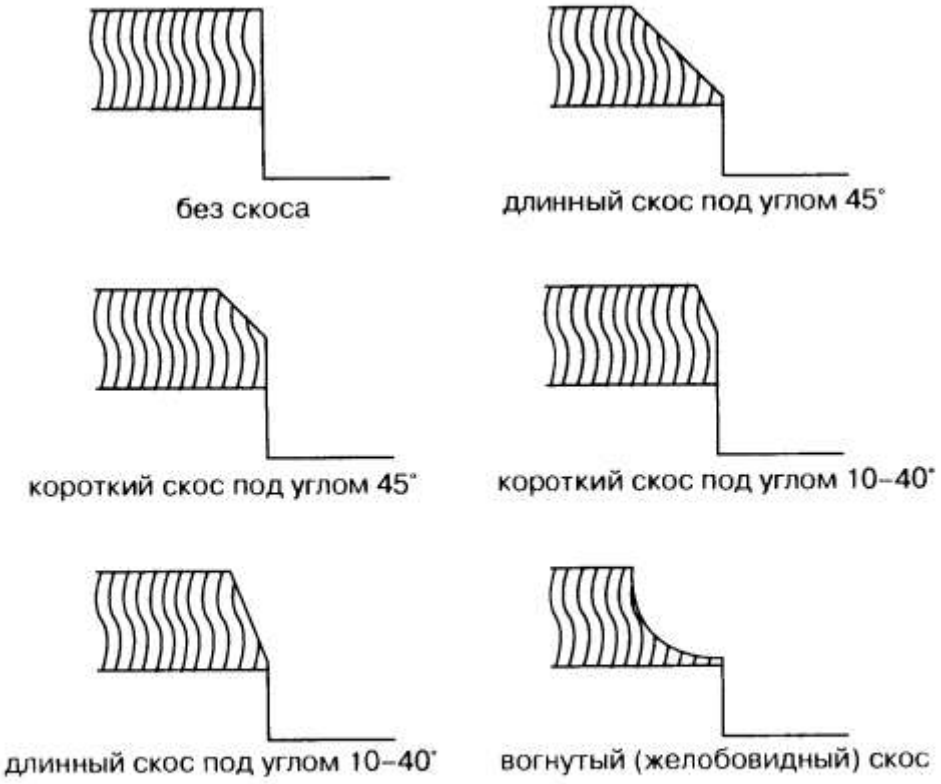


Рис. 118. Варианты препарирования края полости и создания скоса эмали.

If any wall cavity is not covered by enamel (often - gingival), the bevel on it is not done. Filling material to dentin butt coupled. Bevel enamel creates a diamond tapered and bullet-eminent burs or carbide finishing burs 10-12 octagonal turbine tip to the abundant air-water cooling. To create a bevel enamel, especially if combined with the filling cavity sealing fissures invasive, convenient to use carbide burs Fissurotomy, SS White, creating bevel enamel on the chewing surface within 10-15 ° during the process of preparation. By creating bevel enamel we end forming cavity. In conclusion, it should be noted that the current value has changed the term "bevel angle."

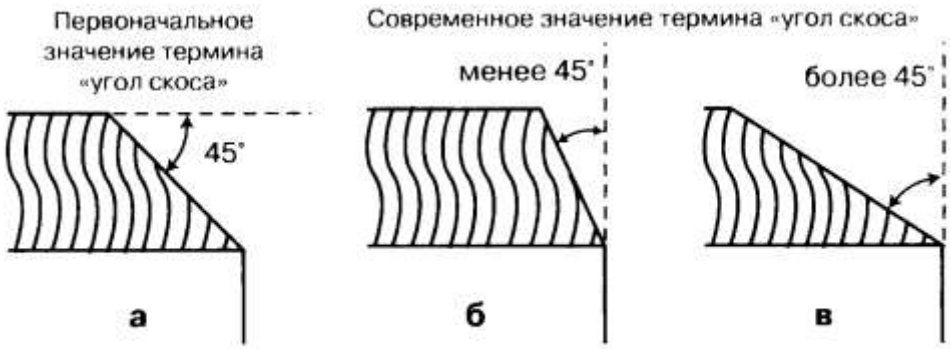


Рис. 119. Значения термина «угол скоса стенки полости».

5. Finishing enamel margins. After treatment with diamond or tungsten carbide burs at high speed along the edges enamel carious cavity is weakened, has cracks, irregularities fragmentirovapy enamel prisms, have no connection to the underlying tissues. In the future, this may cause a violation of fit seals of recurrent caries. All this necessitates Finishing - final (finish) machining the edges of the cavity, providing for the removal of damaged, weakened portions enamel and smoothness imparting to it. Finishing provides the best interaction and sturdy marginal seal between restorative material and tooth structure. This manipulation is performed 16 and 32 Granite carbide finishing burs or fine diamond head (red or yellow stripe). Work finishing burs recommended at low speed without pressure required air-water cooling. It is also effective to conduct the final treatment of the edges of the cavity enamel trimmer knives and gingival edges which remove a thin surface layer of enamel, except for possible negative effects of vibration, overheating, and other factors that occur in the processing tool rotating tooth tissues. In conclusion, it is appropriate to bring in a table summary recommendations on the operation modes at different stages of the preparation of cavities overheating and other factors that occur in the processing tool rotating tooth tissues. In conclusion, it is appropriate to bring in a table summary recommendations on the operation modes at different stages of the preparation of cavities overheating and other factors that occur in the processing tool rotating tooth tissues. In conclusion, it is appropriate to bring in a table summary recommendations on the operation

modes at different stages of the preparation of cavities

Таблица 18

Режимы препарирования кариозных полостей

Этап	Инструменты	Установка (наконечник)	Скорость
Раскрытие полости	Алмазные или твердосплавные боры	Турбинная бормашина	250 000–300 000
Профилактическое расширение полости	Алмазные или твердосплавные боры	Турбинная бормашина	250 000–300 000
Некрэктомия	Твердосплавные боры	Микромотор	500–2000
	Экскаваторы	Ручные инструменты	–
Формирование полости	Алмазные или твердосплавные боры	Турбинная бормашина	250 000–300 000
Финирование краев полости	Алмазные мелкозернистые боры, твердосплавные финиры	Микромотор	500–10 000
	Эмалевые ножи, триммеры десневого края	Ручные инструменты	–
Удаление (высверливание) «старой» пломбы	Алмазные или твердосплавные боры повышенной режущей эффективности	Турбинная бормашина	250 000–300 000

Clinical activity №13

Subject: Stages of restoration cavity 1 class by Black.

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Teach students the stages of the restoration of the cavity 1 class by Black
The task of the training session:	- Teach students the stages of the restoration of the cavity 1 class by Black - To familiarize students with the peculiarities of preparation and drug treatment cavities. - Features filling cavities various filling materials (cements, amalgams, JRC

	composite material (light and chemical curing)). - Teach students to correctly and consciously to provide treatment to patients with deep caries, observe the necessary precautions while in the dental office. Especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking in the restoration of cavities 1 class, responsible approach to their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of treatment of deep caries is important in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical class №14

Subject: Restoration of cavities class II Black.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Teach students the stages of the restoration of the cavity 2 class by Black
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-.		Meet, they write.

20 minutes 15 minutes 30 minutes 15 minutes	2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	They work in groups, groups perform groups perform present

interactive method

Using the method of "Brainstorm"

Test questions on employment:

1.Etapy cavities restoration of Class 2 by Black
2. Stages of preparation
3. Expansion cavity
4. Nerkroektomiya
5.Formirovanie

The text of the practical classes

As noted above, for class II cavities defects are disposed on the contact (approximal) surfaces of the molars and premolars (Fig. 120). The cavity may be located a front pa (medial) or rear (distal) of the contact surface, and can be simultaneous destruction process both carious tooth contact surfaces. Due to the fact that the preparation of such voids is generally made through chewing (occlusal) surface, they are further divided into okklyuziopnye medial-distally and medially-okklyuzioppye-occlusive-distalpye (MOD-cavity). Despite the presence in the title the

word "occlusion", cavity class II - the defeat of the contact surface is not always including a defect on the chewing surface.

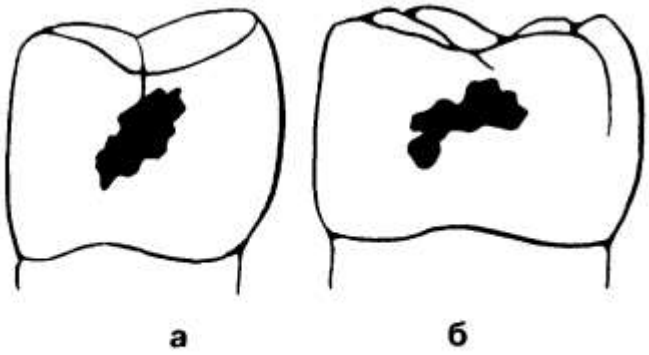


Рис. 120. Полости II класса (схема):
а – кариозная полость II класса на премоляре;
б – кариозная полость II класса на моляре.

Class II cavity usually located either in the contact point (area equator) or between the contact point and the neck of the tooth (in the region of the contact points gingival pole). Class II cavity preparation involves consistent implementation of the same five steps that I Cavity preparation class.

1. Disclosure of the cavity. For Class II cavity disclosure is generally performed excision healthy enamel and dentine located above the cavity.

Disclosure cavity class II can be carried out in various ways:

A. Direct access is used when there is free access to the affected contact surfaces: in the absence of an adjacent tooth (Figure 121, a.), Or when processing capabilities cavity through a cavity in an adjacent tooth (Figure 121, b.). In these cases, the cavity dissected, without bringing it to the chewing surface. Direct access is also used in microinvasive preparation method (see. Sec. 4.2), when the thin, specially designed for this purpose include instruments directly into the interdental space (Fig. 121 in).

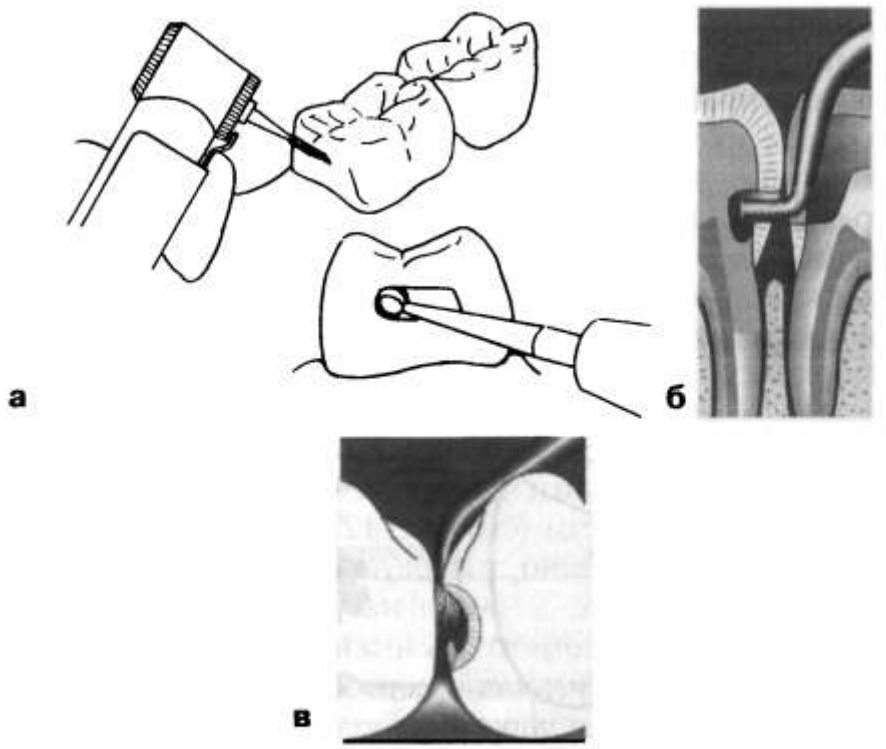


Рис. 121. Варианты прямого доступа при препарировании кариозной полости II класса:
а – при отсутствии соседнего зуба;
б – обработка через кариозную полость в соседнем зубе;
в – микроинвазивный способ препарирования.

To provide direct access to the cavity class II, can be produced moving apart (separation) of the teeth. separators (Figure 122.) - before special tools for this purpose are widely used. Furthermore, rasklinit teeth can be conventional wooden wedges increasing size.

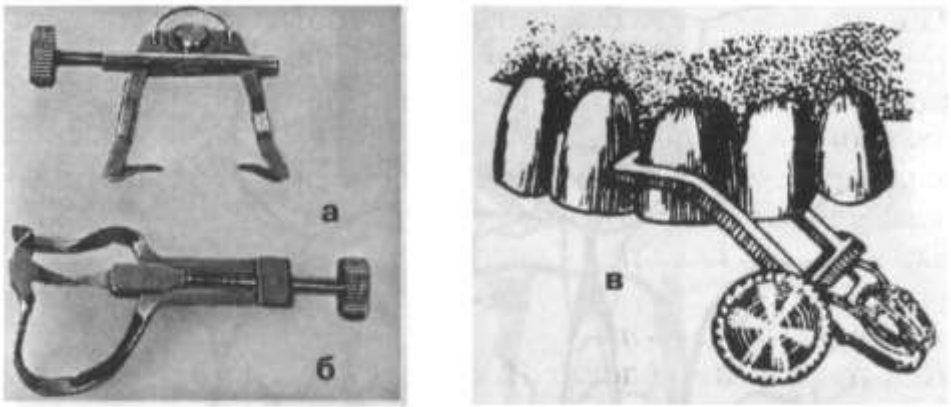


Рис. 122. Сепараторы для раздвигания зубов:
а – ELIOT (*HAGER&WERKEN*);
б – IVORY (*HAGER&WERKEN*);
в – применение сепаратора (Гофунг Е.М., 1939).

B. occlusal access is the most common. When it is made wide excision of tissue from the chewing surfaces of the tooth (see. Fig. 123). The use of occlusive access shows, first of all, with extensive carious lesions, as well as routine dental reception when the dentist you need to

quickly, manufacturability and low cost process and seal the contact cavities.

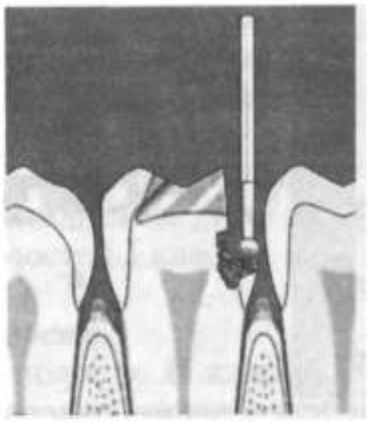


Рис. 123. Раскрытие кариозной полости через окклюзионный доступ.

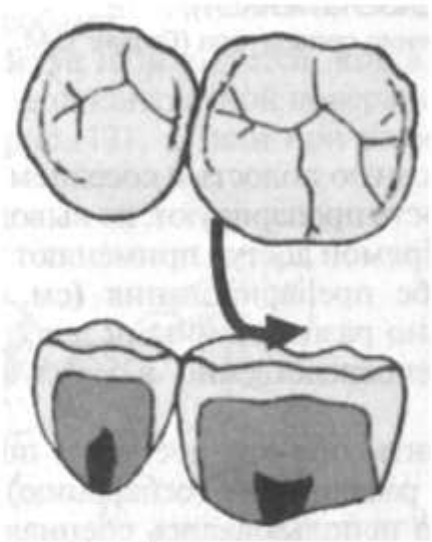


Рис. 124. Маргинальный гребень по краю жевательной поверхности, направляющий пищевой комок на жевательную поверхность и защищающий межзубной промежуток.

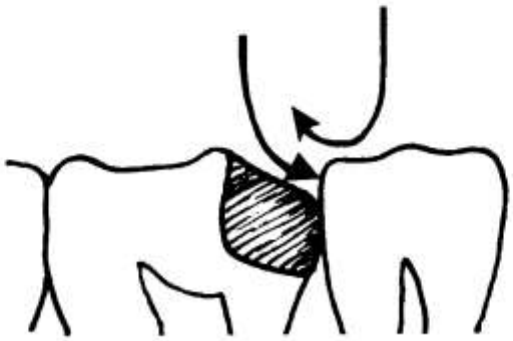


Рис. 125. Проникновение пищи в межзубной промежуток и травмирование десневого края при разрушении или неправильном моделировании маргинального гребня.

A disadvantage occlusal access is a significant loss of tissue on the occlusal surfaces and, primarily, - marginal (edge) ridge. Marginal ridge - enamel bead running along the edge of the chewing surface. He directs the bolus on the chewing surface, preventing the penetration of food in the interdental space and injury despevoyu edge (Fig. I24, I25). As shown by clinical

experience, restoring marginal ridges composite is less reliable and durable than the abandonment of their own in the scrap area of the tooth tissues. Hollow main purpose of other types of access for class II cavities -Reduce the amount of excised tissue during the opening of the cavity and, most importantly, the preservation of the marginal ridge.

B. lingual or vestibular access (Fig. 126) used in the presence of a small contact surface pas cavity with localization in the cervical area and high clinical crown of the tooth. When lih kinds of access to the vestibular and lingual surfaces formed to the horizontal tunnel cavity location area. Hollow sometimes whether access types call the "technology of the horizontal tunnel."

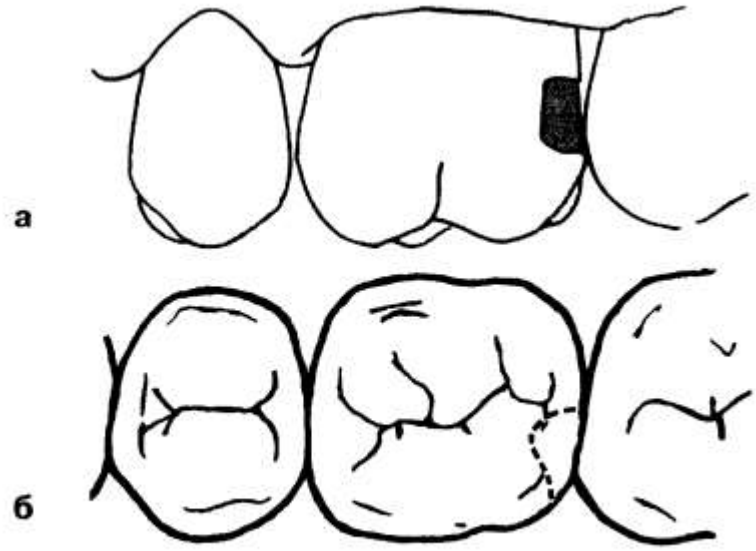


Рис. 126. Вестибулярный доступ. Вид сбоку (а) и сверху (б).

G. Gingival access is used for shifting teeth, outcrop their necks when the contact carious cavity is available for processing from the gingival margin (see. Fig. 127).

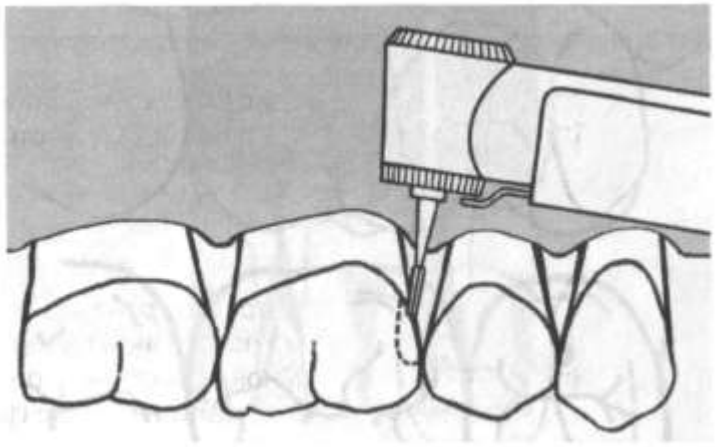


Рис. 127. Десневой доступ.

D. access tunnel (tunnel preparation) is a species occlusal access, wherein the marginal ridge stored. Disclosure of the cavity is carried out with chewing surfaces in a triangular fossa, some distance 2-2.5 mm from the edge of the tooth. Burs small tooth tissues do tunnel directed to the contact cavity (Fig. 128). It is called the occlusion-approximal tunnel. Thus, the open cavity without damaging the marginal ridge. Tunnel preparation used in small carious lesions mainly localized to the equator or slightly lower (between the contact point and the neck of the tooth). The disadvantage of this method is the inability to control the visual quality necrectomy, as well as a large enough risk of opening the cavity of the tooth, especially in younger patients.

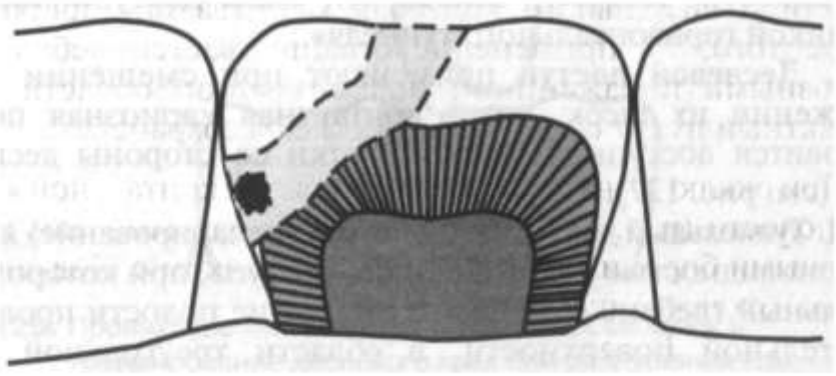


Рис. 128. Туннельное препарирование.

As noted above, the most simple, reliable and widespread is the occlusal access, even though he is considered to be insufficient physiological. At the same time we should recognize that alternative forms of access (excluding direct) is more cumbersome, more complex and performance and less reliable, since it does not provide sufficient space review and visual inspection of the quality of preparation. In addition, their use is limited to small carious lesions subcontact area when the contact point with the adjacent tooth more

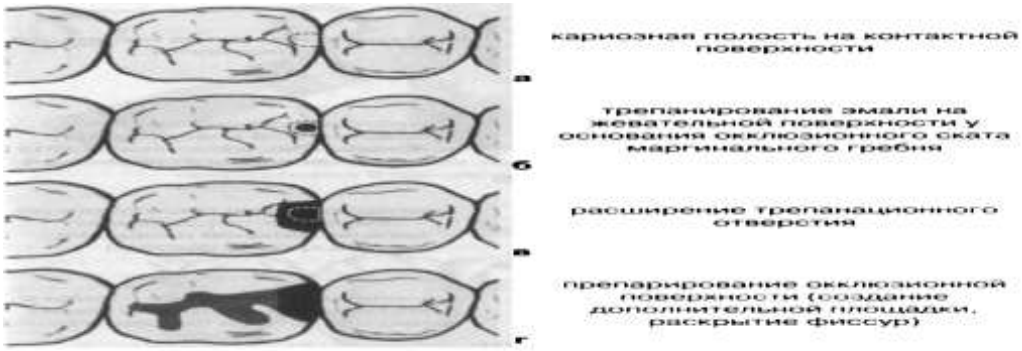


Рис. 129. Этапы раскрытия полости II класса при окклюзионном доступе.

saved.

When occlusal access opening of the contact cavity (Fig. 129 a) produce diamond or carbide burs tip turbine with air-water cooling. At the first stage it is recommended to use a ball-shaped or pear-shaped boron small size. They trepanning enamel carious cavity above the base ramp occlusal marginal ridge (see. Fig. 129, b). After the boron "falls" into a cavity, a thin fissure bur extend burr hole by removing the ridge and edge overhanging the cavity enamel sections (see. Fig. 129 in). Thereafter, the additional space on the chewing surfaces and treated fissures (see. Fig. 129 g).

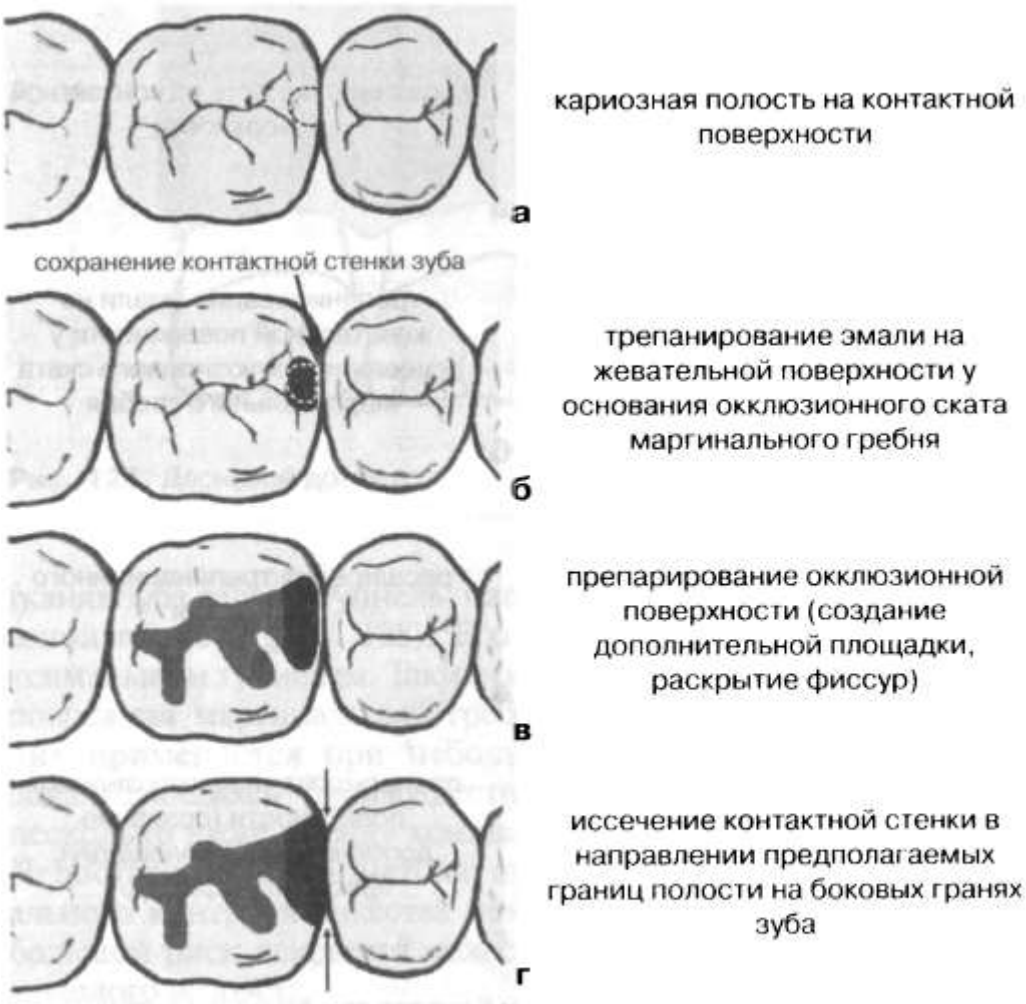


Рис. 130. Вариант проведения раскрытия полости II класса при окклюзионном доступе.

In some cases, more appropriate, after "falling" into a cavity (Fig. 130, b) not excise contact tooth wall and form a cavity (additional space) on the occlusal surface (Fig. 130, c). As a result, the physician receives a good overview and access to the contact cavity. Contact tooth wall is thin excised fissurnmm boron towards cavity putative borders on the side faces of the tooth (Fig. 130 g). When disclosing the tunnel cavity, lingual, gingival or vestibular access mainly used in small spherical burs with an elongated shaft.

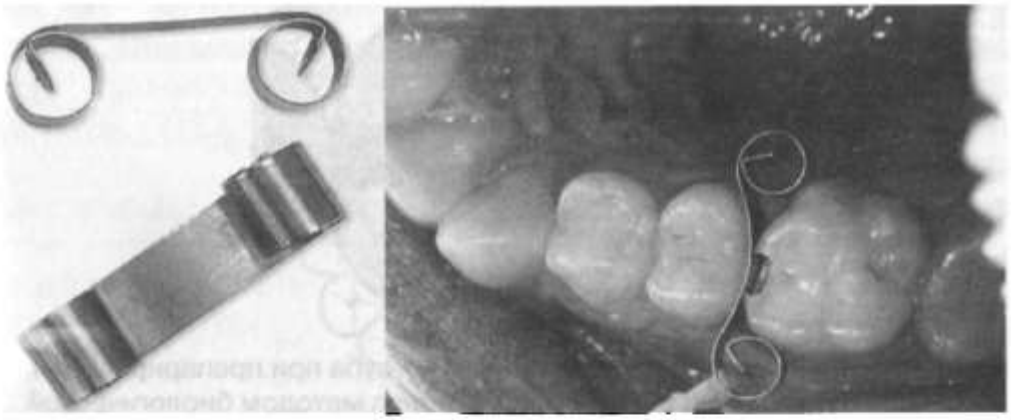


Рис. 131. Приспособление для защиты тканей соседнего зуба от повреждения в процессе препарирования InterGuard, *Ultradent*.

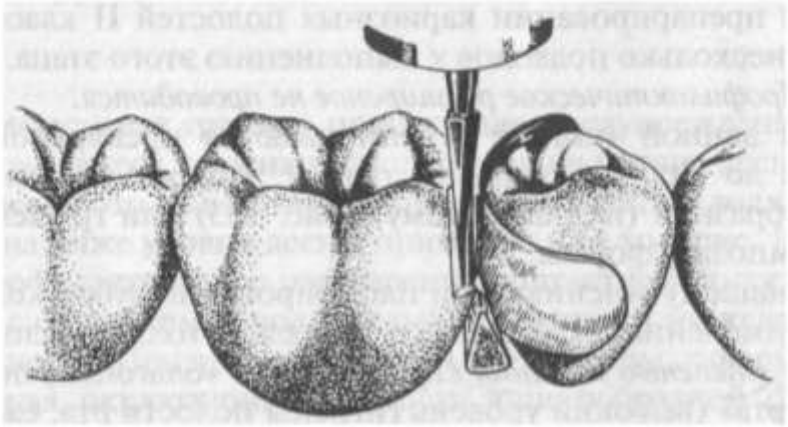


Рис. 132. Защита межзубного сосочка деревянным клином и матрицей в процессе препарирования.

During the expansion of the cavity should be such that boron is not damaged enamel on the contact surface of an adjacent tooth. This requires a good visual control of the preparation and protecting adjacent tooth with special devices (metallic plate, wooden wedges, etc.) (Fig. 131, 132). To remove a thin layer of enamel adjacent to the neighboring tooth, use of hand tools, such as knives enamel.

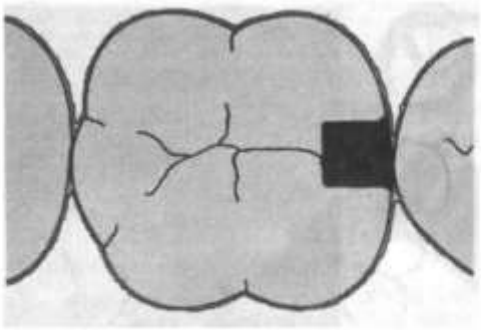


Рис. 133. Минимальное иссечение тканей зуба при препарировании полости II класса в соответствии с методом биологической целесообразности.

2. Preventive extension. When dissection of class II cavities are several possible approaches to the implementation of this phase. A. Preventive expansion is not performed. When this tactic limited to the preparation of cavities apparently healthy tissue. The cavity formed

yaschikoobraznoy (under amalgam) (Fig. 133) or pear (a composite) shape. In our view, at sealing dental composites using such tactics only justified in patients with mild flow caries, i.e. with "safe oral" (high level of oral hygiene, daily use flossing; KPU component not more than 4, the absence of recurrent caries, lack somatic pathologies that may affect the condition of the individual kariesrezistentnosti). B. Prophylactic expansion cavity is carried out in accordance with the method of Blake ("extension for prevention"). Dissection of the contact cavities in the buccolingual direction is made to buccal and lingual crown radii, which usually have little susceptible to caries. Thus necessarily off from contact with the tooth adjacent. The extent of the cavity opening in the buccolingual direction should be such that, during straight line from the gap between the central incisors to the lingual edge of the cavity would have been the last field in view of the doctor (Fig. 134). This rule applies to the medial cavity. The distal cavities is observed a similar relation. Thus necessarily off from contact with the tooth adjacent. The extent of the cavity opening in the buccolingual direction should be such that, during straight line from the gap between the central incisors to the lingual edge of the cavity would have been the last field in view of the doctor (Fig. 134). This rule applies to the medial cavity. The distal cavities is observed a similar relation. Thus necessarily off from contact with the tooth adjacent. The extent of the cavity opening in the buccolingual direction should be such that, during straight line from the gap between the central incisors to the lingual edge of the cavity would have been the last field in view of the doctor (Fig. 134). This rule applies to the medial cavity. The distal cavities is observed a similar relation.

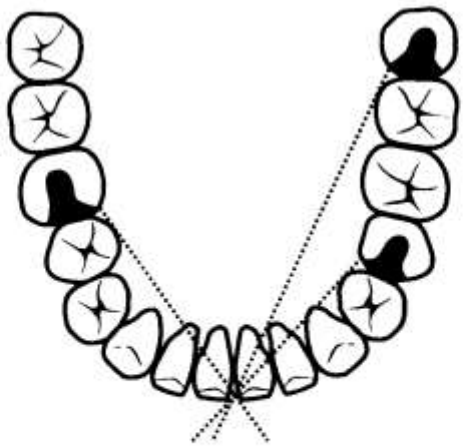


Рис. 134. Визуальный контроль размера иссечения апроксимальной (медиальной) стенки полости в соответствии с методом профилактического расширения по Блеку (Гутнер Я.И., 1964).

Pridesnenaya cavity boundary for the prevention of recurrent caries should be placed on the gingival level. When technically feasible, the gingival wall must be lowered below the gum level approximately I mm (Fig. 135). Preventive expansion of the contact cavity is combined with the creation of additional grounds on the chewing surface. Thus excised all fissures, extensive and

occlusive cavity yaschikoobraznoy forms formed according to the principles described above.

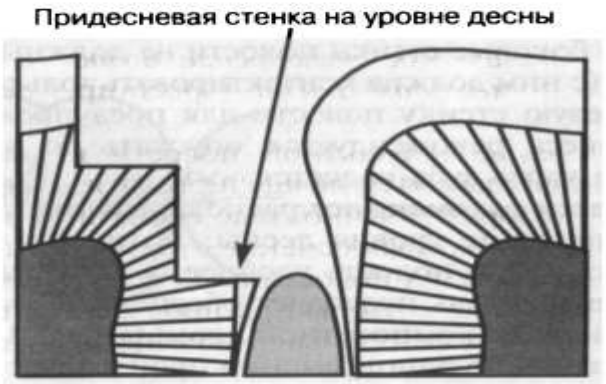


Рис. 135. Препарирование придесневой стенки в соответствии с методом профилактического расширения по Блеку.

The described method is shown in the application of materials that do not have adhesive properties (amalgams, inlays), especially in patients with "dysfunctional" Oral (for active caries, high index KGTU, poor oral hygiene). We also encourage you to use this approach as a method of choice when filling with composites and dental glass ionomer cements-tion in patients with severe dental caries. B. Prophylactic expansion cavity is carried out according to the method of prophylactic sealing. When treating "average patient" mouth which should be attributed to the category of "dysfunctional" (medium-severe course of dental caries), minimal dissection of tissue, in our opinion, it is impractical, a hook in this case the risk of recurrent decay and caries adjacent to seal fissures unreasonably high. Therefore, on a weight receiving dental most effective from a medical standpoint, and the most restrictive with respect to the tooth structure is unaffected prophylactic method of sealing. This method is especially indicated for dental filling composite materials (possibly in conjunction with glass ionomer cements) patients with a mean severity of dental caries, although it can also be used in patients with mild and severe "carious disease." Compared with the method of "prophylactic expansion", the degree of removal of the contact cavity pas buccal and lingual surfaces can be reduced. However, in this case the cavity edges should reach sites available at wat ke oral hygiene (Fig. 136). It is mandatory to rule that the side wall of the cavity must not touch the adjacent tooth (to be in contact with it only seal). Gingival cavity wall to prevent recurrent caries is recommended to lower the level of gums (subgingival portion of the tooth is immune zone). Some dentists recommend gingival wall positioned 1-2 mm above the gingival level, explaining the fact that a seal cavity convenient, and left on the gingival wall of enamel provides a more sturdy composite marginal seal seals (Fig. 137). At this stage simultaneously performed invasive treatment fissure (fissurotomiya) in accordance with the principles of "preventive sealing" (Fig. 138). that the side walls of the cavity should not touch the adjacent tooth (to be in contact with it only seal). Gingival cavity wall to prevent recurrent caries is recommended to lower the level of gums (subgingival portion of the tooth is immune zone). Some dentists recommend gingival wall positioned 1-2 mm above the gingival level, explaining the fact that a seal cavity convenient, and left on the gingival wall of enamel provides a more sturdy composite marginal seal seals (Fig. 137). At this stage simultaneously performed invasive treatment fissure (fissurotomiya) in accordance with the principles of "preventive sealing" (Fig. 138). that the side walls of the cavity should not touch the adjacent tooth (to be in contact with it only seal). Gingival cavity wall to prevent recurrent caries is recommended to lower the level of gums (subgingival portion of the tooth is immune zone). Some dentists recommend gingival wall positioned 1-2 mm above the gingival level, explaining the fact that a seal cavity convenient, and left on the gingival wall of enamel provides a more sturdy composite marginal seal seals (Fig. 137). At this stage simultaneously performed invasive treatment fissure (fissurotomiya) in accordance with the principles of "preventive sealing" (Fig. 138). Gingival cavity wall to prevent recurrent caries is recommended to lower the level of gums

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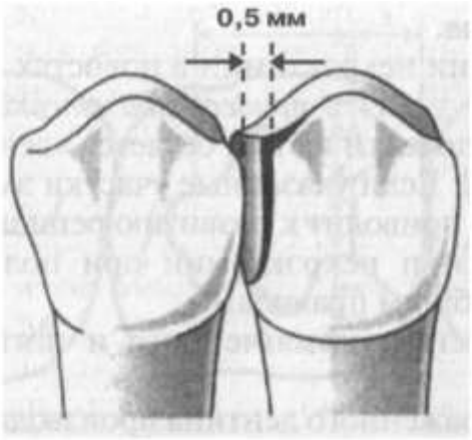

Рис. 136. Минимальная степень профилактического расширения кариозной полости II класса в щечно-язычном направлении (Хельвиг Э. и соавт., 1999).

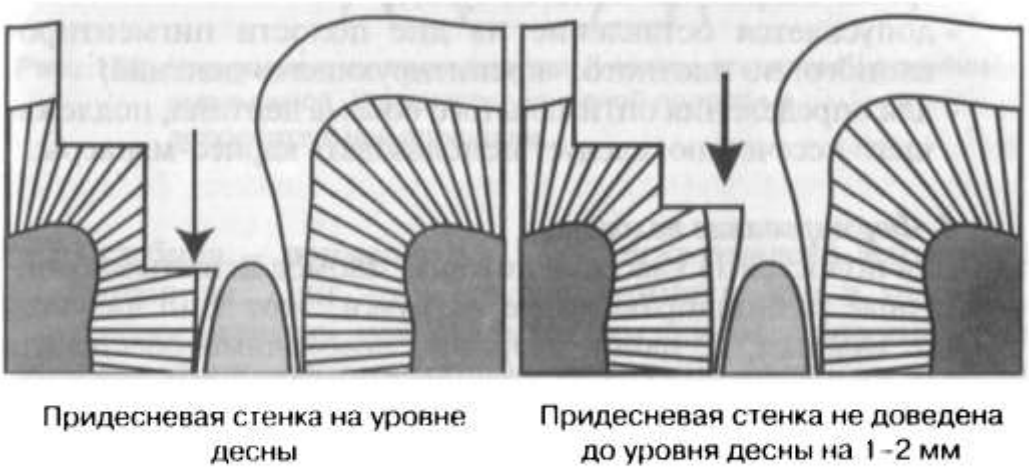

Рис. 137. Варианты препарирования придесневой стенки в соответствии с методом профилактического пломбирования.

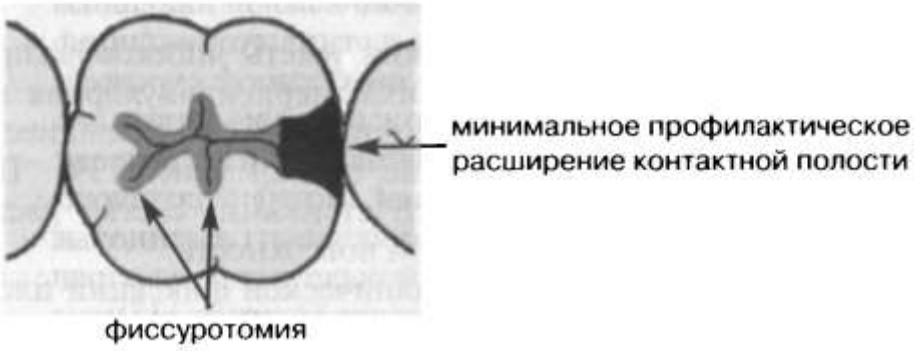

Рис. 138. Профилактическое расширение полости II класса в соответствии с методом профилактического пломбирования.

3. Necrosectomy. In conducting necrectomy in cavities of class II special attention should be given to the gingival wall. Typically, after the opening of the cavity thereon remains "beater" demineralized enamel. If these areas are not removed enamels, hereinafter, this leads to the development of recurrent caries. In general, when step necrectomy Class II cavities is performed by the general rules:

complete removal of the softened pigmented and dentin;
removal of the affected dentin is produced or an excavator, a spherical burs large;
after removal of demineralized dentin is recommended to excise a thin boundary layer of dentin (1 mm) round bur at low speed (if it is not facing opening of the cavity of the tooth);
may be left on the bottom of the cavity pigmented, but dense, "krepitiruyuschie" dentin;
to determine the optimum volume of dentin subject excision, use caries markers.
4. Formation of the cavity. For class II cavities in which the seal is experiencing increased multi-directional load, this step is extremely important. On the one hand it is necessary to provide a secure fit seals, on the other - to preserve the strength properties of the tooth. If it is intended the use of materials that do not have adhesive properties (amalgam, metal or ceramic inserts) formed of Class II cavity must satisfy a number of requirements:
A. "Basic" yaschikoobraznuyu cavity should have the shape of: flat gingival wall perpendicular to the direction of chewing pressure, vertical, diverging to the contact surface of the side wall (139 Fig.). Under tab cavity is formed with the walls, slightly diverging also to the occlusal surface.

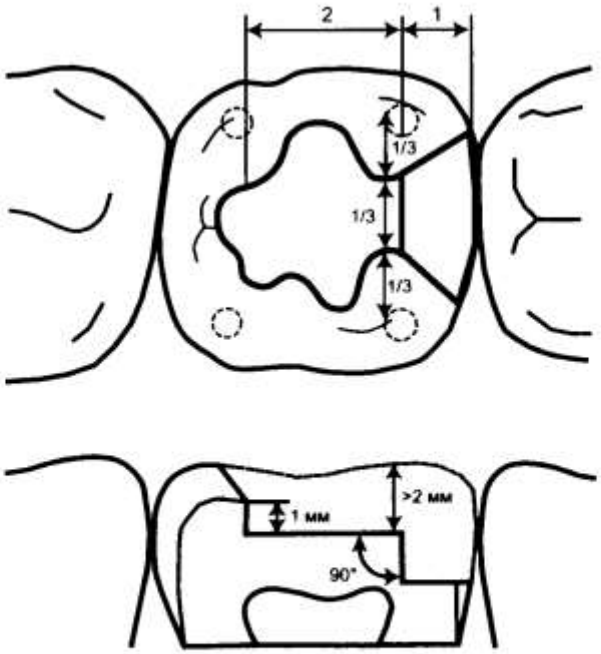

Рис. 139. Наружные очертания полости II класса при пломбировании амальгамой. Параметры основной полости и дополнительной площадки.

B.To ensure fixation macromechanical seals on the chewing surface formed additional space. To provide strength and a secure fit seals, additional site should have the following parameters (Figure 139.):
depth - about 1 mm below the enamel-dentin border. It should be remembered that in the areas subjected to high stresses, the thickness of sealing material layer should be not less than 2 mm. The angle between the bottom and the walls should be equal to 90 °;
length - twice the length of the main cavity;
width - about one third of the distance between the tops of the mounds of chewing; - the angle between the bottom of the main cavity and the additional platform must equal 90 °;
shape - an additional area must have a shape retention (e.g., a "dovetail") for fixing the seal macromechanical;
transition between the main cavity and the additional area (narrow part of the "dovetail") must be located midway between the bumps.
The width of this part of the additional pad to be twice smaller than the width of the main cavity;
- a condition of fissures - in accordance with the method of preventive expand all fissures are

excised. Due to this broad form of the "dovetail" The shape of the additional grounds cited in a number of national guidelines, we believe insufficiently justified in terms of the prevention of recurrent caries neotpreparirovannyh and unfilled fissures. B. If the preparation is carried out according to the biological feasibility of the method, and an additional ground is not formed, to improve the fixation of the seal is necessary to make the retention points. They form a thin fissure bur in vertical grooves pas side walls of the cavity (Fig. 141).

G.If after excision of diseased fissure masticatory occlusal surfaces of the cavity size is greater than half the distance from the center of the fissure to the central protuberance vertices, then, to prevent broken off thalamus, it dissected over a height of 2 mm and cover filling material. When MOD-cavities (mesial-occlusal-distal) excision tuber conducted when the occlusion of the cavity portion width exceeds 1/4 of the distance between the vertices chewing hillocks and depth - 2 mm, i.e. bottom of the cavity is within the dentine.

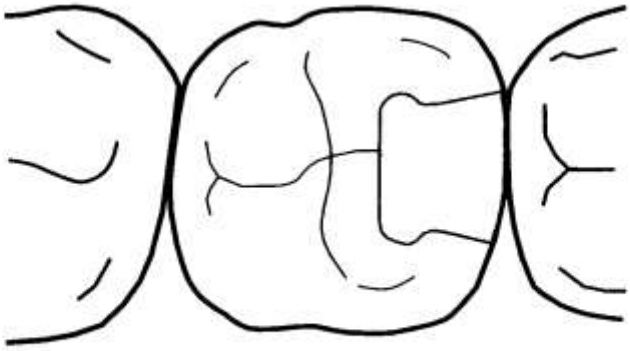

Рис. 141. Создание ретенционных борозд на боковых стенках полости II класса.

D.Bevel enamel made in accordance with the principles outlined above. In the application of composites and glass ionomer cements cavity preparation is made in accordance with principles and techniques adgezivnoi prophylactic sealing.

A.The main chamber is formed taking into account features of the spatial organization of these materials. The contours of the cavity are made smooth, it is given a slightly pear-shaped. The side walls of the cavity should be angled 90 ° to the tooth surface (Fig. 142). Bevel enamel on these walls, or not done at all, or are limited to the creation of a small bevel, using hand tools such as knives enamel.

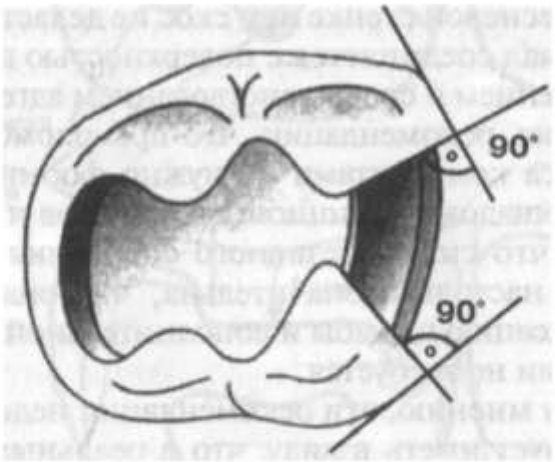

Рис. 142. Оптимальное соотношение боковых стенок кариозной полости II класса и поверхности зуба (Хельвиг Э. и соавт., 1999).

Particular attention should be paid to the formation of the gingival wall (see. Fig. 143). It is formed perpendicular to the vertical axis of the tooth. The angle between the gingival wall and the bottom of the cavity (axial wall) should be sharp and straight or slightly rounded. Forming an obtuse angle impairs the conditions for fixing the seal. Acute and slightly rounded corner between the gingival and axial walls is done by distributing carious lesions below the gum level. This technique allows the output boundary of the cavity at the level of the gums and avoid damaging the periodontal attachment during preparation. If the gingival wall has a layer of enamel, for improvement of fit seals thereon done bevel. It is better to use the gingival margin trimmers. If there is no enamel at the gingival wall of the bevel is not done,

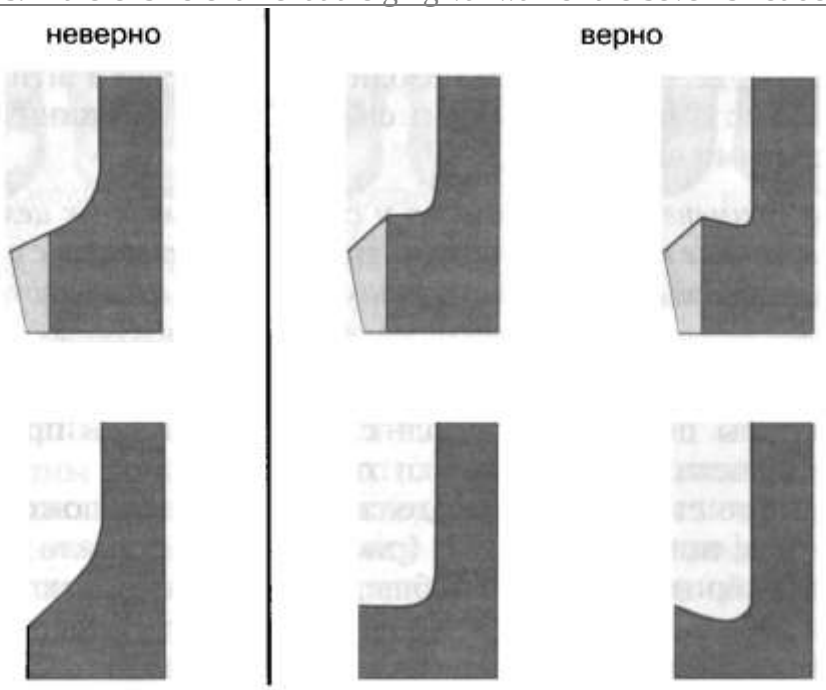

Рис. 143. Варианты формирования придесневой стенки в полостях II класса.

B.With the introduction and improvement of adhesive technologies were recommendations that when filling cavities class II composites do not need to generate additional venues, retention points, etc. This is motivated by the fact that the strength of adhesive bonding of composites to tooth structure so significant that it provides a secure fit and seal macromechanical additional retention is required. In our opinion, these recommendations are not sufficiently substantiated. It should be borne in mind that in actual clinical strength composite adhesion to the tooth structure is much less than it obtained in experimental studies and declared by manufacturers vreklamnoy products. In addition, it should be remembered, and the gradual degradation of the hybrid layer, leads to deterioration of fit and reduce micromechanical retention seal. For this reason, we recommend that when filling with composites cavities class II to form an additional platform. Its parameters are as follows (Figure 144.):

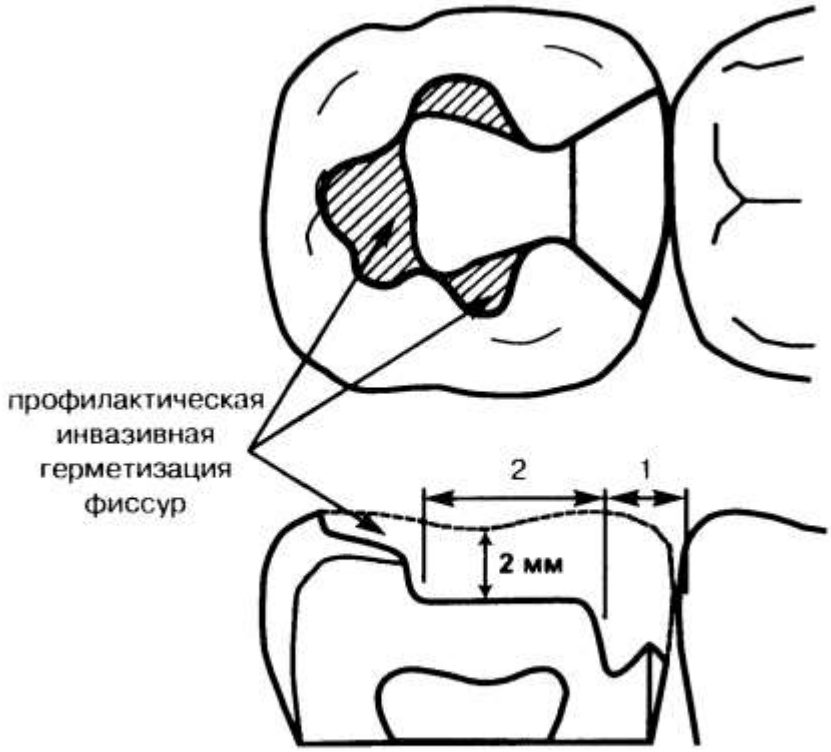

Рис. 144. Полость II класса: границы пломбы и параметры дополнительной площадки при лечении кариеса зуба методом профилактического пломбирования.

Depth - at least 2 mm. The corners between the bottom and the walls must be smooth;
length - twice the length of the main cavity;
width - about one third of the distance between the tops of the mounds of chewing;
when MOD-cavities (mesial-occlusal-distal) width of more platforms should not exceed 1/4 the distance between the vertices chewing mounds;
the angle between the bottom of the main cavity and the additional platform must equal 90 °, the angle is smoothed, rounded;
shape - better, if the additional site will be the retention shape, although a rectangular shape and is valid;
additional playground is formed midway between the chewing bumps;
in accordance with the method of preventive filling, all fissures are not covered with an additional platform to be disclosed and sealed.
B. Outer contours of the seals must be located within the "immune" zones, to reduce the chance of recurrent caries and increase their life (Fig. 145).

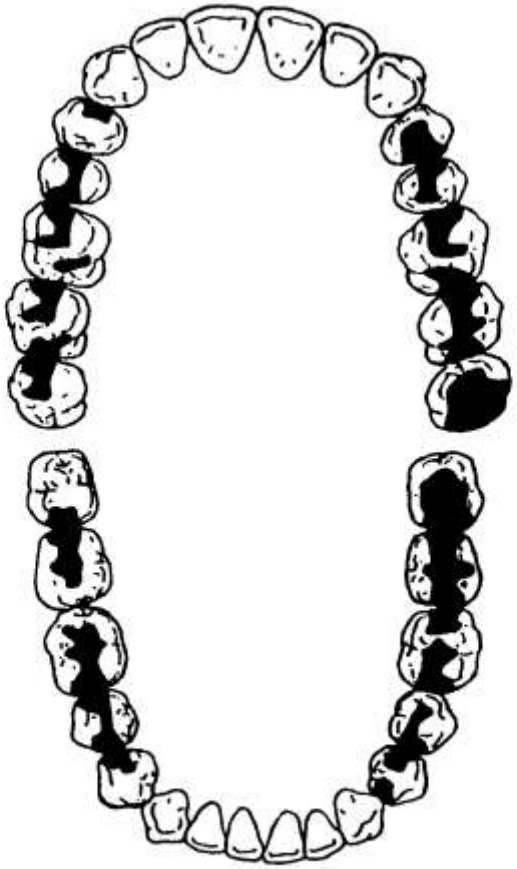

Рис. 145. Варианты границ пломб в полостях II класса при проведении лечения кариеса зубов методом профилактического пломбирования композитами (Петрикас А.Ж., 1997).

G. On the occlusal surface edge seal and the region of the bevel enamel should not get into the space okklyuzionpogo contact with the teeth-antagonists

D.Sometimes it is necessary to deviate from the standard approach to the preparation of cavities. For example, with wide spread of caries process can be formed sharply podrytymi hillock or highly thinned sidewall. In this case, they are excised on a height of 2 mm, or a composite material reinforced by a special technique. Especially shows soshlifovyvanis hillocks during chewing MOD cavities in pulpless teeth. Although the best option in such cases is to cover these crowns of teeth. The most common errors made when creating the cavity of the outer contour of class II.

5. Finishing enamel margins. This operation is performed, and according to the above rules and technology. It is only necessary avenge that finishing the gingival wall of the cavity more conveniently and safely provodin "hand tools - trimmers despevoyu edges that reduce the risk of damage to the gums and tooth enamel adjacent.

Clinical activity №14

Subject: Steps 2 restorations class by Black

Technological models for education

class time: 160 minutes	The number of students 8-10

Type of activity:	clinics activity
Plan:	Teach students the stages of dental restoration 2 class by Black
The task of the training session:	- Teach students the stages of tooth restoration 2 class by Black - To familiarize students with the peculiarities of preparation and drug treatment of cavities - Features filling cavities various filling materials (cements, amalgams, JRC composite material (light and chemical curing)). - Teach students to correctly and consciously to provide treatment to patients with deep caries, observe the necessary precautions while in the dental office. Especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking at the dental restoration 2 class by Black, a responsible approach to their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of dental restoration stage 2 classes on Blake is essential in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical class №15

Subject: Restoration of cavities class III by Black.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Teach students the stages of the restoration cavity Class 3 by Black
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes	1.1. Check notebooks and posschaemosti	Listen to write.

10 minutes 10 minutes 5 minutes 45 min 10 minutes	1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Round table"

Test questions on employment:

1.Etapy restoration of cavities 3 class by Black
2. Stages of preparation
3. Expansion cavity
4. Nerkroektomiya
5.Formirovanie

The text of the practical classes

dissection - (from praeparatio words - preparation, training) - is the impact on the tooth tissue to remove the abnormal tissue and create the shape of the cavity, providing a secure fit of the seal.
Dissection of dental hard tissues is an important step in treatment, since only complete excision of abnormal tissue and create a cavity of regular shape will avoid further development of the caries process and ensure a secure fit in the seal cavity.
The need for preparation is most often caused by caries or defective seals, violation of the aesthetic and functional parameters of the tooth due to malformation or injury.
For a correct description of the shape of the cavity, there are certain concepts and terms.
The walls of the cavity.
1. The inner wall of the cavity - a wall which is not in contact with the tooth surface.
a) axial (axial) - this inner wall, parallel to the vertical axis of the tooth;
b) pulp - the inner wall of the cavity perpendicular to the vertical axis of the tooth.
There is also the term "cavity bottom", implying a flat cavity wall perpendicular to the vertical axis of the tooth. Often, however, "the bottom of the cavity" refers to the pulp wall, for example in cavities III and V classes.
2. External wall - they come in contact with the tooth surface and are called the surface:
a) distal;
b) mesial;
c) vestibular;

g) the lingual;
d) gingival.

Angles formed cavities:

1. Linear angles - a combination of two planes (walls);

a) inside - with apexes directed inwardly of the tooth;
b) external - with the apex pointing outwards.

2. Point angles - a compound of the three planes (walls).

Usually, corners slightly round off during dissection. In linear angles a retention groove in point - form retention points.

2. Cavity preparation for class III.

According to Black classification class III cavity disposed on the contact surfaces of the incisors and canines while maintaining incisal edge.

Traditional preparation.

It is shown for cavities, completely localized on the surface of the root.

1. The shape of the cavity yaschikoobraznaya, interfacial angle of 90 °. The outer walls are perpendicular to the surface of the root. The cavity in the dentin deepen 0.75 mm, if not required greater removal of necrotic tissue. This depth provides sufficient space for the fixation of the composite forming the retention grooves and retention of strength of the outer walls.

2. Retention groove in the dentin may be necessary to improve the retention of the restoration. They are also helping to reduce the polymerisation shrinkage layered composite applications. Furthermore, the retention grooves help to improve the accuracy of fit of the composite material due to increase bending resistance forces acting on the tooth in the cervical area.

The continuous retention groove is formed on the inner surface of the outer walls of the cavity by means of spherical boron №?. Continuous groove allows for maximum retention. A groove distance of 0.25 mm from the edge of the cavity, and its depth is 0.25 mm (one-half the diameter of the spherical boron №?). furrow direction coincides with the bisector of the angle formed at the axial connection and the outer walls. The entire length of the furrow to be parallel to the root surface. If you do not require the maximum additional retention, retention grooves or form only in gingivoaksialnom and intsizoaksialnom corners, or do not form at all.

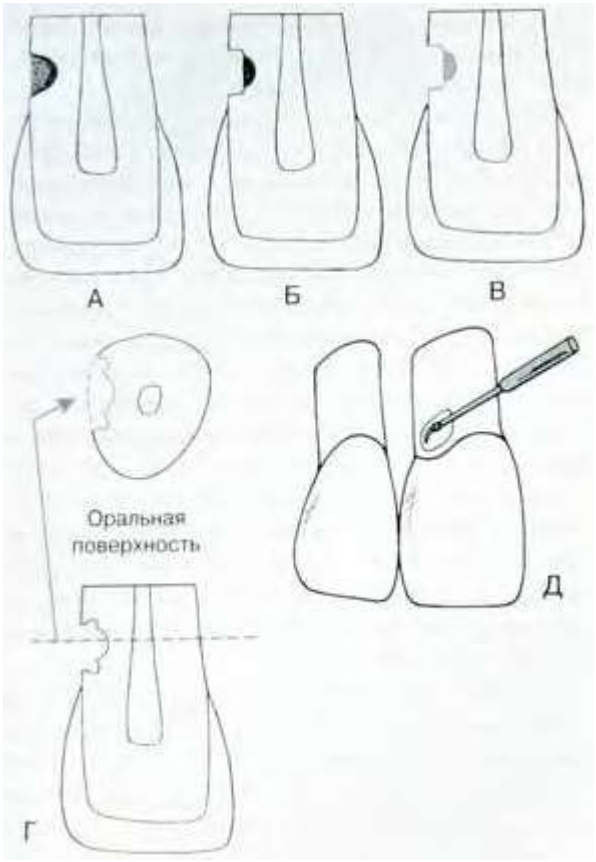

Fig. 2.1

The traditional preparation of oral class III completely localized on the surface of the root:

A - longitudinal section in mediodistalnoy projection illustrating carious defect;

B - the initial shape of the cavity - the depth of 0.75 mm;

B - removed infected dentin, the cavity depth is increased;

T - longitudinal and transverse sections illustrating the retention groove, an axial wall contours, shape and direction, and oral vestibular wall;

D - the end of the preparation after the establishment of the retention cavity.

The traditional preparation with the formation of the bevel enamel.

When localization cavity in the tooth crown preparation may be accomplished by the lingual or vestibular access. Both options are available with the formation of the traditional preparation bevel enamel.

Lingual access.

It is carried out under indirect vision, which requires a clean unscratched mirror. Direct view can be achieved, slightly turning down the patient's head.

1. Preparation begins with intsizogingivalnogo edge defect, as close as possible to the adjacent tooth, but not touching it.

2. The cutting tool is arranged perpendicular to the surface of the enamel. Access to the defect is carried out intermittent movements with slight pressure. Incorrect access unreasonably expands to the preparation margin portions, exposed to the pressure (edge crests) and tooth weakens the fabric.

3. The boundaries of the cavity is expanded to healthy tissue, but only to a certain depth. It is necessary to avoid the propagation of the cavity proximal and vestibular surface of the tooth and a gingiva.

4. cavity shall not go into the dentin more than 0.2 mm from the enamel-dentine compound, if infected tissues have been removed during the preparation and is not planned retentive forming furrows (otherwise forming in place an axial wall of the deepened grooves on days 0, 5 mm into the dentine, to prevent the formation of undercuts).

5. The axial wall to be convex outwards, repeating tooth contours and enamel-dentine compound as in intsizogingivalnom and vestibulooralnom direction.
6. The enamel walls of the cavity must be perpendicular to the outer surface of the tooth.
7. Small undercuts enamel in areas not exposed to the load can be saved. All the fragile edge of the enamel is removed.
8. Creation of retention points are usually not required. But in some cases (eg, for large size of the cavity), forming grooves or depressions on gingivoaksialnomu and sometimes intsizoaksialnomu linear angles, using spherical boron number?. According oroaksialnomu vestibuloaksialnomu and linear corners grooves are not formed, as they only weaken the enamel walls and edges, and additional retention in these areas is not required.

Gingival retention groove formed in the dentin of 0.2 mm inwards from the enamel-dentin border, a depth of 0.25 mm. Boron at an angle bisecting the angle formed at the axial connection and the outer walls. Begin formation of the retention groove with vestibuloaksialnogo point angle and continues along a linear gingivoaksialnogo angle parallel to the enamel-dentine compound enamel without creating overhanging edges to orogingivoaksialnogo point angle.

Incisal the retention groove is formed in the cavity of the corner point aksiointsizalnom boron number? at a distance of 0.2 mm from the enamel-dentin border, a depth of 0.25 mm. Then deepening slightly extend towards vestibuloaksialnomu linear corner. This is not to be deprived enamel dentine.
9. Generate bevel enamel using plamevidnogo or circular diamond bur, thereby forming a 45 ° angle to the outer surface of the tooth. Width of bevel enamel 0.25-0.5 mm. It is necessary to increase the surface enamel etching. In large and medium cavities of class III enamel bevel is formed on all edges of the cavity accessible except gingival, since there is little (or no) access to the enamel and the processing of this portion is limited. Moreover, a bevel is not formed on an oral surface, if these portions are exposed to the chewing load as the composite is less resistant to abrasion than enamel.

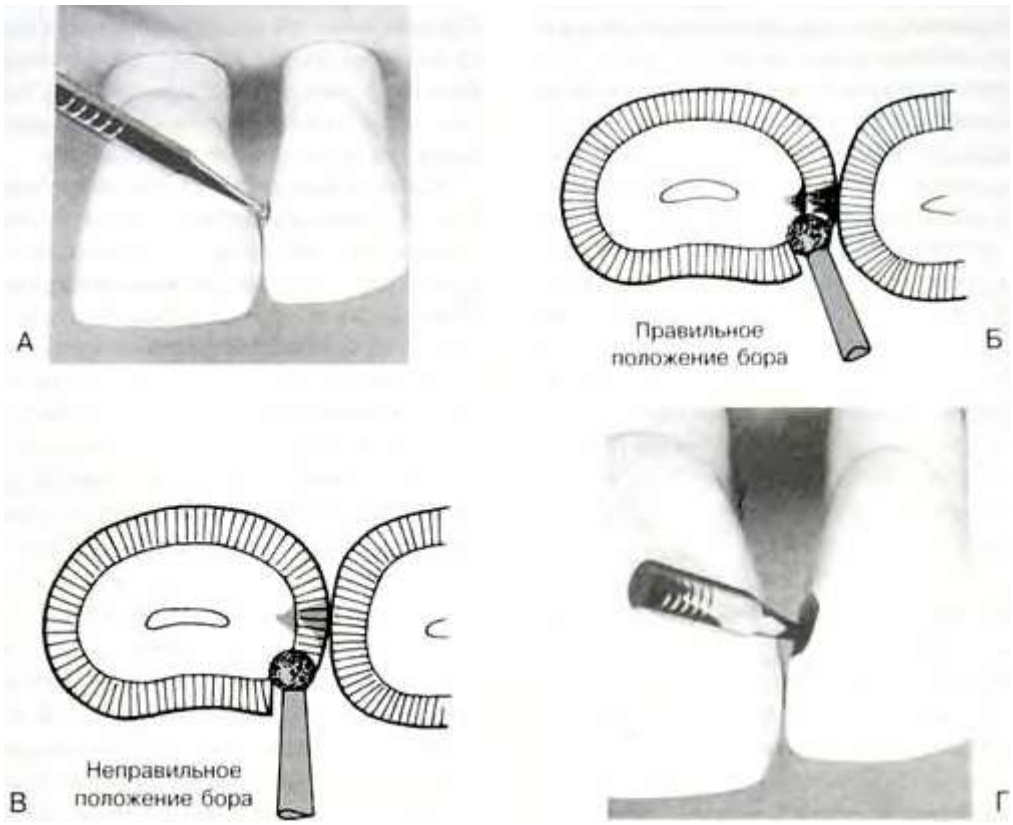

Fig. 2.2. Start preparation for class III cavities, localized in the crown of the tooth, lingual access:

A - boron carbide or diamond perpendicularly to the enamel surface. Preparation begins with intsizogingivalnogo defect edge as close as possible to the neighboring tooth;
B - the correct position of boron, a parallel arrangement of enamel prisms;
B - wrong location boron;
D - the same tool expand the cavity.

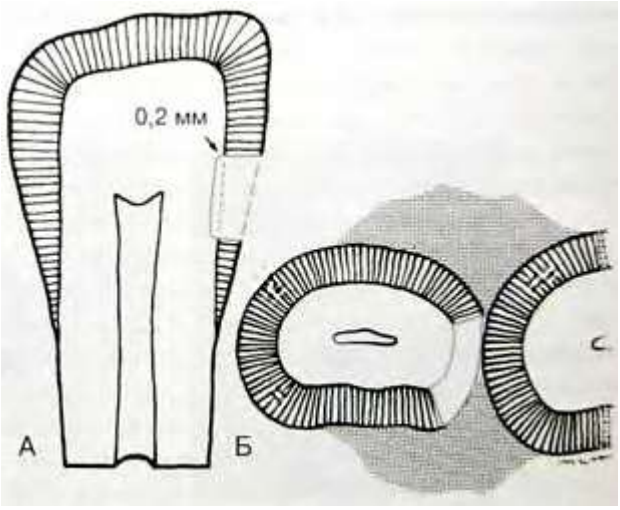

Figure 2.3. The ideal depth of the axial wall of the cavity is not needed if greater removal of carious tissue modified:
A - intsizogingivalny slice;
B - vestibulooralny slice.

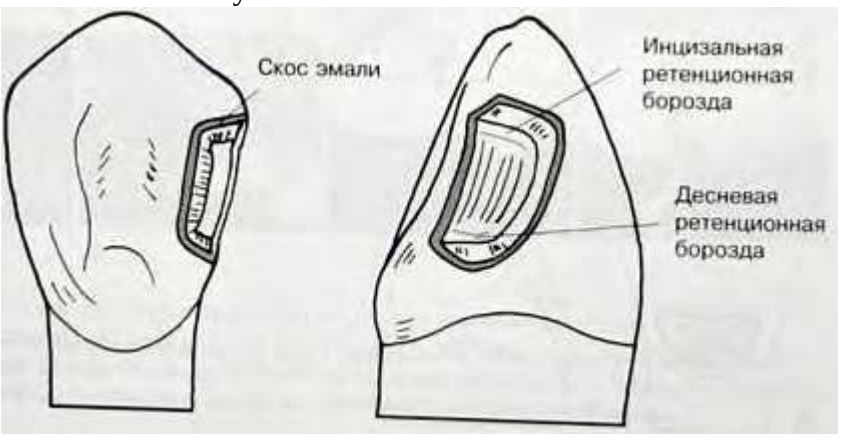

Fig. 2.4. Large cavity of class III, according to the prepared traditional type to form a bevel enamel.

Vestibular access.
Dissection of this access is simplified by the fact that the review is carried out straight cavity. In addition, defects are usually larger. Dissection is carried on almost the same rules as the oral access, with some exceptions:
1. To improve access to a defect introduced into the interdental space Wedge.
2. Use of spherical boron № cavity 2 is formed to a depth of 0.2 mm from the enamel-dentine compound as described above.
3. In areas not exposed to load, can maintain enamel overhanging edges.
4. To remove residues of infected tissues at the enamel-dentine compound used probe.
5. In order to form the additional retention retention grooves and recesses as described above.
6. Plamevidnym or spheroidal form a diamond bur enamel bevel angle of 45 ° to the outer surface of the tooth across the available cavity edges, a width of 0.25-0.5 mm.

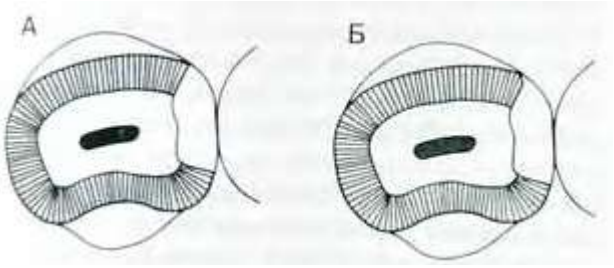

Fig. 2.5.
A - cross-section of the cavity of the class III, the prepared according to the traditional type (interfacial angle 90 °) vestibular access;
B - cross-section of the cavity of the class III, the prepared according to the traditional type with bevel enamel formirovaneim 45 ° for vestibular edge.

Combined preparation.
This type of preparation is used for the formation of cavities, spreading on the surface of the root. Part of the cavity is located at the root surface, is formed on the traditional type with the creation of a bonded joint filling material with the edges of the cavity and the retention grooves in the dentin. The coronal portion of the cavity is formed with a chamfer creating enamel.

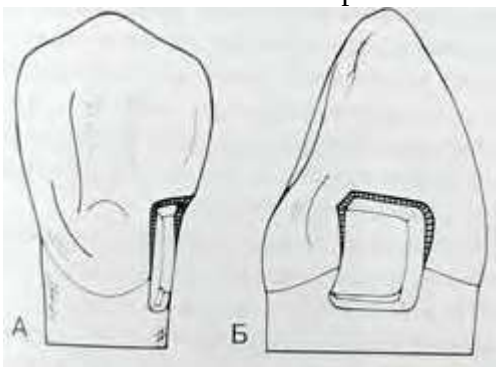

Fig. 2.6. Description above.

Modified preparation.
It is the most gentle type of preparation of cavities class III medium and small sizes. The main purpose of this type of preparation - gentle removal of damaged tissues and the maximum preservation of healthy tissue.
1. The boundaries preparation carried flaw size.
2. Access to create a cavity with a lingual surface of the (possibly) suitable size round bur (№?, 1 or 2). The cutting tool is arranged perpendicular to the surface of the enamel.
3. cavity walls no requirement, except that their outer corners must be 90 ° or more. In small cavities of the cavity walls may diverge outward from the axial axis in the deepest portion of the cavity that ensures the formation of the bevel and the maximum preservation of the enamel of the tooth tissue. The cavities of a large size is also observed conservative preparation, however cavity walls should not diverge greatly.
4. The depth of the preparation as determined defect size, so the axial cavity wall typically unequal depth. The minimum depth of the axial wall extends to 0.2 mm from the enamel-dentine compound.
5. Bevel enamel spheroidal form diamond bur at the same time removing the fragile enamel. Also it allows you to remove the bevel enamel carious tissue on the periphery of the defect. Width of bevel 0.25-0.5 mm. Bevel enamel on the gingival wall of the cavity is not formed due to the thickness of the enamel portion. Bevel enamel in oral palatal edge on the upper incisors is also not recommended, since there is carried occlusal contact.
6. Additional retention points is not required, since the retention of the composite is mainly due to its adhesion to the peripheral enamel etched with acid.

7. In areas not exposed fragile enamel occlusal load can be maintained, but at the edges of cavity overhanging the edge of the enamel is removed.

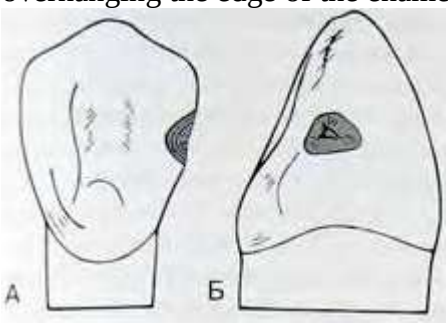

Fig. 2.7. The cavity of class III, the prepared on the modified type

Clinical activity №15

Subject: Stages of restoration of teeth 3 class by Black

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Teach students the stages of restoration of teeth 3 class by Black
The task of the training session:	- Teach students the stages of restoration of teeth 3 class by Black - To familiarize students with the peculiarities of preparation and drug treatment of cavities - Features filling cavities various filling materials (cements, amalgams, JRC composite material (light and chemical curing)). - Teach students to correctly and consciously to provide treatment to patients with deep caries, observe the necessary precautions while in the dental office. Especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking when restorations Class 3 by Black, a responsible approach to their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of dental restoration stage 3 class according to Black is essential in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical class №16

Subject: Restoration of cavities Class IV Black.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Teach students the stages of the restoration cavity 4klassa by Black
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnкm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Round table"

Test questions on employment:

1.Etapy restoration of cavities 4 classes on Blake
2. Stages of preparation
3. Expansion cavity
4. Nerkroektomiya
5.Formirovanie

The text of the practical classes

dissection - (from praeparatio words - preparation, training) - is the impact on the tooth tissue to remove the abnormal tissue and create the shape of the cavity, providing a secure fit of the seal.
Dissection of dental hard tissues is an important step in treatment, since only complete excision of abnormal tissue and create a cavity of regular shape will avoid further development of the caries process and ensure a secure fit in the seal cavity.
The need for preparation is most often caused by caries or defective seals, violation of the aesthetic and functional parameters of the tooth due to malformation or injury.
For a correct description of the shape of the cavity, there are certain concepts and terms.
The walls of the cavity.
1. The inner wall of the cavity - a wall which is not in contact with the tooth surface.
a) axial (axial) - this inner wall, parallel to the vertical axis of the tooth;
b) pulp - the inner wall of the cavity perpendicular to the vertical axis of the tooth.
There is also the term "cavity bottom", implying a flat cavity wall perpendicular to the vertical axis of the tooth. Often, however, "the bottom of the cavity" refers to the pulp wall, for example in cavities III and V classes.
2. External wall - they come in contact with the tooth surface and are called the surface:
a) distal;
b) mesial;
c) vestibular;
g) the lingual;
d) gingival.
Angles formed cavities:
1. Linear angles - a combination of two planes (walls);
a) inside - with apexes directed inwardly of the tooth;
b) external - with the apex pointing outwards.
2. Point angles - a compound of the three planes (walls).
Usually, corners slightly round off during dissection. In linear angles a retention groove in point - form retention points.

Dissection cavities Class IV.
According to Black classification class IV cavity disposed on the contact surfaces of the incisors and canines with violation corners and cutting edges of the crown.
Traditional preparation.
In Class IV cavities are very rare. An exception is the portion of the cavity is localized on the root surface. Interfacial angle in this part of the cavity must be 90 °, regardless of the type of preparation used to form the crown portion. In addition, we need a retention grooves.

The traditional preparation with the formation of the bevel enamel.
This type of preparation is carried out in Class IV cavities of large size. The following manipulations are carried out to ensure retention:
1. Additional platform dovetail.
2. Formation of retention points (grooves or depressions). Gingival or incisal retention recesses are formed on the same principles as in the cavities class III: in dentin on linear and point angles make round indentations without undermining enamel.
3. Additional platform dovetail. It is formed on an oral surface of the tooth and allows to increase the strength and improve the retention of the restoration. However, it is less conservative than retention points, so rarely used.

4. The use of pins. They have a number of disadvantages:
a) when it is screwed pin, especially in the frontal teeth, is great risk of opening the pulp chamber;
b) the pins do not increase the strength of the filling material;
c) some pins corrode due microleakage, leading to a change in color restoration and the tooth.
Despite this, in the absence of a large amount of healthy tooth tissue, the use of pins necessary for adequate retention of the restoration.
5. Formation bevel enamel, which increases the surface etching.

Preparation guidelines:
1. Preparation depth of dentin must be 0.5 mm if not needed more extensive resection of necrotic tissue. The cavity formed spheroidal carbide or diamond bur of appropriate size.
2. Remove brittle enamel, dentin not having a subject.
3. Plamevidnym or spheroidal form a diamond bur enamel bevel angle of 45 ° to the outer surface of the tooth edges of all the available cavity. The width of the chamfer ranges from 0.25 to 2 mm depending on the volume of the lost tissue and the need for additional retention.
4. Retention of the gingival sulcus form round bur number? at a distance of 0.2 mm inwards from the enamel-dentin border, a depth of 0.25 mm (one-half the diameter of the boron №?), an angle dividing compounds axial angle and the gingival wall half, the entire length of the gingival wall and to vestibuloaksialnogo oroaksialnogo linear angles.
5. In the field of cutting edge retention points are usually not formed.

Figure 3.1. Class IV cavity, the prepared according to the traditional type to form the enamel bevel (chamfer has not been formed). Showing gingival and incisal retention grooves and additional platform dovetail.

Modified preparation.
It is shown in the cavities of the middle and small size or traumatic defects. The purpose of the modified preparation - gentle removal of affected tissues with maximum preservation of healthy, together with an adequate retention and resistant form.
Preparation guidelines:
1. The axial depth of the cavity walls is determined defect size old restorations spalling. It should not exceed 0.2 mm inwards from the enamel-dentine compound, if not needed more extensive resection of necrotic tissue.
2. Retention grooves and depressions do not normally form. Retention restoration is performed by bonding the composite to enamel and dentin.
3. Areas of the line cutting edge spalling does not usually require dissection. Their little "refreshing" smooth diamond bur sharp edges, giving the surface roughness.
4. Bevel enamel is formed on all edges of the cavity accessible as described above.

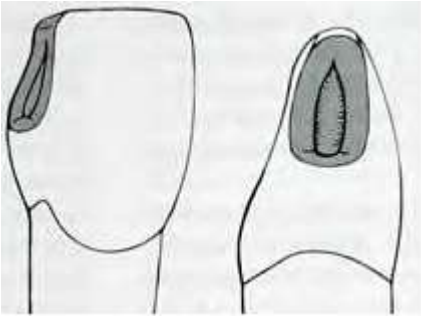

Fig. 3.2. Modified cavity preparation class IV:

Clinical activity №16

Subject: Steps restorations Class 4 Blake

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Teach students the stages of restorations Class 4 Blake
The task of the training session:	- Teach students the stages of restorations Class 4 Blake - To familiarize students with the peculiarities of preparation and drug treatment of cavities - Features filling cavities various filling materials (cements, amalgams, JRC composite material (light and chemical curing)). - Teach students to correctly and consciously to provide treatment to patients with deep caries, observe the necessary precautions while in the dental office. Especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking when restorations Class 4 Blake, responsible approach to their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues stage dental restoration Class 4 Blake is essential in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical class №17

Subject: Restoration of class V cavity by Black.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice

Plan	Familiarization with the subject.
The task of the training session	Teach students the stages of the restoration of the cavity 5 class by Black
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Round table"

Test questions on employment:

1.Etapy restoration of cavities 5 class by Black
2. Stages of preparation
3. Expansion cavity
4. Nerkroektomiya
5.Formirovanie

The text of the practical classes

dissection - (from praeparatio words - preparation, training) - is the impact on the tooth tissue to remove the abnormal tissue and create the shape of the cavity, providing a secure fit of the seal.
Dissection of dental hard tissues is an important step in treatment, since only complete excision of abnormal tissue and create a cavity of regular shape will avoid further development of the caries process and ensure a secure fit in the seal cavity.
The need for preparation is most often caused by caries or defective seals, violation of the aesthetic and functional parameters of the tooth due to malformation or injury.
For a correct description of the shape of the cavity, there are certain concepts and terms.

The walls of the cavity.

1. The inner wall of the cavity - a wall which is not in contact with the tooth surface.
a) axial (axial) - this inner wall, parallel to the vertical axis of the tooth;
b) pulp - the inner wall of the cavity perpendicular to the vertical axis of the tooth.
There is also the term "cavity bottom", implying a flat cavity wall perpendicular to the vertical axis of the tooth. Often, however, "the bottom of the cavity" refers to the pulp wall, for example in cavities III and V classes.
2. External wall - they come in contact with the tooth surface and are called the surface:
a) distal;
b) mesial;
c) vestibular;
g) the lingual;
d) gingival.

Angles formed cavities:

1. Linear angles - a combination of two planes (walls);
a) inside - with apexes directed inwardly of the tooth;
b) external - with the apex pointing outwards.

2. Point angles - a compound of the three planes (walls).

Usually, corners slightly round off during dissection. In linear angles a retention groove in point - form retention points.
Dissection cavities Class V.
According to the classification Black, Class V cavities located on the labial, buccal and lingual surfaces of the tooth in the gingival portion of the crown.

Traditional preparation.

Held in the localization of the defect at the root surface.
Preparation guidelines:
1. The cavity is formed tapered fissure bur. If access to the cavity is limited, you can use the spherical boron. Conical fissure boron included in the cavity at an angle of 45 °, tilt the distal tip. With further dissection tip is tilted so that boron axis perpendicular to the tooth surface. Thus formed edge cavity will have interfacial angle of 90 °.
2. The depth of the cavity should not exceed 0,75 mm when not required greater removal of carious tissue modified. This depth provides strength cavity walls, restoration strength and the possibility of forming retention grooves.
3. Axial wall should follow the contours of the outer surface of the tooth.
4. The outer cavity walls should diverge slightly (see if a vestibular surface, all the walls of the cavity of the class V clearly visible).
5. Retention grooves form boron number? the entire length or gingivoaksialnogo intsizoaksialnogo (okklyuzionnoaksialnogo) linear angle, a depth of 0.25 mm, an angle dividing the angle between the axial and the gingival or occlusal (incisal) half wall. The distance from the groove edge to edge of the cavity should reach 0.25 mm, which is sufficient to prevent cleavage.

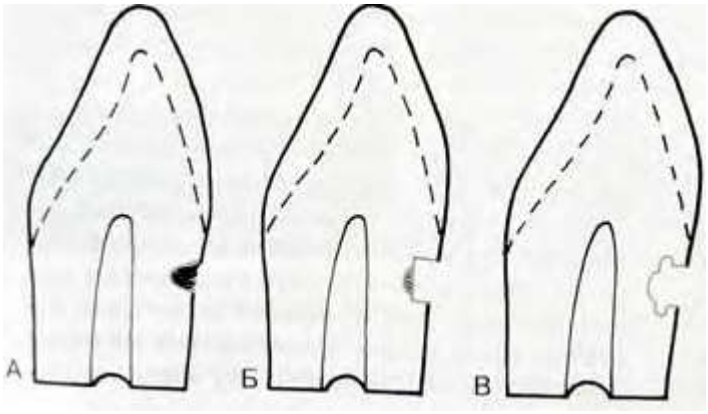

Fig. 4.1. Traditional Class V cavity.
A - localized defect on root surfaces;
B - the edge of the cavity at an angle of 90 °, the depth of the axial walls of 0.75 mm;
B - Remove the remaining infected dentine, formed gingival and incisal retention grooves.

The traditional preparation with the formation of the bevel enamel.
It is indicated for the restoration of large-sized cavities.
Preparation guidelines:
1. Axial cavity walls should have the same depth (0.2 mm inwards from the enamel-dentin border, if not planned formation of the retention grooves, and 0.5 mm - if scheduled).
2. The edges of the cavity are formed initially at an angle of 90 °, and then create the bevel enamel.
3. Formation of retention grooves required when large-sized cavity, or if the cavity is located on the root surface. If the edges of the cavity consist of enamel retention grooves generally do not form.
4. Bevel enamel forming an angle of 45 ° to the outer surface of the tooth width of 0.25 - 0.5 mm.
5. If there are portions of the cavity demineralization of enamel, carried conservative extension spheroidal cavity diamond bur.

Fig. 4.2. Large cavity of the class V, formed with a chamfer creating enamel.

Combined preparation.
If the cavity of the class V applied to the surface of the root, the gingival wall of the cavity formed by the conventional type (an angle of 90 °, usually with a retention groove, the depth of 75 mm). with the bevel makes only around the edges of the enamel walls.

Fig. 4.3. Large cavity Class V, which covers the root surface, the prepared combined way. The coronal portion to form a bevel on the prepared enamel traditional type, the root portion - of traditional type enamel without canting.

Modified preparation.
Shown in the cavities Class V small and medium size. The purpose of the modified preparation - Conservative removal of defective tissues.
Preparation guidelines:
1. The walls of the cavity need not be of uniform depth.
2. interfacial angle need not be 90 °.
3. Retention grooves are not usually formed.
4. The cavity is formed spherical diamond bur, the preparation margin determined by the size of the defect.
5. If the defect affects dentin cavity to deepen it by 0.2 mm, if not required greater removal of carious tissue modified.

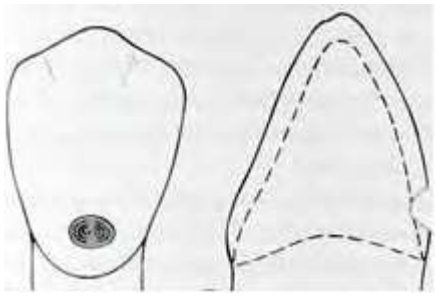

Fig. 4.4. Class V cavity, the prepared on the modified type.

5. Conclusion.
Thus, we can conclude that the dentist today is often not necessary to adhere to certain principles of the preparation of cavities made by the GV Black in his fundamental work "Surgical dentistry" (1908). The basic principles of Black:
1. Removal of overhanging edges of enamel, without support, in order to prevent them were broken off.
2. A thorough, complete removal of carious dentin.
3. "Extension for preventing" - prophylactic expansion cavity to the immune (immunity) tooth zones in order to prevent recurrence of caries.
4. Create a cavity yaschikoobraznoy form affording the stability and the seal tooth to forces (stress) occurring during chewing.
Black's principles were based on the success of Dentistry at the time when, in practice, been used for sealing cement and amalgam. At the present time, when the dental composite materials are widely used, there is no need to comply fully with the principles of Black.

Today, dentists adhere to the principle of "biological expediency" preparation (Lukomsky IG, 1955). According to this principle, areas of enamel and dentin is necessary to excise sparingly visible to healthy tooth structure. This principle is the basis of the modified preparation, which is used for the preparation of small and medium-sized cavities of different classes. For cavities completely localized to root surface located within the crown, but the large size, and also applicable to the crown and the root surface at the same time, i.e., where necessary additional retention using conventional preparation to form a bevel or without enamel.

Clinical activity №17

Subject: Stages of tooth restoration, class 5 according to Black

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Teach students the stages of dental restoration, class 5 according to Black
The task of the training session:	- Teach students the stages of dental restoration, class 5 according to Black - To familiarize students with the peculiarities of preparation and drug treatment of cavities - Features filling cavities various filling materials (cements, amalgams, JRC composite material (light and chemical curing)). - Teach students to correctly and consciously to provide treatment to patients with deep caries, observe the necessary precautions while in the dental office. Especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking in the restoration of teeth 5 classes on Blake, responsible approach to their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues stage dental restoration, class 5 according to Blake is essential in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical class №18

Subject: Restoration of the cavity Class VI for Black.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.

The task of the training session	Teach students the stages of the restoration of the cavity 6 of Class Blake
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Round table"

Test questions on employment:

1.Etapy restoration of cavities 6 class by Black
2. Stages of preparation
3. Expansion cavity
4. Nerkroektomiya
5.Formirovanie

The text of the practical classes

Class VI, according to supplement to Black's classificationAre cavities, localized on the cutting edge of the cutting edge and on the tops of the mounds of canines, premolars and molars (see. Fig. 179). Cause the formation of defects in this area is to wipe the tooth dentin tissue (see. Fig.

180). After exposure of the dentine surface, it, like the fabric softer than enamel, begins to wear faster. As a result of this process on the cutting edge cutting tools are formed first point, and then trough defects. On the tops of the mounds of canines, premolars and molars are cup-shaped defect. The bottom of such defects, due to staining dentin food dyes, usually pigmented - dark brown or black. Dentine caries is rare. Enamel defect usually sharp edge, thinned and weakened.

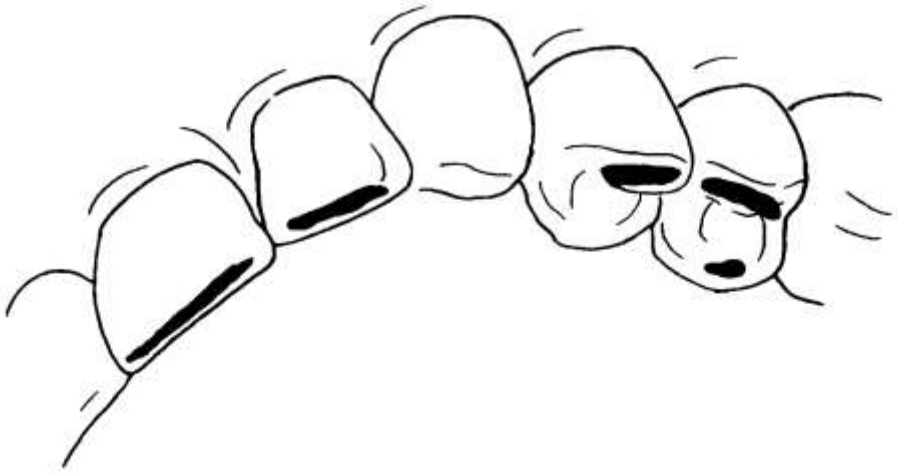

Рис. 179. Полости VI класса.

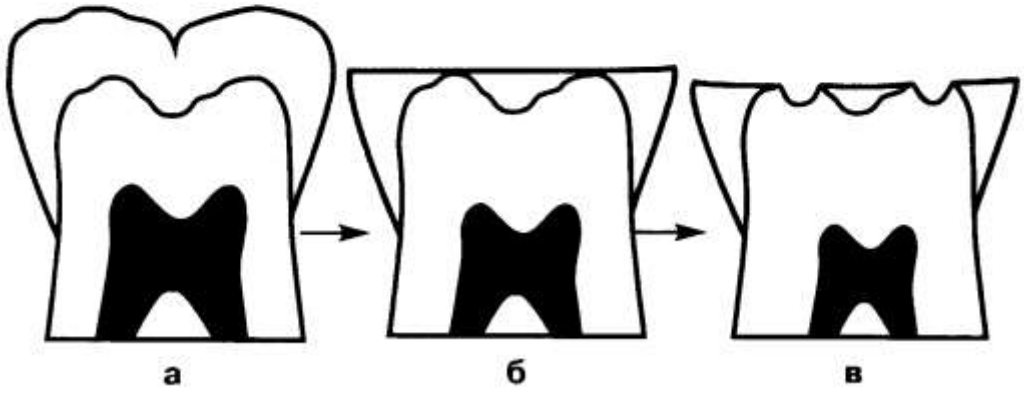

Рис. 180. Механизм образования дефекта твердых тканей на вершинах бугров моляра (объяснения – в тексте).

Uniform physiological erasing teeth (Fig. 181) in the formation of defects expressed by the cutting edge on the tops of incisors and canines hillocks and posterior teeth causes extremely rare. If they develop, usually in a fairly advanced age of the patient. Most often the formation of defects observed when the class VI localized form pathological abrasion caused by disorders bite dentition defects, improper design of prostheses malformations hard dental tissue, habit chewing on one side (Makeyev IM, 2003). Preparation and filling of the defect is not always the optimal treatment tactics with cavities Class VI. Treatment of these patients requires, first of all, to identify and eliminate the causes of the increased abrasion of teeth. they often require sophisticated orthopedic treatment with the restoration of the height of occlusion by replacing defects dentition and coated artificial tooth crowns. Sometimes, if during the treatment of a patient it was made: increase occlusion and tissue recovered tooth out of engagement with the teeth-antagonists, more reliable and aesthetically advantageous method replacing a defect VI class is the production of direct composite veneer overlapping cutting edges and the introduction of the tooth in a harmonious occlusion. Dissection of a composite veneer in these situations is made in accordance with the principles described in section if during the treatment of a patient it

was made: increase the bite and tissue recovered tooth out of engagement with the teeth-antagonists, more reliable and aesthetically appropriate defect substitution method is the production of Class VI direct composite veneer overlapping cutting edges and the introduction of the tooth in a harmonious occlusion. Dissection of a composite veneer in these situations is made in accordance with the principles described in section if during the treatment of a patient it was made: increase the bite and tissue recovered tooth out of engagement with the teeth-antagonists, more reliable and aesthetically appropriate defect substitution method is the production of Class VI direct composite veneer overlapping cutting edges and the introduction of the tooth in a harmonious occlusion. Dissection of a composite veneer in these situations is made in accordance with the principles described in sectionDissection class V cavities Black. In some cases, limited to the preparation and filling of defects in composite materials. Sealing in this situation, typically involves replacement of hard tissue defect composite material without changing the height of the bite.

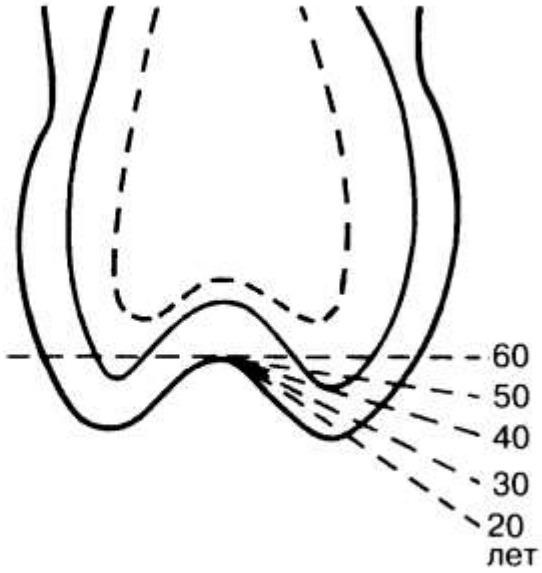

Рис. 181. Динамика физиологического стирания коронки зуба (Полянцев В.А, 1989).

The literature describes the experience of a large number of filling cavities Class VI composites in one visit with simultaneous increase of the height of the bite on these seals. We believe that such interference should be used very carefully, after a thorough analysis of occlusal relationships, determine the structural height of the bite and strength evaluation of composite restorations opportunities in conditions of increased occlusal loads. Cavity preparation class VI has some peculiarities. This is due, primarily, to the fact that the defects are located in areas of increased occlusal and abrasive loads. Therefore, before the start of the preparation necessary to be an analysis of occlusal relationships and secure point of occlusal contacts (using carbon paper).

1. Disclosure of the cavity. Disclosure cavity VI class, in connection with its cup-shaped or trough-shaped form is generally not required. Weak enamel, the edges of the cavity, particularly at the incisors is stored to the maximum.

2. Expansion cavity. On the front teeth, this step is not performed. On mounds posterior teeth, particularly molars, where the seal would be subject to significant loading, the expansion cavity is held so as to seal the boundary to the tooth does not pass through the point of occlusal contacts.

3. Necrosectomy.tissue excision on this leg is held very sparingly. Excessive removal of intact hard tissue in this region leads to a weakening of the tooth portions to which the greatest load falls when chewing and biting food. Removed only pigmented dentin. Enamel, even weakened

and is not related to the dentin, is preserved as much as possible. During filling its cavity side reinforcing layer of the composite material.

4. Formation of the cavity. The cavity formed on the top tuber cylindrical shape with parallel or slightly convergent towards the bottom wall. Tilt wall can be achieved by placing a bevel on the edges enamel cavity at an angle 10-15 °. Optimum cavity depth - 1.5-2 mm, if there are no indications for a deeper dissection. After determining the restoration ground off sharp boundaries at the edges of the enamel portions of the tooth crown. This operation is carried out on sections of enamel, form which can not be corrected during sealing (Fig. 182).

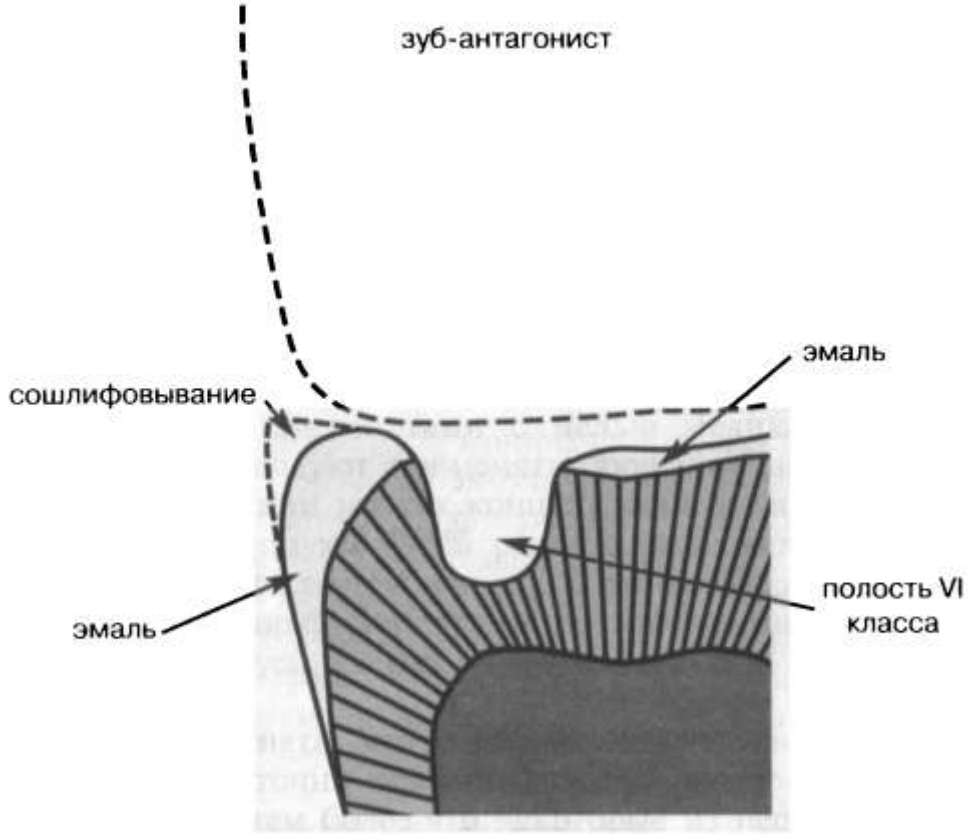

Рис. 182. Полость VI класса на вершине жевательного бугра.

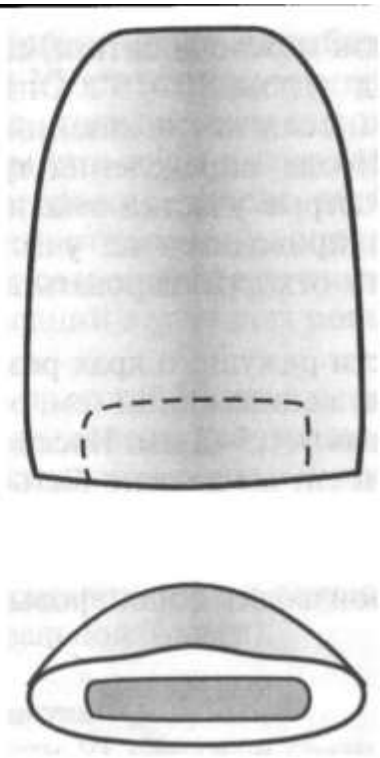

Рис. 183. Полость VI класса на режущем крае резца.

The cavity in the cutting edge of the cutter is created as a groove with a slightly tapered bottom (see. Fig. 183). Its depth should also be 1.5-2 mm. Excision of unaffected tissues of the tooth in this case should be minimized. All the enamel cavity on the edge cutters seek to preserve. Sometimes, to provide a seal arrangement at the edges of the walls of the cavity, produce reduction should antagonist tooth.

5. Finishing enamel margins. Finishing enamel edges held by the above-described rules grained diamond burs, carbide finishing burs or hand tools, such as knives enamel.

Clinical activity №18

Subject: Stages of restoration of teeth 6 class by Black

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Teach students the stages of restoration of teeth 6 class by Black
The task of the training session:	- Teach students the stages of restoration of teeth 6 class by Black - To familiarize students with the peculiarities of preparation and drug treatment of cavities - Features filling cavities various filling materials (cements, amalgams, JRC composite material (light and chemical curing)). - Teach students to correctly and consciously to provide treatment to patients with deep caries, observe the necessary precautions while in the dental office. Especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking in the restoration of teeth 6 class by Black, a responsible approach to their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all

	manual skills. -Knowledge of issues stage dental restoration, class 5 according to Blake is essential in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Plan of practical and clinical training for students II course IV- semester

Practical lesson №1

Topic: General treatment of caries. Caries and nutrition. Physical treatment of caries

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Provide students with the general method of treatment of dental caries. Learn how to conduct physical methods of caries treatment.
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria

Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Round table"

Test questions on employment:

1. What drugs are used for the general treatment of caries?
2. What goal is the total treatment of caries?
3. What vitamins are used in the general treatment of caries?
4. What are the mineral components are used in the general treatment of caries?
5. What kind of diet therapy is indicated for the general treatment of caries?
6. What are the physical methods are used in the treatment of dental caries?

Test questions and answers:

1. What drugs are used for the general treatment of caries?

For a general treatment of caries using vitamin B, D, E, and mineral components: glycerophosphate, lactate and calcium gluconate, phytin.

2. What goal is the total treatment of caries?

Total caries treatment aims to improve the body's defenses and resistance tooth tissues.

3. What vitamins are used in the general treatment of caries?

In general, treatment of caries using vitamin B, D, E.

4. What are the mineral components are used in the general treatment of caries?

In general, treatment of caries mineral components are used:

Glycerophosphate, lactate and calcium gluconate, phytin.

5. What kind of diet therapy is indicated for the general treatment of caries?

In general, treatment of caries diet therapy is shown next:

necessary to reduce the consumption of carbohydrates in general and to exclude them prièm between meals.

6. What are the physical methods are used in the treatment of dental caries?

Of all the physical methods used in the treatment of caries electrophoresis (calcium and phosphorus ions may be introduced by electrophoresis)

The text of the practical classes

-For a general treatment of caries using vitamin B, D, E, and mineral components: glycerophosphate, lactate and calcium gluconate, phytin.

-Total caries treatment aims to improve the body's defenses and resistance tooth tissues.

-In general, treatment of caries using vitamin B, D, E.

-In general treatment of caries mineral components are used:

Glycerophosphate, lactate and calcium gluconate, phytin.

-In general, treatment of caries diet therapy is shown next:

necessary to reduce the consumption of carbohydrates in general and to exclude them prièm between meals.
-Of all the physical methods used in the treatment of caries electrophoresis (calcium and phosphorus ions may be introduced by electrophoresis)
-1. Tranquilizers. 2.Analgetiki
-To improve the resistance of dental tissues prescribed vitamins, D, E, and mineral components: glycerophosphate, lactate, calcium gluconate, phytin. (1 tablet 3 times a day for 4-6 weeks with a break of 1-2 months)
-When deep caries in order to clarify the diagnosis, if it is impossible to determine the state of pulp, the control placed seal.
-Therapeutic pads often like Kalmetsinu consist of two components: a powder containing Ca (OH) 2, zinc oxide, sulfacetamide, dry blood plasma. Karmometiltsellyullozy liquid-solution.
Kaltsin- paste, it consists of Ca (OH) 2 and zinc oxide prepared from glycerol vazelinovo- basis, which allows to keep the plasticity for a long time.
-When chronic deep caries treatment involves excision of infected carious process hard tissue forming the cavity and sealing it. As with caries average, the insulating gasket is used depending on the properties of the filling material.
-When chronic treatment of deep caries used preparations containing calcium hydroxide, to provide the anti-inflammatory action on the pulp and odontoblasts stimulation to enhance deposition substitutive dentin .In result of lower pH due to the expressed alkaline formulation normal blood supply of the pulp and dentin substitutive delayed intensively. In our country, the drug is released kalmetsin from overseas - a drug chemically cured-Dycal and Alcaliner, consisting of two components. Calcimol- medications light and chemical curing.
-When electroanesthesia for caries treatment apparatus can be used
ELOZ -1.
-To determine the excitability of the pulp in the treatment of caries can be applied apparatus ML-1.
-When caries treatment for strengthening the enamel and dentin can be used fluorine electrophoresis method.
-Sostavnoy part of complex treatment of caries is oral hygiene and teeth.

Clinical activity №1

Subject: Implementation of elektroodontometrii.

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Ehtiopatogenez caries general, local, physiotherapy disease
The task of the training session:	- To familiarize students with the etiology and pathogenesis of dental caries in order to conduct etiopathogenetic general treatment of caries. -Oznakomit students with equipment for physiotherapy treatment of dental caries. - To teach the students to carry out electrophoresis, phonophoresis, UV-irradiation. - Teach students to correctly and consciously pursue a common treatment of dental caries, as well as physiotherapy. Observe the necessary safety precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking in the appointment of the total caries treatment, physical therapy, take responsibility for their future profession, to

	develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of general, local, physical therapy of caries is important in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

№2 practical lesson

Topic: Physical treatment of caries.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Familiarize students caries treatment physical method
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 10 minutes 10 minutes 10 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnкm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and	Meet, they write. They work in groups, groups perform groups perform present

15 minutes	case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	

interactive method

Using the method of "Klasster"

Test questions on employment:

1. What vitamins are used in the general treatment of caries?
2. What are the mineral components are used in the general treatment of caries?
3. What kind of diet therapy is indicated for the general treatment of caries?
4. What are the physical methods are used in the treatment of dental caries?

Test questions and answers:

1. What vitamins are used in the general treatment of caries?

In general, treatment of caries using vitamin B, D, E.

2. What are the mineral components are used in the general treatment of caries?

In general, treatment of caries mineral components are used:
Glycerophosphate, lactate and calcium gluconate, phytin.

3. What kind of diet therapy is indicated for the general treatment of caries?

In general, treatment of caries diet therapy is shown next:
necessary to reduce the consumption of carbohydrates in general and to exclude them prièm between meals.

4. What are the physical methods are used in the treatment of dental caries?

Of all the physical methods used in the treatment of caries electrophoresis (calcium and phosphorus ions may be introduced by electrophoresis)

The text of the practical classes

Dental caries - a pathological process appears after the eruption of the teeth, in which there is a softening and demineralization of hard tooth tissue with the subsequent formation of a defect in the form of cavities.

Cavities are classified:

Caries in the stage of spot.
Surface caries.
Middle caries.
Deep caries.
Physical methods of diagnosis, treatment and prevention are used at different stages of the caries process.
When caries stains in step employed reminera-tion of tooth tissue by means of calcium electrophoresis fluorine. For children using 5% calcium gluconate solution for adults of 10% calcium gluconate solution. Exposure Time - 10-15 minutes and then carried applique with 2% sodium fluoride solution for 2-3 min. The treatment course - 10-15 sessions. The procedure is performed every day. Simultaneously with electrophoresis trace elements prescribed for multiple caries total irradiation of UV rays. Recommend 2- 3 courses of UV irradiation at 20 treatments every other day. On the surface, medium and deep caries
at preparing you can apply electroanesthesia and electric pulp test.
Fizioprofilaktika caries

Fizioprofilaktika caries occupies a prominent place among other methods of prevention of dental caries.

Prevention of dental caries in children begins with prenatal child development period. To do this, pregnant women are prescribed the total UV radiation, aimed at strengthening the woman's body and the stimulation of calcium-phosphorus metabolism, improve education and assimilation of vitamins. You can assign aeronizatsiyu for the normalization of the autonomic nervous system.

In the neonatal period (up to 1 month.) Important daily walks and a stay of the child in reflected sunlight. During the summer, children have enough time to be in the sun light. In northern areas, children need to do artificial total irradiation with ultraviolet rays.

For the prevention of dental caries in children is possible to irradiate the gums and oral mucosa, since l / W biodozy and increasing 1/3 biodozy, the duration of each subsequent exposure, leading to 2-3 biodozy. In Year 2 of the course of irradiation, it is better in the winter and spring. Similar and adults can carry out procedures, prone to dental caries.Treatment of physical methods at caries 1. Bactericidal method: EUV-irradiation. 2. Analgesic Methods: diadinamo-, amplipulse. 3. Anesthetic techniques: electrophoresis anesthetics amplipuls- and diadynamophoresis anesthetics flyuktuorizatsiya. 4. remineralizes method: electrophoresis trace elements. 5. metabolism correction methods (vitaminokorrigiruyuschie, ionokorrigiruyuschie): EUV irradiation suberythermal doses. Bactericidal therapies caries EUV irradiation of the teeth and gums. During the absorption of radiant energy occurs microbial cells and photolysis denaturation of nucleic acids and proteins of microorganisms due to its excessive absorption of energy quanta DNA and RNA molecules, which leads to inactivation and destruction of microorganisms structures to their death. To start treatment with 1 biodozy, then incremented by 1 each subsequent irradiation biodozy to 4 biodozy; treatment of caries 4-6 treatments. Analgesic techniques physiotherapy caries Diadynamic currents Nam, CP, DP. Diadynamic currents rhythmically stimulate nerve conductors somatosensory system, inhibit impulses in pain sensitivity fibers. Afferent flow imbalance occurs which restricts pain afferent impulses from the hearth. Pain dominant suppressed dominant rhythmic stimulus that leads to breaking the cycle of pain between the hearth and the CNS, in relieving pain dominant in the cerebral cortex, causes a reduction and disappearance of pain during carious diseases. Diadynamic currents are able to normalize cortical neurodynamics with facial pain. This is done by reflex action on the peripheral and conductor sections pain analyzer. Applied DN - 30 s - 1 min, KP - 2-3 min (with a change of polarity), DP - 1-2 minutes, daily; Treatment should be engaged in courses for 5 - 7 procedures. Amplipulse is rhythmically orderly flow of afferent impulses in the central nervous system, suppresses the electrical impulses from the pain of the hearth. The analgesic effect of sinusoidal modulated current is realized by the same paths as the diadynamic. For the procedure using alternating mode, IV RR modulation frequency 100 Hz, modulation depth - 75%, posting - 2-3 with a pause, the duration of Procedure 5 - 8 min; Course 5 7 procedures. Anesthetic treatments at caries Electrophoresis anesthetics (0.25-5% novocaine solution hydrochloride, 0.5-1% tetracaine solution, 0, 5-2% Trimekain solution - a anode). Input via electrical current anesthetics reduce or completely inhibit the excitability of sensory conductors and holding them inhibit pulses. The combined influence of electric current and reduces the local anesthetics pulse stream from the cavity and causes hypalgesia. In carrying out electrophoresis in order to compensate the leakage current of the tooth cavity must be carefully isolated from the saliva and dried. The current strength of up to 2 mA, duration of effect 0 1 - 15 minutes, daily; treat caries need a course of 7-10 treatments. Diadynamophoresis, amplipulsforez anesthetics. Anesthetic effect of drugs (0.25- 5% novocaine solution hydrochloride, 0.5-1% tetracaine solution, 0, 5-2% Trimekain solution - a anode) supplemented analgesic effect diadynamic and sinusoidal modulated currents. When administered drug species when data currents rectified amplipulse therapy regimen used, and when diadynamophoresis procedure is carried out without polarity reversal. When used diadynamophoresis DN - 30, MP - 3.2 min, DP - 1-2 minutes, daily; course of 5-7 treatments. When used amplipulsfore-the rectified mode, IV RR modulation frequency 100 Hz, modulation depth - 75%, posting - 2-3 with a pause, the duration of Procedure 5 - 8 min;

treat caries necessary rate 5 - 7 procedures. Flyuktuorizatsiya. Under the action of randomly varying pulse decreases and disappears pain in the hearth and are blocked carious pain impulses in the cerebral cortex. It has an analgesic effect, It promotes regression of the inflammatory infiltrate. Applied current frequency of 100-2000 Hz, nevypryamlenny symmetrical, a density of 1 - 2 mA / cm2 for 10 minutes daily; treat caries need a course of 5 treatments. Remineralizing treatment of carious lesion Electrophoresis microelements teeth (2-5% calcium chloride solution from the anode, 2% sodium fluoride solution from the cathode, 2-5% of sodium phosphate solution with a cathode region of caries). The method allows to introduce the required drugs in a region inaccessible to other modes of administration: in particular, carry out electrophoresis in the tissue enamel, dentin, fill micronutrient deficiency in tooth tissues, growing under carious diseases. To maintain a sufficiently high concentration microelement administered in recommended carious spot Electrophoresis was performed every other day for 10-20 days. The current strength of up to 2 mA, duration of effect 10-15 min daily; treat caries need a course of 15-20 procedures. Therapies correction metabolism caries at tooth roots medium-wave ultraviolet radiation (suberythermal dose). Under the influence of EUV radiation occurs vitamin D formation, which regulates calcium-phosphorus metabolism in the organism, contributes to sheathe organism resistance, prevents leaching of calcium from teeth. EUV radiation promotes the formation and absorption of vitamins D and C. Use basic or accelerated schedule of EUV-radiation; treat caries need a course of 15-20 procedures. Local UV-irradiation gums leads to the activation of the microcirculation, enzymatic processes of metabolism in the cells of the oral mucosa. Carried out with the help of special tubes. Impact begins with 1/2 biodozy, increasing the dose each successive irradiation at 1.2 to 2 biodozy biodozy, every other day; course of 4 treatments. Contraindications: 1. violation oral mucosa integrity 2. intolerance administered drugs, 3. General contraindications to physical treatments. Fizioprofilaktika caries Fizioprofilaktika aimed at: 1. prevention of tooth decay and the development of caries disease, 2. limiting the spread of caries process, 3. reduction of symptoms of the disease through metabolic correction (vitaminokorrigiruyuschie methods), 4. reduction phenomena demineralization (remineralizing treatment), 5. damaging effects on microorganisms (bactericidal methods), 6. decrease pain (analgesic, anesthetic treatment of caries). Causes and prevention of deep caries Do you like to look in the mirror at the blackened teeth? Do you like it when people just ignore you, seeing the kind of running your tooth? What do you feel when it is due to your negligence teeth start to hurt and eventually fall out? The causes of tooth decay are commonplace. disease prevention is regular hygienic care and visits to the dentist. Unfortunately, we often forget that our teeth are attacked by a huge number of bacteria due to our negligence and even untidiness. Why is wisdom tooth decay and molars? Violation of the rules of hygiene. Thus there is a drop of mineral substances are needed to strengthen the tooth enamel. First, there is the area covering the tooth plaque that develops in the future in stone and destroys the enamel. Regular teeth cleaning will save you from many problems, especially if the choice of toothpaste do you advise your dentist. Selecting brush - too serious question. The degree of stiffness should meet your individual characteristics. Do not forget that the brush should be changed not less than once a month. Improper diet. Eating sweets in large quantities, insufficient amounts of protein, vitamins in our food. Especially harmful to teeth drink carbohydrate-based, as well as excessive sweet tooth. Heredity, too, is of great importance to the emergence of the disease. Not unimportant composition of saliva, which is in the mouth. In patients with caries it is more viscous. Acquired chronic diseases. In this case, measures to prevent - it is your doctor. You only need to strictly comply with its recommendations. Bad habits (smoking, alcohol abuse) - also a possible cause of tooth decay. Just bad habits. If you are constantly gnaws fingernails, nibbling the tip of a pencil or pen to crack nuts or hard candy, it is hardly surprising appearance of microcracks in the enamel. And this is - a direct path to the formation of caries. Hormonal imbalances in the body. The methods of caries prevention Preventive measures against diseases - a topic which today applies to virtually everyone. With caries encountered virtually every modern man, it is not surprising that the measures for its prevention cause such an interest. Caries begins with small

whitish spots on tooth enamel. Their appearance is accompanied by an increase tooth sensitivity to cold or hot food. And those symptoms with which most people are drawn to the dentist (tooth pain, darkening and gradual tooth decay) occur much later when the disease has already received its development. Hence it is clear that the prevention of dental caries starts with regular visits to the doctor. Dental office need to visit at least twice a year, even if you feel that your teeth are in good condition. A qualified dentist detects first, imperceptible to your symptoms and suppress the disease in the bud. When the daily prevention of illness at home, you can avoid the continuation of the disease, will save teeth that already have this diagnosis. So, want healthy teeth and a beautiful smile, "a million dollars", then we begin to work on yourself. You need to: 1. Reviewing your diet. To get rid of tooth decay, reduce the intake of sweets, sour and pungent foods to a minimum. We eat warm food. We refuse to very cold and very hot food, as well as receiving them simultaneously. This also saves on the problems of the oral cavity with caries. 2. To get rid of caries, thoroughly clean the mouth after every meal, using toothpicks and rinses. Very good and useful to rinse the teeth and oral cavity decoctions of herbs or special rinses. 3. Regularly use for preventing disease toothpaste saturated with fluorine. After 3 weeks, be sure to change it to a different pasta. 4. To get rid of tooth decay, brush your teeth 3-4 times a day, for at least 5 minutes each time. 5. Use a toothbrush of medium hardness. 6. To get rid of tooth decay, change the brush at least once every three months. 7. If the body lacks fluoride, then we use the medicines, vitamins, which contain fluorine. As an auxiliary agent for the prophylaxis can use mouthwash solution of sodium chloride. Caries treatment time of 10 days. Prevention of dental caries front teeth to tooth decay is not worried about you and your family budget, it is necessary to regularly clean the teeth using dental floss. So you protect yourself from the trouble in the form of loss of respectable appearance and a substantial amount of the loss. For the prevention of the disease is not only important to take good care of your teeth, but also regular check-ups at the dentist. Qualitative diagnosis will identify problems at an early stage, and thus eliminate the need for drastic measures in the future. The earlier a problem is found, the easier and cheaper to eliminate it. To problems with the front teeth were not a surprise, you need to properly approach to prevention. Remember that caries in advanced stage is not only aesthetic, but can be more costly and pleasure. Services aesthetic dentistry today are quite expensive, but can bring great results. Do not forget that the teeth - a card, it is a sign of health and well-being, it is the first impression and more. prevention of dental caries during pregnancy and lactation It is essential to understand that the foundation of human dental health is established even before his birth. Therefore, during pregnancy for the prevention of dental caries woman should eat right, so that the body of the child receives all the necessary. Prevention of dental caries and sound approach comprises feeding to the infant. Of course, there is nothing better than breast milk, but the lure of well-chosen also plays a very important role in the prevention of dental caries.

Clinical activity №2

Subject: Implementation of thermodiagnostics.

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Carrying thermodiagnostics
The task of the training session:	- To familiarize students thermodiagnostics -Oznakomit students with equipment for physiotherapy treatment of dental caries. - To teach the students to carry out electrophoresis, phonophoresis, UV-irradiation. - Teach students to correctly and consciously pursue a common treatment of dental caries, as well as physiotherapy. Observe the necessary safety

	precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking in the appointment of the total caries treatment, physical therapy, take responsibility for their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of general, local, physical therapy of caries is important in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical lesson №3

Topic: Errors and complications arise in the diagnosis and treatment of dental caries.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Learn the basic errors that occur in the treatment of dental caries, to master the methods of their elimination and prevention.
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria

Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Klasster"

Test questions on employment:

1. In what circumstances and for any diagnosis of possible accidental opening of the cavity of the tooth?
2. What is the cause of a secondary or recurrent caries?
3. What groups of filling materials may contribute to inflammation and necrosis of the pulp?
4. What are the complications resulting overhanging edge seals?
5.K any complication resulting overstatement of fillings?
6.K some complication causes improper cavity preparation?

Test questions and answers:

1. In what circumstances and for any diagnosis of possible accidental opening of the cavity of the tooth?

Accidental opening of the cavity during tooth preparation is due to insufficient knowledge of the topography of the tooth cavity. In addition, the disclosure of the tooth cavity is more common in deep caries. In this case, treatment is carried out as in traumatic pulpitis.

2. What is the cause of a secondary or recurrent caries?

The cause of secondary caries or recurrent dissection is wrong cavity or sealing cavity tackle art.

3. What groups of filling materials may contribute to inflammation and necrosis of the pulp?

Inflammation and necrosis of the pulp is possible after filling silicate cement, composite materials, due to violation of rules imposing an insulating gasket.

4. What are the complications resulting overhanging edge seals?

overhanging edge seals leads to complications such as inflammation of the interdental papillae and bone resorption interdental septum.

5.K any complication resulting overstatement of fillings?

Overestimation of the seal leads to a traumatic pulpitis.

6.K some complication causes improper cavity preparation?

Improper preparation cavity leads to a loss of the seal.

The text of the practical classes

-Random opening cavity during tooth preparation is due to insufficient knowledge of the topography of the tooth cavity. In addition, the disclosure of the tooth cavity is more common in deep caries. In this case, treatment is carried out as in traumatic pulpitis.

-The cause of secondary caries or recurrent dissection is wrong cavity or sealing cavity tackle art.

-Vospalenie and necrosis of the pulp is possible after filling silicate cement, composite materials, due to violation of rules imposing an insulating gasket.
seals -Navisayuschy edge leads to complications such as inflammation of the interdental papillae and bone resorption interdental septum.
-Zavyshenie seal leads to a traumatic pulpitis.
-Nepravilnoe preparation cavity leads to a loss of the seal.
Changing the color of a tooth after sealing occurs due to incomplete removal of the altered dentin and also due to mismatch color gamut color tooth fillings.
-When wrong diagnosis may not be a pain when biting and otèk soft tissue.
-When wrong diagnosis may appear strong, paroxysmal, night, spontaneous pain.
-When wrong diagnosis may occur paroxysmal, short-term, spontaneous pain.
-When the treatment of deep caries is the most common complication of opening the pulp horns.
-Working tip without cooling of the pulp may lead to burns. -To prevent boron entering the windpipe is necessary to use a cofferdam.
Seeing-diff. diagnosis of deep caries with secondary caries oriented based on patients' complaints and objective examination data. Deep caries is characterized by a severe complaints (intermittent pain stimuli from all species) and a depth of cavity (within okolopulpovogo dentin).
Seeing-diff. middle caries diagnosis with chronic fibrotic periodontitis should be remembered that the similarity lies in the absence of complaints. The essential difference between these two diseases that at preparing cavity occurs at the average sensitivity caries and periodontitis response to offline in preparation due to necrosis of the pulp .If average tooth caries is responsive to temperature and chemical factors, and periodontitis response to these stimuli offline . tooth pulp at medium caries responsive to a current of 6.2 mA, periodontitis occurs at a current of 100 microamps. On the radiograph not changed at caries periodontal tissues, and chronic periodontitis found changes in the periodontium.
Seeing-diff. diagnosis caries surface erosion of dental hard tissues, it must be remembered that the erosion of hard tissue is cup-shaped, the bottom of its smooth, shiny. Most often affects the neck. Erosion is often combined with hyperesthesia.

Clinical activity №3

Subject: The use of rubber dam.

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	errors in diagnosis and complications during and after the treatment of all forms of tooth decay.
The task of the training session:	To familiarize students with the most common errors during caries diagnosis and troubleshooting. - To familiarize students with the most common errors in the treatment of tooth decay and methods to address them. - To study the basic errors that occur in the treatment of dental caries, to master the methods of their elimination and prevention. - To teach students the correct and conscious approach to the issues of the clinic and diagnosis of all forms of tooth decay. Observe the necessary safety precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking in case of errors and complications

	in the treatment of caries, take responsibility for their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues clinics dif.diagnostiki, treatment of all forms of tooth decay, as well as the likelihood of errors and complications in the work, it is important in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical lesson №4

Topic: Prevention of tooth decay

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	To study the prevention of dental caries
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm	Meet, they write. They work in groups,

15 minutes 30 minutes 15 minutes	2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	groups perform groups perform present

interactive method

Using the method of "Brainstorm"

Test questions on employment:

1. What is the prevention?
2.Mery eliminate cariogenic situation in the mouth?
3. Methods of increasing resistance of tooth enamel.
4.C what period begin prevention of tooth decay?
5. As the fluorine content in the water is optimal?
6. Which food for newborns is the most valuable?

Test questions and answers:

1. What is the prevention?

Prevention is a system of social, medical, hygienic and educational measures aimed at preventing disease by addressing the causes and conditions of their emergence and development as well as increasing the body's resistance to adverse environmental factors.

2.Mery eliminate cariogenic situation in the mouth?

Measures to eliminate cariogenic situation include:

Recovery of the organism; restriction of carbohydrate intake; diet ; receiving solid foods; oral hygiene; salivation improvement, elimination of dentofacial deformities; Fissure closure and blind holes of the tooth.

3. Methods of increasing resistance of tooth enamel.

There are the following ways to enhance the resistance of tooth enamel: correct tab and development of tooth tissue; full maturation of enamel; remineralizing therapy; ftorpreparatov use of topical and systemic action.

4.C what period begin prevention of tooth decay?

Caries prevention should start from the prenatal period of fetal development and continues throughout a person's life.

5. As the fluorine content in the water is optimal?

The optimum fluorine content in water of about 1 mg / l.

6. Which food for newborns is the most valuable?

The most valuable food for newborns is breast milk, as it contains the optimal set of essential nutrients.

The text of the practical classes

-Profilaktika is a system of social, medical, hygienic and educational measures aimed at preventing disease by addressing the causes and conditions of their emergence and development as well as increasing the body's resistance to adverse environmental factors.

-K measures to eliminate cariogenic situation include:

Recovery of the organism; restriction of carbohydrate intake; diet ; receiving solid foods; oral hygiene; salivation improvement, elimination of dentofacial deformities; Fissure closure and blind holes of the tooth.

-There following methods of increasing resistance of tooth enamel: correct tab and development of tooth tissue; full maturation of enamel; remineralizing therapy; ftorpreparatov use of topical and systemic action.
-Profilaktiku caries should begin with prenatal period of fetal development and continues throughout a person's life.
-Optimal fluorine content in water of about 1 mg / l.
-The most valuable food for newborns is breast milk, as it contains the optimal set of essential nutrients.
-Significantly role in the prevention of dental caries prevention and elimination plays dentofacial deformities. Orthodontic treatment aimed at normalizing the occlusion, eliminate crowding, reduces the risk of caries.
-For applications for the prevention of dental caries, the following solutions are used: 1-2% solutions of sodium fluoride and stannous fluoride.
Fluoro-electrophoresis helps stimulate processes such as:

Education mineral protective plènki, increasing the resistance of enamel to decay.
Effectively remterapii held in the treatment of caries in the stage of the spot is determined by staining of the tooth 2% solution of methylene blue (some stains disappear or decrease)
-As remineralizing composition solutions include ions of calcium, phosphorous, fluorine "Remodent"
-Preparat introduced by electrophoresis and applique.
-The most common method of preventing tooth decay in our country is the fluoridation of drinking water.
-Ftorsoderzhaschie gels are applied to the crown of the tooth for 5-6 minutes.
-As dental composition includes ingredients such as abrasives, surfactants and extenders (glycerol, etc.), pastes imparting ductility and toughness.
-Uhod oral child to start with two years of age, when the child is formed milky bite.

Clinical activity №4

Subject: Methods of fissure sealing

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	To study the method of sealing the teeth
The task of the training session:	To acquaint students with all existing methods of caries prevention. - Teach students to correctly and consciously carry out prevention of caries since fetal development. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking in matters of prevention of caries, take responsibility for their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of caries prevention, it is essential in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table,

topic:	alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical lesson №5

Topic: Non-carious lesions arising before teething. Hypoplasia, hyperplasia

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	To familiarize students with the classification of non-carious lesions of dental tissues tvèrdyh (Patrickeyev VK).
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Brainstorm"

Test questions on employment:

1.Klassifikatsiya carious lesions depending on the timing of occurrence.
2.Perechislite non-carious lesions arising before teething.
3.Perechislite non-carious lesions arising after teething.
4.Formy hypoplasia.
5. The clinical picture of hyperplasia.
6. Clinical dental fluorosis.
Test questions and answers:
1.Klassifikatsiya carious lesions depending on the timing of occurrence.
Depending on the timing of non-carious lesions are divided into 2 groups:
1.Porazheniya arising before teething.
2.Porazheniya arising after teething.
2.Perechislite non-carious lesions arising before teething.
For non-carious lesions occur before teething include: hyperplasia, hypoplasia, fluorosis, hereditary lesions of teeth.
3.Perechislite non-carious lesions arising after teething.
For non-carious lesions arising after teething include: abnormal abrasion, wedge-shaped defects, necrosis, erosion, trauma, hypersensitivity.
4.Formy hypoplasia.
There are the following forms of hypoplasia:
-volnistaya, spot, grooved.
Also distinguish between systemic and local hypoplasia.
5. The clinical picture of hyperplasia.
Clinically under hyperplasia imply excessive formation of tooth tissue -emalevaya drop. Often enamel droplets located in the neck
tooth. Enamel droplet diameter of 1-3 mm. Hyperplasia does not cause any functional impairment.
6. Clinical dental fluorosis.
Dental fluorosis is a disease associated with intoxication fluorine.
Fluorosis affects mainly permanent teeth, most incisors and premolars of the maxilla, mandible rezhe- incisors and molars.

The text of the practical classes

Non-carious lesions of teeth in the form of erosion, increased abrasion, wedge-shaped defects and other forms of violations of enamel and dentine have been described in the XIX century. The study of this disease, researchers have repeatedly returned to the teeth. However, in comparison with the study of the pathogenesis and etiology of dental caries and periodontal disease, works devoted to the same issues in relation to non-carious lesions are relatively few. To a certain extent this is due to insufficient knowledge, which remains to this day a mystery to doctors.
Classification of non-carious lesions (YA Fedorov, 1998)
1. Pathology of hard tissue of teeth that occurred during their development.
1.1. Hypoplasia tooth enamel.
1.2. Hyperplasia tooth enamel.
1.3. dental fluorosis.
1.4. Hereditary disorders of dental tissues.
1.5. Medications and toxic disorders of dental tissues.
2. Pathology hard dental tissue which has arisen after their eruption.
2.1. Pathological dental abrasion.
2.2. Wedge teeth defects.
2.3. tooth erosion.

2.4. Medications and toxic disorders of dental tissues.
2.5. Injury of teeth.
2.6. Necrosis of solid teeth tissues.
dental lesions that developed during the formation and mineralization of teeth (before eruption)
1. Hypoplasia tooth enamel
2. System hypoplasia
Enamel hypoplasia - a vice of its development, coming as a result of violations of metabolic processes in the developing tooth and manifested in quantitative and qualitative abnormalities of the tooth structure, as a violation of mineralization during its formation.
Etiologic factor hypoplasia enamel is considered insufficient or delayed function odontoblasts that occurs due to the metabolism in the whole body under the influence of various diseases or as a result of metabolic disturbances in some follicles under the influence of mechanical trauma, infection, ionizing radiation, and others. Depending on the efficient cause violation occurs in the group of teeth formed in one and the same period (systemic hypoplasia); at several adjacent teeth of the same or different period (lobular hypoplasia); on one or more teeth (spot hypoplasia). System hypoplasia of 90.6% of such lesions. System enamel hypoplasia is found in 2-14% of cases, it is characterized by impaired development of enamel in all or group of teeth at a time. Enamel hypoplasia occurs in 12-19% of children Literature data confirm that (Lukanova-SkopakovaK 1977;. MorabitoA, DefabianisR, 1988.). Hypoplastic defects localized on teeth arranged symmetrically in the same portion of crowns, with lesions of the same width, that is, its clinical manifestation of the same on all the teeth. In primary teeth is rare, mainly as a result of metabolic disorders in the body of a pregnant woman and is rarely due to metabolic disorders in the child in the first months of life. Often combined with congenital hypoplasia of allergy is characterized by impaired water and mineral metabolism. Hypoplasia also occurs in children who underwent CNS disease, recover from hemolytic jaundice in the background Rhesus-conflict, rickets, tetany, gastro-intestinal diseases, with the defeat of the endocrine system, in bottle-fed, with congenital syphilis. Hypoplasia clinically manifested in the form of spots, recesses of different sizes and shapes, striations and even complete absence or enamel on which the tooth portion. Localization hypoplasia section can judge the age, which is a violation of mineral metabolism, and the width of the affected area will determine the length violations. By the number of hypoplastic areas,
arranged parallel to the cutting edge, specify how many times encountered a sharing violation in the body of the child. It should be noted that more than 60% of the defects hypoplasia developed in the first 9 months of a child's life, when even mild compensatory and adaptive mechanisms, and any adverse factors (illness, poor nutrition) may cause metabolic disorders in the body (Dyakov C, B., 1965). Therefore more hypoplasia occurs in the cutting edge of incisors, canines and first molars mounds. In diseases of children over 3-4 years of life hypoplasia seen in the rest of the teeth. If this affects the crowns of the teeth up to the cervical region, and in the second premolars and molars can be spot on the chewing surface. Distinguish following clinical forms hypoplasia: Spotted form hypoplastic manifested as white spots with distinct borders, smooth shiny surface, which are located on one level, symmetrically arranged crown teeth. The symmetry is characterized by not only the location of spots, but their shape and size. Erosive form hypoplastic characterized thinning of the enamel layer at various locations on the crown of the tooth limited area. Defects have different, but more rounded, shape, arranged symmetrically on the like teeth. Defects are generally the same size and shape. Hypoplasia grooved shape shown in the form of grooved recesses enamel varying width and depth, arranged parallel to the cutting edge. At the bottom of the grooves istonchon enamel layer, and sometimes completely absent. Mixed form hypoplastic characterized by alternating white spots and erosions on the individual teeth and even within a single tooth or a combination of grooves, erosions and stains. In recent years, it is more common, making it difficult to diagnose enamel lesions. Spotty form hypoplasia occurs in 46.8% of patients, erosive - 27.3%, grooved - at 5.2%, mixed - in 20.7% of patients. One kind of system are hypoplastic Hutchinson teeth Pfluger and Fournier, having a

peculiar shape of crowns. Tso general appearance of crowns of incisors Hutchinson and Fournier are similar (both are barrel-shaped). In addition to this characteristic (total), the teeth are Hutchinson semilunar notch of the cutting edge of the central incisors upper and lower jaws. The authors, whose names are called data varieties systemic hypoplasia, It was considered the cause of development of teeth hereditary syphilis. The influence of syphilitic infection and explain the development of Pfluger teeth. The peculiarity of the structure of these teeth is that the chewing surface of the crown of the first permanent molars have underdeveloped converging mounds, whereby this molar crown acquires conical formulas local Local hypoplasia hypoplasia characterized by impaired development of tissues and rarely two teeth. The reason for its occurrence is either, mechanical injury of the developing permanent tooth follicle or inflammation in it under the influence of biogenic amines and infection entering the follicles in chronic periodontitis baby tooth. Temporary teeth local hypoplasia was observed. More often cause local hypoplasia is an inflammatory process, propagating from the region of the apex of temporary or osteomyelitic hearth jaw. Any rudiment of permanent tooth may be involved in the inflammatory process, but it is more likely to suffer the beginnings of the premolars, which are located between the roots of the temporary molars. As is known, temporary molars most often affected by caries and consequently, apical periodontitis. As for the local treatment of hypoplasia, when significant deformation crown shown manufacture artificial crown. In a clinical temporary molars most often affected by caries and consequently, apical periodontitis. As for the local treatment of hypoplasia, when significant deformation crown shown manufacture artificial crown. In a clinical temporary molars most often affected by caries and consequently, apical periodontitis. As for the local treatment of hypoplasia, when significant deformation crown shown manufacture artificial crown. In a clinical
defect enamels, do not apply to all vestibular surface of the tooth to be preferred aesthetic restorative materials with minimal dissection of hard tooth tissues. Timely medical assistance in hypoplasia not only has great aesthetic, but also psychological value, since it helps eliminate unwanted emotional layers. In addition to all of said treatment hypoplasia helps prevent tooth decay. Older children, especially girls, are going through such a hard defect of tooth development. This forms a closed character and unwillingness to communicate. Aesthetic dissatisfaction makes contact to the dentist. You should first fix in the medical card pockets hypoplasia, sketch their schematic, measure the size vertically and horizontally in mm. This is necessary in order5 mmIt will need to be carried out within 8-16 months on a particular circuit. Practical observations indicate that the volume (area) spots under the remoterapii reduced for 2-3 months. an average of 1-1.5 mm. Taking into account the psychology of patients awaiting results immediately, or at least after a few days of treatment measures, they should be aware and motivated for a long course of treatment, but without any surgical interventions associated with the tooth preparation. The feature of this treatment is that it is carried by the patient and the doctor only controls its phases and corrects event. In 92.5% of the patients were obtained good and consistent results, and only in certain patients who do not follow the basic rules of treatment, failed to completely eliminate stains hypoplasia. Integrated remoterapiya based on local application of phosphorus and calcium preparations, vitamin preparations and natural biologically active substances designated courses, according to the schemes. When hypoplasia treatment is prescribed for the entire year, monitoring the results and the integrity of the remedial measures to patients on average every 1.5-2 months. The patient must undergo three month course of treatment with calcium glycerophosphate, multivitamins, antioxidants intermittently 3 mes.Bolnogo teach oral hygiene and prescribe phosphate toothpaste like "pearls", "Pearl new", "children's pearls", "Arbat", "CHeburashka" twice for dentifrice applications and hypoplasia in portions (15 min. each day throughout the treatment time). Eliminating hypoplastic enamel portion is possible by blending the seal in the recesses or grooves of the corresponding color and having optimum adhesion of the filling material. With strong thinning cutting edge and on the hills aplasia enamel premolars and molars shown covering artificial crowns of the teeth. On incisors and canines in adults is made of porcelain, plastic or metal crown with lining.

Orthopedic treatment in children is best done after the formation of the dental system in order to prevent the development of complications from the pulp and periodontal. On teeth formed from the roots and extensive tissue defects can be manufactured orthodontic crown that protects the tooth from breaking, and must be aged over 16 years to replace them on the testimony of permanent prostheses of the above materials. Children with hypoplasia enamels must be taken on a dispensary observation dentist to determine indications for treatment by different methods (re-
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Mineralize therapy, elimination of enamel defects using the filling materials) and its implementation. To prevent the development of hypoplastic important are the following preventive measures:

1) the concern for the health of the pregnant woman, and then the newborn;
2) prevention of infectious and noninfectious diseases in children;
3) timely and efficient comprehensive treatment arisen somatic disorders (acute infectious diseases, malnutrition, toxic dyspepsia, hypo- and avitaminosis, etc.);
4) enhancement of dental health education in women's and children's clinics.

Hyperplasia tooth enamel

Hyperplasia teeth manifested in excessive formation of tooth tissue, which is called enamel or enamel drops pearls. Their origin is connected with the process of differentiation of cells in the vaginal gertvigovskogo ameloblast. Enamel droplets more likely to occur in the necks of the teeth, sometimes in the root bifurcation. Their size reaches 2-4 mmin diameter. Most often they are associated with excess formation of dentine which is externally covered with enamel. Sometimes in the center of the drop is a cavity formed tissue similar to the pulp. At the clinic, they does not manifest itself and detected during examination. More detailed study of this form of non-carious lesions of teeth AOCawanha

A965). He divided the enamel droplets into 3 types: root, cervical, coronal. Based on microscopic studies the author has allocated 5 groups:

a) holds enamel-drops;
b) the enamel-dentine drops;
c) the enamel-dentine drops with the pulp, often associated with the cavity of a tooth;
d) a drop-Rodriguez Ponti - small droplets enamel (nodules) in the periodontium;
d) vnutrizubnye enamel droplets included in the dentin of the tooth crown or root.

Cervical enamel droplet usually found at an exposure gingival retraction and the tooth neck. Root - can be seen when X-ray examination or after tooth extraction. Meanwhile vnutrizubnye (vnutridentinnye) enamel drops occur more often when the physician at preparovanii cavity

within dentin "bumps" with boron to a rigid portion thereof. It is in this place and there is a drop of enamel, the treatment to be just a drop of cervical enamel. They must be gone
fovat diamond bur, sanded and zapolirovat the tooth portion, and then after training to give the patient recommendations for daily applications of phosphate-containing toothpaste for 7-10 days.

Endemic dental fluorosis

Endemic fluorosis associated with an excess of fluorine entering into the human body with drinking water, food. More common in areas with high concentrations of fluoride in the drinking water. Particularly severe manifestations of it marked in the US, North and South Africa, India, Italy, Mexico. Often detected in the zone of the metallurgical and chemical industries, fluoro ejection into the atmosphere. Numerous studies have shown that the concentration of fluorine in drinking water to 0.5 mg / l does not cause changes in the tissues of the teeth. When the fluorine concentration of 0.8-1.0 mg / l mild forms of fluorosis occur in 10-12% of the population; at 1,0-1,5mg / n- u20-30% concentration; at 1.5-2.5 mg / n- at 30-45%; above 2.5 mg / l - more than 50% of the population (Patrickeyev VK, 1956; GabovichRD, 1957; OvrutskiyG.D 1962; ExiundsS.A.etal, 1987; Larsen Metal, 1987....) . The higher the concentration of fluorine in drinking water, the higher prevalence and intensity of fluorosis. However, it is known that the presence of significant amounts of calcium in the water reduces the development of fluorosis (Koshovskaya VA, 1975). Fluorosis to a certain extent - a common disease of human and animal skeletons, but we are concerned only dental fluorosis. It is believed that fluorine, entering the organism acts on ameloblast, which leads to incorrect formation of enamel. Local Action it hardly takes place, as changes occur, and by parenteral administration of fluoride preparations. A.V.Voynar A953) believed fluoro reduces phosphatase activity, which adversely affects the mineralization of enamel. Studies have shown that fluoride in oral or even local administration quickly enters the bloodstream and blocks the thyroid gland, affecting its activity. It seems that the change in the function of the thyroid gland is the most likely explanation for the adverse effects of fluoride on the enamel mineralization. Depending on the severity of dental fluorosis changes in endemic distinguish following clinical forms of dental fluorosis (Patrickeyev VK). Dashed shape characterized hardly detectable chalky enamel strips on anterior teeth (the most mild form). White color strips from the center to the periphery and becomes less bright imperceptibly into normal tooth color. Spotted form manifested as chalky spots located in different parts of the tooth crown. The intensity of the white color disappears from the center to the periphery. The enamel surface in spots usually smooth and shiny. Sometimes there is a weakly expressed pale yellow pigmentation. Chalky-speckled form is manifested in all, not just the front teeth, clinically very diverse: white glossy and matte spots, areas of pigmentation spots of light to dark brown. stains
It is usually located on the vestibular surface of the front teeth. Sometimes there are small rounded enamel defects - specks. Erosive form - a heavy loss of teeth, characterized by the formation of defects - erosions in chalky altered enamel. The presence of at least one erosion is already evidence of a qualitatively new, more severe, stage of development of dental fluorosis.
Payload form occurs in epidemic areas with a fluorine content of 10-12 mg / l and is characterized by the gradual destruction of tooth enamel, their erasure. The prevalence of dental fluorosis in the Northwest region of Russia, even at a low content in fluorine vode3-0,7 mg / l), increased over the last 16-18 years, from 1% to 8.3%. In this more common form of spotty E1,4%), less often - chalky-speckled C2,4%) and quite rarely erosive form of fluorosis. For endemic foci fluorosis characterized by reduced intensity and prevalence of dental caries. However, studies V.A.Koshovskoy A975), L.I.Kovalenko A977) suggests that susceptibility to caries is influenced not only fluorine but mostly other macro-and micronutrients contained in drinking water and food. However it found some trace elements (manganese, iron, aluminum, magnesium, etc.) contribute to the appearance of pigmentation at fluorosis. The children's bodies fluorine is delayed significantly more than adults. A significant role in this is fluoro, coming from the foodstuffs. With age, the fluorine content in the human body increases. In the body,

fluoro deposited in the bones and teeth, parenchymatous organs. Excreted fluoro released primarily with urine G6-79%), faeces A6-19%) and then G-10%). Routine prophylactic concentration of fluoride does not cause changes in the tissues of the body. Only in cases of high concentrations (more than 10.6 mg / l) sclerotic phenomena observed in the skeleton, as well as changes in blood vessel walls. Some researchers suggest that fluoride has a carcinogenic effect. Changes in the teeth, as already indicated, may even occur at low concentrations of fluorine @ 5-0,7 mg / l) when the water is soft, without calcium, which is characteristic for the climatic conditions of the middle zone. However, some authors refer to the spotty form hypoplasia of dental fluorosis. In addition, teeth may appear fluorosis during consumption fluoride toothpaste in areas where the water contains fluorine in optimum concentrations. Prevention of dental fluorosis can be carried out collectively and individually. Collective activities normally reduced to the replacement source of drinking water or by mixing two sources to reduce fluorine concentration. Individual action is the removal of artificial feeding and feeding children. With the start of feeding the water to be replaced which is typical for the climatic conditions of the middle zone. However, some authors refer to the spotty form hypoplasia of dental fluorosis. In addition, teeth may appear fluorosis during consumption fluoride toothpaste in areas where the water contains fluorine in optimum concentrations. Prevention of dental fluorosis can be carried out collectively and individually. Collective activities normally reduced to the replacement source of drinking water or by mixing two sources to reduce fluorine concentration. Individual action is the removal of artificial feeding and feeding children. With the start of feeding the water to be replaced which is typical for the climatic conditions of the middle zone. However, some authors refer to the spotty form hypoplasia of dental fluorosis. In addition, teeth may appear fluorosis during consumption fluoride toothpaste in areas where the water contains fluorine in optimum concentrations. Prevention of dental fluorosis can be carried out collectively and individually. Collective activities normally reduced to the replacement source of drinking water or by mixing two sources to reduce fluorine concentration. Individual action is the removal of artificial feeding and feeding children. With the start of feeding the water to be replaced wherein the water contains fluorine in optimum concentrations. Prevention of dental fluorosis can be carried out collectively and individually. Collective activities normally reduced to the replacement source of drinking water or by mixing two sources to reduce fluorine concentration. Individual action is the removal of artificial feeding and feeding children. With the start of feeding the water to be replaced wherein the water contains fluorine in optimum concentrations. Prevention of dental fluorosis can be carried out collectively and individually. Collective activities normally reduced to the replacement source of drinking water or by mixing two sources to reduce fluorine concentration. Individual action is the removal of artificial feeding and feeding children. With the start of feeding the water to be replaced

milk, fruit juices, imported by other regions. Food must be rich in proteins, vitamins of group B and C and D. Additionally, the calcium salt is administered in the form of phosphorus and calcium glycerophosphate, calcium gluconate, calcium lactate by taking these drugs two-week course. It is advisable to school and preschool age children from time to time, during the summer and winter holidays, remove to rest in the place where the springs do not have high fluoride content. There are methods for water purification from fluorine: freezing, boiling, filtering the water through a bed of magnesium oxide, its treatment

sulphate of alumina.

Treatment of dental fluorosis.

fluorosis Treatment depends on the stage of destruction of the teeth and its prevalence in the oral cavity. Thus, according to the recommendations I.O.Novika A951) and G.D.Ovrutskogo A962), the first stage, characterized by the appearance of subtle white spots, stripes, wavy, it does not require special treatment and is considered to be reversible. The second and third step are characterized by irreversible lesions of enamel and dentine that require medical intervention. Electron microscopic study of diseased dental fluorosis

We showed that in the area of the spots in the enamel expanded mezhprizmennye space, reduced enamel bond between the structural entities, which indicates a decrease in its strength. In more severe forms of dental lesions decreased contours of structural units enamel, enamel prisms blurred boundaries and even pockets of their decomposition, alternating with amorphous formation, in which individual crystals interspersed gidrooksiapatita. All this is evidence of breach of the strength and resistance of tooth enamel (Patrickeyev VK, 1968; PA Leus, Galchenko VM, 1983). The above determines the treatment path dental fluorosis. Firstly, it should be directed to the remineralization of the tooth structure and be general and local. Secondly, it must be a restoration - to restore the shape and color of teeth. In this regard, taking into account the existing morphological data should not start treatment teeth affected by fluorosis, even with the use of modern composites. Coating of the teeth structure is fraught with great destruction of enamel and dentin and subsequent deposition of the filling material. As for the treatment of dental fluorosis, most of the authors recommend that the general treatment: appointment of phosphorus-calcium preparations and vitamins, elimination of excessive amounts of fluoride from drinking water and food. Most of the recommendations of local treatment of dental fluorosis reduced to bleaching pigmented enamels different acids, peroxides, and other substances, followed by neutralization of their action alkaline agents, 10% solution of calcium gluconate (Ovrutsky GD, 1962; Maximenko D.C., A. Nikolishin K., 1976; EV Borovsky et al,. 1978; Lebedev PC Galchenko VM., 1981; Groshikov MI, 1985; Colton PO, 1980; Murrin JR, Barkmeier WW, 1982;. CrollTh.R, 1990; and etc.).

bleaching technique

Use plastic guboderzhateli. Gum smeared with Vaseline, is applied humidified 33% solution of H202 (perhydrol) roller for 5-7 minutes, periodically changing (treatment time of 20-25 minutes). When the negative effect of using 36% HC1 solution and 33% H202 solution ratio of 1: 2 for 5-7 minutes. Next, using a roller with 33% H202 solution for 10-15 minutes. Then rinse 1% soda solution or water. Session terminated by electrophoresis of 5% for 20 minutes a solution of calcium chloride (with the positive electrode), every day or 8-10 sessions, at a current of 1.5-2.0 mA.Byli proposed special toothpaste containing sodium citrate (a chelating agent), citric acid (chelating agent and cleaning) proteolytic enzyme, alumina (polishing agent), and sodium monophosphate and dicalcium phosphate (Nordbo N. etal., I988). According to them, these pastes whiten teeth, especially after professional tooth cleaning hygienic. Unfortunately, currently commercially available have many different tools designed supposedly for effective cleaning and bleaching teeth at home. These medications contain strong peroxide compounds, causing irreversible enamel demineralization, so patients do not have to carry out their own teeth whitening. It is detrimental and irreversible impact on dental health. Such examples are already enough. There are more modern and safe methods of teeth whitening performed at home, but controlled by a qualified dentist. For these purposes, we used individual clear plastic tray and whitening gels, including 10% carbamide peroxide and a few other proprietary formulations. The authors noted good results (Quellet D. et al, 1992;. Reinhardt JW, 1993; GodderB, 1994, etc...). Perhaps only in the early 90s there was a new concept and technology of removing pigmented enamel with a set of materials "GTREMA". It is composed of low concentration hydrochloric acid, particulate silicon carbide (abrasive) and a silicon gel. Work technology provides stain removal with this mixture using slow speed handpiece (to avoid spraying the acidic material) and special rubber polishing cups to the holder for applying microabrasive composition on teeth and manipulations. The author recommends the use of protective equipment for the patient (goggles and rubber dam) to the doctor (glasses and rubber gloves). enamel processing is carried out for 15-30 seconds followed by rinsing abrasive composition for 30 seconds. Along with this, the author recommends that dental treatment after the procedure microabrasion fluorine-containing solution. Filed by using this technology and the composition can achieve good and consistent results (Croll Th.R, 1990; Kroll TP, 1996). Eliminate spots and weak pigmentation can be

achieved by a comprehensive remineralization therapy already described scheme. Consequently, dashed, spotty, chalky-speckled form generalized dental fluorosis should be treated as a spotted form hypoplastic remineralizing complex courses of therapy for an average of 6 months. - 2 years. It should be noted that the results come faster than enamel hypoplasia.
Pre-month course of general and local remineralization therapy, as
as defined above. At the same fillings in children in these cases should be carried out with the use of glass ionomer cements. They can then be partly replaced by composite filling materials (Artelt JM et al., 1996). 7.2.4. Hereditary disorders of inherited disorders of dental tissues dental tissues may relate to enamel, dentin or enamel and dentin in general. Hereditary disturbances of enamel development generally occur due to the influence of hereditary factors that are manifested as a result of abnormalities of ectodermal structures.
In fact, it is - imperfect amelogenesis (amelogenesis imperfecta). Based on these hereditary diseases are divided into 3 groups:
1. Hereditary enamel hypoplasia caused by violation of the enamel matrix.
2. Hereditary enamel hypoplasia, due to a violation of enamel maturation.
3. Hereditary enamel hypoplasia associated with gilokaltsifikatsiey.
Each of the three groups has its own variety of enamel lesions.
*Formation of defective enamel (imperfect amelogenesis)*It is not a single picture, and is shown in several embodiments. The clinical picture depends on the quantitative and qualitative disturbances in the enamel, which are very relative and in practice is uncertain. 1 embodiment. With a slight violation of the structure of enamel teeth erupt in the medium term, but are smaller, longer intervals (of three) are formed between the teeth. The enamel is smooth and shiny, but painted in yellow or brown. Shades on different teeth may be different. Root cavity of a conventional structure of the tooth. Option 2. At higher quantitative and destructive changes enamel teeth erupt in time, but have the shape of a cone or cylinder. Tooth surface is rough because the enamel is stored only in the form of separate islands, teeth color - yellow to dark brown. Labial surface affected more. Such teeth are characterized in the literature as "brown hypoplasia enamel". The basis of this pathology - violation enamel structure, it is not sufficiently calcined, expressed hyperesthesia. Roots and regular tooth cavity. 3 embodiment. Teeth retain normal size, shape, color, however, on a hard surface enamel disorder disposed grooves, giving it a corrugated appearance. Unlike systemic hypoplasia grooves are not located
horizontally, vertically or chaotically. Amazed weight teeth. tooth cavity and root-without visible changes. 4 embodiment. The teeth have a normal size and shape, but the enamel chalky devoid of light due to the absence of the cuticle. Enamel is easy to mechanical stress, separated from the dentin at the slightest trauma. Exposed dentine has yellow, brown and later due to penetration of the pigment from the outside. There is hypersensitivity. Roots and tooth cavity - without any visible changes. Most often there are 1 and 4 options imperfect Amelogenesis. In general, they make up 66% of all hereditary disorders of tooth tissue and detected in children of both sexes almost equally.
Violation of dentin.
Dentinogenesis imperfecta (dentinogenesis imperfecta) occurs very rarely, is a consequence of pathological mesodermal cell formations and klinicheekm itself almost does not show. It takes place only dentin hypersensitivity. Its presence in children in the absence of carious lesions should indicate an inherited disorder of dentin (Gage JP, 1985; Komarowska etal, 1989, etc...). More frequent simultaneous destruction of tooth enamel and dentin. Inheritance violation structure of enamel and dentin (Stanton-Kapdepona syndrome) was first described in1892. Stanton, and later on, but in more detail in Kapdeponom1905. This form of developmental disorder characterized by a change of color of the teeth crowns, starting early and rapidly progressive erasure of dental tissues. This nosological form has many names: • beskoronkovye teeth; without teeth enamel; brown transparent or teeth; enamel hypoplasia; defective dentinogenesis; dentin hypoplasia; opalescent dentin;
• hereditary browning of teeth; Kapdepona disease, Stanton syndrome;

• odontopatiya mezoektodermalnaya et al.

Frequency reaches 33% of all hereditary disorders tooth development. At the core of this structural anomaly is, according to some researchers, a hereditary abnormal function mesodermal embryonic tissue, and in the opinion of other authors - ectodermal embryonic tissue. Characteristically, this dominance is transferred only half of the offspring. At the same time, men and women are affected equally often. It appears on the primary and permanent teeth. Clinical signs of Stanton-Kapdepona syndrome is very characteristic. The teeth are of normal size and shape, are cut in the medium term. The intensity of the color is different - often watery gray pearlescent or brown tint. When illumination light guide teeth, as it were translucent. Shortly after the eruption of the tooth enamel is chipped off, from its remains - the sharp edges. Perhaps a progressive blurring of enamel and reducing the height of the teeth and their volume \ exposed dentine quickly erased, it is 1.5 times softer than normal, its surface smooth, shiny, various colors -. From light to dark brown. After radiographic outline dentin tooth cavity. pain complaints are usually not of hypersensitivity and gums from injury, because of wearing crowns of teeth or tongue and lip injury by sharp edges of the teeth. Electroexcitability tooth pulp generally is reduced, sometimes considerably, sensitive to chemical and physical stimuli also lowered. The dentin more water than normal, and inorganic salts, is substantially less. In the above structure tackle enamel and dentin of the teeth in the first place should deliver timely diagnosis and hence, the subsequent treatment, the success of which depends on how it is started early. Treatment of non-carious lesions of teeth of the group is carried out sequentially from the enamel lesions. Previously, all kinds of pathology enamel did not even try to cure, waiting for prosthetics at an appropriate age. Until recently, the main type of treatment for syndrome razvivshemsya Stanton-Kapdepona was also prosthesis. In lesions anterior teeth - cosmetic plastic or metal-ceramic crowns, in other cases - when indicated. At present, various forms of hereditary disorders of enamel and dentin remineralization advisable to treat complex Until recently, the main type of treatment for syndrome razvivshemsya Stanton-Kapdepona was also prosthesis. In lesions anterior teeth - cosmetic plastic or metal-ceramic crowns, in other cases - when indicated. At present, various forms of hereditary disorders of enamel and dentin remineralization advisable to treat complex Until recently, the main type of treatment for syndrome razvivshemsya Stanton-Kapdepona was also prosthesis. In lesions anterior teeth - cosmetic plastic or metal-ceramic crowns, in other cases - when indicated. At present, various forms of hereditary disorders of enamel and dentin remineralization advisable to treat complex

therapy of the previously described scheme. The results of this treatment is usually satisfactory and depend on the timeliness of its beginning. If it is started immediately after the eruption of teeth, the results will be even good. The fact that the usually restoration therapy, even the most modern composite materials, usually leads to a rapid further tooth decay, for obvious reasons, that is due to disruption of the structure and mineralization of the enamel and dentin. Therefore, treatment of this group of diseases of the teeth must start with a rather long complex remineralizing therapy comprising reception phosphorus-calcium preparations (calcium glycerophosphate), trace elements and other biologically active substances ("Klamin"), vitamin compositions and

local impact of phosphate toothpaste on the full one-year scheme, taking into account the age of the patients. This is necessary above all to prevent tooth decay by caries, abrasion and other adverse factors. In addition, in the early diagnosis and timely treatment of the 4th variant imperfect Amelogenesis syndrome and Stanton-Kapdepona can achieve very good results. If this is not achieved, then in the future, depending on the concrete results and the age of patients with dental defects are replaced with glass ionomer ("Ionofil", "Aqua Ionofil" and others.) And held prosthesis if necessary.

Osteogenesis imperfecta (osteogenesis imperfecta)

It is a rare disease that has at its core the electoral defeat of mesenchymal derivatives in the embryonic period. It is transmitted in an autosomal dominant manner. More than half of the children's parents do not have this disease, but it could be their relatives. The birth of sick

children in healthy families should be seen as the emergence of new mutations under the influence of endogenous or exogenous factors. The disease occurs in children of both sexes, is more common in boys. This disease has many names: osteogenesis imperfecta, fetal rickets, periosteal dystrophy, hereditary hypoplasia mesenchyme periosteal dysplasia, congenital brittle bone disease "glass man", opalescent dentinogenesis (Maksimovskiy YM)

At the present time are distinguished: 1) innate imperfection of bone formation, or Prolik disease; 2) later imperfect bone formation, when the disease manifests itself in different periods after birth (Lobstein disease). First rarer second, more common in boys. Detected in fetuses or neonates. It is characterized by fractures of long bones, ribs, collarbone. Hands and feet do not suffer. Children have short stature, broad flattened skull. There is a very slow ossification of the fontanelles, stunted growth and weight gain. Mental development corresponds to age. The second form is detected at the 1st year of life or later. Sometimes it takes an Email to adolescence. In this form of the listed symptoms are less pronounced. Often occur maloboleznennye fissuring bones than their fractures. Fusion takes place in the normal time. Multiple fractures cause severe disability. Fractures are more common in lower limb diaphyseal region. In addition to multiple fractures, for disease-Prolik Lobstein characteristic blue sclera, deafness, and change the structure of the teeth. The disease is based insufficient deposition of mineral salts in forming bone and dental tissues. Radiograph of the jaws marked thinning of the cortical layer, the coarse structure of cancellous bone. During the formation of the features of the teeth in their development have been identified. deafness and change the structure of the teeth. The disease is based insufficient deposition of mineral salts in forming bone and dental tissues. Radiograph of the jaws marked thinning of the cortical layer, the coarse structure of cancellous bone. During the formation of the features of the teeth in their development have been identified. deafness and change the structure of the teeth. The disease is based insufficient deposition of mineral salts in forming bone and dental tissues. Radiograph of the jaws marked thinning of the cortical layer, the coarse structure of cancellous bone. During the formation of the features of the teeth in their development have been identified.

Teeth, both temporary and permanent, are of normal size, regular shape. Coating varies tooth crowns. It ranges from gray to blue-gray or yellowish-brown with high translucency. One and the same patient different groups of teeth and the same teeth have different degrees of coloration. The second time and the first permanent molars have a lighter color compared to the other. Observed abnormal erase both temporary and permanent teeth. Different children's degree of erasure is not the same: the temporary teeth are erased to a greater extent than permanent. Erasing the hard tissue is more pronounced at the incisors and first molars. Obliteration tooth cavity and channels shown later than when dysplasia Kapdepona only after teething It progresses slowly and in different teeth to varying degrees. More pronounced in the incisors and first molars. Erasing the hard tissue of the tooth is not always accelerated the process of obliteration. The structure of the alveolar bone has no abnormality. Some identify dental dysplasia Kapdepona because this disease is inherited in the same way as a dominant trait, showed similar clinical and radiological picture of the teeth, at the heart of both diseases are mesenchymal disorders that affect the exchange of hard tissues of the tooth. To distinguish the condition of the teeth with osteogenesis imperfecta and dysplasia Kapdepona, we must first pay attention to the overall appearance and condition of the child. For osteogenesis imperfecta characterized by: 1) the growth of small, no adequate age, prominent forehead overhanging head, and sometimes blue sclera; 2) repeated fractures of the skeleton, most of the tubular; 3) change in bone structure which is manifested radiographically thin diaphysis with a widening end, a thin layer of cortical, cancellous porosity due to fine and rare spongy bone trabeculae; 4) coloring

enamel increasingly more intense (grayish blue or brown color); 5) the later manifestation obliteration tooth cavity and the channel, which starts after the dentition and slower; 6) own genetic origin anomalies. Changes in disease teeth Prolik-Lobstein is inherited as a dominant trait unstable, and as a permanent Kapdepona's disease.

Marble bone disease.

Marble bone disease is also known as osteopetrosis, Alberta disease-Schoenberg. It occurs in both sexes. Two forms of the disease: manifested in early childhood with severe symptoms dramatically, and flowing with no visible clinical symptoms and diagnosed only by X-ray study. The disease is characterized by partial or continuous hardening of cancellous bone, most often around the skeleton. In the early phase of the development of bone disease sclerotized only in the metaphyses of long bones and in the peripheral areas of flat bones; on the rest of the bone over the spongy structure is preserved. Revealed uneven seal skull. Adventitious cavity typically sclerotic (mostly basic and frontal). The defeat of the jaw bones accompanied by a developmental disability and teething. Effect of the disease to the teeth is expressed in slowing the development later eruption and change their structure. The teeth are immature roots obliterated tooth cavity and channels. Typical high susceptibility dental caries process.

Medications and toxic disorders of dental tissues

This new nosological group identified after years of analyzing the causes of very characteristic lesions of teeth. Until that time, all the following violations of the teeth attributed to hypoplasia, which is not quite true, although some signs of it when such lesions are, for example, the symmetry. However, the clinical picture of the defects themselves is significantly different from the erosive form of hypoplasia. Medications and toxic disorders of the teeth found in the last few years, more frequently. It is first and foremost a violation of enamel due to hypervitaminosis-D. Under the influence of large doses of ergocalciferol mineralization of enamel occurs prematurely when the protein matrix of the enamel organ are not yet fully formed. The resulting adverse mineralization process occurs atypically, and erupting teeth (usually front) portions are formed in the form of original belts overtighten the tooth crown. Lesions are symmetrical in size and shape, are located on the same teeth on the right and the left. The place where an abnormality on the crown of the tooth enamel, depending on the timing of occurrence of hypervitaminosis-D. Closer to the cutting edge of the cutting edge - in the first 3 months. life, in the center of the crown - for 5-6 months. life, closer to the neck of the tooth - for 8-9 months. zhizni.Razmery defects depend on the timing of the drug overdose may be 0,5- Closer to the cutting edge of the cutting edge - in the first 3 months. life, in the center of the crown - for 5-6 months. life, closer to the neck of the tooth - for 8-9 months. zhizni.Razmery defects depend on the timing of the drug overdose may be 0,5- Closer to the cutting edge of the cutting edge - in the first 3 months. life, in the center of the crown - for 5-6 months. life, closer to the neck of the tooth - for 8-9 months. zhizni.Razmery defects depend on the timing of the drug overdose may be 0,5-1 mm in depth and width, but sometimes reach 2- 3 mm width and 1-1.5 mmdepths. Surface defects hard, rough, different in color from the rest of the tooth. When taking the history of the mother in all cases could be established occurred overdose ergocalciferol marked by paediatricians. It usually happens because of increase in the dose 3-4 times instead of the recommended doctor. Another source of hypervitaminosis are infant formulas, especially import, which contained rather large amount ergo calciferol. The examination of negotiability, medications and toxic disturbances of enamel with increased1978. by1997. 5-6 times, reaching a total of 12.1% of all non-carious lesions. Including the effects of hypervitaminosis-D accounted for 90.7%, and tetracycline teeth - only 9.3%. From these data it is clear that in this nosological group includes so-called "tetracycline teeth", i.e. teeth, painted under the influence reception tetracycline assigned during tooth formation. At the same time it found that the drug is deposited in the skeleton, a negative effect on mineral metabolism in the bones and teeth. These teeth often affected by caries carious diseases and 2nd groups, such as, increased stiraemostyu.Klinicheski is manifested in the form of staining individual tooth portions (or the entire crown) in yellow color from light-yellow to dark yellow (first)

It takes place under the influence of light, food, drink, etc. The reason is usually installed in the collection history. Prevention of these disorders tooth development consists in strict compliance with dosage of ergocalciferol and when assigning deletion preparations tetra-

cyclin series during the formation of teeth in children, that is, in the first and second years of life. Therapeutic measures in all cases, you should start with a comprehensive Remy

neralizuyuschey therapy schemes hereinbefore defined and in accordance with the patient's age. Then after 2-3 months. therapeutic measures should be differentiated depending on the depth and size of the lesions. So, if the consequences of a breach of enamel due to hypervitaminosis ergocalciferol insignificant, ie transverse strips no wider or deeper1 mmThen after remineralizing therapy should begin to phase equalization of the defect on the vestibular surface of the tooth enamel by grinding the edges of the defect particulate diamond bur. In the first stage only on enamel ground off 0,10-0.15 mm. Then, the patient is released to continue the comprehensive remineralization therapy 1-1.5 months. In subsequent phases observed the same principle of alternation by grinding enamel remineralization therapy. Thus, gradually over a few visits to the vestibular surface of the teeth are aligned almost completely. Rounding out the comprehensive treatment measures remineralization therapy. In this case, application of phosphate-containing toothpastes should be carried out twice a day, especially immediately after grinding. It is necessary to monitor the progress of remineralization of enamel in the setback area, using the index of remineralization. Usually 30-37 days after remineralization therapy Sanding enamel enough to ensure that this portion has a light yellow color or stained with iodine at all.

The positive results of this treatment have received indirect confirmation of a number of authors who consider possible reduction should enamel for medicinal purposes and its subsequent remineralization. At a deeper and broader defect that can not be recovered in this way, you also need to conduct a comprehensive remineralization therapy for 2-3 months. Then, a filling defect with

using glass ionomer cements ("Ionofil", "Aqua Ionofil" et al.), and only after a certain age admissible partial replacement of the seals in the composite material. Treatment, or rather, color restoration, the "tetracycline teeth" - a difficult task and sometimes impossible. If the drug is taken only 2-3 days and as a result, there is a yellow stripe width of the teeth in the 1-2 mm, The complex remineralizing therapy can eliminate this defect of enamel coloring for 6-9 months. Such observations are there, and they gave good results, but not all patients. At coloring of dental crowns and even more so in case of late treatment when tooth color has become dark yellow or even brown, restoring a natural appearance of the teeth is not vozmozhnym.V recently in this regard, there was some progress in the elimination of TE

tratsiklinovoy pigmentation of teeth. A method for internal bleaching teeth using a mixture of sodium perborate and hydrogen peroxide in specific ratios, it is recommended to leave this mixture into the cavity of the tooth for 4 weeks. After this, the bleaching agent and re-closed temporary seal a tooth cavity. whitening process takes 10-12 weeks., and the authors have noted good results. Re-darkening of the teeth was only 10% of individuals. The main conditions AJ application of this technique is the tooth enamel undamaged and insulated glass ionomer cement root canal is filled with gutta-percha.

Clinical activity №5

Topic: Klinichsekie stages of restoration teeth with hypoplastic

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Explore klinichsekim stage of the restoration of teeth with hypoplasia
The task of the training session:	- To teach students the correct and conscious approach to the issue of classification, clinics and differential. Diagnostic carious lesions. Observe the necessary safety precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of

	responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking during dif.diagnostiki carious lesions, responsible approach to their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues dif.diagnostiki hypoplasia, hyperplasia, is important in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical lesson №6

Topic: Fluorosis. Clinic. Diagnosis and dif.diagnostika.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	To familiarize students with the clinic and dif.diagnostikoy flooroza teeth
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by	Meet, they write. They work in

15 minutes 30 minutes 15 minutes	interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	groups, groups perform groups perform present

interactive method

Using the method of "Brainstorm"

Test questions on employment:

1.Klassifikatsiya carious lesions depending on the timing of occurrence.
2.Perechislite non-carious lesions arising before teething.
3.Perechislite non-carious lesions arising after teething.
4. Clinical dental fluorosis.
Test questions and answers:
1.Klassifikatsiya carious lesions depending on the timing of occurrence.
Depending on the timing of non-carious lesions are divided into 2 groups:
1.Porazheniya arising before teething.
2.Porazheniya arising after teething.
2.Perechislite non-carious lesions arising before teething.
For non-carious lesions occur before teething include: hyperplasia, hypoplasia, fluorosis, hereditary lesions of teeth.
3.Perechislite non-carious lesions arising after teething.
For non-carious lesions arising after teething include: abnormal abrasion, wedge-shaped defects, necrosis, erosion, trauma, hypersensitivity.
4. Clinical dental fluorosis.
Dental fluorosis is a disease associated with intoxication fluorine.
Fluorosis affects mainly permanent teeth, most incisors and premolars of the maxilla, mandible rezhe- incisors and molars.

The text of the practical classes

Endemic fluorosis is a disease associated with an excess of fluorine entering into the human body. An early sign of fluorosis - tooth loss. In 1900, an Italian doctor Chiyya found among residents of neighborhoods of Naples, unknown before the change of teeth and called them black, to explain this phenomenon impacts on the teeth of drinking water contaminated by volcanic emissions. Later, like the defeat of teeth observed in the US and other countries. Almost 3 decades the cause of this injury was unknown. Only in 1931 it was established that the causative factor is the high content of fluorine in drinking water. Fluoride is an active element and a free form not found in nature, it is a member of more than 100 minerals. Enriching the soil fluorine occurs as a result of the eruption of volcanic rock, mineral fertilizers, venting fluorinated products. Under the influence of precipitation fluorine-containing minerals dissolve, accumulate in deep artesian wells. The rivers and lakes may also contain a large amount of fluorine salts. With the water and soil from fluoro enters the plant and, therefore, in animals and humans. Therefore, almost all foods contain greater or lesser amounts of fluoride. Especially a lot of it in marine fish, cabbage, meat products, chicken eggs, plants. fluorine concentration in fruit is

relatively small. However, products containing fluorine, do not cause fluorosis, they are An additional source of revenue of this element in the body. With a product of a person receives an average of 0.5-1.1 mg of fluoride per day. The main source of fluorine into the organism - water (up to 2.5 mg per day) It is used when it is fixed in the body of fluorine greater than for revenue earned it with food or with air. In the body of fluoride children is delayed significantly more than adults. Therefore fluorosis porazha- are basically permanent teeth of children living in endemic areas from birth to 3 - 4 years of age when their teeth are in the stage of incomplete formation and mineralization unfinished. 3abolevanie does not arise in individuals, making it into a hotbed of endemic fluorosis after prore- dental bonding. However, the concentration of fluoride in water in excess of 6 mg / liter, may cause changes in the already formed teeth, and at the Research Institute of fluorine contained in the water 20 mg / l and above may be affected fluorosis teeth vzros- mated humans (Novick IO) . Fluoride is a part of all human authorities, but mostly found in bones and teeth. Fluorides contained in the saliva, gingival fluid, dental plaque. Most of the fluorine is excreted by the kidneys and sweat glands, and a smaller portion is retained in the body. The frequency and severity of fluorosis depends on the fluorine concentration, the individual characteristics of the body (individual sensitivity, kidney status, CNS, parathyroid glands, etc.), age, climate, water content of the calcium. When the fluorine concentration in water 1.0 - 1.5 mg / l fluorosis observed in 30% of the population; at 1.5-2.0 mg / l - 30% - 40%; at 2.0 - 3.0 mg / l - 80% - 90% of the population endemic region (VK Patrickeyev). In hot climates, where many drinking water is used, there may be a pronounced under mild fluorosis Fluorine Content in water (0.5 - 0.7 mg / l). The optimum fluorine content in water is considered to be 1.0 mg / l, Such Coy at concentrations rarely observed fluorosis and dental caries occurs pronounced static effect. On the territory of the Russian Federation fluorosis lesions were vyyav- fiefs in Tver, Tambov and Moscow regions. The pathogenesis of fluorosis is not completely understood. There are several assumptions: • fluoro toxic effect on ameloblast and this leads to incorrect formation of enamel; • fluoro, being enzymatically poison prolonged it enters reduces phosphatase activity and thereby gives mineralization of enamel; • According to IG Lukomsky, (1940) fluorosis arises from the interaction of a large number of incoming outside fluoride with calcium, magnesium, manganese and other elements, thereby disrupting the mineralization process of the tooth hard tissue. Thus, hypoplasia and fluorosis at various etiological factors have similar pathogenesis, ie. e. ameloblast damage and disruption of mineralization of solid teeth tissues during their development. Therefore, according to some authors who conducted the used route, fluorosis is a hypoplasia of a specific origin may, due to an excess of fluoride in drinking water. YA Fedorov, VA Drozhzhina (1997) believe that the change in the function of the thyroid gland is the most likely explanation for the adverse effects of fluoride on the enamel mineralization as fluoride in oral and topical administration even penetrates quickly into the bloodstream and blocks the thyroid gland, affecting its activity. The widespread use of fluoride in toothpastes, dietary supplements, fluoridation of water to prevent caries has caused the recent increase in the prevalence of mild dental fluorosis iatrogenic origin in some European countries and in the United States. Pathohistological changes at fluorosis depend on the shape of clinical manifestations. The surface layer of enamel is well mineralized in subsurface gipomineralizatsiya noted. The chalky Degeneration enamel increased mezhprizmennye space pronounced reduction in the density of enamel, increasing its permeability for patches sites. With this link the enamel pigmentation resulting dye penetration into it of foodstuffs (coffee, tea, tobacco, etc.). In mild lesions noted emphatically hydroxyapatite crystal structure, in severe forms clarity structures decreases, complete disintegration of foci detected enamel. Dentin-enamel connection has a toothed shape. The structure of the basic substance dentin is sealed around the dentinal tubules expressed giperkaltsinatsii area, increased micro hardness of dentin. fluorosis clinic manifestations depends on gravity, so vyde- lyayut following forms: mottled, dashed, chalky-mottled, erosive and destructive (Patrickeyev VK, 1956). The latter two forms occur with the loss of tooth structure. Stains and cavities may be pigmented or chalky color: yellow, brown. When SG minor excess fluorine affects only cutters with a large - teeth (Figure

8.). Patients complain of a cosmetic defect, to subjective feelings are absent. In dashed form and spotted enamel smooth, shiny; with chalky-speckled form, it loses its luster and transparency. Erosive and destructive form manifest themselves in the form of the parcels defect hard tooth tissues expressed erasing enamel and dentin tissue broke off may occur due to their brittleness. Dashed and spotted form fluorosis differentiate caries stains in step hypoplasia, pigmented enamel (Table 1). Chalky-speckled form - with surface caries, hypoplasia, acid necrosis, marble disease (Table 2.). Erosive and destructive form differentiated with superficial and middle caries acid necrosis enamel erosion, cuneate defects, imperfect Amelogenesis, syndrome Stanton - Kapdepona in case of severe tissue loss (Tables 2 - 4). Diagnosis is based on subjective and objective data analyzes, additional methods of examination. It should take into account the importance of such information, as the absence of pain when probed and from exposure to irritants (pain can be observed only when the erosive zivnoy form), the presence of a smooth, glossy enamel in the areas of destruction; stains do not stain with methylene blue, depth and area of the lesions do not increase with time (except destructive forms when observed mild pronounced decrease under the influence of an altered tissue abrasion); defined endemic areas living PA-patient's. fluorosis Treatment depends on the severity of lesions, and can include bleaching, restoration of modern filling materials, use facets, veneers or orthopedic treatment. Apply general and local treatment. For a general treatment prescribed phosphorus - calcium and vitamin. Eliminates excess amount of fluorine in drinking water, limited use products containing fluorine. When changing the color of enamel recommendations bolshinst- ve cases reduced to bleaching pigmented areas razlichny- mi acids (phosphoric, citric) with subsequent neutralization with alkali agents and the use applications of 10% calcium gluconate solution for 10 - 15 min. The course of treatment consists of 10-15 procedures. After 6-8 months, a second course of general and local treatment of Nogo. Appointed by toothpaste containing mineral sub- stances. Treatment of erosive and destructive forms of fluorosis is to eliminate tissue defects with the help of filling materials, veneers, and in some cases - by making artificial cosmetic crowns. In recent years, a new technology of removing a pigmented enamel preparation using "Prem" consisting of hydrochloric acid of low concentration, particulate silicon carbide and silicon gel. Processing enamel this preparation is performed using rubber cups, fortified in the low-speed handpiece, for 15-30 seconds, followed by rinsing the abrasive composition water jet for 30 seconds. For home whitening used individual tray with bleaching gel containing 10% urea peroxide etc .. YA Fedorov, VA Drozhzhina (1997) propose to treat the bar, spotted and chalky - mottled forms of dental fluorosis in the same way as the spotty form hypoplasia (integrated courses remineralization therapy for 6 months -. 2 years). A more complex and severe forms of fluorosis - by filling defects after prior month course of general and local remineralization therapy. Thus fillings in children should be performed using glass ionomer cements that can later be partially replaced by composites. Prevention of dental fluorosis performed collectively and individually: • Replacement of a water source; • mixing water sources; • Water purification from excess fluorine; • natural breastfeeding a child; • Replacement of water juices and milk; • assignment vitamins D and C; • assignment calcium and phosphorus week course; • reception restriction products containing fluorine; • taking children to summer time from an endemic area. The freezing and boiling water, the use of household filters fluorine concentration in water do not reduce.

Fluorosis cases were described in 1890. For a long time these teeth changes were called "mottled enamel" and their causes were not known. Only in 1931 we established a connection with the

disease is too high content of fluoride in the water that formed the basis of his name - "fluorosis" (from the Latin «fluorom» - fluoride). Endemic fluorosis distributed in those regions where the fluorine content in 1 liter of drinking water of more than 1.5 mg. Much less common professional fluorosis develops in the aluminum industry and workers associated with increased concentration of fluorine in the inhaled air.

The causes of fluorosis

Fluoride - a trace mineral, which, along with calcium, potassium, magnesium and others involved in the physiological processes in the human body. The greatest amount of fluorine contained in the bone tissue and teeth. Its entry into the body occurs with food and water. However, the fluorine contained in the products absorbed only in small quantities, the bulk of the fluorine supplied to the body have on fluorides dissolved in water. The optimum water containing 1 mg of fluorine / l. Lower fluorine concentrations in water leads to the intake of an insufficient amount of the trace element and can cause the development ofcaries. Increased concentration of fluorine causes fluorosis.

The most frequently observed at fluorosisteethingpermanent teeth in children 3-4 years old living in areas with increased concentrations of fluoride in the water. This suggests that the development of dental fluorosis associated with the adverse effects of excess fluoride in the process of forming the rudiments of permanent teeth. milk teeth with fluorosis defeat almost does not occur, since their beginnings are formed during fetal development when excess fluoride retained placenta and is not transmitted to the fetus. Fluorosis already formed teeth can be observed in adults with sharply increased fluorine concentration in water - 6 mg / l and higher.

Dashed form of dental fluorosisappears on the vestibular surface appearance cutters chalk lines or bands. In some cases, they are clearly visible, but most are mild and become more visible on drying the tooth surface. Possibly merging lanes in spots, but the spots in the structure is always possible to distinguish between the individual bands.

Spotted form of fluorosis- on the tooth surface there are clearly visible whitish spots without multiple bands which may form at the junction of a large spot diameter. The surface stains and fluorosis shiny smooth boundary expressed not sharply and smoothly into the healthy enamel.

Chalky-speckled form of fluorosis It characterized by a matte shade throughout the enamel of teeth affected with those located on her well-rounded pigmented spots and dots. In some cases, the enamel has a yellow tint. It may be observed degradation portions - speckles depth 0.1-0.2 mm and a diameter of 1.5 mm and having a bottom pigmented. In this form of fluorosis patients have rapid erasure enamel exposing located underneath dark brown dentine.

Erosive form of fluorosischaracterized by a degradation of the enamel portions of much greater size than specks chalky-speckled form fluorosis -erosions. In the field of enamel erosion absent. There expressed erasing enamel on the chewing surface of the teeth.

Destructive form of dental fluorosiserosive lesions accompanied by erasure and not only enamel and a subject to hard tooth tissues. tooth tissues become brittle, prone to breaking off, whereby the shape of the tooth crown is broken. However, the deposition of substitution dentin prevents opening of the dental cavity. Payload fluorosis form usually is observed in regions where the fluorine content in water higher than 10 mg / l.

Professional fluorosis manifests defeat bones (osteoporosis.osteosclerosis) With impaired mobility in the joints. Stains on the teeth may be missing. At a late stage of professional dental fluorosis joinvegetative-vascular disordersand liver damage. Perhaps the development of cancer of bones -osteosarcoma.

fluorosis treatment

By identifying a patient fluorosis recommended deliver drinking water used by him for analysis to determine the contents of fluorine in it. At higher concentrations of fluoride is necessary to change the source of potable water or to use the purified water from the fluorine. Further drinking water with a high content of fluorine can cause the patient more severe fluorosis with destruction of affected teeth. Patients with fluorosis should abandon the use of toothpastes and other means of oral care, containing fluorine.

Removal of the affected areas of the tooth, followed by filling of fluorosis when not used, as it often leads to loss of the seal and further tooth decay. Patient fluorosis recommended intake of calcium and phosphorus.
In mild fluorosis produced chemical,LEDorlaser teeth whitening. After it necessarily carried remineralization of tooth, which consists in applying to the tooth enamel and the calcium phosphorus compounds usingultraphonophoresis.electrophoresisor by application. tooth remineralization with fluorosis requires a minimum of 10 treatments, optimally - 15-20 per course of treatment procedures.
whitening procedure is ineffective in severe chalky-speckled and erosive and destructive forms of fluorosis. In these cases, atooth restorationusingveneers or lumineers. When fluorosis severe destructive changes in tooth tissue treatment shown inorthopedistinstallingceramicorPFM crown.
Prevention of dental fluorosis
The main direction of preventive measures in areas with an increased amount of fluoride in the water is to reduce the amount of fluoride is ingested. For this it is necessary to use purified water or drinking water with normal content of fluorine brought from other areas; avoid the use of toothpastes and gels with fluorine; limit the use of fluorine-containing products (fish, butter, etc.).

Clinical activity №6

Topic: Klinichsekie stages of restoration teeth with fluorosis

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Explore klinichsekim stage of the restoration of teeth with fluorosis
The task of the training session:	- To teach students the correct and conscious approach to the issue of classification, clinics and differential. Diagnostic carious lesions. Observe the necessary safety precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking during dif.diagnostiki carious lesions, responsible approach to their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues dif.diagnostiki fluorosis, hyperplasia, it is important in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical exercise №7

Topic: Hereditary diseases hard tooth tissues. Clinic. Diagnosis and dif.diagnostika

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Provide students with hereditary diseases hard tooth tissues. Clinic. Diagnosis and dif.diagnostika
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Round table"

Test questions on employment:

1.Perechislite inherited disorders of dental tissues.
2.Klinika imperfect Amelogenesis.
3.Klinicheskaya picture marble disease.

4. Clinic imperfect dentinogenesis.
5.Klinicheskaya picture Stentona- Kapdepona syndrome.
6.Metody treatment of hereditary lesions:
Test questions and answers:
1.Perechislite inherited disorders of dental tissues.
By hereditary disorders of tooth structure they are:
Amelogenesis imperfecta, dentinogenesis imperfecta, osteogenesis imperfecta, marble bone disease, Stanton-Kapdepona syndrome.
2.Klinika imperfect Amelogenesis.
Imperfect amelogenesis - a violation of the enamel.
Distinguish 4-D shapes Amelogenesis:
In the first form -Small quantitative and qualitative changes (zhèlty enamel brown)
When 2nd forme- changes are more pronounced. After 2-3 years after the eruption of the tooth enamel appear changes (color, crack, spall)
At third form -emal on all the teeth quickly disappears, and exposes the brown dentine.
When 4th forme- enamel during eruption devoid of light, sometimes offline.
3.Klinicheskaya picture marble disease.
Marble bone disease is a rare disorder that manifests differentiated osteosclerosis most bones of the skeleton.
Clinically distinguish between benign and malignant forms of the disease course.
When benign multiple sclerosis, along with the entire skeleton is marked sclerosis of the maxilla, anomalies teething. Enamel immediately after the eruption has a chalky hue, and then becomes loose and easily lost. Teeth are rapidly destroyed.
Malignant forme- along with the entire skeleton sclerosis early and greatly disturbed hematopoiesis (anemia), reduced visual acuity, there osteomyelitis of the mandible and bone fractures.
4. Clinic imperfect dentinogenesis.
Dentinogenesis imperfecta is a hereditary developmental disorder of dentin.
Clinically, the disease is characterized by underdevelopment or lack of roots, as well as the characteristic mobility of the teeth, before loss.
5.Klinicheskaya picture Stentona- Kapdepona syndrome.
Clinically the syndrome Stanton -Kapdepona isolated following disorders: changing bit color enamel loss, severe abrasion, and increased fragility of the teeth and their subsequent loss.
6.Metody treatment of hereditary lesions:
When treating tissue lesions using hereditary teeth:
- remrastvorami processing, sodium fluoride.
-ortopedicheskoe treatment.

The text of the practical classes

-K inherited disorder of tooth structure are:
Amelogenesis imperfecta, dentinogenesis imperfecta, osteogenesis imperfecta, marble bone disease, Stanton-Kapdepona syndrome.
-Nesovershenny amelogenesis - a violation of the enamel.
Distinguish 4-D shapes Amelogenesis:
In the first form -Small quantitative and qualitative changes (zhèlty enamel brown)
When 2nd forme- changes are more pronounced. After 2-3 years after the eruption of the tooth enamel appear changes (color, crack, spall)
At third form -emal on all the teeth quickly disappears, and exposes the brown dentine.
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-Mramornaya disease is a rare disorder that manifests differentiated osteosclerosis most bones of the skeleton.
Clinically distinguish between benign and malignant forms of the disease course.

When benign multiple sclerosis, along with the entire skeleton is marked sclerosis of the maxilla, anomalies teething. Enamel immediately after the eruption has a chalky hue, and then becomes loose and easily lost. Teeth are rapidly destroyed.
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-Klinicheski the syndrome Stanton -Kapdepona isolated following disorders: changing bit color enamel loss, severe abrasion, and increased fragility of the teeth and their subsequent loss.
-When the treatment of hereditary lesions of teeth tissues used:
- remrastvorami processing, sodium fluoride.
-ortopedicheskoe treatment.
-When imperfect amelogenenza treatment, in order to preserve the existing enamel remineralization recommended systematic processing solutions and 0,2-0,05% sodium fluoride.
-When imperfect dentinogenesis patients usually complain of tooth podvizhnostt previously loss.
-Nesovershenny amelogenesis relates to hereditary diseases.
-When the first form, there is a smooth, glossy enamel, but with a yellow or brown tint.
-On the X-ray picture of teeth in individuals with syndrome Stentona- Kapdepona revealed normal formation Cornellà are generally thinner and shorter, but the tooth cavity in the coronal and root portion is tapered.
-Mramornaya disease-congenital osteosclerosis family. It is a rare disease characterized by diffuse ostesklerozom in most bones.
-When questioning the patient to find out: the patient's complaints, past illnesses, conditions, allergic analysis. Properly conducted questioning of the patient in most cases, allows to correctly guess the diagnosis. Which in the future must be confirmed by objective methods of research. However, one should not overestimate the role of questioning.
-Osmotr oral examination starts with the mouth vestibule of closed jaws when relaxed and lips.
Primarily visiting red border of the lips and corners of the mouth. Pay attention to the color. Education scales, crusts. Then inspect the inner surface of the cheeks define a bite, visiting gum. Then proceed to study the actual oral cavity. Produce a general inspection, paying attention to the color and moisture of the mucous membrane. On examination, pay attention to the language of its size, shape, condition papillae. When viewed from the bottom of the oral cavity pay attention to the mucosa.
-K Additional tests include elektroodonto- diagnostics (EDI).
EDI provides a more comprehensive state of Repose of the pulp and the tissues surrounding the tooth.
Figures set threshold excitation pulp in normal and pathological conditions. Healthy teeth respond to currents of 2-6 mA. Reducing electroexcitability do20-40 microamps indicates the presence of inflammation in the pulp. The reaction slurry on a current of 60 mA points to necrosis of the coronal pulp. If it occurs necrosis and root pulp, the tooth reacts on a current of 100 mA or higher. When expressed morphological changes in periodontal tooth reacts on currents more than 200 mA.
-In dentistry is often used near-focus intrapartum contact radiography. Tremendous help the doctor has radiography in the treatment of root canals (determined by an X-ray their direction, the filling rate, throughput), when determining the condition of the surrounding tooth root tissue, detection of pathological processes in bone and its structures. The principle of the method consists in the fact that X-rays in dependence on the density of the subject portion to a greater or lesser extent delayed tissues. tooth enamel yields a dense shadow and dentine and cement - less dense than enamel

Clinical activity №7

Topic: Clinical stages of treatment of pathological erasure.

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Explore klinichsekim stages of treatment of pathological abrasion
The task of the training session:	Teach students the correct and conscious approach to the diagnosis of imperfect Amelogenesis, dentinogenesis, osteogenesis. Observe the necessary safety precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking in the diagnosis of hereditary non-carious lesions of hard tissues of the tooth, take responsibility for their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of etiopathogenesis hereditary lesions of dental hard tissues is important in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical exercise №8

Topic: Hereditary diseases hard tooth tissues. Clinic. Diagnosis and dif.diagnostika

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Provide students with hereditary diseases hard tooth tissues. Clinic. Diagnosis and dif.diagnostika
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and	Actions

time occupation (160 min)	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnкm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Round table"

Test questions on employment:

1.Perechislite inherited disorders of dental tissues.
2.Klinika imperfect Amelogenesis.
3.Klinicheskaya picture marble disease.
4. Clinic imperfect dentinogenesis.
5.Klinicheskaya picture Stentona- Kapdepona syndrome.
6.Metody treatment of hereditary lesions:
Test questions and answers:
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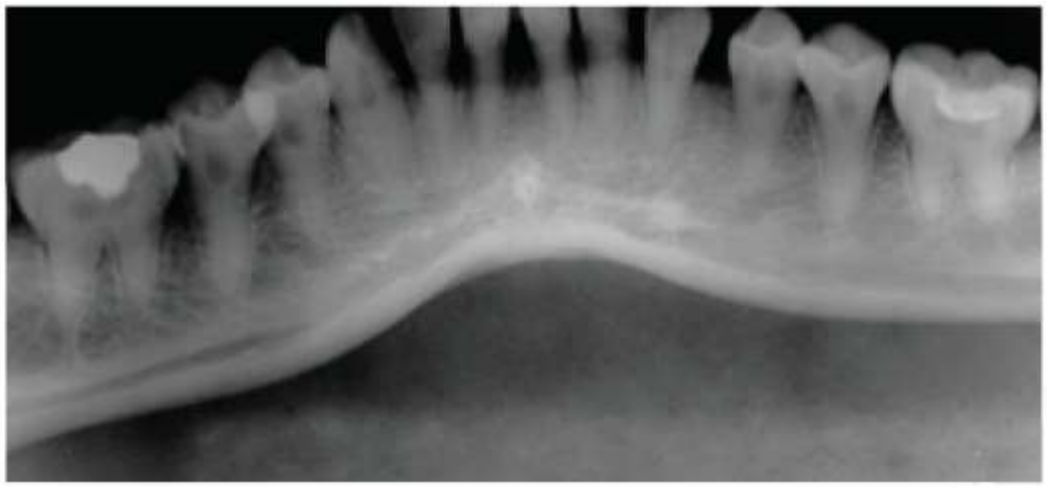
When treating tissue lesions using hereditary teeth:
- remrastvorami processing, sodium fluoride.
-ortopedicheskoe treatment.

The text of the practical classes

UNFINISHED Amelogenesis, UNFINISHED dentinogenesis
Incomplete amelogenesis - an inherited autosomal dominant concatenated

Unfinished amelogenesis X-linked enamels change associated with the violation of its structure and maturation.
Unfinished dentinogenesis - inherited autosomal dominant, perhaps, incomplete recessive manifestation osteogenesis Kapdepona dysplasia, coronal and root dentin dysplasia, dysplasia of dental cavities, odontodisplaziya dysplasia cement.



incomplete dentinogenesis
DIAGNOSIS OF UNFINISHED Amelogenesis

Aesthetic defect, which is manifested in the form of:
- change in tooth color (from white to brown);
- Violations of the teeth of transparency;
- pigmentation irregularities, depressions on the surfaces of teeth

Genetically caused violation enamel formation structure processes leads to a change (complete or partial) thickness of the enamel, which is manifested in various clinical forms of hereditary hypoplasia enamel

Anamnesis
Gender, age

Clinical manifestations of a genetic disease in women there are 1.5 times more likely than men

Mutagenic gene in male fetus with the X-linked form can cause not only a violation of Amelogenesis, but a number of changes that lead to his death in the prenatal period

Transferred and associated diseases
Perhaps violation craniofacial structures (retention teeth, open bite, etc.).
Violation of solid tissues or solid organic matrix of tissues in conjunction with numerous syndromic disease causes a variety of clinical forms of genetic abnormalities
The color of milk and permanent teeth is changed from white to tan. The number and severity of lesions of the enamel hypoplastic vary depending on the depth of disorders amelification processes. Affected as milk and permanent teeth. Defects enamel varied from linear and point to its thinning recesses (almost 1 / 2tolschiny enamel layer) or saving only the tooth neck. Enamel is dense, it is possible partial chips. If the enamel becomes soft gipokaltsinatsii gradually disappears easily separated from dentine. Naked and increased sensitivity dentine by various dyes becomes dark brown in color.
When Abuse gene mutations occur amelogenin gene. This is reflected in the structure of the tooth enamel, as ameloblasts, consisting mainly of amelogenins proteins are the main cells secreting enamel mineralized organic component. If enamel hypoplasia connected with the violation of its structure, a small thickness of the enamel layer is combined with a normal (unmodified) its hardness. Changing enamel maturation process leads to decrease its hardness at normal thickness of the enamel layer. In such cases, the disruption is detected enamel prisms and sometimes their absence and low degree of crystallization. Gipokaltsinirovannoy softening of the

enamel - the result of violations of crystallization processes, leading to a lack of maturity of the enamel
The treatment is not carried out
No complaints or unsatisfactory patient diagnosis
Treatment was carried out with composite materials

Mismatch volume severity of therapeutic treatment

Classification of clinical manifestations unfinished Amelogenesis
I. Hereditary enamel hypoplasia associated with the breaking its structure.
II. Hereditary enamel hypoplasia, associated with the violation of its maturation.
III. Hereditary enamel hypoplasia associated with its hypocalcification

inspection

I. Point defects of enamel often on vestibular surfaces of premolars and molars buccal surfaces, the cutting edge is not struck. The enamel is smooth, and its color changes from opaque white to transparent brown, can be thinned. Tooth color is changed from white to yellow-white. Enamel is hard, rough, can break away from the dentin.
No clear enamel prismatic structure. Identifies individual single crystals uneven
II. Enamel color changed from matte-white-yellow to brown. Defeat is not always symmetrical. The enamel is thick and pigmented. Most struck teeth of the upper jaw.
Structural defects localized in the outer layer of enamel besprizmennom. Dentin is not changed
III. Enamel white, yellow, normal thickness but soft. Quickly erased, leaving the exposed dentine, which can be colored with pigments of food in a dark brown color
The content of organic substances in the enamel is increased by 3 times. Enamel normal thickness, but it has the matrix form as after decalcification

DIAGNOSIS OF UNFINISHED dentinogenesis
Discoloration of teeth discoloration (opalescent watery from gray to yellow-brown). Changing the shape of the teeth. Fast abrasion of the teeth.
Hereditary disorders of the structure of enamel and dentin, manifested in the form of unstructured enamel and dentin matrix atypical

Anamnesis
Gender, age

It affects people of both sexes.
In pure Mongoloid and Negroid races
pathology is not found.
It sets an autosomal dominant mode of inheritance with 50% risk to offspring of both genders
Development of the disease
Characterized by increased erasing occlusal tooth surfaces, the lack of enamel, dentine exposure
Changes in the form of disintegration of the enamel crystals formation mezhprizmaticheskih wide spaces. In the pulp - vacuolization odontoblasts, reducing their number, and sometimes complete lack of expansion predentin zone. The cement - the restriction layer in the upper portion of the root and the presence of structural degenerative changes which lead to clinical changes in both dairy and permanent teeth

The effectiveness of the treatment previously

The treatment was not performed. Treatment was carried out with composite materials

Lack of patient complaints. Ineffective treatment

inspection

Tooth color is changed: color gray watery enamel, dentin exposed yellow-brown. Progressive erasing hard tooth tissues reduces the size of the crown, sometimes spherical. Radiographically detected shortened tooth roots in periapical bone rarefaction possible foci. Clinical changes observed both in milk and in permanent teeth

Characteristically sufficiently low content of minerals in the dentin, calcium, and phosphorus at the same time the amount of organic substances and water is increased. Genetically caused formation of atypical dentin and enamel structure disturbances adversely affect the compound of hard tissue between a

DIFFERENTIAL DIAGNOSIS AND OTHER KAPDEPONA dysplasia hereditary
Developmental disorders of dentine

Unfinished dentinogenesis I type

Diagnosed lesions of teeth identical to the clinical picture of dysplasia Kapdepona
Observed in the unfinished osteogenesis. Characterized by a triad of symptoms:
- blue sclera;
- abnormal fragility of the bones;
- the development of otosclerosis.
It affects predominantly long bones

The coronal and root dentin dysplasia

The color of milk and permanent teeth changed, often amber hue; opalescent teeth. Perhaps erasing enamel and dentin

The cavities and channels of the roots of deciduous teeth is completely obliterated. The cavities of permanent teeth have a characteristic appearance crescent. The roots of the milk teeth are often poorly developed and the teeth after the eruption quickly fall. The roots of single rooted permanent teeth short, cone-shaped, sharply tapering at the apex, the roots of posterior teeth are shaped like the letter W. The morphological changes of the skeleton

TREATMENT OF INCOMPLETE Amelogenesis, unfinished dentinogenesis

Sealing (groups of advanced composite materials) Production of veneers, and crowns. Restoration of the anatomic form and function of the tooth restoration of anatomic tooth shape and function.
Dissection of the cavity and its sealing Orthopedic therapies.
PREVENTION Amelogenesis INCOMPLETE, UNFINISHED dentinogenesis

The families of patients with hereditary manifestations of dental hard tissue changes, prenatal diagnosis in order to prevent the risk of re-birth of a sick child.

Clinical activity №8

Topic: Clinical stages of treatment of hypersensitivity

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Explore klinichsekie stages of treatment hypersensitivity
The task of the training session:	Teach students the correct and conscious approach to the diagnosis of imperfect Amelogenesis, dentinogenesis, osteogenesis. Observe the necessary safety precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking in the diagnosis of hereditary non-carious lesions of hard tissues of the tooth, take responsibility for their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of etiopathogenesis hereditary lesions of dental hard tissues is important in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
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Step 2-. 20 minutes	2.1. rapid test / FAQ / knowledge is strengthened by interaktivnкm	Meet, they write. They work in groups,

15 minutes 30 minutes 15 minutes	2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	groups perform groups perform present

interactive method

Using the method of "Round table"

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Incomplete amelogenesis - an inherited autosomal dominant concatenated

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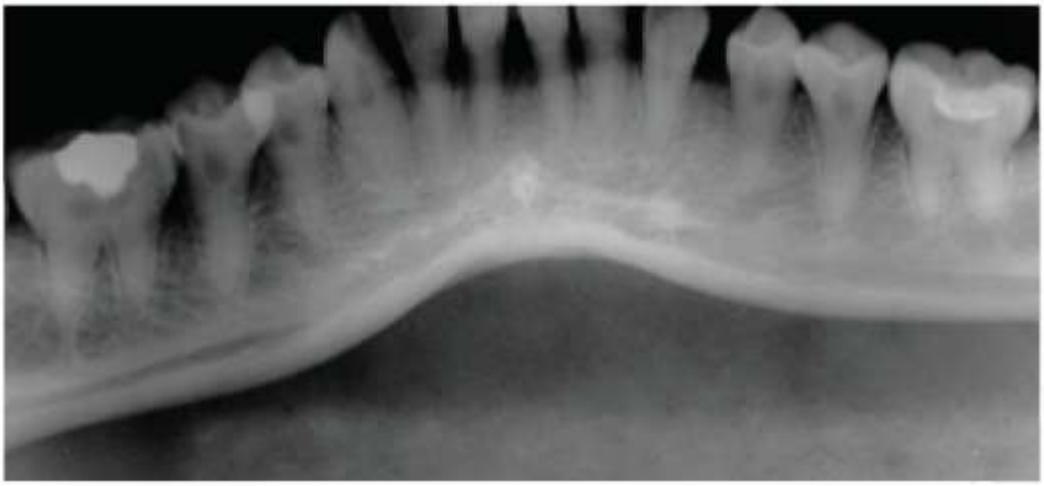

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Anamnesis

Gender, age

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Mutagenic gene in male fetus with the X-linked form can cause not only a violation of Amelogenesis, but a number of changes that lead to his death in the prenatal period

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Clinical activity №8

Topic: Clinical stages of treatment of hypersensitivity

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Explore klinichsekie stages of treatment hypersensitivity
The task of the training session:	Teach students the correct and conscious approach to the diagnosis of imperfect Amelogenesis, dentinogenesis, osteogenesis. Observe the necessary safety precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking in the diagnosis of hereditary non-carious lesions of hard tissues of the tooth, take responsibility for their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of etiopathogenesis hereditary lesions of dental hard tissues is important in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal

Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical lesson №9

Subject: non-carious lesions arising after teething. Wedge-shaped lesion, necrosis and eroziya.Klinika. Diagnostics.

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	To familiarize students with non-carious lesions arising after teething. Wedge-shaped lesion, necrosis and eroziya.Klinika. Diagnostics.
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Brainstorm"

Test questions on employment:

1. List the non-carious lesions arising after teething.
2.Klinicheskaya picture hypersensitivity.
3.Klinicheskaya picture of dental erosion.
4.Klinicheskaya picture necrosis of dental hard tissues.
5.Klinicheskaya wedge pattern defect.
6.Dif.diagnostika necrosis erosion hard tissue.
Test questions and answers:
1. List the non-carious lesions arising after teething.
For non-carious lesions arising after teething include: abnormal abrasion, wedge-shaped defects, necrosis, erosion, trauma, hypersensitivity.
2.Klinicheskaya picture hypersensitivity.
Hypersensitivity clinically manifested diversely. Typically, patients complain of intense pain but quickly passing from the effect of temperature or mechanical stimuli. Usually, these symptoms constant, but sometimes there may be a temporary lull or cessation of pain (remission)
3.Klinicheskaya picture of dental erosion.
Clinically during erosion of enamel caries lesion is noted, abrasion occlusal surfaces, but deposition of supragingival and subgingival dental calculus rarely observed.
4.Klinicheskaya picture necrosis of dental hard tissues.
Clinical manifestation Necrosis begins with the loss of gloss enamel and manifestations chalky spots, which then become dark brown. In the center of the lesion begins to soften and defect formation. In this case the enamel becomes fragile, breaks off excavator. Dentin is also pigmented. Patients complain of pain from thermal, mechanical and chemical stimuli that pass quickly after their elimination.
5.Klinicheskaya wedge pattern defect.
Clinically, the wedge-shaped defect is usually not accompanied by pain. Sometimes patients indicate a defect in the tissue of the neck of the tooth. In rare cases, there is rapidly passing pain from various types of stimuli.
6.Dif.diagnostika necrosis erosion hard tissue.
When the differential. diagnosis must be remembered that for the erosion is characterized by hard, shiny surface, and there are areas of necrosis softening.

The text of the practical classes

Non-carious lesions that developed after teething
Dental erosion - the progressive loss of enamel and dentin of unknown etiology. Baume, Port Euler believed that erosion occur due to improper cleaning of teeth by mechanical action. A role at the same time attaches great consumption of citrus fruits, fruit juices, etc. Are important factors unfavorable working environment (acids, mineral and metal dust and the like), and surfactants both in their production, and as a part of hygiene products. Yet, many authors do not tend to believe that the emergence of dental erosion is a local, purely mechanical or chemical process, but prefer to refer this issue to the category of outstanding. D.A.Entin saw the cause of erosion in neurodystrophic processes that cause decalcification of dental hard tissues. However, no one could explain, why sometimes there are erosion, and sometimes - wedge-shaped defects. Erosion occur more frequently in older people on the vestibular surface of the central and lateral incisors of the upper jaw, they occur on the canine and premolar. Sometimes defeat is symmetrical. Their occurrence can be associated with impaired mineral metabolism due to endocrine or other disturbances in the body and respectively in the tooth pulp. This is confirmed by the results of clinical observations and radioimmunoassay data, which indicate the presence

of explicit prior and concomitant disorders of thyroid function in patients with erosion of tooth enamel. Yu.M.Maksimovsky and colleagues, analyzing the causes of erosion, also have an important role of endocrine disorders and especially hyperthyroidism. He said,
thyrotoxicosis identified in 2 times more likely than those with normal thyroid function. He established a direct link between the intensity of destruction of teeth and duration of hyperthyroidism. With increasing life of disease for one year, the number of patients with erosion of dental hard tissue is increased by 20%. Studies show a significant increase in the prevalence of dental erosion in the past 10 years. Thus, when examining populations found 47.2% of people with dental erosion, while 10-15 years ago, these people were not more than 5-7%. In the analysis of the frequency of non-carious lesions based on the uptake of patients in the dental clinic, found 29.5% of people with dental erosion among all requests and 55.9% - in the number of patients with non-carious lesions of group 2. Meanwhile, 10-15 years ago, these patients was only 24% and 33, 3%, respectively. In this predominantly affects women (84.9%) after the age of 25-30 years. Erosions combination with hormonal disorders (including thyroid dysfunction and gonads) was more than 15% of cases. The initial stage is characterized by loss of erosion gloss at a certain, limited area of the vestibular surface of the tooth. If the tooth is good to dry, then this site will be noticeable. Its boundaries can be identified by a remineralization of the index - 5% tincture of iodine: there is a yellow or brown color. Most often appear on the erosion of canines, premolars, incisors, but there may be other teeth. Unless erosion is a defect of the enamel round shape which is arranged obliquely or transversely most convex portion of the vestibular surface of the tooth enamel. Typically, erosion of the bottom is smooth, shiny, solid. The gradual widening and deepening it can lead to complete loss of enamel and dentin outcrop on the vestibular surface of the tooth. Erosion are often combined with deletion of the cutting edges of the crowns of incisors and molars mounds. Pain is often absent or mild, but encountered strong enough dentin hypersensitivity. EV Borovsky et al. lesion distinguish two stages: primary (enamel erosion) and pronounced (erosion of enamel and dentin). Yu.M.Maksimovsky details clinical manifestation of erosions and 3 distinguishes the degree of destruction, based on the depth of the defect hard tissue: Pain is often absent or mild, but encountered strong enough dentin hypersensitivity. EV Borovsky et al. lesion distinguish two stages: primary (enamel erosion) and pronounced (erosion of enamel and dentin). Yu.M.Maksimovsky details clinical manifestation of erosions and 3 distinguishes the degree of destruction, based on the depth of the defect hard tissue: Pain is often absent or mild, but encountered strong enough dentin hypersensitivity. EV Borovsky et al. lesion distinguish two stages: primary (enamel erosion) and pronounced (erosion of enamel and dentin). Yu.M.Maksimovsky details clinical manifestation of erosions and 3 distinguishes the degree of destruction, based on the depth of the defect hard tissue:
1. Starting degree damage the surface layers of enamel;
2. The average degree, defeat the whole thickness of the enamel layer up to the enamel-dentine border;
3. Deep extent defeat enamel and dentin.
At 1 and 2 degrees of the lesion is white with a shiny surface, with 3 degree - appears brown or light yellow pigment. Dental erosion is typically characterized by a chronic course, however, distinguish two stage clinical erosion: active and stable. For typical active stage for progressive decline and tooth tissue, accompanied by hyperesthesia, active erosion resizing phase disappearance of surface gloss erozii.V occur every 1.5-2 months. remineralization index reaches 4-3 points. The stabilized form of erosion of dental hard tissue is characterized by more calm, slow-flowing, shiny surface is retained at the site of enamel lesions. Change its size does not occur within 9-11 months. remineralization Index does not exceed 1-1.5 points.
The microhardness of enamel erosion in significantly reduced surface marked foci of enamel demineralization. Thus, in contrast to dental caries, which holds enamel subsurface demineralization, erosion formed at the surface demineralization lesions, which gradually cover the tooth enamel layers (PA Leus, Galchenko VM). In the study of the ultrastructure of enamel

during dental erosion observed that the enamel in erosions and adjacent sections differs reduced degree of salinity and the presence of destructive changes: in some areas of enamel prisms visible, expressed mezhprizmennye space, and on the other - they are indistinguishable because demineralization. Hydroxyapatite crystals of different shapes. In areas adjacent to the erosion, they do not have clear boundaries and have a regular shape, but larger and sometimes smaller and shorter. Visible crystals of enamel of different density, which indicates the unevenness of mineralization. The dentin with dental erosion are also distinct changes: there are areas with a dense arrangement of hydroxyapatite crystals, interspersed with loose arrangement of crystals. Dentinal tubules found obliterated and neobliterirovannye. Structure substance obliterating the dentinal tubules, specific and similar to that in erasability, similar results were obtained in the study of the ultrastructure of enamel and dentin. However, in addition to these areas of demineralization detected accumulation of bacteria, masking the contours of enamel prisms. SEM central erosion zones also revealed the presence of significant structural changes in the surface and in the deeper layers of tissue damaged teeth. Comparative electron microscopic analysis revealed differences in structural organization enamel erosion when depending on the clinical phase of disease manifestations. For the active stage of development characterized by erosion loss as a matter of enamel and dentin in large areas exposed to destructive changes. Visible portions complete disintegration in an amorphous form with large recesses. The advantage of SEM compared to the replica was the fact that due to the special unit of the scanning electron microscope occurred volumetric three-dimensional image of the object - it gave us a glimpse into the interior of the sample. In this regard, it is seen that the demineralization process leads to a considerable loss of enamel and disorientation of the crystal structure. The data obtained showed a lesion of the enamel and dentin at a sufficiently great depth. The structural changes were characterized by the destruction of enamel prisms, fragmentation and disturbance of crystals communication therebetween, and the components and form a structureless random accumulations that could not be identified. Electron microscopic examination of the structure of the surfaces bordering the central hearth loss of enamel and dentin revealed destructive changes in large areas around the erosion zone, which differ visually. On scans visible enamel prisms with sharply defined boundaries, characterized by a reduced level of salinity in the same way as, for example, this happens after acid treatment before filling composites. As a result of these actions it was destroyed core prisms. In the cervical region of teeth affected by erosion is visible broken, but quite clearly detectable boundary between the crown and root. In all the cases studied, the crown enamel layered on the root cement. Clinic enamel erosion is not simple, and must be differentiated from the wedge-shaped defects, cervical caries and tooth necrosis. Only after that should be taken care plan. Thus it is necessary not only to organize treatment, but also to conduct a thorough examination of the patient by using general methods of diagnosis, clinical and paraclinical methods, including advice related professionals. In this case, clarification of the background pathology is very important for the successful treatment of erosions. Therapeutic activities of a dentist and doctors-internists should be combined. As for dental activities

a) calcium glycerophosphate 0.5 g3 times a day for a month; b) "Klamin» A-2 table.) or "Fitolon» C0 kap.) 2-3 times a day for 15 minutes. before meals for one or two months;

c) multivitamin "Kvadevit" or "Komplevit" Table 3-4. a day after breakfast; g) electrophoresis a 2.5% solution of calcium glycerophosphate, 10 sessions a day in between common treatment; d) training and carrying out of cleaning teeth phosphate toothpaste applications such as "pearls", "CHeburashka" and others. By 15 minutes. daily during the treatment period. Depending on the phase of the clinical manifestations of erosion determined time integrated remineralizing therapy. The acute phase is assigned at least 2 courses of oral medication (with an interval of 2-3 months), the treatment is carried out 5-6 months. under the supervision of clinic and remineralization index. If achieved real improvement (erosion, does not develop hypersensitivity dentin disappeared remineralization index does not exceed 1-1.5 points), you can move on to the tooth filling, if necessary. The phase stabilization treatment can limit the total one-month course,

and then move to the dental fillings indicated. In all cases, a shallow, flat erosion of teeth located within the enamel should be treated conservatively. Erosion smoothed, becomes shiny, smooth and unobtrusive. Where required, the defect can be sealed using a glass-backing material with its subsequent coating composite. However, in all cases it is necessary to continue holding the general treatment, at least a one-month course of the year, and be sure to continue the local treatment, saving mode applications of phosphate-containing toothpaste 2-3 times a week. Compared to the eroded surface of the tooth in the active phase of development In all cases, a shallow, flat erosion of teeth located within the enamel should be treated conservatively. Erosion smoothed, becomes shiny, smooth and unobtrusive. Where required, the defect can be sealed using a glass-backing material with its subsequent coating composite. However, in all cases it is necessary to continue holding the general treatment, at least a one-month course of the year, and be sure to continue the local treatment, saving mode applications of phosphate-containing toothpaste 2-3 times a week. Compared to the eroded surface of the tooth in the active phase of development In all cases, a shallow, flat erosion of teeth located within the enamel should be treated conservatively. Erosion smoothed, becomes shiny, smooth and unobtrusive. Where required, the defect can be sealed using a glass-backing material with its subsequent coating composite. However, in all cases it is necessary to continue holding the general treatment, at least a one-month course of the year, and be sure to continue the local treatment, saving mode applications of phosphate-containing toothpaste 2-3 times a week. Compared to the eroded surface of the tooth in the active phase of development defect can be sealed using a glass-backing material with its subsequent coating composite. However, in all cases it is necessary to continue holding the general treatment, at least a one-month course of the year, and be sure to continue the local treatment, saving mode applications of phosphate-containing toothpaste 2-3 times a week. Compared to the eroded surface of the tooth in the active phase of development defect can be sealed using a glass-backing material with its subsequent coating composite. However, in all cases it is necessary to continue holding the general treatment, at least a one-month course of the year, and be sure to continue the local treatment, saving mode applications of phosphate-containing toothpaste 2-3 times a week. Compared to the eroded surface of the tooth in the active phase of development

portions after exposure of enamel remineralization agents appeared less degraded. In the micrographs of teeth remineralization was observed after a smoother surface topography, absent deep holes and recesses, indicating an enhancing mineralization process. Especially clearly manifested remineralization process in areas bordering the hearth active enamel loss where visible even layer can span the space in which are embedded single still preserved portions degradation. Apparently, the alignment of the enamel surface is the result of filling the spaces mezhprizmennyh mineral components and enhance the crystal structure of the enamel prisms. Cervical erosion of teeth remineralization after looked more flat compared with remineralizing eroded surface before processing and it was quite well distinguishable. Emphasis is placed on a smooth surface like enamel and dentine. Thus their structure at selected sites resemble those of the tooth surface intact. 7.3.2. Medications and toxic disorders of hard tissue of teeth This nosological form of non-carious lesions highlighted recently, this is a necessary measure, since such patients are at least 5% of all non-carious lesions and 9.3% - in the number of non-carious lesions 2nd group. Previously, these patients are "lost", falling into a group of patients with erosions or necrosis of teeth, or in the group of patients with abrasion or were diagnosed with the so called "focal demineralization of teeth." Meanwhile, it is known that some drugs, e.g., hormonal contraceptives, salicylates,

are capable of causing disturbances in mineral metabolism and as a consequence - non-carious lesions of teeth. It is obvious that it is salicylates, related to patients with rheumatism, and osteochondrosis in lifelong learning, contribute to an increase in the frequency of non-carious lesions. At the same time, population surveys show that salicylates, hormone drugs, including contraceptives, as well as some other medicinal preparations used for a long time, adversely affect the

dental health. On the other hand, it has the effect of certain toxic factors of the working environment as well as frequent individual contact with toxic substances. It is known that in recent years in the world, including in our country has increased the use of drugs, and toxic drugs in order to achieve a narcotic effect. In particular there was a purely Russian phenomenon - drug addiction, that is, the use of toxic substances by inhaling their vapors young people, teenagers and even children. As a rule, this contingent of persons engaged in drug treatment, psychiatrists and other specialists general. This is understandable, since it was always assumed that the toxic, narcotic and similar substances act primarily on the central nervous system, internal organs and the psyche of man. However, in the last 10 years with the appearance of substance abuse often become dentists face, even assuming the essence of the disease. That they are able to at the very early stages of the disease the first to recognize and identify such patients. However, dentists and, faced with this phenomenon have not been prepared for such events, the correct, including the differential diagnosis of disease. It was found that sniffing glue "Moment", acetone, benzene and other volatile toxic substances soluble in saliva and act on the teeth leads to a surface change in the enamel, which consists in a change in its color, loss of gloss, and subsequently - to demineralization and Development necrosis enamel, often, in severe cases, a fairly broad and deep. Such observations are now uncommon, but it is extremely difficult to diagnose and treat. Clinical manifestations of these different in nature and content of non-carious lesions is quite different. Thus, long term administration of hormonal drugs and salicylates, sucking tablets acidic vitamin C, typically results in damage to the enamel and dentine in the form of erosion, vertical and mixed forms of dental abrasion. Erosion unusual oval and various shapes are developed not only on the typical tooth sections (just below the equator on the vestibular surface), but also in unusual tooth portions (bumps, the cutting edge of each tooth portion). Such erosion and wear of the teeth portions are usually light, give the impression of transparency, smooth and shiny. The size and depth of them can be different - from 1- Sucking acidic vitamin C tablets usually results in damage to the enamel and dentine in the form of erosion, vertical and mixed forms of dental abrasion. Erosion unusual oval and various shapes are developed not only on the typical tooth sections (just below the equator on the vestibular surface), but also in unusual tooth portions (bumps, the cutting edge of each tooth portion). Such erosion and wear of the teeth portions are usually light, give the impression of transparency, smooth and shiny. The size and depth of them can be different - from 1- Sucking acidic vitamin C tablets usually results in damage to the enamel and dentine in the form of erosion, vertical and mixed forms of dental abrasion. Erosion unusual oval and various shapes are developed not only on the typical tooth sections (just below the equator on the vestibular surface), but also in unusual tooth portions (bumps, the cutting edge of each tooth portion). Such erosion and wear of the teeth portions are usually light, give the impression of transparency, smooth and shiny. The size and depth of them can be different - from 1- cutting edge, any portion of the tooth). Such erosion and wear of the teeth portions are usually light, give the impression of transparency, smooth and shiny. The size and depth of them can be different - from 1- cutting edge, any portion of the tooth). Such erosion and wear of the teeth portions are usually light, give the impression of transparency, smooth and shiny. The size and depth of them can be different - from 1-2 mm until 6-7 mm in size from 0.5-1 mm to 2-3 mmin depth. Hypersensitivity may be weak. Causal relationships, usually installed in the collection history. After identifying causes destruction of the teeth is prescribed complex treatment to dental fillings, which for obvious reasons must be delayed. Meanwhile, with toxic effects, e.g., gasoline fumes, acetone, glue "Moment" and other similar substances, the picture is quite different. First of all, it is a contingent of children and adolescents. Second, the clinical manifestations of these lesions of enamel and dentin is characterized as toxic necrosis. The characteristic features of enamel toxic necrosis initial manifestations of the early stages of a tooth discoloration from light yellow to light and dark brown, loss of gloss enamel, its roughness, appearance demineralization portions. In later cases, there are extensive areas of necrosis with mild necrotic masses. Surveyed teens usually inhibited, in rare cases, inexplicably excited. Explain the cause of the changes in the teeth can not, because they do not see a cause-

and-effect relationship between this phenomenon and substance abuse. Dental care is usually poor (IG more than 3.5 points). It should interrupt the negative effects of toxic substances on the teeth and oral tissues, connect narcologists. In this case, the doctor's actions have to be very tactful but insistent, in compliance with the rules of medical ethics and psychology. Otherwise, success is difficult to achieve or impossible. Treatment of toxic and pharmacological disorders dental hard tissue development is different and to some extent different from other forms of treatment of dental diseases. So, when medicated lesions of enamel and dentin at the first stage treatment measures must be integrated in remineralizing therapy which, incidentally, largely compensates the negative effect of drugs (Smoljar NI, 1976, 1980; Fedorov Yu, 1979). It consists in the following nominations:

a) calcium glycerophosphate 0.5 g 3 times a day for a month;

b) multivitamin "Kvadevit" or "Komplevit" et al. Table 4-5. a day for a month;

c) "Klamin» A-2 table.) or "Fitolon» C0 kap.) 2-3 times a day for 15 minutes. before meals for a month;

d) training toothbrushing and conducting pastes phosphate applications such as "pearls", "Bambi" et al. to 15 min. constantly, daily throughout the treatment time;

d) electrophoresis a 2.5% solution of calcium glycerophosphate - 10 sessions a day for the period between courses total treatment;

e) rinsing the oral elixir "Elam" daily after brushing teeth and eating, holding the solution at 10-15. oral cavity.

Course of general remineralizing treatment repeated 2-3 times within six months. The decrease in R & D up to 1,5-1,0 points indicates the possibility of transition to the next stage of treatment - fillings. Best embodiment should be regarded as sealing glass ionomer cements, or a combination thereof with composite materials. General and local treatment of teeth from patients with toxic lesions of the enamel and dentin greatly differs primarily supplementation active antioxidants (vitamins A, C, E), the general terms of therapy, the details of dental restorations. Concretize these appointments:

a) calcium glycerophosphate for 0.5 g 3 times a day for one month, or 1.5;

b) "Aevit» 3-4 capsules a day or vitamins A and E separately 3-4 capsules
per day for one month, or 1.5;

c) ascorbic acid 0.5 g per day for one month, or 1.5;

g) "Klamin» B-3 Table.) or "Fitolon» C0 kap.) 2-3 times a day for 3 months. contract;

e) multivitamin "Komplevit" or "Kvadevit" - Table 3-5. a day after breakfast 2-3 months in a row;

e) electrophoresis of a 2.5% solution of calcium glycerophosphate - 10 sessions a day for the period between courses total treatment;

f) training toothbrushing and conducting pastes phosphate applications such as "pearls", "Bambi", "CHeburashka" for 15 minutes. constantly, daily during the treatment period;

h) rinsing the oral mouthwash "Elam" daily after brushing teeth and eating, holding the solution in the mouth for 10-15 seconds, continuously, daily during the entire treatment.

remineralizing teeth filling after treatment is performed under the control of remineralization index without the use of composite materials, and consequently the enamel without acid treatment. In this case the most shows the use of glass ionomer cements.

Clinical activity №9

Topic: Basic principles of restoration of wedge-shaped defects, erosion, necrotic teeth

Technological models for education

class time: 160 minutes	The number of students 8-10

Type of activity:	clinics activity
Plan:	Learn the basic principles of restoration of wedge-shaped defects, erosions, necrosis teeth
The task of the training session:	- To familiarize students with the clinical manifestations of non-carious lesions arising after the eruption of the tooth. - To teach students to diagnose non-carious lesions arising after the eruption. - Teach students to correctly and consciously pursue dif.diagnostiku non-carious lesions of teeth occurring after the eruption of the tooth. Observe the necessary safety precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking during dif.diagnostiki hypersensitivity, abnormal abrasion, wedge-shaped defects, erosion, necrosis. Take responsibility for their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of etiology, clinical features, differential. Diagnostic carious lesions arising after teething, is important in the formation of future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical class №10

Subject: non-carious lesions of teeth resulting to teething. Mechanical tooth loss. Clinic, diagnostics and dif.diagnostika

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	To familiarize students with non-carious lesions arising before teething. Clinic. Diagnostics.
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students

Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Brainstorm"

Test questions on employment:

1. What distinguishes teeth injury.
2. What can cause acute injury?
3.Klinicheskaya picture tooth injury.
4.Klinicheskaya picture dislocated tooth.
5.Hronicheskaya injury.
6.Lechenie Uzury and irregularities.

Test questions and answers:

1. What distinguishes teeth injury.

Distinguish acute and chronic injuries of the teeth.

2. What can cause acute injury?

Acute injury can result in injury, fracture or dislocation of the tooth or group of teeth.

3.Klinicheskaya picture tooth injury.

Clinically tooth injury manifests occurrence of pain during the first hours that increases with nakusyvanii.

4.Klinicheskaya picture dislocated tooth.

When dislocation tooth patient complains of pain one tooth or group of teeth, the occurrence of significant mobility. Accurately indicates the time of occurrence and the cause.

5.Hronicheskaya injury.

Chronic injury is quite common in daily practice and often results in severe damage to the tooth. For example, formation on the incisors Uzury, abrasion hard tissues are the consequence of long-acting mechanical factors.

6.Lechenie Uzury and irregularities.

Treatment Uzury and irregularities is to eliminate the defect. In some cases it is sufficient by grinding, in others restoring the shape of tooth filling. Importance is the elimination of the traumatic factor.

The text of the practical classes

-Razlichayut acute and chronic injuries of the teeth.
-Ostraya injury can result in injury, fracture or dislocation of the tooth or group of teeth.
-Klinicheski tooth injury manifests occurrence of pain during the first hours that increases with nakusyvanii.
-When dislocation tooth patient complains of pain one tooth or group of teeth, the occurrence of significant mobility. Accurately indicates the time of occurrence and the cause.
-Hronicheskaya injury is quite common in daily practice and often results in severe damage to the tooth. For example, formation on the incisors Uzury, abrasion hard tissues are the consequence of long-acting mechanical factors.
-Treatment Uzury and irregularities is to eliminate the defect. In some cases it is sufficient by grinding, in others restoring the shape of tooth filling. Importance is the elimination of the traumatic factor.
-When tooth dislocation may Welding of the root in the jaw, which is always accompanied by the rupture of the neurovascular bundle.
-Zondirovanie -determination, with the presence of pain cavity walls and the bottom of the cavity. Held angle probe.
-Vydelyayut following tooth fractures:
Fracture of the crown, neck fracture, fracture of the tooth root.
-When irreversible injury tooth shown following treatment:
Trepanation crown, removing dead pulp filling channel imposing a permanent seal
-Chasche all chronic tooth trauma occurs in smokers, shoemakers, tailors.
-K Additional tests include elektroodonto- diagnostics (EDI).
EDI provides a more comprehensive state of Repose of the pulp and the tissues surrounding the tooth.
Figures set threshold excitation pulp in normal and pathological conditions. Healthy teeth respond to currents of 2-6 mA. Reducing electroexcitability do20-40 microamps indicates the presence of inflammation in the pulp. The reaction slurry on a current of 60 mA points to necrosis of the coronal pulp. If it occurs necrosis and root pulp, the tooth reacts on a current of 100 mA or higher. When expressed morphological changes in periodontal tooth reacts on currents more than 200 mA.
-In dentistry is often used near-focus intrapartum contact radiography. Tremendous help the doctor has radiography in the treatment of root canals (by X-ray
snapshot determine their direction, the filling rate, throughput), when determining the condition of the surrounding tooth root tissue, detection of pathological processes in bone and its structures. The principle of the method consists in the fact that X-rays in dependence on the density of the subject portion to a greater or lesser extent delayed tissues. tooth enamel yields a dense shadow and dentine and cement - less dense than the enamel.
-Termodiagnostika -determination tooth razdrazhiteli- reaction temperature at one of the oldest physical methods commonly used to determine the state of the pulp. The ester used as an irritant, but usually cold or hot water which is a strong irritant due to the higher heat capacity. The simplest method is to irrigation water from the syringe teeth.
-Perkussiya-tapping on zubu- used to determine the status of periodontium. Forceps or pen tip tapped on the cutting edge or chewing surface of a tooth. If there is no periodontal inflammation focus, percussion painless. Distinguish vertical percussions when the direction coincides with the punches and the horizontal axis of the tooth when the punches have lateral direction.
-Palpatsiya- oschupyvanie- used to determine the swelling tumor seal motility of organs or tissues of the mouth. tooth mobility is determined by rocking the forceps. There are 3 degrees of mobility 1 in the vestibular--smeschenie oral napravlenii.2 - in the vestibular-oral and 3- laterally on the tooth axis (vertical direction)

Clinical activity №10

Topic: Clinical principles of restoration teeth after mechanical lesion.

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Learn the basic principles of restoration teeth after mechanical lesion.
The task of the training session:	- To familiarize students with the principles of restoration teeth after mechanical lesion. - To teach students to diagnose non-carious lesions arising after the eruption. - Teach students to correctly and consciously pursue dif.diagnostiku non-carious lesions of teeth occurring after the eruption of the tooth. Observe the necessary safety precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking during dif.diagnostiki after mechanical porazheniya.Otvetstvenno approach their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of principle of restoration teeth after mechanical lesionin the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical class №11

Subject: non-carious lesions arising after teething. Chemical teeth loss. Clinic, diagnostics, dif.diagnostik

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	To familiarize students with non-carious lesions arising after teething. Clinic. Diagnostics.
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Brainstorm"

Test questions on employment:

1. What distinguishes teeth injury.
2. What can cause acute injury?
3.Klinicheskaya picture tooth injury.
4.Klinicheskaya picture dislocated tooth.
5.Hronicheskaya injury.
6.Lechenie Uzury and irregularities.

Test questions and answers:

1. What distinguishes teeth injury.

Distinguish acute and chronic injuries of the teeth.

2. What can cause acute injury?

Acute injury can result in injury, fracture or dislocation of the tooth or group of teeth.

3.Klinicheskaya picture tooth injury.

Clinically tooth injury manifests occurrence of pain during the first hours that increases with nakusyvanii.

4.Klinicheskaya picture dislocated tooth.

When dislocation tooth patient complains of pain one tooth or group of teeth, the occurrence of significant mobility. Accurately indicates the time of occurrence and the cause.

5.Hronicheskaya injury.

Chronic injury is quite common in daily practice and often results in severe damage to the tooth. For example, formation on the incisors Uzury, abrasion hard tissues are the consequence of long-acting mechanical factors.

6.Lechenie Uzury and irregularities.
Treatment Uzury and irregularities is to eliminate the defect. In some cases it is sufficient by grinding, in others restoring the shape of tooth filling. Importance is the elimination of the traumatic factor.

The text of the practical classes

Pigmentation teeth and plaque - result from exposure to various substances (as found in some foods, medicines, etc. cigarettes.), And violations of oral hygiene.
Normally, healthy teeth are white with different shades. Dairy teeth may be bluish-white hue, constant - white-gray or yellowish. However, under the influence of both internal and external reasons for their color may vary. The internal reasons can be attributed to the penetration of the tooth cloth certain substances (blood, certain pigments) in various diseases. The color of the enamel are also affected by external factors: smoking, eating certain foods and medicines.
Furthermore, discoloration of teeth can cause all sorts of solid deposits on tooth tissues representing foreign substances of different color and consistency. The deposits can be classified into mild (raids) and hard (tartar).
Soft plaque is often found in people ill caring the oral and gingival disease sufferers. In it there are the remains of food and various micro-organisms. If soft plaque is not removed, there are also accumulated inorganics, which leads to the formation of tartar.
Layering may cause not only discoloration of teeth, but also to more profound changes in the teeth themselves or supporting tissues surrounding teeth. Therefore, they should be removed as early as possible, rinsing the mouth with water or antiseptic solution. More dense plaque is removed with the help of a physician ultrasound with subsequent polishing.
To restore the color of teeth are used bleaching systems comprising hydrogen peroxide. The lack of effectiveness of whitening teeth for aesthetic reasons, can be coated with porcelain crowns.

dental erosion- a disease characterized by the progressive diminution of dental tissues (enamel and dentin) irregularly rounded shape. Erosion is most common among older age category 25-30 years. And this disease are more prone to women that may be related to their increased sensitivity to stress. The reasons leading to the occurrence of erosion can also be attributed poor environmental conditions that affect the nervous and endocrine systems. Erosion is often associated with impaired thyroid and sex glands functions.
According to the severity of symptoms it is customary to distinguish 3 degrees of erosion:

Grade I - initial, characterized by lesions of the surface layers of enamel, its opacity, gloss loss, suggesting violation of mineralization;
II degree - medium, affected the entire thickness of the enamel;
III degree - deep, affected the entire thickness of the enamel and dentin layers deep.

In the II and III stages appear round enamel defects, which gradually widen and deepen. Affected teeth are particularly sensitive to external stimuli (cold, hot, sour, sweet, etc.).
At step I the development of erosion can be stopped by mineralization of tooth tissue by calcium electrophoresis. Treatment of II and III degree of erosion, the presence of substantial area lesions produced by fillings or dental prosthetics. And finally, we should not forget that at any stage of the disease should be taken of phosphorus products, calcium, trace elements and vitamins.

Necrosis of solid teeth tissues- serious disease characterized by necrosis of dental tissue due to exposure to various chemicals, diseases of endocrine or central nervous system, as well as other reasons. Often leads to complete loss of the tooth.
Necrosis begins with the loss of gloss enamels, chalky appearance, and then dark brown stains. Also, pigmented dentin, enamel becomes brittle. Aching from the chemical, mechanical, thermal stimuli. In addition, there are some characteristic of carious lesions, signs of necrosis. Thus, there

are marked changes in enamel subsurface at a saved outer layer. It is believed that these symptoms are manifested in the background disorder or adjustment functions of the thyroid and sex glands.
Necrosis to be distinguished from erosion. So, for the erosion is characterized by brilliant, solid surface, and there are areas of necrosis softening. In treating these portions dissect and seal up cavity. Also in the treatment of necrosis necessarily eliminate the symptoms of hypersensitivity hard tissue. For this purpose, solutions of calcium gluconate and sodium fluoride.
When necrosis is formed in the mouth environment favorable for the occurrence of caries. To eliminate it should consume less carbohydrates properly and regularly clean your teeth.
In order to prevent necrosis should be 2-3 times a year to visit the dentist. To this end, a remineralizing treatment or surface treatment of fluoride preparations teeth. Patients with this disease should be at the dispensary accounting.

dental trauma- dislocation, bruised or broken teeth as a result of stroke, increased load upon chewing, etc. These defects are rare compared with other diseases, however, require much attention.
Traumatic injuries are of two types: acute and chronic.
acute trauma occurs due to the load simultaneous high intensity per tooth - accidental fall, blow, etc. .. Acute injuries are divided into:

tooth contusion, With or without damage to the vascular bundle;
Dislocation of tooth - characterized tooth displacement in the well until its total loss, can be accompanied by damage to the gums;
*fracture*It can take different lines. Fracture of the tooth crown or the cervix is visible at once, but the root fracture can only be determined via X-ray diffraction;
combined injury - characterized by a combination of several types of dental injuries;
Trauma tooth germ, Possible damage when deciduous teeth.

trauma treatment depends on the type of damage. If you need to create a tooth injury rest, eliminate from the diet solid food. Correction is performed by setting the dislocation of the tooth to its original location or replantation of the tooth (at its loss). After the tooth should create absolute peace. fracture treatment is carried out by filling the channels, it is important to restore the normal position of the tooth and to exclude the conditions of its re-injury.
chronic injury They are quite common and are often caused by prolonged exposure to mechanical factors. Characteristic for some professions - for example -. Tailors nibble thread teeth, etc. Tooth decay, usually insignificant, is not accompanied by pain. Chronic injury easily restored by grinding or by filling the damaged surface. Then it is necessary to eliminate the traumatic factors.

dental hypersensitivity- increased sensitivity of the teeth to mechanical, chemical or thermal effects often observed when solid structures Abuse tooth tissues. May occur when erosion pathological abrasion, periodontal lesions, wedge-shaped defects, etc.
The main manifestation of hypersensitivity - pain, when exposed to a variety of stimuli. hypersthesia three levels can be identified:

For the first degree is characterized by sensitivity to thermal stimuli (hot, cold);
It characterized by second degree sensitivity and also to chemical influences (sour, sweet, salty);
When the third degree painful sensations arise on the temperature, chemical and mechanical stimuli. Discomfort may sometimes occur even if a simple brushing.

Increased sensitivity may manifest itself as a separate tooth, and in groups of closely spaced teeth. The intensity of pain can range from mild discomfort to severe throbbing pain, which

greatly affects the daily life of the patient. Also hyperesthesia can complicate treatment of dental caries and periodontal.
hypersensitivity treatments are selected individually, depending on its causes, extent and complexity caused its pathology. However, the most common indication for the treatment of hypersensitivity is holding remineralization therapy. This should eliminate the juices and acidic foods from the diet. In addition, it is recommended to brush your teeth with fluoride toothpaste.

Clinical activity №11

Subject: Klinichsekie stages of restoration of non-carious lesions.

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Klinichsekie explore the stages of restoration of non-carious lesions.
The task of the training session:	- To familiarize students with klinichsekim stage of restoration of non-carious lesions. - To teach students to diagnose non-carious lesions arising after the eruption. - Teach students to correctly and consciously pursue dif.diagnostiku non-carious lesions of teeth occurring after the eruption of the tooth. Observe the necessary safety precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking during dif.diagnostiki after mechanical porazheniya.Otvetstvenno approach their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of principle of restoration teeth after mechanical lesionin the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical class №12

Subject: Local and general treatment of carious lesions

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Teach students to conduct the topical treatment of carious lesions.

Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Brainstorm"

Test questions on employment:

1. General treatment of dental hard tissue erosions.
2. What is the topical treatment of dental hard tissue erosions.
3.Mestnoe treatment of hard tissue necrosis.
4. General treatment of wedge defect.
5.Tehnika of remineralizing therapy with hyperesthesia.
6.Perechislite non-carious lesions arising before teething.

Test questions and answers:

1. General treatment of dental hard tissue erosions.

When erosion of dental hard tissues is necessary to take urgent measures to address the factors that contribute to the progression of existing erosion. For this purpose, it is recommended to exclude excessive use of juices, fruit or after administration thoroughly rinse the oral cavity; reduce the impact of mechanical factors-not to use hard tooth schètkoy, remineralizing or use fluoride toothpaste.

2. What is the topical treatment of dental hard tissue erosions.

Local treatment of dental hard tissue erosions in applications is a solution of calcium gluconate, 3% Remodent solution, 0.2% sodium fluoride solution. This is achieved by the remineralization of hard tissue at sites of erosion, which leads to a stabilization process. Course of treatment of 15-20 procedures.
3.Mestnoe treatment of hard tissue necrosis.
Local treatment of hard tissue necrosis is primarily in eliminating hypersensitivity hard tissue. To this end use application of 10% calcium gluconate solution, 0.2-2% sodium fluoride solution.
4. General treatment of wedge defect.
With the general treatment of the wedge defect to take precautions to reduce the mechanical action on the teeth. Dentifrice applied soft brush, the paste used containing fluorine or having remineralizing effect.
5.Tehnika of remineralizing therapy with hyperesthesia.
In implementing remterapii with hypersensitivity to the following parameters:
-zuby isolated from the saliva and dried with a cotton swab.
-snimayut plaque from the enamel surface.
-Then, 5-7 min 1015 applied solution or calcium gluconate solution Remodent.
-during kazhnyj third visit after two applications of liquid remineralizing the tooth surface was treated with 1.2% sodium fluoride or Ftorlak applied to the surface of the tooth.
6.Perechislite non-carious lesions arising before teething.
For non-carious lesions occur before teething include: hyperplasia, hypoplasia, fluorosis, hereditary lesions of teeth.

The text of the practical classes

-When erosion of dental hard tissue is necessary to take urgent measures to address the factors that contribute to the progression of existing erosion. For this purpose, it is recommended to exclude excessive use of juices, fruit or after administration thoroughly rinse the oral cavity; reduce the impact of mechanical factors-not to use hard tooth schètkoy, remineralizing or use fluoride toothpaste.
-Local treatment of dental hard tissue erosions in applications is a solution of calcium gluconate, 3% Remodent solution, 0.2% sodium fluoride solution. This is achieved by the remineralization of hard tissue at sites of erosion, which leads to a stabilization process. Course of treatment of 15-20 procedures.
-Local treatment of hard tissue necrosis is primarily in eliminating hypersensitivity hard tissue. To this end use application of 10% calcium gluconate solution, 0.2-2% sodium fluoride solution.
-With the general treatment of the wedge defect to take precautions to reduce the mechanical action on the teeth. Dentifrice applied soft brush, the paste used containing fluorine or having remineralizing effect.
-In implementing remterapii with hypersensitivity to the following parameters:
-zuby isolated from the saliva and dried with a cotton swab.
-snimayut plaque from the enamel surface.
-Then, 5-7 min 1015 applied solution or calcium gluconate solution Remodent.
-during kazhnyj third visit after two applications of liquid remineralizing the tooth surface was treated with 1.2% sodium fluoride or Ftorlak applied to the surface of the tooth.
-For non-carious lesions occur before teething include: hyperplasia, hypoplasia, fluorosis, hereditary lesions of teeth.
-For non-carious lesions arising after teething include: abnormal abrasion, wedge-shaped defects, necrosis, erosion, trauma, hypersensitivity.
-When the tooth shown irreversible injury following treatment:
Trepanation crown, removing dead pulp filling channel imposing a permanent seal
-caries treatment consists of the activities of general and local character
-General measures to the goal to increase the body's defenses and resistance tooth tissues.

-To increase the resistance of tissue tooth administered vitamin B, D, E, and mineral components: glycerophosphate, lactate, calcium gluconate, phytin. (1 tablet 3 times a day for 4-6 weeks with a break of 1-2 months)
-The nature of the topical treatment of non-carious lesions of dental tissues depends on the extent of changes in the tissues of the tooth. In the initial shape is carried -treatment
Effectively conducted without remterapii determined by methylene blue staining of the tooth (some stains disappear or decrease)
-Repeated course remterapii if necessary.
-Part of an integrated treatment of caries is the hygiene of the oral cavity and the teeth.
-The drug is administered by electrophoresis and applique.

Clinical activity №12

Subject: Topical treatment of carious lesions.

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Explore the topical treatment of carious lesions.
The task of the training session:	- To familiarize students with klinichsekim stage of the restoration of non-carious lesions. - To teach students to diagnose non-carious lesions arising after the eruption. - Teach students to correctly and consciously pursue dif.diagnostiku non-carious lesions of teeth occurring after the eruption of the tooth. Observe the necessary safety precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking during dif.diagnostiki after mechanical porazheniya.Otvetstvenno approach their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of principle of restoration of teeth after mechanical injury in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical class №13
Subject: Physical treatments for non-carious lesions

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Teach students to carry out the physical therapies non-carious lesions
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Round table"

Test questions on employment:

1. General treatment of dental hard tissue erosions.
2. What is the topical treatment of dental hard tissue erosions.
3.Mestnoe treatment of hard tissue necrosis.
4. General treatment of wedge defect.
5.Tehnika of remineralizing therapy with hyperesthesia.
6.Perechislite non-carious lesions arising before teething.

Test questions and answers:

1. General treatment of dental hard tissue erosions.

When erosion of dental hard tissues is necessary to take urgent measures to address the factors that contribute to the progression of existing erosion. For this purpose, it is recommended to exclude excessive use of juices, fruit or after administration thoroughly rinse the oral cavity; reduce the impact of mechanical factors-not to use hard tooth schètkoy, remineralizing or use fluoride toothpaste.
2. What is the topical treatment of dental hard tissue erosions.
Local treatment of dental hard tissue erosions in applications is a solution of calcium gluconate, 3% Remodent solution, 0.2% sodium fluoride solution. This is achieved by the remineralization of hard tissue at sites of erosion, which leads to a stabilization process. Course of treatment of 15-20 procedures.
3.Mestnoe treatment of hard tissue necrosis.
Local treatment of hard tissue necrosis is primarily in eliminating hypersensitivity hard tissue. To this end use application of 10% calcium gluconate solution, 0.2-2% sodium fluoride solution.
4. General treatment of wedge defect.
With the general treatment of the wedge defect to take precautions to reduce the mechanical action on the teeth. Dentifrice applied soft brush, the paste used containing fluorine or having remineralizing effect.
5.Tehnika of remineralizing therapy with hyperesthesia.
In implementing remterapii with hypersensitivity to the following parameters:
-zuby isolated from the saliva and dried with a cotton swab.
-snimayut plaque from the enamel surface.
-Then, 5-7 min 1015 applied solution or calcium gluconate solution Remodent.
-during kazhnyj third visit after two applications of liquid remineralizing the tooth surface was treated with 1.2% sodium fluoride or Ftorlak applied to the surface of the tooth.
6.Perechislite non-carious lesions arising before teething.
For non-carious lesions occur before teething include: hyperplasia, hypoplasia, fluorosis, hereditary lesions of teeth.

The text of the practical classes

-When erosion of dental hard tissue is necessary to take urgent measures to address the factors that contribute to the progression of existing erosion. For this purpose, it is recommended to exclude excessive use of juices, fruit or after administration thoroughly rinse the oral cavity; reduce the impact of mechanical factors-not to use hard tooth schètkoy, remineralizing or use fluoride toothpaste.
-Local treatment of dental hard tissue erosions in applications is a solution of calcium gluconate, 3% Remodent solution, 0.2% sodium fluoride solution. This is achieved by the remineralization of hard tissue at sites of erosion, which leads to a stabilization process. Course of treatment of 15-20 procedures.
-Local treatment of hard tissue necrosis is primarily in eliminating hypersensitivity hard tissue. To this end use application of 10% calcium gluconate solution, 0.2-2% sodium fluoride solution.
-With the general treatment of the wedge defect to take precautions to reduce the mechanical action on the teeth. Dentifrice applied soft brush, the paste used containing fluorine or having remineralizing effect.
-In implementing remterapii with hypersensitivity to the following parameters:
-zuby isolated from the saliva and dried with a cotton swab.
-snimayut plaque from the enamel surface.
-Then, 5-7 min 1015 applied solution or calcium gluconate solution Remodent.
-during kazhnyj third visit after two applications of liquid remineralizing the tooth surface was treated with 1.2% sodium fluoride or Ftorlak applied to the surface of the tooth.
-For non-carious lesions occur before teething include: hyperplasia, hypoplasia, fluorosis, hereditary lesions of teeth.

-For non-carious lesions arising after teething include: abnormal abrasion, wedge-shaped defects, necrosis, erosion, trauma, hypersensitivity.
-When the tooth shown irreversible injury following treatment:
Trepanation crown, removing dead pulp filling channel imposing a permanent seal
-caries treatment consists of the activities of general and local character
-General measures to the goal to increase the body's defenses and resistance tooth tissues.
-To increase the resistance of tissue tooth administered vitamin B, D, E, and mineral components: glycerophosphate, lactate, calcium gluconate, phytin. (1 tablet 3 times a day for 4-6 weeks with a break of 1-2 months)
-The nature of the topical treatment of non-carious lesions of dental tissues depends on the extent of changes in the tissues of the tooth. In the initial shape is carried -treatment
Effectively conducted without remterapii determined by methylene blue staining of the tooth (some stains disappear or decrease)
-Repeated course remterapii if necessary.
-Part of an integrated treatment of caries is the hygiene of the oral cavity and the teeth.
-The drug is administered by electrophoresis and applique.

Clinical activity №13

Subject: Topical treatment of carious lesions

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Explore the topical treatment of carious lesions.
The task of the training session:	- To acquaint the students treat hypersensitivity electrophoresis. - To teach students to diagnose non-carious lesions arising after the eruption. - Teach students to correctly and consciously pursue dif.diagnostiku non-carious lesions of teeth occurring after the eruption of the tooth. Observe the necessary safety precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking during dif.diagnostiki after mechanical porazheniya.Otvetstvenno approach their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of principle of restoration of teeth after mechanical injury in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical class №14

Subject: Principles of restoration of non-carious lesions

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Teach students to carry out the restoration of the principles of non-carious lesions
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Round table"

Test questions on employment:

1. General treatment of dental hard tissue erosions.
2. What is the topical treatment of dental hard tissue erosions.
3.Mestnoe treatment of hard tissue necrosis.
4. General treatment of wedge defect.
5.Tehnika of remineralizing therapy with hyperesthesia.
6.Perechislite non-carious lesions arising before teething.

Test questions and answers:

1. General treatment of dental hard tissue erosions.

When erosion of dental hard tissues is necessary to take urgent measures to address the factors that contribute to the progression of existing erosion. For this purpose, it is recommended to exclude excessive use of juices, fruit or after administration thoroughly rinse the oral cavity; reduce the impact of mechanical factors-not to use hard tooth schètkoy, remineralizing or use fluoride toothpaste.

2. What is the topical treatment of dental hard tissue erosions.

Local treatment of dental hard tissue erosions in applications is a solution of calcium gluconate, 3% Remodent solution, 0.2% sodium fluoride solution. This is achieved by the remineralization of hard tissue at sites of erosion, which leads to a stabilization process. Course of treatment of 15-20 procedures.

3.Mestnoe treatment of hard tissue necrosis.

Local treatment of hard tissue necrosis is primarily in eliminating hypersensitivity hard tissue. To this end use application of 10% calcium gluconate solution, 0.2-2% sodium fluoride solution.

4. General treatment of wedge defect.

With the general treatment of the wedge defect to take precautions to reduce the mechanical action on the teeth. Dentifrice applied soft brush, the paste used containing fluorine or having remineralizing effect.

5.Tehnika of remineralizing therapy with hyperesthesia.

In implementing remterapii with hypersensitivity to the following parameters:

-zuby isolated from the saliva and dried with a cotton swab.

-snimayut plaque from the enamel surface.

-Then, 5-7 min 1015 applied solution or calcium gluconate solution Remodent.

-during kazhnyj third visit after two applications of liquid remineralizing the tooth surface was treated with 1.2% sodium fluoride or Ftorlak applied to the surface of the tooth.

6.Perechislite non-carious lesions arising before teething.

For non-carious lesions occur before teething include: hyperplasia, hypoplasia, fluorosis, hereditary lesions of teeth.

The text of the practical classes

Restoration - recovery process and correction of aesthetic and functional parameters of a tooth in the oral cavity directly in a single visit by composite materials.

Differences sealing of the restoration:

- when filling occurs mainly functional recovery characteristics of the tooth, and at the lost tooth restoration material replenished tissue simulates dentin and enamel, their transparency and color gamut;
- filling a medical procedure, and restoration combines elements of medical and artistic works.

Contraindications to the restoration:

1. The presence of a pacemaker patient heart rate, the so-called "Pass - Maker", when fotopolimerizator can disrupt the device and the pulse frequency vozmlzhna cardiac arrest.
2. The patient's allergic reaction to the adhesive elements of the system or in the composite, which is extremely rare.

Key factors in the oral cavity, considered in a restoration:
- the suitability of the roots of the teeth or for recovery, i.e. their viability. Due to the adhesive of the fourth-generation systems to be virtually re-establishment of any root is sealed with a high quality root canal. A prerequisite is stored circular tooth ligament;
- the state of periodontal tissues. With periodontitis possible after restoration konservanivnogo and surgical treatment in combination with splinting teeth;
- patient hygiene skills. When brushing teeth irregular boundary marked pigmentation and loss of surface gloss restoration;
- a correct choice of the composite material and the adhesive system, providing sufficient adhesion to the tooth capable of withstanding the load of chewing and possessing good aesthetic characteristics.

Indications for restoration:
dental caries in all stages of tooth decay;
non-carious lesions (erosion of enamel abrasion necks and occlusal surfaces of teeth, enamel hypoplasia, dental fluorosis et al.);
anomalies shape and color of teeth (spinous, tetracycline teeth, Stanton syndrome - Kapdepona);
dental injuries;
change in the color of the teeth after trauma or endodontic treatment;
anomalies of the teeth, including pan, tilt, dystopia, the presence of three and diastema.

Restoration process can be executed:
seals;
crown;
bridge constructions;
tabs (direct method);
artificial teeth.

Conditions of work with composites.
1. Work in "four hands" with the dentist assistant. His duties are:
- conducting teeth cleaning before restoration;
- Participates in the identification of colors and shades;
- participates in the application of the rubber dam;
- monitors the condition of the patient;
- provides a dry working area;
- assisting in the construction of the restoration;
- conducting polymerization composite lamp;
- controls the working area purity;
- polishes teeth restored.
2. Equipment of working place:
- dental unit should be oil-free compressor, vacuum cleaner and saliva ejector. Dissection of the tissue of the tooth tip turbine is made with a mandatory water supply that provides protection against overheating of the tooth;
- chair should be unfolded, because Restoration takes time;
- temperature in the cabinet 21 - 23 ° C. At a lower temperature composite materials lose ductility at higher - become flowable, viscous and poorly amenable to plastic working;

- presence of a cofferdam, retraction filaments insulating vestibular matrices in combination with the interdental wedges;
- fotopolimerizator with wavelength 450 - 500 nm. It is recommended to check it weekly tester such as "Cure-Rite" for the early detection of decreasing wavelength. Contamination of the surface of the fiber lead-out leads to a decrease in the lamp power to 30%;
- when working fotopolimerizatorom eyes should be protected by special glasses with glass of orange or orange spectrum plexiglass shield, as a direct effect of the rays are extremely harmful to the eye.

The standard technique of working with composites

The main requirement of the reduction of light-cured dental composite materials is the accurate and methodical compliance instructions. Only when all of the process steps is achieved the necessary adhesion of the composite to the tooth structure and get a good cosmetic result. Despite some differences in the use of composites of different companies, there are general principles at work.

Stages of restoration

Stage 1 - preparation for restoration.
Assistant conducts professional hygiene. It is known that in addition to the tooth surface is pellicle plaque, excluding direct contact of the gel and acid components of the adhesive system with enamel. It is necessary to produce mechanical removal of the plaque and brushes preventive rubber cups, filled with cleaning pastes containing no fluorine (increases the acid resistance of enamel) and oil (restorative pollute surface and degrade the adhesion). Optimum results are achieved by using Handy - blaster removing plaque using an abrasive powder (based on the soda), applied to the tooth surface with water under pressure.
By indications carried anesthesia, after which the tooth is isolated from saliva using a rubber dam, which provides absolute dry working area, protects the patient from inhaling various substances used in the treatment and ingestion tools. The use of rubber dam is a guarantee of the quality of work of the doctor.

Stage 2 - preparation.
Preparation guidelines when working with fotokompozitami znachitelbno differ from the principles of preparation for Black: it must be gentle. When dissection decalcified enamel must be removed and changed in color enamel. Held removing necrotic dentin softened and pigmented. It is performed on the enamel seam, i.e. at an angle of 45 ° bevel around the edge of the cavity for vertical prisms disclosure. It is used to increase adhesion and masking the transition line "enamel - composite."
Drills used for the preparation and processing of surface restoration, are divided into two groups: carbide having a different number of blades, and diamond burs of different sizes. Bora-only preparation have black, blue and green stripes on the leg. Finishing burs with a red stripe rough surface is used for treatment and disposal of excess material, a yellow - grinding surface restoration, a white stripe - to create an ideal surface for polishing the finished plastic heads and pastes.
Stage 3 - the imposition of pads.
The purpose - protection against possible neblpgopriyatnogo pulp exposure from composite. Gaskets may be of 2 types: therapeutic and insulating.
Therapeutic superimposed with deep caries (the gentle preparation processes lead to injury of odontoblasts, and also a direct impact on the microbial metabolic products of pH drop in vasodentin) or to the exposed accidentally tooth point cavity without pulpitis symptoms. In order to provide an anti-inflammatory action on the pulp and stimulation of odontoblasts to enhance

the mineralization and deposits of substitution dentin functions use the calcium-containing paste, for example, "Dycal" (Dentsply), "Life" (Kerr), "Calcimol" (Voko), which impose on the problem areas bellied probe as enough of a trace amount for medical treatment of the pulp. A thick layer of the material worsen the adhesion of the seal.
Isolate medical need gasket glass ionomer cement, if used adhesive system comprises acetone which is partially destroys materials based on calcium hydroxide. The insulating spacer may be of two types: linear and volumetric. Linear pad only performs an insulating function and volume, in addition to insulating, has yet a second function - volume recovery of lost dentin after preparation (technique "Sandwich"). Application of the adhesive last generation systems (Prime & Bond 2.1 and Prime & Bond NT "Dentsply" firm) eliminates the insulating spacers due to penetration of adhesive systems deep in the dentinal tubules (not less than 100 microns) and their subsequent polymerization. It is impossible to apply as the insulating gasket phosphate cement,

Stage 4 - etching of enamel and dentin.
Purpose: to carry out the cleansing of the cavity surface and improve adhesion of the composite to the tooth hard tissue.
After conditioning the enamel improved wettability enamels, increases the surface area of the composite compound and enamel. During etching to cut enamel prisms are formed grooves that improve mikroretentsiyu composite by creating mikrouderzhivayuschego relief. etching technique has been proposed in 1955 by M. Buonokore.
During etching of enamel lost irretrievably enamel layer about 10 microns thick. Changes in the enamel (holes, slots) reach a depth of 30 - 50 microns. The etched enamel, not composite-coated, easily colored ekzokrasitelyami.
Advantages of dressing:
good marginal adaptation;
sufficient adhesion to the enamel composite;
strengthening mounds deprived of dentin resulting from the preparation.
The etching process starts with enamel and lasts 30 seconds. The enamel has a 36% orthophosphoric acid, and after 15 seconds. acid applied to the dentin for 15 seconds. Then all of the acid washed with copious amounts of water for 30 seconds. Then the enamel and dentin light dried air jet directed on the enamel, and better conduct removal of water vacuum. You can not overdry dentin, as there will be a collapse, that is, disorientation, collagen fibers and deteriorate the adhesion to dentin. The latter should not be on the surface free of water droplets, but should be moist ("sparkling dentin").
The purification occurs during etching of the cavity surface on which during preparation formed a so-called "smear" layer consisting of dentin debris, desquamated epithelial cells and microorganisms. Smear layer is topographically divided into proper and smear layer plugs which seal dentinal tubules. Located on the surface of the dentin smear layer lowers its permeability and prevents the formation of a hybrid zone. If it is left to be degraded and the composite adhesion occurs secondary caries due to the development of microorganisms. When etching dentin acid causes dissolution of smear layer and plugs disclosed dentinal tubules, dentin permeability increases for adhesive systems. Hydroxyapatite crystals are dissolved and converted into the dentin structure
It should be noted that the etching overdried laying of glass ionomer is unacceptable, because it leads to the creation of a depot acid seal to the development of serious complications. A sign of delamination is overdried glass ionomer lining edges of the cavity walls.
Enamel after etching and drying looks matte and dentin - sparkling.

Step 5 - priming dentin and enamel surfaces.
The composite material due to its hydrophobic properties is capable of forming a compound with moist dentin. Ensure their connection can chereh pad of glass ionomer or compomer, or via a primer, which promotes the formation of dentin hydride zones and seals the dentin, i.e. It

protects it from temperature and other effects due to blockage of the dentinal tubules. Adhesive - the second component of the bonding system - primer provides a compound treated dentin and etched enamel composite material. The adhesive layer should ideally be about 30 microns. Visually, it looks like a slightly damp surface.
The term "priming" refers to greater use in the bonding systems of the 4th generation (ProBond type) when the dentin primer and adhesive were in different bottles. Currently there are 5 Bondingovye generation system (Prime & Bond 2.1 and Prime & Bond NT firm "Dentsply") in one bottle. This universal linking system for enamel and dentin in its composition has PENTA phosphate ester type, that connects directly to the tooth calcium. Hydrophilic properties of these systems provide a good penetration into the dentin layer and the formation of a hybrid resin and dentin. Acetone, part of the systems, is a carrier polymer matrix and better hydrophilic carrier particles.
Thus, the essence of this stage is to apply the adhesive to the enamel and dentin with a brush or sponge for 30 seconds. for its penetration in the dentinal tubules. Next, the removal (drying) excess acetone contained in the adhesive system, a jet of air from an air gun or using a vacuum cleaner and polymerization for 10 seconds. The strength of the bond of the adhesive and the dentin with properties equivalent to the strength of dentin tear. According to A. Gryuttsner ("DentArt" №2 - 96, S. 33), "more likely to happen razrvyv in the dentin than in the place of attachment of the adhesive to the dentin, that is, the mechanical properties of the dentin even inferior strength of the adhesive attachment to dentin."

Stage 6 - the introduction of a portion of the composite and its plastic modeling.
Adding the composite tool made from Teflon or titanium coated with trowelled more plugger.
Light curing composites superimposed portions of no more than 2-3 mm thick. Layered polymerization allows you to:
arrest shrinkage, as microlayers give significantly lower total shrinkage than a thicker layer of composite;
obtain more complete the polymerization (polymerization maximum is 70% - 80%). The greater the percentage of the polymerization, the less "is not wired" in the chain of monomer molecules that may have a toxic effect on the tooth pulp;
assess the correctness of the choice of colors and in a timely manner to correct it if necessary.
Adhesive Technology - this construction restoration tooth composite by gluing fragments using surface layer inhibited by oxygen. The surface layer is formed by the polymerization shrinkage of the composite and the composition resembles unfilled adhesive system. The surface layer is completely inhibited by oxygen, i.e. the polymerization reaction in this layer no longer possible. The surface of the polymerized with access air composite portion is obtained shiny, "wet" and is easy to remove the tool or glove. Layer inhibited by oxygen, as a by-product of polymerization, and plays a positive role, creating the conditions for good composite portion of the compound introduced with a previously polymerized surface (adhesive system or composite).
If the polymerization is carried out without oxygen access (by the polymer matrix), the surface layer has a smooth glossy surface, but is permeable to dyes and easily damaged tool. According to the requirement of the standard techniques to be removed throughout the restoration surface. If such a layer is inside the structure - is a line of mechanical weakness, staining food dyes and separation as a result of the impact of chewing loads.

Control test:
Checking layer inhibited oxygen
The prepared surface looks shiny, "wet" gloss can be easily removed.
Adding composite portions
When making portions of the composite pressure created locally removes layer inhibited by oxygen, and a portion of the composite is adhered to the prepared surface, breaking away from the tool. If the composite reaches for the tool, this means that the glued surfaces contaminated

gingival or oral liquid or offline layer thereon inhibited by oxygen. The insertion portion of the composite should be removed and repeat processing adhesive bonding surface.

Plastic forming the composite portion

When trying to separate the composite tool portion from the bonding surface it is deformed, but not separated. If it separates - plastic processing in such a case should be continued until a complete gluing.

When filling the cavities of the first class of material need to impose slanting layers: the first - from the middle bottom of the cavity to the edge of the masticatory surface. Glare initially conducted through the enamel to the vestibular or oral side, then - perpendicular to the surface of the composite. The next layer is applied in an oblique direction other and glare produced with opposite side. Thus it is achieved a good marginal seal and prevents separation from the composite enamel due to shrinkage.

Step 7 - polymerisation of the composite portion.

In the curing of any composite material shrinkage occurs. In composites chemical curing shrinkage is directed towards the highest temperature, ie. E. To a pulp. Shrinkage light-cured composites is directed to the light source, i.e., the lamp.

Initial curing composite portion visible blue light in a predetermined direction is performed (obtaining directional shrinkage with the possibility of further compensation) for 10 seconds. Checking the probe, it is necessary to make sure that it is solid. After the main shrinkage polymerizable composite portion is irradiated by placing the optical fiber at the minimum possible distance, measured perpendicular to the surface. The purpose of this stage is to achieve the highest possible degree of polymerization for the remaining irradiation time (polymerization time required is generally defined only manufacturer's instructions applied composite). The polymerization layer is formed, inhibited by oxygen on the outer surface and thus creates conditions for making a new composite portions.

CONTROL TEST

When finishing

A compound composite and monolithic dental tissue looks at the surface and in depth restoration no white tear strip therebetween.

Step 8 - finishing restoration.

Finishing restoration consists of:

a) modeling a restoration surface shape;

b) forming the surface of the restoration.

9 stage - control tests and the restoration of correction.

Restorations examined by a doctor in natural daylight and artificial light. Attention is drawn to the tooth shape, color, transparency and surface quality. It should be no visible cracks or air pores. When detecting any - or their defects should be eliminated by repeating the steps from standard techniques of restoration etching (if the defect borders enamel) or adhesive application, if the defect is only in the composite.

Upon detection of the optical border seal in the form of a visible crack it better to "broaden" boron and again to perform all phases of work.

10 stage - polishing.

Polishing pastes produced Enhens system and rubber head.

1. Polishing paste Prisma Gloss:

a) 30 seconds. each surface without water;

b) 30 sec. each surface, with the addition of water dropwise until frothing paste.

After compliance polishing paste time wash with water and dry the surface of the restoration. Already at this stage should be restored luster surface. The contact surfaces are polished using a strip and floss.

2. Polishing paste Prisma Gloss Eksta Fine:

a) 30 seconds. each surface without water;

b) 30 sec. each surface, with the addition of water dropwise.

After this paste is washed with water, dried surface of the restoration. The criterion of good polishing - gloss is the same as the gloss polished enamel ("dry" shine). If such brilliance not, it is better to repeat polishing.

Stage 11 - Polymerization finish.

There is no consensus on the final polymerization is not. If carried out, then each surface shine restoration for 1 minute. The maximum effect is achieved when the light beam perpendicular position relative to the surface of the tooth.

-When erosion of dental hard tissue is necessary to take urgent measures to address the factors that contribute to the progression of existing erosion. For this purpose, it is recommended to exclude excessive use of juices, fruit or after administration thoroughly rinse the oral cavity; reduce the impact of mechanical factors-not to use hard tooth schètkoy, remineralizing or use fluoride toothpaste.
-Local treatment of dental hard tissue erosions in applications is a solution of calcium gluconate, 3% Remodent solution, 0.2% sodium fluoride solution. This is achieved by the remineralization of hard tissue at sites of erosion, which leads to a stabilization process. Course of treatment of 15-20 procedures.
-Local treatment of hard tissue necrosis is primarily in eliminating hypersensitivity hard tissue. To this end use application of 10% calcium gluconate solution, 0.2-2% sodium fluoride solution.
-With the general treatment of the wedge defect to take precautions to reduce the mechanical action on the teeth. Dentifrice applied soft brush, the paste used containing fluorine or having remineralizing effect.
-In implementing remterapii with hypersensitivity to the following parameters:
-zuby isolated from the saliva and dried with a cotton swab.
-snimayut plaque from the enamel surface.
-Then, 5-7 min 1015 applied solution or calcium gluconate solution Remodent.
-during kazhnyj third visit after two applications of liquid remineralizing the tooth surface was treated with 1.2% sodium fluoride or Ftorlak applied to the surface of the tooth.
-For non-carious lesions occur before teething include: hyperplasia, hypoplasia, fluorosis, hereditary lesions of teeth.
-For non-carious lesions arising after teething include: abnormal abrasion, wedge-shaped defects, necrosis, erosion, trauma, hypersensitivity.
-When the tooth shown irreversible injury following treatment:
Trepanation crown, removing dead pulp filling channel imposing a permanent seal
-caries treatment consists of the activities of general and local character
-General measures to the goal to increase the body's defenses and resistance tooth tissues.
-To increase the resistance of tissue tooth administered vitamin B, D, E, and mineral components: glycerophosphate, lactate, calcium gluconate, phytin. (1 tablet 3 times a day for 4-6 weeks with a break of 1-2 months)
-The nature of the topical treatment of non-carious lesions of dental tissues depends on the extent of changes in the tissues of the tooth. In the initial shape is carried -treatment
Effectively conducted without remterapii determined by methylene blue staining of the tooth (some stains disappear or decrease)
-Repeated course remterapii if necessary.
-Part of an integrated treatment of caries is the hygiene of the oral cavity and the teeth.
-The drug is administered by electrophoresis and applique.

Clinical activity №14

Subject: Modern methods of treatment of non-carious lesions ..

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Explore the topical treatment of carious lesions.
The task of the training session:	- To acquaint the students treat hypersensitivity electrophoresis. - To teach students to diagnose non-carious lesions arising after the eruption. - Teach students to correctly and consciously pursue dif.diagnostiku non-carious lesions of teeth occurring after the eruption of the tooth. Observe the necessary safety precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking during dif.diagnostiki after mechanical porazheniya.Otvetstvenno approach their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of principle of restoration of teeth after mechanical injury in the formation of the future practitioner. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical class №15

Topic: Methods for whitening teeth

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice

Plan	Familiarization with the subject.
The task of the training session	Teach students to carry out teeth whitening methods
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Round table"

The text of the practical classes

Staining of teeth it can be classified in several ways
(B. Touati et al, 2004):
- according to the origin: external; interior;
- with color;
- with a pathological or non-pathological nature.

Discoloration of teeth most often it refers to the internal and can occur for the following reasons:
- dental caries;
- pulp disease;
- medical errors endodontic treatment;
- the use of materials, coloring a tooth;

- disorders of formation of dental hard tissues (enamel localized hypoplasia). Dental caries is a major cause unaesthetic pigmentation (Feinman et al, 1987). The color change can occur either through internal cavity pigmentation and surface changes (white spot caries or brown color). Cavities before restoration must be thoroughly cleaned, however, in some cases infiltration of pigments can permanently cover the dentin and emal.Izmeneniya tooth color may occur due to an injury or infection in the pulp. Acute injury, chronic less (e.g., orthodontic treatment), resulting in damage to the blood vessels pulpy.Krovoizliyanie causes penetration into the dentinal tubules where it releases hemoglobin. Disintegrating, hemoglobin releases ions Fe2 +, which contacting with oxygen to form iron oxide. Sometimes oxides combine with sulfur to form a dark gray iron sulfide. If the tooth is viable, can appear gray or orange shades (the latter are associated with secondary dentin). Significant bleeding tooth changes color from red to pink and orange. The subsequent necrosis of the pulp tissue and iron compounds give a brown, blue and finally gray okrashivanie.Nelechenye teeth with pulp that has lost viability due to infection (pulp necrosis, apical periodontitis) can significantly iz Significant bleeding tooth changes color from red to pink and orange. The subsequent necrosis of the pulp tissue and iron compounds give a brown, blue and finally gray okrashivanie.Nelechenye teeth with pulp that has lost viability due to infection (pulp necrosis, apical periodontitis) can significantly iz Significant bleeding tooth changes color from red to pink and orange. The subsequent necrosis of the pulp tissue and iron compounds give a brown, blue and finally gray okrashivanie.Nelechenye teeth with pulp that has lost viability due to infection (pulp necrosis, apical periodontitis) can significantly iz
change color in the gray-brown tonah.Chasto cause staining of teeth is iatrogenic factor.
To avoid this problem during endodontic treatment is necessary to observe the following rules:
- should be removed undercuts the roof cavity of the tooth and the entire coronal pulp. This is especially significant for the first maxillary incisors, in which the closer to the cutting edge or side portions of the tooth pulp cavity remains, which decomposition products are stained tooth;
- tooth restoration after endodontic treatment must be performed in the next visit;
- materials for filling a tooth root canal must be within the channel, its mouth is to be opened (free of gutta percha and sealer) and securely sealed. For anterior teeth intracanal filling material shall be projected onto the gums at or near the apex kornya.Nesoblyudenie above rules is the most frequent cause staining pulpless teeth. Uncured root canal sealer makes impossible the adhesion of restorative or cushioning material in the tooth cavity. As a rule, the situation is complicated plohoobrezannaya, charred gutta-percha, formed after the restoration of the free space in which the infection develops actively. These errors, in the best case, is tooth-colored, however,
kanalu.K tooth root of the tooth can cause staining of some use for root canal sealers, such as resorcinol-formalin paste, a paste having a composition of iodoform, «Endomethasone» (not «Endomethasone ivory»), especially if these substances are left in the cavity tooth. Using silver pins may cause black coloration due okisleniya.Chasche often affects root zuba.Primenenie as amalgam restorative material may cause pigmentation dentin and impart a bluish-gray tint zubu.V some cases, due to ion displacement or corrosion may change the color of the surrounding tooth mucosa shell.
In particular, it is promoted defects dental abrasion exposing dentin. Furthermore, organic elements mezhprizmennyh pro-
enamel spaces capable of reacting with hydroxyl and amino groups
dyes. Binding pigments with calcium ions forms the dental tissue
new molecules that differ in size and give other optical ef-
fect. For instance, quercetin pigment contained in tea, has five hydro
ksilnyh groups forming stable attachment to mezhprizmennym
organic substances. In this case the mechanical cleansing of the tooth is not Dos
tatochno efficiently to eliminate such coloration is necessary chemical
cal whitening.
Sources of pigmentation are:

- all forms of tobacco (cigarettes, pipe tobacco, chewing);
- drinks and food with natural or artificial colors
(Coffee, tea, red wine, blueberries, blackberries, soy sauce, etc...);
- local effect drugs (chlorhexidine);
- chromogenic bacteria that cause green, brown or black
staining (usually in the cervical area in children);
- metal oxides exhibit significant exo- and coloring endogenous activity (chronic mercury poisoning, mercuric chloride, lead).*Age-related changes in tooth color* It is an illustrative example of the combined influence of different reasons. It includes a physiological change in the structure of the tooth plus a long-acting chemical and mechanical factors. Age-related changes affect the entire tooth structure. Enamel thinner, sometimes up to complete disappearance, becomes less transparent. tooth cavity decreases in size, the dentin is exposed to the changes. The hard tissues of the tooth is relatively increased content of inorganic substances in the pulp - fibrous structures. Exposure of the dentine, enamel numerous cracks, gum recession, long-term effects of food pigments, tobacco, medication change all the parameters contribute svetodinamiki teeth. May change color tone of the tooth (e.g., "A" «D» or «C»), increased color intensity (for example, "A3" to "A4"), decrease brightness. Transparency frontal teeth increases due to abrasion and decrease in organic tooth tissues.
Indications and contraindications for tooth whitening
The decision to whiten your teeth or not, depends on the aesthetic needs of the patient. In addition, to change the color of the tooth, in most cases possible to use alternative chemical bleaching techniques or combinations thereof, however indications for this method are always relative. Most often, teeth whitening resorted those who have tooth surface is resistant unnatural tsvet.Ispolzuya modern bleaching methods can significantly alter the color of teeth. Measures to improve the color of teeth can be directed against the outside and against the inner staining, as well as to improve the natural color of teeth. Bleaching performance largely depends on the cause of the violation of color. Respond well to whitening teeth violations colors associated with surface staining (pigment raids, dental plaque), age-related changes, staining dentin from the pulp chamber. Among the clinical situations worse amenable to bleaching include inborn errors of tooth-colored fabrics, high transparency of fabrics, dyeing the exposed dentin from the cavity rta.Protseduru chemical bleaching of teeth belong to the list of aesthetic dentistry. It is not directed at restoring the function or chewing tooth dentition in general, it does not contribute to primary, secondary or tertiary prevention of dental diseases. However, the bleaching technique in some cases are able to eliminate the aesthetic disadvantage thereby increase the level of social adaptation and quality of life. In some cases, the patient may be a need for clarification of unstained teeth. Most Europeans teeth belong to the tone (hue) "A" and have A3 A3,5 intensity depending on group membership and jaw, however, patients with such teeth or even lighter, may require bleaching. Usually this need arises due to professional or social reasons. For example, the maximum light teeth may be necessary or singers sotsi-
cial group with high income made have a "whiter" ulybku.Vmeste with this increase in cases of chemical bleaching unstained teeth can facilitate advancement of this technique include its private dentists patsientov.Takim manner, the chemical bleaching the teeth may be carried out in the following cases:
1. The color of the tooth of the patient is different from the adjacent teeth.
2. There staining of teeth or groups.
3. Staining missing teeth, the patient wishes to have more light teeth.
However, it should be noted that the procedure of teeth whitening is not for everyone.
contraindications are to bleaching:
- severe general diseases (diabetes, neuro-psychiatric diseases and cancer);
- Multiple dental caries;
- periodontal disease tissue to be treated;
- the presence of dentures, crowns, restorations of photopolymer on the frontal area;

- a significant loss of enamel due to pathological or vozras-
tnoj abrasion, deep cracks on its surface;
-. Availability nude gingival portions of the teeth, erosions, etc. (in
this case, the whitening will lead to the development of hypersensitivity
teeth);
- patient flow rate of orthodontic treatment (the teeth The relative
belyatsya unevenly);
- smoking (after bleaching can occur even stronger
color change);
- Pregnancy and lactation;
- minor patients;
- patients who have allergic reactions to drugs and materials used (mainly for peroxy compounds and latex) .Vneshnee eliminated staining teeth using professional hygiene. Prevention of dental plaque and tartar should be performed in all patients. This procedure is very often possible to achieve good aesthetic results, although it is not bleaching. If the intrinsic staining occurs, or conducted after removal of dental plaque patient is not satisfied with the color of the teeth to be applied whitening.

CLASSIFICATION whitening techniques

Currently the following methods to change the color of natural teeth are used in the dental practice:
- microabrasion;
- chemical bleaching;
- direct composite restoration;
- indirect restoration:
- veneers (ceramic, composite);
- crowns (metal-ceramic, metal-composite, all-ceramic, composite, plastic).

Selection of method depends on several parameters:
- the intensity of staining of the teeth;
- prevalence of staining;
- staining depth;
- the cause of staining;
- the level of the patient needs to change the color of teeth;
- the cost of treatment.

Often for a considerable discoloration of teeth patient must sequentially apply two or more of these techniques (e.g., microabrasion, chemical bleaching, manufacture of veneers) .Sovremennye chemical methods of tooth whitening are classified as follows:
- professional whitening:
- external (for vital teeth);
- internal (devitalized teeth);
- home bleaching;
- mixed bleaching.

Whitening agents different from each other and the concentration of different consistency agent, its exposure time on teeth, and the use of additional physical factor that activates the bleaching component (laser, UV rays, a halogen light, heat).

The essence of all modern techniques It is the same: the substance, which is released during the decomposition of oxygen penetrate into hard tissue of the tooth (dentin and enamel) and oxidize organic matter, coloring tooth, and
denatured proteins also included in the pigment, making the teeth less tissue
transparent and optically lighter. This process is fundamentally different
by the action of acids, demineralized dental tissues.

Professional Whitening

A significant proportion of patients prefer whitening in the dental office than home whitening. They are attracted by the speed of achieving results and effectiveness of the procedure. Some of the patients are not able to properly carry out whitening using splints at home because of their employment, negligence and so on. N. The difference between professional whitening from home is not only the concentration of the drug (10-20% instead of 35-40%), but also in duration of the procedure.

Professional whitening performed in a clinic high concentrations of peroxide compounds and leads to faster results.

indications for the meeting may include the following:

1) if you need quick results;
2) the patient wants whitening performed at a hospital;
3) required to bleach the individual teeth;
4) there is express or difficult to remove staining;
5) patient increased pharyngeal reflexes;
6) the patient's bruxism or TMJ disorders.

Success depends on the bleaching carefully diagnostic procedure performed with the elucidation of the etiology teeth pigmentation individual symptoms and determining proper therapy technique, which will most effectively eliminate active defekt.Suschestvuyut various methods of whitening teeth in the dental office. Used for bleaching a variety of drugs, all based on the use of a highly concentrated solution of hydrogen peroxide or a gel. Some gels and solutions only activated by chemical reaction, the other - under the influence of heat or light energy. Furthermore, existing bleaching techniques in the dental office provide different performance results.

To professional methods include whitening teeth already had a root (internal) and vital (external) otbelivanie.Professionalnoe whitening performed in the dental office. For this method frequently used gels or solutions of 30-37% concentration of hydrogen peroxide with oral mucosal protection cavity. At the core of the chemical bleaching are the oxidative processes that occur as a result of exposure to atomic oxygen on natural fabrics

teeth. In addition, to activate the bleaching agent dentist may use a laser or a special lamp. Laser technology involves the use of argon or diodovogo lasers, and allows you to get a lighter shade of the enamel without harm to its structure and chemical composition. Please be aware that the laser does not whiten teeth, it just speeds up the oxidative action of hydrogen peroxide. Because it uses high concentrations, the mouth should be carefully prepared for the procedure. The course may include several sessions, although the whitening effect in bolshinstvapatsientov usually seen already in the first visit. This process can be

applied as a dental arch as a whole, and to separate the tooth. When the outer surface of the insulated bleaching dentition coated bleaching agent, which is then illuminated with a halogen lamp, creates the effect of slightly perceptible heat.

Internal bleaching one tooth

It refers to professional whitening. Bleaching pulpless teeth carried by the pulp chamber. The technique is based on filling the pulp chamber of a tooth, a change in color, a paste-like mixture. The need for it arises, if there is a tooth injury, discoloration as a result of the use of silver points, previous endodontic treatment. The first experiments of the internal teeth whitening inanimate held almost as old as attempts in natural teeth. Garreton proposed chemical treatment based on sodium hypochlorite even in 1895 g. Spasser (1961) introduced the practice of a mixture of sodium perborate and water based Sylva work that has reached the first clinical success with this bleaching

agent in 1938 g. Grogan also confirmed oxidizing quality perboratanatriya in 1946 In 1958 g. Pearson used teploaktiviruemuyu hydrogen peroxide, whereas Nutting and Po (1967) described his technique combined by mixing hydrogen peroxide and sodium perborate. Last razno-

visibility outpatient treatment has been used for a long time, but many authors have pointed out the danger of this procedure (Rotstein et al, 1991). According to these authors, under certain

circumstances, still remains unclear after treatment cervical resorption occurs, affecting 10-15% of the treated teeth. The exact cause of this bone resorption are still not clear, but apparently, the responsibility for this lies with the hydrogen peroxide, or rather at an acidic pH, which it attaches to the solution. This resorption occurs only through 5-15let after treatment. In view of all this information, and especially in the light of modern knowledge, caution should be exercised when using hydrogen peroxide. Patients treated with only sodium perborate, did not suffer from the same shortcomings. Authors simultaneously stopped using hydrogen peroxide more than 5 years back in favor of a mixture of sodium perborate and water proposed Spasser (1961). This is a simple procedure that includes several etapov.Posledovatelnost manipulation by internal bleaching is as follows: it is necessary to close the tops of obturated root canal, with the obligatory radiological control. Good clean tooth and determine its color. The deepening of the root canal is done at the level of the gingival margin, the channel is sealed with glass ionomer cement. The cavity left tooth whitening substance from the swab. Then the tooth is closed airtight bandage made of cement for 3-5 days. The next visit is controlled by the result. If necessary, the procedure is repeated until the doctor will not achieve the desired result. The final treatment of the tooth (restoration) is carried out not earlier

It is pointed out that internal bleaching may lead to fracture of the tooth crown or root resorption in the gums (high concentration, temperature, no gasket) .In connection with the fact that not in all cases can be carried whitening (contraindications exist, referred to earlier) resorted to direct dental restoration - restoration of color, transparency, shape using composite filling materials or izgotovleniyuortopedicheskih designs.

Energy methods of teeth whitening

Under energetic bleaching realize whitening teeth in the dental office by using a light source or heat energy. One of the oldest methods of bleaching power is the procedure used for over 30 years, which uses 30-35% solution of hydrogen peroxide and a strong source of light and thermal radiation. As such a source of some doctors use photo light high power, others - a special whitening tool "Porthole» (Union Broach). Although effective, this method is gradually receding into istoriyu- due to the fact that as a result of overheating of dental pulp there is a large number of teeth oslozhneniy.Pulpa, being sensitive to the yellow and red light spectrum, absorbs thermal energy released porthole, which often leads to its overheating with subsequent necrosis. Contemporary sources produce light blue spectrum to which the pulp of the tooth is least sensitive. bleaching procedure consists of common elements, a careful implementation of which is necessary for the success of certain stages lecheniya.Suschestvuyut whitening irrespective metoda.Etap 1. After production of images of the patient smiles and determining the color of teeth must be cleaned from the surface coating. This can be achieved by brushing the teeth with a toothbrush and toothpaste, or can be used sandblasting apparatus. If the patient had just completed orthodontic treatment, carried out with a bracket system, it is important to thoroughly clean the teeth from possible cement residues and composite bonding. Contemporary sources produce light blue spectrum to which the pulp of the tooth is least sensitive. bleaching procedure consists of common elements, a careful implementation of which is necessary for the success of certain stages lecheniya.Suschestvuyut whitening irrespective metoda.Etap 1. After production of images of the patient smiles and determining the color of teeth must be cleaned from the surface coating. This can be achieved by brushing the teeth with a toothbrush and toothpaste, or can be used sandblasting apparatus. If the patient had just completed orthodontic treatment, carried out with a bracket system, it is important to thoroughly clean the teeth from possible cement residues and composite bonding. Contemporary sources produce light blue spectrum to which the pulp of the tooth is least sensitive. bleaching procedure consists of common elements, a careful implementation of which is necessary for the success of certain stages lecheniya.Suschestvuyut whitening irrespective metoda.Etap 1. After production of images of the patient smiles and determining the color of teeth must be cleaned from the surface coating. This can be achieved by brushing the teeth with a toothbrush and toothpaste, or can be used sandblasting apparatus. If the patient had just completed orthodontic treatment, carried out with a

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Step 2. Isolation gums, oral mucosa and tongue soft tissue of the lips and cheeks by means koferdama, special adhesive wax, polymer materials and the retractor locking cheeks and tongue. The use of such barriers promotes delimitation surgical field, prevents the penetration of hydrogen peroxide in tooth periodontal space, protects tissues from the effects of oral bleaching agents, heat and light. In some cases protivozagarnogo shows an application of a cream that is applied to the surface of the lips, cheeks, gums, as well as on the skin around the mouth. the patient's eye glasses protected with orange filters. tooth whitening procedure usually does not cause great discomfort or severe pain. In this case, the use of any type of anesthesia is contraindicated, t. To. the doctor needs to know the response and feel of the patient during the bleaching procedure. In the case of insulation integrity violation occurs probability wicking hydrogen peroxide under the barrier. In this case, the patient may feel a burning sensation on the gums or even pain. In the event of such symptoms physician can easily remove the arising defekt.Etap 3. application technique bleaching solution or gel. to the teeth

applied to hydrogen peroxide solution is applied with a brush or gauze, impregnated abundantly peroxide. Some methods involve mixing the hydrogen peroxide with a booster, which forms a viscous foam, solution deposition technique simplifies the teeth. Application of whitening gel, usually presents no technical difficulties. Most companies produce gels immediately ready for use. The gel is applied to the teeth directly from the syringe in which it is packaged. Other gels must be prepared immediately before use. Most often, two or three components must be mixed together. Such gels are applied with a brush or a special applicator. Gels are applied uniform layer 2-5 mm thick. Generally, most methods envisages repeated application of the bleaching agent.

Stage 4. Activation of the hydrogen peroxide with light or heat. In the case of lamps for light curing composite materials, several commercial devices and lasers each tooth is processed separately in the light for 1-5 minutes. Modern setting, such as BriteSmile, LumaArch, Zoom, illuminate both dental arches at the same time. Exposure time is 8 to 20 minutes per cycle. A number of companies releasing bleaching gels that do not require the activation of a light or heat energiey.K These include Virtuoso Lightning Gel, Hi-Lite, Illumine In-Office and others. Bleaching process occurs mainly by a chemical reaction.

Step 5: After completion of the spent bleaching gel barrier and all insulating materials are removed from the mouth. The teeth and the mouth rinsed copiously with water. In some cases, teeth can be polished polishing discs and heads. For the purpose of prevention of tooth hypersensitivity, especially when repeated bleaching, it is advisable to use gel 1,1% neutral

sodium fluoride. After the procedure, the patient should be given detailed advice about the nature of power in the next 24-48 hours. Refraining from smoking and drinking tea, coffee, red wine and other foods, coloring their teeth for two days, it is a prerequisite for maintaining good whitening results.

The systems used for teeth whitening in the dental office

LaserSmile. Modern methods of laser teeth whitening. A laser beam activates a special light-sensitive bleaching gel, the composition of which is the secret of the company. Convenient tip allows whiten teeth of the upper and lower jaws 45 minutes without causing any discomfort to the patient. The system is suitable not only for bleaching but also for working on soft oral tissues. BriteSmile. Tech Professional Teeth Whitening developed about five years ago by former NASA experts. Photosensitive whitening gel comprising 15% hydrogen peroxide. Installing the blue spectrum produces a light and allows you to simultaneously whiten teeth of both jaws, including second premolars, the procedure takes about one and a half hours. Due to the widely advertised the company's marketing program, this kind of bleaching is carried out more than 3,700 dentists in the United States and beyond rubezhom.PowerGel. Currently available in four varieties:

RowerGel Arch, PowerGel Diode, PowerGel Halogen, PowerGel Plasma Arc. Each gel is designed for use with a particular light spectrum allocated apparatus for whitening teeth. Each gel formulation allows it to optimally conduct the heat to activate itself and at the same time to reduce the absorption of thermal radiation of the tooth. Photosensitive activator gel changes color to indicate the termination of the bleaching action. Rembrandt Virtuoso Lightening Gel. Contains 35% hydrogen-peroxide

yes, fluoro and ingredients that reduce the increased tooth sensitivity.

Soft oral tissue isolated using Paint-on Dental Dam - po-

limernogo svetootverdevayuschego material. This blocking material ob-

possesses high fluidity, so when it is applied around the tooth neob-

walk light treatment for 5-10 s. The gel is applied directly

from the syringe, where it is stored in a layer at least 1 mm thick. gel activation

viruyut using a lamp, preferably type plasma arc, used for svetootverdevaniya composite for 5 seconds on each tooth. The activation is repeated seven times, adding new portions of the gel to areas where it is needed. It is necessary to conduct three such cycles, then remove the gel and rinse the mouth. During the procedure, increased tooth sensitivity observed rarely. The company is currently working on releasing a special plasma arc installation _____, which will allow for the processing of light gel quickly. Opalmence Xlra. 35% solution of hydrogen peroxide gel contains carotene, which gives it a bright orange color, which theoretically should contribute to a better light absorption and increase the activity of the hydrogen peroxide. White Glitter OpalDem blocking material hardens under the action of light. The material is applied directly around one tooth of a syringe and treated with light for several seconds. After applying the block on all teeth made light treatment for 20 s. After the procedure insulating material is easily separated from the teeth and mucosa in one block. The gel is also in a syringe, from which is applied to the teeth. In this case layer thickness must be at least 1 mm. The gel is activated for any 20-30 c using a halogen lamp, or a 3-5 - by using plasma arc lamps. After light activation for 10-15 minutes the gel is removed and the mouth is rinsed with water. It is recommended to carry out three cycles. During the procedure, increased tooth sensitivity occurs relatively rarely. Illumine. The bleaching gel consists of 30% hydrogen peroxide solution in the same syringe, and mixtures kopolimernogo powder maleik anhydrate and ester metilvenilovogo located in another syringe. When mixing the substances from the two syringes in the hydrolysis is produced a semi-solid from which easily and quickly released hydrogen peroxide. Both syringe interconnected. For kneading required some skill. It should squeeze the contents of one syringe (hydrogen peroxide) to the other, where the powder. Then all contents of the second syringe is sucked back into the first syringe, which was originally hydrogen peroxide. This procedure is repeated several times. After mixing concentration of the active gel becomes equal to 15%. The syringe is

detached from the gel, and its contents are squeezed out in a matrix. After about 2 minutes, the gel becomes cloudy and gradually begins to harden. In this step, a matrix is applied to the teeth. Because the gel has a sufficiently thick, rezinoobraznuyu consistency, then for proper installation of matrix necessary to apply a certain force. Excess gel cleaned using a trowel so that the gel is not in contact with the gum. Exposure time - 30-45 minutes. At this time, the patient may be out of the office, that is. To. Any special monitoring him from the staff not trebuetsya.Posle after 45 minutes of the matrix are removed. Typically, the gel remains on the teeth in the form of rezinoobraznoy mass and require 15-20 minutes to clean teeth using hand tools and floss. The mouth is rinsed with water. In conducting the hypersensitivity of the teeth occurs frequently. In a study conducted Reality, tooth hypersensitivity was observed in almost 50% patsientov.Zoom. The new system of teeth whitening in the dental office, established by DISCUS DENTAL. It uses a 22% hydrogen peroxide gel with a photosensitive activator. The light source can simultaneously activate the gel on the teeth of both jaws. The kit also includes a bleaching materials for home whitening gel. First, it provides a thorough insulation oral soft tissue and skin to prevent active substances. Then, the teeth are covered with special preparations that contain mineral substances (calcium fluoride). These substances penetrate into hard tissue of the teeth by preventing the occurrence of hypersensitivity, which in rare cases can occur after the bleaching procedure. Thereafter teeth firm gel is applied, which includes hydrogen peroxide and established by DISCUS DENTAL. It uses a 22% hydrogen peroxide gel with a photosensitive activator. The light source can simultaneously activate the gel on the teeth of both jaws. The kit also includes a bleaching materials for home whitening gel. First, it provides a thorough insulation oral soft tissue and skin to prevent active substances. Then, the teeth are covered with special preparations that contain mineral substances (calcium fluoride). These substances penetrate into hard tissue of the teeth by preventing the occurrence of hypersensitivity, which in rare cases can occur after the bleaching procedure. Thereafter teeth firm gel is applied, which includes hydrogen peroxide and established by DISCUS DENTAL. It uses a 22% hydrogen peroxide gel with a photosensitive activator. The light source can simultaneously activate the gel on the teeth of both jaws. The kit also includes a bleaching materials for home whitening gel. First, it provides a thorough insulation oral soft tissue and skin to prevent active substances. Then, the teeth are covered with special preparations that contain mineral substances (calcium fluoride). These substances penetrate into hard tissue of the teeth by preventing the occurrence of hypersensitivity, which in rare cases can occur after the bleaching procedure. Thereafter teeth firm gel is applied, which includes hydrogen peroxide and The light source can simultaneously activate the gel on the teeth of both jaws. The kit also includes a bleaching materials for home whitening gel. First, it provides a thorough insulation oral soft tissue and skin to prevent active substances. Then, the teeth are covered with special preparations that contain mineral substances (calcium fluoride). These substances penetrate into hard tissue of the teeth by preventing the occurrence of hypersensitivity, which in rare cases can occur after the bleaching procedure. Thereafter teeth firm gel is applied, which includes hydrogen peroxide and The light source can simultaneously activate the gel on the teeth of both jaws. The kit also includes a bleaching materials for home whitening gel. First, it provides a thorough insulation oral soft tissue and skin to prevent active substances. Then, the teeth are covered with special preparations that contain mineral substances (calcium fluoride). These substances penetrate into hard tissue of the teeth by preventing the occurrence of hypersensitivity, which in rare cases can occur after the bleaching procedure. Thereafter teeth firm gel is applied, which includes hydrogen peroxide and First, it provides a thorough insulation oral soft tissue and skin to prevent active substances. Then, the teeth are covered with special preparations that contain mineral substances (calcium fluoride). These substances penetrate into hard tissue of the teeth by preventing the occurrence of hypersensitivity, which in rare cases can occur after the bleaching procedure. Thereafter teeth firm gel is applied, which includes hydrogen peroxide and First, it provides a thorough insulation oral soft tissue and skin to prevent active substances. Then, the teeth are covered with special preparations that contain mineral substances (calcium fluoride). These substances penetrate into

hard tissue of the teeth by preventing the occurrence of hypersensitivity, which in rare cases can occur after the bleaching procedure. Thereafter teeth firm gel is applied, which includes hydrogen peroxide and
Special svetoaktiviruemy catalyst. Stationary lamp that
emits light of a certain wavelength is set so
that the light flux covers simultaneously the upper and lower teeth.
The procedure lasts one hour. Thereafter teeth again coated preparation
based on calcium and fluoride.
LumaWhite. 30-35% solution of hydrogen peroxide gel for use with
Luma Arch system. The gel is prepared by mixing the peroxide solution vo
portly powder whose composition is not reported to yield zheleobraz-
hydrochloric consistency. whitening procedure takes about half an hour.
In order to keep the acquired white teeth after the procedural
fools bleaching as long as possible, it is necessary to strictly observe good oral hygiene, and, on the recommendation of the attending physician, periodically (1 time in 6-12 months) use a tray with a special gel at home. Within 48 hours after bleaching is necessary to observe the so-called "transparent" diet, ie to abandon coloring products -.. Tea, coffee, red wine, chocolate and berries.

COMPOSITION OF tooth whitening

Within a decade after the emergence of materials for home whitening they have been many changes. first-generation materials were presented liquid form, they did not stay in the CVR for a long time and require constant refilling. The second generation, are still available on the market, more viscous gels, and presented in order to prevent leakage of material out and as a consequence of soft tissue irritation. They also contain varying concentrations of active substances. The third generation of dental bleaching agents is diverse carriers and colors. Overall improvement in the quality control of dental manufacturers and companies, together with qualitative changes of packaging and instructions for patients, making these drugs much more "friendly" to the buyer.

Content bleaching gels:

- carbamide peroxide;
- hydrogen peroxide and sodium hydroxide;
- materials that do not contain hydrogen peroxide, sodium perborate ie,..
- zagustitel- Carbopol or Polyx;
- urea;
- nositel- glycerol, glycol, dentifrices;
- surfactants and pigment dispersants;
- preservatives;
- flavoring agents;
- fluorides (in some products to reduce the possible increased sensitivity).

COMPONENTS OF BLEACH GELS

carbamide peroxide

Carbamide peroxide ($CH_6N_2O_3$) in 10% aqueous solution is used in most home bleaching kits. It decomposes to 3.35% strength solution of hydrogen peroxide (H_2O_2) and 6.65% strength solution of urea (CH_4N_2O). 15 and 20% solutions of carbamide peroxide are available for home whitening under the supervision of a physician. A 15% carbamide peroxide releases 5.4% hydrogen peroxide and 20% -naya- one allocates 7% hydrogen peroxide (Fasanaro, 1992). 35% carbamide peroxide solution is available as a product Quickstart (Den Mat Corp. Santa Ana, CA) and Opalescence Quick (Ultra dent Products Inc., South Jordan, UT). They are positioned in the market as
preparations for whitening treatments in the doctor's office prior to use by patients home whitening kit. From such a 35% strength solution obtained 10% solution of hydrogen perekici. Because of the possibility of damage to soft tissue, they should be used with rubber dam or

insulator soft tissues. The difference in bleaching efficiency of different concentrations of drugs is not yet fully explored until the end (Haywood and Heymann, 1991).

Clinical activity №15

Topic: teeth whitening method

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	To investigate whitening methods
The task of the training session:	- To introduce students to the method of teeth whitening - To teach students methods of teeth whitening - Teach students to correctly and consciously carry out whitening techniques zubov.Soblyudat necessary precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking during dif.diagnostiki after mechanical porazheniya.Otvetstvenno approach their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of the teeth whitening technique issues shaping the future of the practicing physician. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical class №16

Topic: Methods of increasing resistance of dental hard tissues

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Teach students the method of increasing the resistance of hard tissue of teeth
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Round table"

Test questions on employment:

1. Kariesrezistentnost
2. dental caries resistance is provided

The text of the practical classes

Kariesrezistentnost - a resistance to dental caries. tooth resistance is formed in healthy people to tooth decay, which is not burdened moved and chronic concomitant diseases and their consequences, to observe the correct diet, with consumption of food that contains all the necessary macro-and micronutrients.

1) Resistance to dental caries is provided by:
2) correct formation and development of tooth tissue;
3) The chemical composition and structure of the tooth enamel and other tissues;
4) Low permeability tooth enamel;
5) A full maturation after the eruption of the tooth enamel;
6) The presence of the pellicle on the tooth surface;
7) A sufficient amount of oral fluid and its composition;
8) The optimum chemical composition of the saliva and its mineralizing activity;
9) good self-cleaning chewing stress and the tooth surface;
10) The properties of dental plaque and plaque;
11) The proper oral hygiene;
12) especially food;

13) Specific and nonspecific protection factors of the oral cavity;
14) The correct tooth primordia formation during fetal development;
15) a timely and complete maturation of the enamel after teething.
Kariesvospriimchivost - this susceptibility dental hard tissues to caries.
Susceptibility to dental caries is provided by:
1) incomplete and defective maturation of enamel after eruption;
2) Incorrect diet in which carbohydrate predominate, but insufficient amounts of proteins, macro- and microelements;
3) Water low fluorine content;
4) Absence of the pellicle on the tooth surface;
5) Abnormalities in the oral composition of the liquid, its concentration, viscosity, quantity and rate of formation;
6) Defective enamel chemical composition, large intercrystalline space;
7) The condition of the tooth pulp;
8) The functional state of the organism during the formation and maturation of tooth tissue;
9) Errors in tooth development due to somatic diseases.
The caries process is progressing, if the speed is reduced salivation, reduced amount of saliva, and increases its viscosity. If a sufficient amount of saliva, it liquid, then the carious process slows down or stops in step spots. High concentrations of macro- and microelements in the oral fluid also suspends caries, if the concentration of the mineral components with a low high content of mucin is observed progression of caries. Smooth, thick enough dense structure with enamel carious slow process. Conversely, the presence of pits, grooves, fissures, folds, grooves, with a thin enamel porous structure contribute to the progression of the pathological process. Very often, tooth decay occurs in the immature fissures, which are risk zones (this includes dental cervical region). Therefore, it is important to seal fissures in the newly erupted permanent molars, it will minimize the risk of tooth decay. Rapid maturation of enamel occurs in mounds and cutting edges for 4-6 months after the eruption. Enamel cutting edge matures in 2 times faster than in the cervical area. Maturation speed fissure is much lower than the mounds and cutting edge, and largely depends on the degree of washing of tooth and saliva closing fissures coating. Full maturation of the large and small fissures of molars occurs in approximately 2 years. Over time, the tooth enamel compacted reduced microspace between the enamel prisms increases toughness and resistance to carious protsessu.Ustanovleno that caries lesion can be significantly reduced by using a number of special substances. The most famous was fluorine, additional administration in which the tooth enamel (provided its low content in drinking water) significantly reduces the increase of caries due to the formation of stable form apatite - fluorapatite and reducing cariogenic plaque activity. Furthermore fluorine anticaries effect is expressed soluble salts of calcium, phosphorus and other substances. Fluorine-containing preparations depending on the type of drug administered by mouth or applied to the surface of enamel. Tablets contain sodium fluoride 0.001 g (yellow) and 0.0022 g (white) of sodium fluoride, a fluorine-based ion - 0.5, and 1 mg respectively. sodium fluoride tablets can be taken with a 2-year-olds and up to 14-15 years. additional introduction in which the tooth enamel (provided its low content in drinking water) significantly reduces the increase of caries due to the formation of stable form apatite - fluorapatite and reducing cariogenic plaque activity. Furthermore fluorine anticaries effect is expressed soluble salts of calcium, phosphorus and other substances. Fluorine-containing preparations depending on the type of drug administered by mouth or applied to the surface of enamel. Tablets contain sodium fluoride 0.001 g (yellow) and 0.0022 g (white) of sodium fluoride, a fluorine-based ion - 0.5, and 1 mg respectively. sodium fluoride tablets can be taken with a 2-year-olds and up to 14-15 years. additional introduction in which the tooth enamel (provided its low content in drinking water) significantly reduces the increase of caries due to the formation of stable form apatite - fluorapatite and reducing cariogenic plaque activity. Furthermore fluorine anticaries effect is expressed soluble salts of calcium, phosphorus and other substances. Fluorine-containing preparations depending on the

type of drug administered by mouth or applied to the surface of enamel. Tablets contain sodium fluoride 0.001 g (yellow) and 0.0022 g (white) of sodium fluoride, a fluorine-based ion - 0.5, and 1 mg respectively. sodium fluoride tablets can be taken with a 2-year-olds and up to 14-15 years. anticaries effect is expressed soluble calcium salt, phosphorous and other substances. Fluorine-containing preparations depending on the type of drug administered by mouth or applied to the surface of enamel. Tablets contain sodium fluoride 0.001 g (yellow) and 0.0022 g (white) of sodium fluoride, a fluorine-based ion - 0.5, and 1 mg respectively. sodium fluoride tablets can be taken with a 2-year-olds and up to 14-15 years. anticaries effect is expressed soluble calcium salt, phosphorous and other substances. Fluorine-containing preparations depending on the type of drug administered by mouth or applied to the surface of enamel. Tablets contain sodium fluoride 0.001 g (yellow) and 0.0022 g (white) of sodium fluoride, a fluorine-based ion - 0.5, and 1 mg respectively. sodium fluoride tablets can be taken with a 2-year-olds and up to 14-15 years.

Clinical activity №16

Subject: Fissure germetiki.Tehnika application.

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	To investigate whitening methods
The task of the training session:	- To acquaint the students the technique of application of fissure sealants. - Teach students fissure sealing - Teach students to correctly and consciously carry out methods of sealing zubov.Soblyudat necessary precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking during dif.diagnostiki after mechanical porazheniya.Otvetstvenno approach their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of method fissure sealing issues shaping the future of the practicing physician. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

Practical class №17

Topic: Methods of sealing fissures

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice

Plan	Familiarization with the subject.
The task of the training session	Teach students the method of sealing of fissures
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Round table"

Test questions on employment:

1. invasive method
2. Non-invasive method
3. dental caries resistance is provided

The text of the practical classes

Methods of sealing fissures

Depending on the state dental tooth surfaces different methods fissure sealing. The essence of this procedure is in anticipation of the development of caries in natural depressions in the chewing surfaces of teeth - fissure tooth. methods for sealing fissures chewing surface of the teeth is not perfectly smooth, on it there are recesses and protrusions to facilitate better chewing of food. It is in furrows on the tooth surface (fissures) and accumulated plaque, which serves the

primary cause of tooth decay. If the grooves are wide and shallow, it does not require sealing, easy to clean your teeth with a toothbrush. Noninvasive fissure sealing the presence of grooves, which can not be cleaned of plaque and food remains only by saliva and toothbrush requires noninvasive fissure sealing. In this case, the operational activities are not provided, are held only standard manipulations: Clean the tooth surface from plaque. Roughening for better securing of the sealant. Sealant Application and its fixation. Depending on the type of hermetic material, the process of hardening is carried out using a special light. If the grooves on the tooth surface covered, to access them for the purification and subsequent filling of the sealant is difficult, the dentist has to use mechanical means for opening them. Invasive fissure sealing Most often invasive fissure sealing is performed on the teeth, the enamel forming process which is close to completion. It was then that the same two factors: the enamel itself is not yet fully matured, and deep fissures and closed contribute to the accumulation of plaque. Mechanical expansion grooves and their subsequent sealing is to solve this problem. Invasive methods are much more preferable than the usual sealing, even in the early stages of tooth decay. Traditional seal closes at least a quarter of the masticatory surface, at the same time, the use of sealants can reduce the area to 5%. Expansion of fissures and alignment of the walls held a diamond bur at full depth. This is necessary in order to properly fill the cavity hermetic gel, as well as uncover hidden pockets of carious lesions, which may have been missed during routine inspection. If in the process of opening fissure caries detected focus, then you must first perform all the necessary manipulations to remove it, and only then make a seal

Clinical activity №17

Subject: Methods of fissure sealing.

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Examine methods sealing fissures
The task of the training session:	- To introduce students to the method of sealing of fissures. - Teach students fissure sealing - Teach students to correctly and consciously carry out methods of sealing zubov.Soblyudat necessary precautions while in the dental office, especially when dealing with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking during dif.diagnostiki after mechanical porazheniya.Otvetstvenno approach their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills. -Knowledge of issues of method fissure sealing issues shaping the future of the practicing physician. The volume of the obtained theoretical knowledge and manual skills in the future will help him to successfully apply them in practice.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and	Clinical analysis, evaluation, interpretation control, question-answer

evaluation criteria:	

Practical class №18

Topic: Protecting history of carious and non-carious lesions of dental hard tissues

Technological models for education

class time: 160 minutes	Number of students: 8-10
Type of classes	Introduction News of practice
Plan	Familiarization with the subject.
The task of the training session	Teach students to protect the history of carious and non-carious lesions of teeth
Teaching methods	Conversation, visual aids for practice
Type of classes	total-collective
Visual aids on	Tutorial, practical material, a projector, a computer
The situation for employment	Methodical equipped classrooms
Monitoring and assessment criteria	recitation

Flow chart of the practical classes

Stages and time occupation (160 min)	Actions	
	Teacher	students
Stage 1. 10 minutes 10 minutes 10 minutes 5 minutes 45 min 10 minutes	 1.1. Check notebooks and posschaemosti 1.2 Explain the topic zanyatiyai expected results. Familiarize lesson plans. 1.3.Rasskazat keywords, references for independent work 1.4. To familiarize with the evaluation criteria during lesson 1.5. It is explained the plan and structure of the practice session 1.6.Peremena	 Listen to write. Define, ask questions, Oznakamlivayuy ut evaluation criteria
Step 2-. 20 minutes 15 minutes 30 minutes 15 minutes	 2.1. rapid test / FAQ / knowledge is strengthened by interaktivnқm 2.2.Razdelyayut students into groups and explain the rules of work 2.6. Give students visual aids for better appropriation of (tests and case studies, models, products, software, phantoms), to give the concept of how to use them to Use 2.7.Delaet the results of the lesson, the analysis of the work done	Meet, they write. They work in groups, groups perform groups perform present

interactive method

Using the method of "Gallery"

Test questions on employment:

1. Writing the history of non-carious lesions of teeth

The text of the practical classes

DATA questioning patients.

COMPLAINTS:
A cosmetic flaw
history of the disease
Permanent teeth to erupt are slain
The dynamics of the disease is not detected, there is stability of existing changes.
Previously, there was no treatment.
ANAMNESIS OF LIFE
The patient performs regular hygienic care of the oral cavity.
There are bad habits: smoking in the last 5 years
Transferred childhood diseases: acute respiratory viral infection, pneumonia, rickets.
Background and related diseases are absent.
Eating a balanced character.
The accommodation in areas with a reduced content of fluorine in drinking water (0.5 mg / l).
Rickets was sick from birth to 4 years
examination of the patient
VISUAL INSPECTION:
The color of the skin of the face and neck is not changed.
face configuration is not changed.
Lymph nodes are not palpable.
Red border of the lips red and moist, turgor saved, without pathological changes and no areas of pigmentation.
INSPECTION vestibule of mouth:
The state of the mucous membrane of the vestibule of pale pink and moist.
Bridle woven into the gum at the boundary of the free and the attached gingiva, the depth of the mouth vestibule of 5 mm.
Orthognathic bite.

Property Inspection MOUTH:

ABOUT														P	ABOUT
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
ABOUT	TO													TO	ABOUT

KPU = 3
INSPECTION Lesions:
Wavy surface enamel, enamel thick, shiny
The localization of the lesion in the vestibular surface of the tooth crown.
The localization of the lesion in the middle of the crown and in the area of the cutting edge
The symmetry of the lesions of teeth.
Soreness in probing the lesion is absent.
Defeat all the teeth
Additional tests
Lesion stained with 2% methylene blue,
Conclusion: The lesion does not stain
RATIONALE FOR THE DIAGNOSIS

Diagnosis: systemic enamel hypoplasia, grooved shape, made on the basis of complaints of the patient on the white and dark spots on the enamel, the data history of the disease, which suggests that the grooves on the tooth surface was observed after the eruption, the data history of life (brought forward early rickets), physical examination data (there are clear limits grooves on the enamel surface stains smooth and shiny, gloss enamel saved) and data of additional methods of examination (EOM = 6mkA, no staining When applying methylene blue).

THEORETICAL PART

hypoplasia(Latin hypoplasia.) - a malformation consisting in hypoplasia of the tooth or tissue. Hypoplasia extreme expression is aplasia, congenital absence of the tooth, part or all of the enamel.

ETIOLOGY

Gipoplaziya dental tissues (enamel often) occurs when the tackle metabolic processes in the tooth buds under the influence of disturbances of mineral and protein metabolism in the body of the fetus or child. Maldevelopment enamel at hypoplasia irreversibly. Enamel hypoplasia often accompanied by a violation of the structure of dentin and dental pulp.

histopathology

Histologically, all forms hypoplasia primarily detected thickness reduction of enamel. Along with this increase mezhprizmennye space Retzius lines extended prisms borders lose their sharpness of outlines. The degree of change depends on the severity of the process. Thus, in point form have a more noticeable changes in dentin: interglobular space area increases, there is dentin intense deposition of substitution. In the pulp reduces the number of cellular elements. Electron-microscopic examination revealed enamel prisms width violation, the orientation of hydroxyapatite crystals. The dentin also disrupted orientation of hydroxyapatite crystals, the structure of dentinal tubules.

CLASSIFICATION

Clinical manifestations:

Color change

enamel hypoplasia

Spot

wavy

striated

The lack of enamel

On the prevalence of:

system

local

CLINICAL PICTURE

Clinically enamel hypoplasia manifests itself as spots, cup-shaped recesses (single or multiple) of different size and shape, or linear grooves of a particular depth and width encircling tooth and arranged parallel to the cutting edge or chewing surface. Given the number of hypoplastic areas can sometimes be clarified how many times encountered such a sharing violation. Sometimes a combination of grooves with the grooves round shape is observed. In some cases, the bottom of the pits or on the hills of premolars and molars the enamel missing.

CLINICAL AND DIAGNOSTIC CRITERIA FOR DISEASE

- clearly limited transverse furrows on the vestibular surface
- single or multiple grooves, alternating with unmodified enamel
- gloss enamel saved
- amazed symmetrically arranged teeth of the same or similar terms of mineralization and eruption

TREATMENT

The nature of the intervention depends on the clinical manifestations. Thus, when single white spots and the treatment can not be carried out. But if the spots or grooves are located on the vestibular surfaces of incisors and are visible during a conversation and a smile, it is necessary to

eliminate this defect. Good results are achieved steloionomernymi filling of cement. When pronounced changes observed in hypoplasia of enamel and dentin, there are indications for orthopedic treatment.
TREATMENT PLAN
Remineralizing therapy by the method Leus-Borowski, calcium and fluoride, filling the defect in the front group of teeth of the lower and upper jaws chemical curing glass ionomer cement Vitro Fil LC.
DIARY OF TREATMENT
02.09.10 - 1 session remineralization therapy. Tooth surface is cleaned mechanically with a brush by plaque toothpaste. Then treated with 0.5% hydrogen peroxide solution and dried air jet. Next, in a modified enamel portion superimposed cotton swabs moistened with a solution of 10% calcium gluconate for 20 minutes, tampons change every 5 minutes. This is followed by application of 2% sodium fluoride solution for 5 minutes. Appointment of calcium glycerophosphate0.5 g 3 times a day for a month, sodium fluoride 0.0022 g 2 times a day for a month.
03.09.10-12.09.10 - repeated sessions of remineralization therapy.
13.09.10 - Filling defect 13,12,11 teeth
14.09.10 - Filling defect 23,22,21 teeth
15.09.10 - Filling defect 33,32,31 teeth
16.09.10 - Filling defect 43,42,41 teeth
PREVENTION
Prevention of systemic hypoplasia is the harmonious development of the child from the first days of life. Of great importance is the warning system diseases accompanied by severe metabolic disturbances.
EPICRISIS
He addressed to the chair restorative dentistry NSMU 02.09.10 with complaints aesthetic disadvantage as transverse grooves on the tooth enamel. From the history of the disease found that the presence of grooves on the permanent teeth observed since the eruption. identified from the medical history, the patient suffered from rickets from birth to 4 years. Based on the data of objective inspection - transverse grooves on the enamel surface defect is smooth and shiny, gloss enamel saved, grooves interspersed with patches of intact enamel and additional data research methods: vital staining - the lesion does not stain. After conducted treatment - remineralizing therapy by the method of Leus-Borowski, 10 sessions, and sealing of glass ionomer cement chemical curing Vitro Fil LC - no complaints.

Clinical activity №18

Subject: Protecting the medical history of carious and non-carious lesions of dental hard tissues.

Technological models for education

class time: 160 minutes	The number of students 8-10
Type of activity:	clinics activity
Plan:	Examine methods sealing fissures
The task of the training session:	- To acquaint the students protected medical history of carious and non-carious lesions of dental hard tissues. - Teach students to write a history of the disease - Teach students to correctly and consciously to write history. Observe the necessary safety precautions while in the dental office, especially when dealing

	with products, solutions, tools. Instill in students a sense of responsibility, good and careful attention to the patient, to interest him, needed to expand The volume of knowledge mastery of practical skills. - to teach students to develop logical thinking in the protection of the medical history of carious and non-carious lesions of hard tissues zubov.Otvetstvenno approach their future profession, to develop critical thinking, which will help him in the future confidently and correctly perform all manual skills.
Teaching methods:	Clinical examination, medical history, to write a history of the disease, the conversation.
Type of activity:	Mass-collective, personal
Visual aids on the topic:	Dental chair, stomalogicheskoe mirror, tweezers, spatula, tray, medical table, alcohol, furatsilin, marlievye balls, sterile gloves
The situation for employment:	Clinically equipped with a simulation study, clinical study
Monitoring and evaluation criteria:	Clinical analysis, evaluation, interpretation control, question-answer

4. Self-employment

Necessary guidelines for the development of self-directed learning activities.

Independent work №2

Methods of sterilization in dentistry

Goal: Teach students independently apply knowledge and skills in practice. The study sterilization techniques, dosterilizatsionnoy preparation and packaging sterilization tools.

Expected results: When the independent work of student studies and learns the chemical, physical and air sterilization methods.

Embodiments of the self-study: presentation (using programs: MS PowerPoint, PromoShOU, Impress, Kingsoft Presentation, ProShow Producer, SmartDraw, Prezi Classic Desktop, VideoScribe, Wink, SlideDog, Adobe Presenter, Hippani Animator), essay, video, flash, animation, stand and other species.

When the self-study is recommended to use sleduyushy sources of information: the Internet, Scientific practical journal Dentistry and other foreign magazines on the subject, basic (1,2,3,4,5,6) and additional (1,2,3,4,5, 6,12,14,17,18,19,21,23) literature.

Independent work №3

Organization of the therapeutic department. Requirements.

Goal: Teach students independently apply knowledge and skills in practice. The study of methods of the organization of the therapeutic department. The requirements placed upon them.

Expected results: When the independent work of student studies and learns the organization of the therapeutic department. Requirements for them.

Embodiments of the self-study: presentation (using programs: MS PowerPoint, PromoShOU, Impress, Kingsoft Presentation, ProShow Producer, SmartDraw, Prezi Classic Desktop, VideoScribe, Wink, SlideDog, Adobe Presenter, Hippani Animator), essay, video, flash, animation, stand and other species.

When the self-study is recommended to use sleduyushy sources of information: the Internet, Scientific practical journal Dentistry and other foreign magazines on the subject, basic (1,2,3,4,5,6) and additional (1,2,3,4,5, 6,12,14,17,18,19,21,23) literature.

Independent work №4

Local factors kariosogennye

Goal: Teach students independently apply knowledge and skills in practice. Studying local cariogenic factors.

Expected results: When the independent work of student studies and learns holding remineralizing treatment of caries in the stage of spot.

Embodiments of the self-study: presentation (using programs: MS PowerPoint, PromoShOU, Impress, Kingsoft Presentation, ProShow Producer, SmartDraw, Prezi Classic Desktop, VideoScribe, Wink, SlideDog, Adobe Presenter, Hippani Animator), essay, video, flash, animation, stand and other species.

When the self-study is recommended to use sleduyushy sources of information: the Internet, Scientific practical journal Dentistry and other foreign magazines on the subject, basic (1,2,3,4,5,6) and additional (1,2,3,4,5, 6,7, 12,14,17,18,19,21,23) literature.

Independent work №5

Common factors kariosogennye

Goal: Teach students independently apply knowledge and skills in practice. The study of general cariogenic factors.

Expected results: When the independent work of student studies and learns conducting fluorination of milk, salt, water.

Embodiments of the self-study: presentation (using programs: MS PowerPoint, PromoShOU, Impress, Kingsoft Presentation, ProShow Producer, SmartDraw, Prezi Classic Desktop, VideoScribe, Wink, SlideDog, Adobe Presenter, Hippani Animator), essay, video, flash, animation, stand and other species.

When the self-study is recommended to use sleduyushy sources of information: the Internet, Scientific practical journal Dentistry and other foreign magazines on the subject, basic (1,2,3,4,5,6) and additional (1,2,3,4,5, 6,7, 12,14,17,18,19,21,23) literature.

Independent work №6

Basic inspection methods

Goal: Teach students independently apply knowledge and skills in practice. Independently collect history, complaints and inspect the patients.

Expected results: When the independent work of student studies and learns how to communicate with patients, collect life history, asking the complaint.

Embodiments of the self-study: presentation (using programs: MS PowerPoint, PromoShOU, Impress, Kingsoft Presentation, ProShow Producer, SmartDraw, Prezi Classic Desktop, VideoScribe, Wink, SlideDog, Adobe Presenter, Hippani Animator), essay, video, flash, animation, stand and other species.

When the self-study is recommended to use sleduyushy sources of information: the Internet, Scientific practical journal Dentistry and other foreign magazines on the subject, basic (1,2,3,4,5,6) and additional (1,2,3,4,5, 6,7, 12,14,17,18,19,21,23) literature.

5. Glossary

STOMATOLOGIC Glossary - Glossary
DENTAL Dictionary - Glossary
STOMATOLOGIChESKIY Dictionary - Glossary

Dentistry- (Zoe. Stoma, stomatos mouth; and logos) is the clinical medicine department of the Members of the field of the teeth, mouth and jaw diseases and bugs etiology, pathogenesis of Sciences, Lavon and measures	**Stomatology**(From the Greek stoma, stomatos mouth ;. And logos - teaching) - this is an area of clinical medicine that studies the etiology, and pathogenesis of disease and damage the teeth, Cavite and oral maxillofacial region,	**Dentistry**- (GRECO. Stoma, stomatos - rot; logos - uchenie) - ETO region klinicheskoy Medicine, kotoraya izuchaet etiologiyu pathogenesis bolezney residential broadband povrejdeniy Zubov, organic

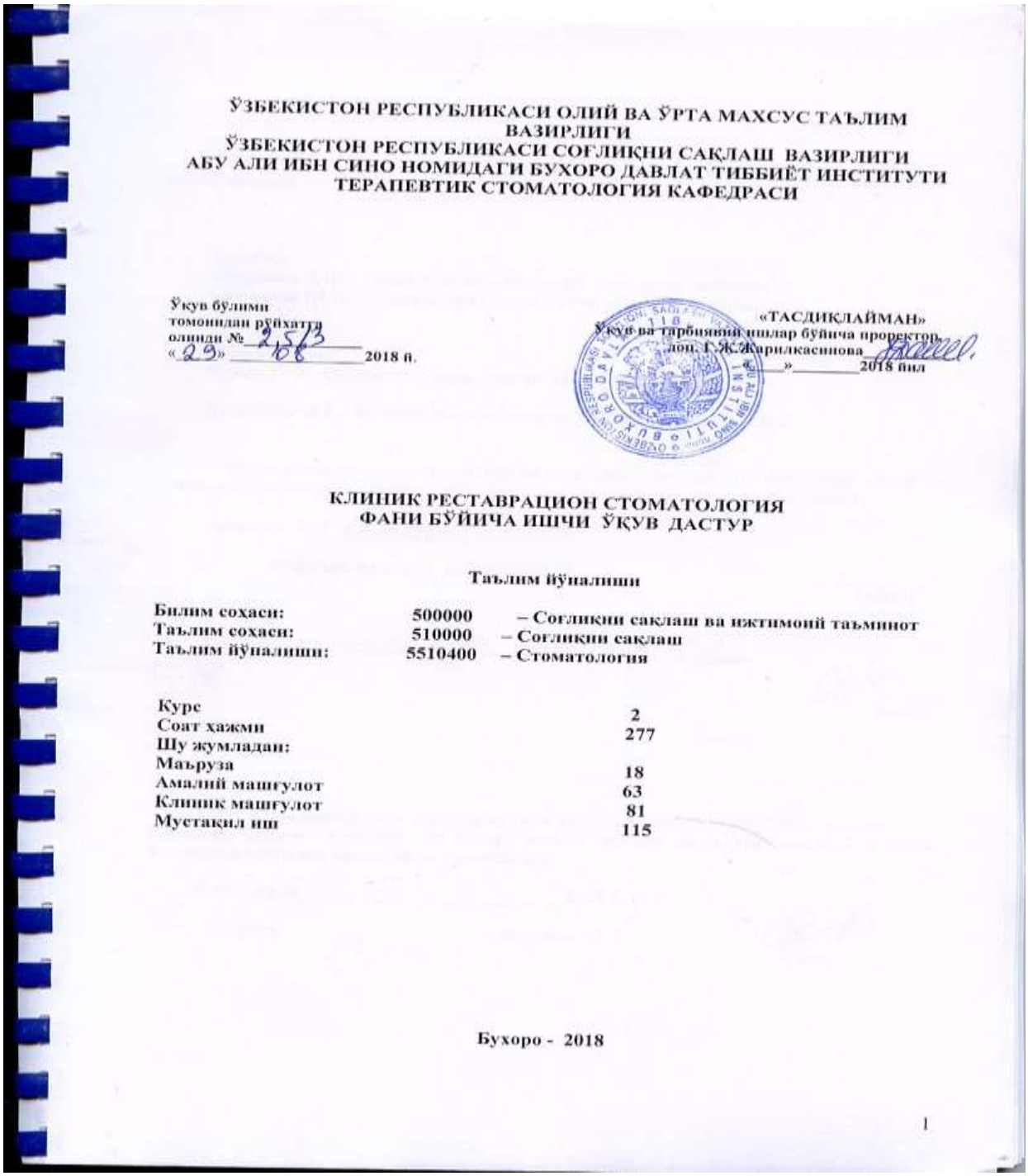
to prevent Olic development.	which is developing methods of diagnosis, treatment and prevention.	chelyustno litsevoy region, kotoraya razrabatyvaet ix diagnostic techniques, prevention lecheniya .
Adgezivlar - stick to the combination of these compounds or creative or enhancement is considered. They are viscous liquid or gel ko'rinshida, is used for fixing the surface of the tooth tissue filler material. They are attached to substances that are known.	**Adhesives**- Enhance a substance or creating a connection, bonding. Is a thick liquid or gel and are used for fixing the clad to the surface of the dental tissues (enamel, dentin) Billy also called binders.	**Adgezivy**- ETO veshchestva, usilivayushchie or sozdayushchie prisoedinenie, prikleivanie. Find Predstavlyayut Cathedral NON jidkosti or helium ispolzuyutsya fiksatsii oblitsovki k poverxnosti zubnyx tkaney (enamel, dentin). The Koran eshche nazyvayutsya svyazuyushchimi veshchestvami.
Adhesion (gluing) bondage and accumulation of material surfaces.	**Adhesion (sticker)**- a grip surfaces of different materials.	**Adhesion (prilipanie)** - ETO stseplenie poverxnostey raznorodnyx materials.
The anatomical shape of the tooth During the development of this tooth shape, round, together with the adjacent teeth for chewing. Each tooth shape vary with the length and the width of the furrows.	**The Anatomical Shape**- a form acquired tooth at the moment of the body, well adapted to conditions in a masticating proximity with other teeth having their particular height, width and the groove on the surface.	**Anatomicheskaya form zuba** - ETO form, priobretennaya Zubov or an integer torque development in the body, the image of nailuchshim prisposoblennaya k jevaniyu usloviyax sosedstva s Other Zubar, imeyushchaya Svoi osobennosti PO Vysotskiy, sweet i c borozdkax or poverxnosti.
drill This sharpening machine, using a special cutting tools designed to sharpen the dental hard tissue. Non-electrical bormashinalar case.	**Drills**- this is your machine, designed for the preparation of special cutting tools of hard tissue of teeth. There are non-electric and electric cars. Electric have different design: standing, floor, wall, laptop. Drills with air turbine designed for the treatment of hard tooth tissue at high Speedy, using high-Strength Alloys of boron and ABRASIVES of high hardness.	**drill** - ETO sverlilnaya Find prednaznachaetsya preparirovaniya Spetsialny rejushchimi instrumentami tverdyx tkaney Zubov. Razlichayut neelektricheskie elektricheskie park. Elektricheskie imeyut raznuyu construction: stoyachie, napolnye, nastennye, portativnye. Find Bormashiny s vozdushnoy turbinoy prednaznacheny obrabotki tverdyx tkaney Zubov nor bolshix oborotax pomoshchi time of the Grand Prix track vysokoprochnyx Splavov abrazivnyx material Fayzullo fmuzaffarov@gmail.com

		tverdosti.
Caries - tooth warned her amazed disease	**caries**- the disease of dental hard tissue	**caries**- ETO zabolevanie tverdyx tkaney zuba
composite- a type of plastic, contains a large amount of inorganic fillers.	**Composite**- a type of plastic with a high content of inorganic filler.	**composite**- ETO type of plastic s Vysoke soderjaniem neorganicheskogo napolnitelya.
Sensitive filling materials- bo'lganashyolar different nature, the crown of the tooth restoration. Old materials: amalgam, cement, plastics period. Advanced composite materials: restavratsion	**Filling materials for teeth**- it is different in its properties to the materials used for the Restoration of the tooth crown. Old generation: Cements, plastic realization. New generation: different types of Restorative composite (slozhnostrukturnyh) materials.	**Find Articles plombirovochnye Zubov**Find -eto razlichnye PO Svoik Properties materials, ispolzuemye restavratsii koronkovoy chasti zuba. Starogo pokoleniya: Amalgame, cement, and plastics. Novogo pokoleniya: razlichnye Vidya restavratsionnyx kompozitnyx (slojnostrukturnyx) materials.
Matrix- Special tselluloid or metal tape, the formation of the contact surface of the teeth fillings.	**Matrix**- a special tape most of Celluloid or metal that covers the tooth and help to form a sealing proper form.	**Matrix**- eto SPETSIALNAYA chashche trace poly or metal tape, kotoraya oxvatyvaet zub i pomogaet formirovat fill the form pravilnoy.
perforation- hole.	**perforated** - Open	**perforation**- otverstie
- with a tooth filling materials, fixing its anatomical shape.	**Sealing**- this is the wrong expression for Cavite filling process, the tooth filling material. Seal - filling.	Plombirovanie-**Find ETO nepravilnoe vyrajenie process napolneniya zuba plombirovochnym broadband services. Fill zapolnenie.**
sharpening - dental hard tissue using those tools, or laser cutting.	**dissection**- a dissection of dental hard tissues with the help of tools, scholarships, or laser	**Preparirovanie**- ETO issechenie tverdyx tkaney zuba s pomoshchyu instrumental, boron or laser.
Restoration of teeth - caries or injury as a result of the loss of tooth tissue.	**Tooth Restoration**- a recreation of tooth hat, lost as a result of caries or trauma.	Zuba restoration -**ETO vossozdanie form zuba, utrachennoy Results karioznogo process or trauma.**
Fissura the crown of the tooth	**fissure**- it is a kind of groove	Fissura-**ETO estestvennaya**

- part of the natural furrows. Fissuralarda to'planilishi remains therefore develop caries process.	(Recess) in the hard tissues of the tooth crown (enamel). Fissures are difficult Hygienic cleansing, which leads to the accumulation of German, and subsequently to the formation of caries defect.	**Borozna uglublenie) (c tverdyx tkanyax treated zuba (enamel). Fissure s Trudy poddayutsya gigienicheskoy chistke tip write down skopleniyu microbes, k i c dalneyshem k Offers karioznogo defect.**
The neck of the tooth - part of the root of the tooth crown and is located in the area of the gum mucosa with extensive dense stands.	**The neck of the tooth**- a tooth area and is located between the root and the crown, and is closely associated with the mucous membrane Gums.	Shane zuba**ETO region zuba, raspolojennaya Mejdu corner koronkoy tesno svyazannaya so slizistoy obolochkoy Desert.**

6. Applications

6.1. THE STANDART PROGRAM FOR THE SUBJECT



ЎЗБЕКИСТОН РЕСПУБЛИКАСИ ОЛИЙ ВА ЎРТА МАХСУС ТАЪЛИМ ВАЗИРЛИГИ
ЎЗБЕКИСТОН РЕСПУБЛИКАСИ СОҒЛИҚНИ САҚЛАШ ВАЗИРЛИГИ
АБУ АЛИ ИБН СИНО НОМИДАГИ БУХОРО ДАВЛАТ ТИББИЁТ ИНСТИТУТИ
ТЕРАПЕВТИК СТОМАТОЛОГИЯ КАФЕДРАСИ

Ўқув бўлими
томонидан рўйхатга
олинди №_2513_____
«29»_____10_____2018 й.

«ТАСДИҚЛАЙМАН»
Ўқув ва тарбиявий ишлар бўйича проректор
доц. Г.Ж.Карилкасимова_____
«___»_____2018 йил

КЛИНИК РЕСТАВРАЦИОН СТОМАТОЛОГИЯ
ФАНИ БЎЙИЧА ИШЧИ ЎҚУВ ДАСТУР

Таълим йўналиши

Билим соҳаси:	500000	– Соғлиқни сақлаш ва ижтимоий таъминот
Таълим соҳаси:	510000	– Соғлиқни сақлаш
Таълим йўналиши:	5510400	– Стоматология

Курс	2
Соат ҳажми	277
Шу жумладан:	
Маъруза	18
Амалий машғулот	63
Клиник машғулот	81
Мустақил иш	115

Бухоро - 2018

1

SESSION

The priority of academic science and higher education recourses

Science Program of the Republic of Uzbekistan the educational standard and qualified according to the requirements of the direction of undergraduate education. This program is based on the requirements of modern teaching technologies in teaching process enacted, the data from the initial application to perform kunikmalarni phantom Studying and kunikmalarni gained through modern medical technology with clinical amaliyo't allows uygunlashtirgan with the administration.
The main dental diseases klinikaviy methods of their diagnosis, treatment and prevention framework containing the prospective general practitioner based on the clinical signs of the disease and its foundation. Restavratsion clinical dental science subjects, 2-III - IV semester course at the expense of science Nazimi.
Training planned medical science, biology and genetics, biophysics, medicine and biological chemistry, normal anatomy, physiology, pharmacology, preclinical subjects such as dentistry restavratsion closely with the illness.
This is the basis for the science subjects and disciplines to specialize in introducing the function.

The purpose of the academic science and mission

The purpose of the teaching of science in clinical thinking ability of students through ustirishga its methods of modern educational technology, which is used in diseases of the teeth fabric causes, mechanisms of development, clinics, diagnostic and comparative diagnoses and treatment methods, and measures to prevent them, and the formation of a hit.
Vazifasi- science department of science knowledge with the students who introduced step by step to go, and kunikmalarni dressing ktslish; applying new technologies Dare process, the students on the clinical thinking and the ability to increase the level of knowledge and care; the student aims to clinical cognitive ability ustirishga standard Moe kunikmalarni assistant-student, student-level phantom mode automatically; AOS diagnosis of diseases of the teeth fabric in the field of science and comparative stage of diagnosis, treatment and prevention methods necessary aspects to provide information about.
Buiicha students' knowledge of science, whenever and skills of the following documents. student:
Practical activities for medical and dentist-professional bodies of the jaw and oral cavity in the field of research methods;
-ukuv, scientific literature and information to do independent work, kunikmalarni independent test and resolve issues;
- caries and nokaries etiology and pathogenesis of the disease;
dental severe diseases of the fabric used in the basic and additional methods of research;
-karies and nokaries filler materials, used in the treatment of the disease; Methods of treatment of diseases of the dental hard fabric;
-karies and nokaries prevention measures, ways to think about the country;
- dental cabinet the following requirements;
Diseases of the dental tissues dental patients, which documents completed form (043-4, 39-Stom);
teeth; Patients with dental tissues diseases, necessarily the main methods (request, the exam is conducted, sensing, percussion, palpation, and determination of the tooth kimirlashini);
Diseases of the dental tissues reborn in dental patients with additional methods (termodiagnostika, EOD conducted rentgenodiagnostika);

remterapiya penetration;
Various Carioca pits charxlashning klinikaviy aspects;
- Various drugs klinikaviy processing aspects of the pits;
Select the type of caries and treatment of diseases of the nokaries;
caries and nokaries treatment of filler materials selection;
The base burns klinikaviy aspects of separation;
The suspension of the filler burns klinikaviy aspects;
permanent filling burns klinikaviy aspects;
Black classification buiicha all Carioca clinic fill the pits; -karioz nokarioz diseases and physiotherapy treatment (eletroforez);
chutkasi teeth and flush the use of braid;
X-ray images and diagnostics;
- After the formation of teeth and prisoners often tissues causes damage nokaries procedures, clinics, comparative methods of diagnosis, treatment and prevention;
- etiology of dental caries visible, classification, comparative clinical diagnosis, treatment and preventive measures ***knowledge and access to them;***
According to the types of caries in dens step bosktsch;
surface, medium and deep caries pits medical treatment;
nokaries diagnosis of diseases;
X-ray image reading;
(cement, composite or other) with the filler material filling embody the restoration;
treatment and temporary filling material, burns and Applications;
they embody the filler material karborund tools such as stone, finish and polish silliklash and finishing;
Creating a contact point;
- measures to prevent caries and diseases of the nokaries favorable ***must be able to kunikmalariga.***

The role of science in the science and production

The faculty of therapeutic dentistry, common practice dentistry medical knowledge is important in the formation of the foundation. He, along with other worldly subjects which surround the dental hard tissue, and it is capable to become pathological processes and disease think about the student clinical development. Because of the public health dental tarkalgangi, the clinical symptoms of the disease and the development of complications, treatment and prevention of disease in the population with a variety of measures indicated a significant influence on it. Particularly widespread in the territory of Uzbekistan, parodentium disease, caries and nokaries kasallillar and other dental diseases, correct diagnosis, correct treatment of common chronic diseases, which can occur in the body, plays an important method of prevention.

The modern science and educational technology

Uzlashtirishlari science students ukitishning advanced and modern methods for the use of new information and educational technologies promotion has great value. Uzlashtirishda science textbooks, educational and methodical feature lectures, complex technology, computer software, electronic materials and modern dental devices, instruments, filling materials, models and videotizimlardan. Practical lessons Moe or advanced technologies used in designing, case-study (of actions). The organization re-developed forms of education: education and training activities of the joint recipients of ways (group and individual) and forms (collective work, team work, group work, individual work) played.
A lecture or teaching and information technology.

"Three-step" interview style

Objective: To determine the patient's problems and to make the right psychological approach to teaching.

The main principles: 2-3 students are divided into small sub-group: the doctor, the patient, the role of experts. Student performing the role of patient diagnosis is delivered in secret. Patient complaints, disease, epidemiological history of the disease, the doctor who knows the patient and the disease may be due to a change in knowledge. A doctor with the patient in 10-16 minutes. Expert participants (patients and doctors) in Section 3 of the following assessment:

1.Nima right?
2.Nima wrong?
3.Qanday to be done?

"Desktop between the pen" mode scenario

Students for a single task. At the same task on the basis of student writing sample of 1, transmits itself into a pen around the table for the next student.

"Sacks" game of cat style

The goal: a deep knowledge of the subject, students will be able to provide.

Principles: Teachers prepare students for questions. During the students on the list in one batch of questions. This special card will be prepared.

Students from the cards. The answer to the questions in writing it. Task of checking for consultants to announce the amount of points and good points.

'Turntables' Nowadays arrangments for the methodical manual

For Business

Specifically spelled printed and situational questions
a series of issues.
Set up a group of students depending on the number of digits.
Clean sheets, ruchkala0r.

Work

Set up a group of students on more than 4 subdivision, which has 3 sub-groups.
Each small group of members of a special sitting at the table clean sheet of paper and a pen tayerlaydilar.
Sheets date, the group number of students, faculty, full name (Written in the name of the house).
One of a small group of students of the envelope. Questions about the same for small groups.
Students stocks questions crushed.
On this question into the circle.
Each crush a student answer sheet goes to the neighbors.
Each student is determined to 3 minutes time.
When the time is satisfied with the work delivered.

All participating students will also discuss the results and choose the most correct answers, answers Prophylaxis max. points simultaneously.
15 minutes of time for discussion.
Students of Mesopotamia part of training to be able to carry on.
Students' scores in the evaluation technique.
Timemagazine the lower part is identified, the leader of the group conducting the house's signature is broken.
The teachers kept the work of students.

The method of the "round table" - a circle around the table given problem or questions on their views and comments by trained through training techniques.
"Round table" method is applied, a table and chairs in a circle. It is a recipient of a one-establish a connection with the "eye" that it will help. There is a round table in spoken and written forms. Oral round the theme of training and education recipients to present their views on the question of a circle and ask each recipient to send us your comments oral incarnate. Says education must listen carefully to all the lessee, if necessary, to discuss all the comments heard after the discussion. Development of the culture of independent thinking and speech development.

"Roundtable" method consists of the following stages:
Will be the subject of training.
Development of training, with the exercise procedure.
Each trained one envelope and write the answers in the group receiving more education, the more "sheets" circulated established in the time allocated for each answer. Education envelope and "sheets," writes his name.
Education envelope and writes on the subject of the question "answer sheet" to answer, and put into the envelope.
The envelope written question goes to the receiver next to the envelope in the direction of education.
Envelope envelope "Responses to the question on the lists," and it puts into an envelope and wrote one of his training goes to the buyer.
Turned around a round table in an envelope, wrote back to the borrower's education. Question wrote on the envelope "sheets" in the nation.
All envelopes shall be collected and analyzed.

"Assessment" -texnologiyasi.
"Assessment" is the center of a person, a self-assessment technology.
"Assessment" - the English word "assessment" ratings, which means "to assess"
The purpose of the students' knowledge through a number of different approaches to assessment, analysis, and self-assessment opportunity to try out for.

Examination Topic (half rate) of the 1-2 test	a problematic situation Topic is clearly based on the life situation, the event as a potential problem, the student staff to find the right solution Your actions ...
symptoms Topic of the scientific opinions, ideas and definitions based on the idea of progress, for example: The scientific basis described in the ... ... lighting and b.	the ability to Topic use of the contents of the life and work skills to the task, for example: Calculate pattern, Fill, Find, compare ...

Fill in the schedule of 'problematic situation'

Problem type of situation	The causes of the problematic situation	Forcing the situation movement

"Hot potato" method.

Objective: Students knowledge of this problem quickly teaches determination, full of blood.
Principles: the teacher stands with his back to the participants and clapped with a pen or a knock on the table. This time, the participants o'zatadilar ball to one another. After a few seconds, knocking a teacher, who has remained in the hands of the ball, this time to stop, that the participant answers the question. If the answer is incorrect, the other participants will be able to answer. The process is repeated several times, that the majority of the participants will be able to answer.

3. The amount of training hours

The volume of hours	Training load distribution on the audience of the amount of training (hours)				independent work
	total	lecture	practical training	clinical training	
277	162	18	63	81	115

4. lectures
4.1. Thematic plan of lectures
Lecture Topic

№	name	hour
1	Therapeutic dentistry aseptic and antiseptic.	2
2	The therapeutic methods of dental patients in clinical research. The tooth enamel and other hard floors of the structure and function.	2
3	Various forms of caries clinic diagnosis.	2
4	Conservative treatment methods .Karies caries prevention.	2
5	Methods for the treatment of various forms of caries operational.	2
6	What happens during tooth development gistogenez nokarioz diseases. Hereditary diseases. Etiology, pathogenesis, classification, clinic, treatment and prevention.	2
7	After nokarioz developing dental diseases. Etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment and prevention.	2
8	Okara .Kursatma the teeth and against the .Kullash methods.	2
9	Restoration of teeth fabric of modern kompazit equipment capabilities against the Primary and .Kursatma	2
	total:	18

Thread 1.
Therapeutic dental clinic patients, methods of tooth enamel, and other functions of membrane structure.
Therapeutic dentistry methods to fill the history of the disease, patients at the clinic, deontology enamel, and other membrane structure, the functions of the caries disease epidemiology and classification approaches. Caries pathological anatomy .To career. Dentin caries. Cement career. Root caries.
References: A: 1.2.6. Q: 8.9-18.21.24.33.

2. Subject to the various forms of caries clinic, comparative tashxisi.Karies the spread of epidemiology .Karies social and demographic omillari.Sulak and tooth-owned agree roli.Karies stages. Various forms of caries clinic, clinical diagnostics usullari.Karies forms of comparative information about the diagnosis.
References: A: Q: 11-18.28 1.2.3

Item 3. caries conservative treatment methods .Karies profilaktikasi.Turli form of conservative treatment of caries tamoyillari.Karies drugs used in the treatment of disease conservative vositalari.Turli form of caries in the conservative treatment methods. References:
References: A: 1.2.3.6. Q: 8-18.22-25.31.
4Turli caries forms of surgical treatment of the subject usullari.Turli form of general principles of operative treatment of caries .Fissur germetizatsiyasi.Karies disease, dental hard tissue to sharpen the criteria and techniques. Carioca pits charxlashning boskichlari.Karioz types of cavities and the type of filler material muvofikcharchlash principles and criteria.

References: A: 1.2.3.6. Q: 8-18.22-25.31.

5. Thread the period of tooth development gistogenez nokaries shall be hereditary kasalliklar.Etiologiya, pathogenesis, classification, clinic, treatment and profilaktika.Tish chikkuniga until the dressing nokaries diseases shall be the period of development. Gipoplaziya. Etiology, pathogenesis, classification, clinic, treatment and prevention. Generation diseases, hereditary diseases, etiology, classification, clinic, treatment and profilaktikasi.Tugallanmagan amelogenez .Tugallanmagan dentinogenez.Tegallanmagan osteogenez.Displaziya. Kapdepon.Marmar disease.
References: A: 1.2.3.7. Q: 8.10-18.22-24.

Item 6 Dentists prisoners after nokarioz developing dental diseases. Etiology, pathogenesis, classification, clinic, diagnosis, comparative diagnosis, treatment and after prfilaktika.Tish prisoners shall be nokarioz kasalliklar.Tishlar pigmentation and sentiments. Etiology, pathogenesis, classification, clinic, diagnosis, comparative diagnosis, treatment and prevention of .Tishlar shift. A wedge of recurrence. Etiology, pathogenesis, classification, clinic, diagnosis, comparative diagnosis, treatment and prevention. The hard fabrics, erosion, necrosis. Etiology, pathogenesis, classification, clinic, diagnosis, comparative diagnosis, treatment and profilaktikasi.Tish injuries. Etiology, pathogenesis, classification, clinic, diagnosis, comparative diagnosis, treatment and prevention. Giperesteziya. Etiology, pathogenesis, classification, clinic, diagnosis, comparative diagnosis, treatment and prevention.
References: A: 1.2.3.7. Q: 8.10-18.22-24.

Mavzu7 teeth against the Okara .Kursatma and .Kullash uslublari.Tishlarni Okara uslublari.Tishlarni okartirishka inactive against kursatmalar.Utkazish texnikasi.Profilaktika.
References: A-1,2,3,6,7,8. Q-1,2,3,6, 10.

References: A: 1.2.3.7. Q: 8-10-18.22.24.30-40

8. The teeth are the subject fabrics, advanced composite materials and restoration capabilities Primary .Kursatma against kursatmalar.Kompozit materials and restoration demonstrates against kursatmalar.kompozit stage of restoration materials. Composite materials with the restoration of the principles of
References: A: 1.2.3.4.7.Q: 8-10-18.22.24.30-40

5. The theme of the practical training plans
III-term

T / R	Themes	practical training	clinical Training
1.	(Dental departments, therapeutic, surgical, Periodontist, physiotherapy, etc.), it jixrzlanishi. Nurses and nurses obligations. Documents. Sterilization.		
2.	Dental patient control methods. Fill the history of the disease and the procedure.		
3.	Caries. Classification. Etiology. Pathogenesis. Caries clinical manifestations of the country.		
4.	Dog stages of caries. Clinic. Diagnosis, comparative diagnosis.		
5	During the acute and surukadi dog caries treatment methods. Retseptura. Methods to prevent the disease.		
6.	Surface caries. Clinic of acute and chronic surface caries diagnosis of any form and comparative diagnosis.		
7.	Depending on the shape of the surface caries and clinical treatment.		
8.	Secondary caries. Diagnosis of acute and chronic forms of the clinic, comparative		
9.	Secondary caries depending on the shape of the clinical course and treatment.		
10.	Deep caries. Acute and chronic forms of clinical, diagnostic, comparative diagnosis. Physical control methods.		
11.	Treatment of acute deep caries.		
12.	Chronic deep caries treatment		
13.	Black class I on the principles of clinical caries cavities restoration capabilities.		
14.	Black class II on the principles of clinical caries cavities restoration capabilities		
15.	Black buiicha dens of class III caries restoration capabilities in clinical principles		
16	Black buiicha dens of class IV caries restoration capabilities in clinical principles		
17	Black buiicha dens of class V caries restoration capabilities in clinical principles		
18	Black buiicha dens of class VI caries restoration capabilities in clinical principles		
	TOTAL:		

IV semester

T / R	Themes	practical training	clinical Training
1.	Treatment of caries disease. Caries and catering. Physical therapy.		
2.	Caries disease, physical therapy methods.		
3.	Caries disease diagnosis and treatment of common errors and complications.		
4.	Caries prevention of the disease. The information about the group of caries preventive factors.		
5	Chikkunga teeth (tooth bud development gistogenezida) until the tooth tissues nokaries diseases appear. Classification. During the development of the tooth bud tooth tissues pathology appear. Gipoplaziya, giperplaziya.		
6.	Fluorosis. Clinic, diagnostics and comparative diagnosis.		
7.	Teeth tukumalarining hereditary diseases. Aetiology, clinic, diagnostic and comparative diagnosis.		
8	After the prisoners shall be nokaries diseases. Giperesteziya, pathological decay. Classification, clinic, diagnostics and comparative diagnosis.		

9	After the prisoners shall be nokaries diseases. A wedge of recurrence, and the erosion of the dental hard tissue necrosis. Clinic, diagnostics and comparative diagnosis.		
10	After the prisoners shall be nokaries diseases. Mechanical injuries of teeth. Clinic, diagnostics and comparative diagnosis.		
11	After the prisoners shall be nokaries diseases. Teeth chemicals injuries. Clinic, diagnostics and comparative diagnosis.		
12	Nokaries local and general treatment of diseases.		
13	Nokaries diseases physical therapy.		
14	Tooth tissues nokaries restoration in patients with clinical principles.		
15	Okara methods of teeth.		
16	Methods of resistance to the tooth tissues.		
17	Fissuralarni germitizatsiya making methods.		
18	Diseases of the dental tissues caries and nokaries on the Protection of the history of the disease.		
	TOTAL:		

5.1. The content of practical training topics

№ lesson	The names of the practical lessons and a summary of the use of new technologies	literatures
1.	Department of therapeutic dentistry. (Periodontist, therapeutic rooms, radiological, physiotherapy treatment room and other rooms) and their equipment. Doctors, nurses, nurse functions. Documents and sterilization. Dental cabinet requirements. Doctors, nurses, nurse obligations. Documenting. Types of sterilization. "Turn the table";Conceptual table of actions; A video Kofferdam	A-1,2,3 K-8-10,11,24,33 I-41-46
2.	Dental diseases control methods.In addition to basic dental patients and control methods. Laboratory methods, information about the types of X-ray inspection method. "Kopdagi cat "; Division; A video of a tooth to determine the elektqo'zg'aluvchanligini	A-1.2 K-8-10,11,24 I-41-46
3	Caries disease process, the clinical benefit of early caries diagnosis.Caries disease process. Caries classification. Discrediting the stage of acute and chronic caries detection and diagnosis, "Turn the table"; Venn diagram, the "map"; A video of caries pathogenesis'	A-1.2 K-8-10,11,15-18,22,24 I-41-46
4.	**Dog stages of caries. Clinic. Diagnosis, comparative diagnosis.** .Stain stage caries remineralizatsiya treatment; remineralizatsiya used in the conduct of medicines; Stain stage of the origin of caries prevention measures tadbirlariMuammoli situation; clusters and conceptual table; A video of the matrix '	A-1.2 K-8-10,11,15-18,22,24,28 I-41-46
5.	**During the acute and surukadi dog caries treatment methods. Retseptura. Disease prevention methods**.. Stain stage of the means used in the treatment of caries treatment formulations. "Assessment"; Venn diagram.	A-1,2,5 K-8-10,11,22,23,24 I-41-46
6.	**Surface caries. Clinic of acute and chronic surface caries diagnosis of any form and comparative diagnosis**.Surface caries clinical kechishii; surface caries clinical symptoms of acute and chronic forms; surface caries diagnosis, "Assessment"; Venn diagrammasiva types of brain storming; Venn diagram and a conceptual chart, local anesthesia (anesthetic, the video instructions)	A-1.2 K-8-10,11,15-18,22,24,28 I-41-46
7.	**Depending on the shape of the surface caries and clinical treatment.**. Where more conservative methods in the treatment of surface caries; surgical methods for the treatment of caries; Error in the treatment of surface caries and	A-1,2,5 K-8-10,11,15-

	prevention of complications and ways to overcome them. "Conceptual" table; SWOT table; Table categories	18,22,23,24 I-41-46
8.	**Secondary caries. Diagnosis of acute and chronic forms of the clinic, comparative**Secondary caries clinical kechishii; Secondary caries and the clinical symptoms of acute and chronic forms; Secondary caries diagnosis. "The problem situation "Lily flower" organizer schedule	A-1.2 K-8-10,11,22,24,28 I-41-46
9.	**Secondary caries depending on the shape of the clinical course and treatment.** Methods for the treatment of secondary caries; Treatment of secondary caries and cavities sharpening sequence; the separatist base and filling method. The difference in acute and chronic deep caries. Antiseptic medicines and classification; The mechanism of action of making a diaper; Each class plays its own advantages. "Who gives more? Who faster? "; Round	A-1,2,5 K-8-10,11,22,23,24 I-41-46
10	**Deep caries. Acute and chronic forms of clinical, diagnostic, comparative diagnosis. Physical control methods** deep caries clinical kechishii; deep caries clinical symptoms of acute and chronic forms; deep caries diagnosis, physical control methods. The treatment of chronic deep caries in a traffic; Making diapers. The sequence of sharpening the treatment of chronic deep caries cavern. "Ourselves"; "Pyramid" diagram and table organizer of the cluster; A video of the oral hygiene measures	A-1.2 K-8-10,11,22,24,28 I-41-46
11	**Treatment of acute deep caries.**Classification of Diseases of the dental hard tissue nokarioz;Developing teeth before nokaries the etiology and pathogenesis of the disease; Diseases of the developing teeth before nokaries Clinic diagnosis "Efficiency, Accuracy, full-blown" method and Venn diagram	A-1,2,5 K-8-10,11,22,23,24 I-41-46
12	**Chronic deep caries treatment.** Classification of Diseases of the dental hard tissue nokarioz;Developing teeth before nokaries the etiology and pathogenesis of the disease; Diseases of the developing teeth before nokaries Clinic diagnosis "Pen" in the center of the table	A-1.2 K-8-10,11,22,23,24 I-41-46
13	**Black class I on the principles of clinical caries cavities restoration capabilities.**Caries about the general concept. Black dens of the Carioca classification. Black class I cavities plays on the principles and specific aspects of it. Charxlashning any information about steps to fulfill the demand. Technologies used: Stom on the pen; 'How?' actions.	A-1,2,3,4,5 K-8-10,11,13,21,22,24,27 I-41-46
14	**Black class II on the principles of clinical caries cavities restoration capabilities.**Black II dens class of Carioca plays specificity of the principle and explanation. "Additional information about the area," a student, to clarify the requirements and specifications. II class selection of plays whose training. Technologies used: 'cluster' actions.	A-1,2,3,4,5 K-8-10,11,13,21,22,24,27 I-41-46
15	**Black buiicha dens of class III caries restoration capabilities in clinical principles.**Black III class to sharpen their dens on the Carioca principles and specific aspects of it. "Additional information about the area," a student, to clarify the requirements and specifications. III class selection of plays whose training. Technology applied to education: Journey through the gallery; Organizers 'cluster'.	A-1,2,3,4,5 K-8-10,11,13,21,22,24,27 I-41-46

IV semester

№	The names of the practical lessons and a summary of the use of new	literature

training	technologies	s
1.	**Black buiicha dens of class IV caries restoration capabilities in clinical principles.**Black IV class to sharpen their dens on the Carioca principles and specific aspects of it. In addition to students for the "playing field" in which case, to clarify the requirements and specifications. IV class selection of plays whose training. Technologies used: Pig in the cats'; 'Cluster' actions.	A-1,2,3,4,5 K-8-10,11,13,21,22,24,27 I-41-46
2.	**Black buiicha dens of class V caries restoration capabilities in clinical principles.**Black dens of V class of Carioca plays specificity of the principle and explanation. Student understanding about the missing wedge-turn, information about V-class service. V class selection of plays whose training. Technology applied to education: Journey through the gallery; Organizers 'cluster'.	A-1,2,3,4,5 K-8-10,11,13,21,22,24,27 I-41-46
3	**Black buiicha dens of class VI caries restoration capabilities in clinical principles.**Reliance on a common understanding about the depth and atypical spaces. Atypical plays reveal specific aspects of atypical gaps and gaps are designed to sharpen the choice of those explanations. Technologies used: Qorbo'ron ',' cluster 'actions.	A-1,2,3,4,5 K-8-10,11,13,22,24,27 I-41-46
4.	**Treatment of caries disease. Caries and catering. Physical therapy.**General treatment guidelines and principles; Physiotherapy treatment guidelines and methods; The physical method of treatment drugs "The problem situation "Lily flower" organizer schedule	A-1.2 K-8-10,1114,22,24,29 I-41-46
5.	**Caries disease diagnosis and treatment of common errors and complications.**Caries all forms of diagnosis and treatment that may arise asorotlar. Caries complications that may arise in the treatment and prevention measures. "Who more? Who faster? "; Round	A-1.2 K-8-10,11,22,24 I-41-46
6.	**Caries prevention of the disease. The information about caries prevention omillarguruxi.**Information about oral hygiene professional; Ftorprofilaktika; "Ourselves"; "Pyramid" diagram and table organizer of the cluster; A video of the oral hygiene measures	A-1,2,6,7 K-8-10,11,14,22,24,25 I-41-46
7.	**Chikkunga teeth (tooth bud development gistogenezida) until the tooth tissues nokaries diseases appear. Classification. During the development of the tooth bud tooth tissues pathology appear. Gipoplaziya, giperplaziya.**Classification of Diseases of the dental hard tissue nokarioz;Developing teeth before nokaries the etiology and pathogenesis of the disease; Diseases of the developing teeth before nokaries Clinic diagnosis "Efficiency, Accuracy, full-blown" method and Venn diagram	A-1,2,6,7 K-8-10,11,22,24 I-41-46
8.	**Fluorosis. Clinic, diagnostics and comparative diagnosis.** Classification of Diseases of the dental hard tissue nokarioz;Developing teeth before nokaries the etiology and pathogenesis of the disease; Diseases of the developing teeth before nokaries Clinic diagnosis "Pen" in the center of the table	A-1,2,6,7 K-8-10,11,22,24 I-41-46
9.	**Teeth tuktsmalarining hereditary diseases. Aetiology, clinic, diagnostic and comparative diagnosis.**The classification of hereditary diseases nokarioz; the causes of hereditary diseases; nokarioz genetic diagnosis and differential diagnosis of the disease is hereditary; nokarioz measures for the prevention of diseases; Assessment techniques	A-1,2,6,7 K-8-10,11,22,24 I-41-46

	"Efficiency, Accuracy, full cluster" method, and the conceptual table	
10	**After the prisoners shall be nokaries diseases. Giperesteziya, pathological decay. Classification, clinic, diagnostics and comparative diagnosis.**Nokaries developing after tooth disease etiology and pathogenesis; Diseases of the developing after tooth nokaries Clinic diagnosis. "Intellectual attack "; Conceptual Table 'video Tooth bleaching methods;	A-1,2,6,7 K-8-10,11,22,24 I-41-46
11	**After the prisoners shall be nokaries diseases. A wedge of recurrence, and the erosion of the dental hard tissue necrosis. Clinic, diagnostics and comparative diagnosis.** Nokaries developing after tooth disease etiology and pathogenesis; Diseases of the developing after tooth nokaries Clinic diagnosis. "Intellectual attack "; Conceptual Table 'video Tooth bleaching methods;	A-1,2,6,7 K-8-10,11,22,24 I-41-46
12	**After the prisoners shall be nokaries diseases. Mechanical and chemicals teeth injuries. Clinic, diagnostics and comparative diagnosis.** . TAfter the work arising from chemical and mechanical causes of injury to the teeth; chemical and mechanical damage clinical and diagnostic methods; Chemical and mechanical trauma first aid, treatment and prevention measures. "Roundtable" "How?" and a cluster of actions; Tooth bleaching methods of the video »	A-1.2 K-8-10,11,22,24 I-41-46
13	**Nokaries local and general treatment of diseases. Physical methods of treatment.**Nokaries local treatment of diseases; nokaries the treatment of diseases in general; nokaries physiotherapy treatment of diseases; Protection of history The house of the round table "; A video of the oral hygiene measures.	A-1,2,6,7 K-8-10,11,14,22,24,29 I-41-46
14	**Tooth tissues nokaries restoration in patients with clinical principles. Okara methods of teeth.** Nokaries developing after tooth disease etiology and pathogenesis; Diseases of the developing after tooth nokaries Clinic diagnosis. "Intellectual attack "; Conceptual Table 'video Tooth bleaching methods;	A-1,2,6,7 K-8-10,11,14,22,24 I-41-46
15	Tooth tissues resistance usullari.Fissuralarni germitizatsiya making methods.Nokaries local treatment of diseases; nokaries the treatment of diseases in general; nokaries physiotherapy treatment of diseases; Protection of history The house of the round table "; A video of the oral hygiene measures.	A-1,2,6,7 K-8-10,11,22,24 I-41-46
16	Diseases of the dental tissues caries and nokaries on the Protection of the history of the disease. TAfter the work arising from chemical and mechanical causes of injury to the teeth; chemical and mechanical damage clinical and diagnostic methods; Chemical and mechanical trauma first aid, treatment and prevention measures. "Roundtable" "How?" and a cluster of actions; Tooth bleaching methods of the video »	A-1,2,7 K-8-10,11,22,24 I-41-46

Guidelines for the organization of 6.Laboratoriya

Science Laboratory works on standard academic plan in the fall for.

7. Form and content of the organization of independent work

In addition to classrooms and the auditorium will be held to independent work on the science. The student organization of independent work of the following form:

Some of the theoretical academic literature with the help of independent introducing the topics;

Information on a given topic (abstract);

On the topics of science or science or scientific publications (monographs, articles) reports on the performance and capabilities;

Scientific articles, thesis in preparation of the conference;

Solving the case;

Graphic organayzerlash and filing procedures;

Krossvordlar making and problem;

Situational tasks;

Preparation of presentations and videos, as well as independent business process Applications etc.

As well as the work of the student mustaktsl, which:

-bemorlar Supervision, preventive exam, patients, clinics, and write the history of the disease;
kuratsiyasida healing patients or the doctor on duty with the oversight of participation;
-axoli work in the medical okartuv interview reports and cake;
aviation students uzlashtirishda Olympic competitions, exhibition, conferences and other events participation.

Students thematic work plan

	Themes	hour
1	Therapeutic dental sterilization methods	2
2.	Therapeutic dental branch of the organization. Requirements.	2
3	Kariesogen factors (local and general)	2
4	Dental hard tissue disease and additional methods	2
5	Caries theories and procedures.	2
6	Caries epidemiology.	2
7	SULAKE normal and the importance of dental hard tissue pathology.	2
8	Caries pathologic anatomy.	2
9	Dental hard tissue diseases additional verification methods.	2
10	Root caries: clinic, diagnosis, treatment	2
11	A provider of therapeutic and diapers. The compounds can be used. Infusion equipment.	2
12	Universal adhesive systems.	2
13	The principles of restoration of teeth, composite filling materials clinical smiles.	2
14	Diseases of the teeth fabric defects depending on the location and depth of composite filling materials selection criteria.	2
15	Caries treatment.	2
16	Maxdlliy caries treatment methods.	2
17	Mini invasive method. Menubar. Arrangments.	2
18	Caries profile aktikasi.	2
19	The principles of caries and catering.	2
20	Nokaries modern methods of treating diseases.	2
21	Tooth tissues hereditary diseases.	2
22	Diseases of the teeth nokarioz charxlashning biological, mechanical and aesthetic principles.	2
23	Okara style teeth. Arrangments.	2
24	Pathological methods of treatment degraded the sensitivity of the teeth.	2
25	Fissure sealants. Administration equipment.	2
	total:	50s

8. List of Practical Skills

An integral part of the examination of the oral cavity
Private examination of the oral cavity
percussion
Tissues of the oral cavity palpation
sensing
Electroodontometry
Termodiagnostika
Methylene blue 2% aqueous solution dyeing method
Kofferdam
Stain stage remineralizatsiya therapy in the treatment of caries
Stain stage of caries using a fluoride varnish treatment
Treatment with sharpening surface caries Carioca pits

Treatment of secondary caries
Acute treatment of caries in both traffic
The treatment of chronic deep caries traffic
sharpening class Carioca empty phantom.
Ysinf Carioca empty phantom sharpening
II class to sharpen the Carioca empty.
Shsinf Carioca empty phantom sharpening.
HT class to sharpen the Carioca cavities phantom.
Tooth restoration capabilities to fulfill the main stage.

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ЎЗБЕКИСТОН РЕСПУБЛИКАСИ ОЛИЙ ВА ЎРТА МАХСУС ТАЪЛИМ ВАЗИРЛИГИ
ЎЗБЕКИСТОН РЕСПУБЛИКАСИ СОҒЛИҚНИ САҚЛАШ ВАЗИРЛИГИ
АБУ АЛИ ИБН СИНО НОМИДАГИ БУХОРО ДАВЛАТ ТИББИЁТ ИНСТИТУТИ
ТЕРАПЕВТИК СТОМАТОЛОГИЯ КАФЕДРАСИ

«ТАСДИҚЛАЙМАН»
Ўқув ва тарбиявий ишлар бўйича проректор,
доц. Г.Ж.Жарилкасинова _____
«____»_____2018 йил

II курс стоматология факультети талабалари учун
Клиник реставрацион стоматология фанидан
III - IV семестрларда ўтказиладиган
маъруза, амалий машғулот ва мустақил ишлар

ТАҚВИМИЙ ИШ РЕЖАСИ

2018– 2019 ўқув йили.
(ўзбек ва рус тилида)

БУХОРО -2018 йил

The subject of clinical dentistry restavratsion
III - IV semester lectures held in the plan.

№	theme	hour	Interdisciplinary and connectivity	Teaching methods	Training tools	used in literature
1	biological chemistry, biology, anatomy, histology, pathological anatomy, pathology, physiology, ecology, hygiene, infectious diseases, internal medicine, physiotherapy, clinical pharmacology,	2 hours	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Questions and answers	Computer, multimedia, handouts,	A: 1.2.6. Q: 8.9-18.21.24.33.
2	biological chemistry, biology, anatomy, histology, pathological anatomy, pathology, physiology, ecology, hygiene, infectious diseases, internal medicine, physiotherapy, clinical pharmacology,	2 hours	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Questions and answers	Computer, multimedia, handouts,	A: 1.2.6. Q: 8.9-18.21.24.33.
3	biological chemistry, biology, anatomy, histology, pathological anatomy, pathology, physiology, ecology, hygiene, infectious diseases, internal medicine, physiotherapy, clinical pharmacology,	2 hours	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Questions and answers	PC, multimedia materials, test questions, posters,	A: 1.2.3 Q: 11-18.28
4	biological chemistry, biology, anatomy, histology, pathological anatomy, pathology, physiology, ecology, hygiene, infectious diseases, internal medicine, physiotherapy, clinical pharmacology,	2 hours	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	brain storming	Computer, multimedia, handouts,	A: 1.2.3.6. Q: 8-18.22-25.31.
5	biological chemistry, biology, anatomy, histology, pathological anatomy, pathology, physiology, ecology, hygiene, infectious diseases, internal medicine, physiotherapy, clinical pharmacology,	2 hours	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	brain storming	PC, multimedia materials, Case	A: 1.2.3.6. Q: 8-18.22-25.31.
6	biological chemistry,	2	medical biology, genetics,	Questio	Computer,	A: 1.2.3.7.

	biology, anatomy, histology, pathological anatomy, pathology, physiology, ecology, hygiene, infectious diseases, internal medicine, physiotherapy, clinical pharmacology,	hours	biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	ns and answers	multimedia, handouts,	Q: 8.10-18.22-24.
7	biological chemistry, biology, anatomy, histology, pathological anatomy, pathology, physiology, ecology, hygiene, infectious diseases, internal medicine, physiotherapy, clinical pharmacology,	2 hours	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	brain stormin g	Computer, multimedia, posters	A: 1.2.3.7. Q: 8.10-18.22-24.
8	biological chemistry, biology, anatomy, histology, pathological anatomy, pathology, physiology, ecology, hygiene, infectious diseases, internal medicine, physiotherapy, clinical pharmacology,	2 hours	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Questio ns and answers	Computer, multimedia, handouts, posters, Case	A: 1.2.3.7. Q: 8-10-18.22.24.30 -40
9	biological chemistry, biology, anatomy, histology, pathological anatomy, pathology, physiology, ecology, hygiene, infectious diseases, internal medicine, physiotherapy, clinical pharmacology,	2 hours	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Questio ns and answers	Computer, multimedia, handouts, posters, Case	A: 1.2.3.4.7.Q: 8-10-18.22.24.30 -40
	total:	18c				

The subject of clinical dentistry restavratsion
III held -semestrlarda practical plan.

№	theme	hours	hour	Independent work assignments lari	hours	TRAINING The method of education lari	Interdisciplinary and connectivity	Training tools	used in literature

1	(Dental departments, therapeutic, surgical, Periodontist, physiotherapy, etc.), and equipment. Nurses and nurses obligations. Documents. Sterilization.	2	1	Therapeutic dental sterilization methods	2	Understanding the map si	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	multimedia materials, test questions, and case studies.	A-1,2,3 K-8-10,11,24,33 I-41-46
2	Dental patient control methods. Fill the history of the disease and the procedure.	2	1	Therapeutic dental branch of the organization. Requirements.	2	Klas sweat	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	multimedia materials, test questions, and case studies.	A-1.2 K-8-10,11,24 I-41-46
3	Caries. Classification. Etiology. Pathogenesis. Caries clinical manifestations of the country.	2	1	Kariesogen factors (local and general)	2	Venn diagram, the "map"	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	multimedia materials,	A-1.2 K-8-10,11,15-18,22,24 I-41-46
4	Dog stages of caries. Clinic. Diagnosis, comparative diagnosis.	2	1	Caries pathologic anatomy.	2	Muamer The situation in the property	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	multimedia materials, and case studies.	A-1.2 K-8-10,11,15-18,22,24,28 I-41-46
5	During the acute and surukadi dog caries treatment methods. Retseptura. Methods to prevent the disease.	1	2	Caries theories and procedures.	2	assesment	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computer, multimedia, test questions, and case studies.	A-1,2,5 K-8-10,11,22,23,24 I-41-46

6	Surface caries. Clinic of acute and chronic surface caries diagnosis of any form and comparative diagnosis.	2	1	Caries epidemiology.	2	brain stormin g	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computer, multimedia, test questions, and case studies.	A-1.2 K-8-10,11,15-18,22,24,28 I-41-46
7	Depending on the shape of the surface caries and clinical treatment.	1	2			concert Table Tsuana	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computers, projectors, multimedia materials, test questions, and case studies.	A-1,2,5 K-8-10,11,15-18,22,23,24 I-41-46
8	Secondary caries. Diagnosis of acute and chronic forms of the clinic, comparative	2	1			Muamer The situation in the property	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computers, projectors, multimedia materials, test questions, and case studies.	A-1.2 K-8-10,11,22,24,28 I-41-46
9	Secondary caries depending on the shape of the clinical course and treatment.	1	2			Round	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computers, projectors, multimedia materials, test questions, and case studies.	A-1,2,5 K-8-10,11,22,23,24 I-41-46
10	Deep caries. Acute and chronic forms of clinical, diagnostic, comparative diagnosis. Physical control methods.	1	2	Caries treatment.	2	Round	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computers, projectors, multimedia materials, test questions, and case studies.	A-1.2 K-8-10,11,22,24,28 I-41-46

11	Treatment of acute deep caries.	2	1	Caries and local treatment.	2	"Efficiency, Accuracy, full-fledged"	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computers, projectors, multimedia materials, test questions, and case studies.	A-1,2,5 K-8-10,11,22,23,24 I-41-46
12	Chronic deep caries treatment	2	1	Root caries: clinic, diagnosis, treatment	2	Pen in the center of the table	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computers, projectors, multimedia materials, test questions, and case studies.	A-1.2 K-8-10,11,22,23,24 I-41-46
13	Black class I on the principles of clinical caries cavities restoration capabilities.	1	2	caries profi laktikasi.	2	Assessment techniques "Efficiency, Accuracy, full-fledged"	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computers, projectors, multimedia, handouts, and case studies.	A-1,2,3,4,5 K-8-10,11,13,21,22,24,27 I-41-46
14	Black class II on the principles of clinical caries cavities restoration capabilities	1	2	Universal adhesive systems.	2	Conceptual table	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computer, multimedia, test questions,	A-1,2,3,4,5 K-8-10,11,13,21,22,24,27 I-41-46
15	Black buiicha dens of class III caries restoration capabilities in clinical principles	1	3	The principles of restoration of teeth, composite filling materials clinical smiles.	2	"Roundtable"	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computer, multimedia, handouts, and case studies.	A-1,2,3,4,5 K-8-10,11,13,21,22,24,27 I-41-46

16	Black buiicha dens of class IV caries restoration capabilities in clinical principles	1	2	Mini invasive method. Menubar. Arrangments.	2	"The percepti on Map" Venn diagram,	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	multimedia materials, test questions, and case studies.	A-1,2,3,4,5 K-8-10,11,13,21 ,22,24,27 I-41-46
17	Black buiicha dens of class V caries restoration capabilities in clinical principles	1	2			Venn diagram	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	multimedia materials, test questions, and case studies.	A-1,2,3,4,5 K-8-10,11,13,21 ,22,24,27 I-41-46
18	Black buiicha dens of class VI caries restoration capabilities in clinical principles	1	2	A provider of therapeutic and diapers. The compounds can be used. Infusion equipment.	2	Venn diagram s, concept ual table	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	multimedia materials,	A-1,2,3,4,5 K-8-10,11,13,22 ,24,27 I-41-46
	total:								

The subject of clinical dentistry restavratsion
Held the fourth semester of practical training plan.

№	theme	A \ M	Kl \ Som	Independent work assignments	hour	TRAINING The method of education lari	Interdisciplinary and connectivity	Training tools	used in literature

1	Treatment of caries disease. Caries and catering. Physical therapy.	1	2	The principles of caries and catering.	2	"Turn the table"; Table categories and conceptual actions	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	multimedia materials, and case studies.	A-1.2 K-8-10,1114,22,24,29 I-41-46
2	Caries disease, physical therapy methods.					Kopdagi cat house	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	multimedia materials, and case studies.	A-1.2 K-8-10,1114,22,24,29 I-41-46
3	Caries disease diagnosis and treatment of common errors and complications.	2	1	Diseases of the teeth fabric defects depending on the location and depth of composite filling materials selection criteria.	2	"sacks of cat "; Conceptual table of actions ;	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computer, multimedia, test questions, and case studies.	A-1.2 K-8-10,11,22,24 I-41-46
4	Caries prevention of the disease. The information about the group of caries preventive factors.	1	2			"Turn the table"; a cluster of actions ;	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computer, multimedia, test questions, and case studies.	A-1,2,6,7 K-8-10,11,14,22,24,25 I-41-46

5	Until tooth chikkunga (tooth bud development wellbeing gistogenezida) dental tissues nokaries diseases appear. Classification. During the development of the tooth bud tooth tissues pathology appear. Gipoplaziya, giperplaziya.	2	1	SULAKE normal and the importance of dental hard tissue pathology.	2	"Efficiency, Accuracy, full-fledged"	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computers, projectors, multimedia materials, test questions, and case studies.	A-1,2,6,7 K-8-10,11,22,24 I-41-46
6	Fluorosis. Clinic, diagnostics and comparative diagnosis.	2	1	Dental hard tissue diseases additional verification methods	2	Kopdagi cat house	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computers, projectors, multimedia materials, test questions, and case studies.	A-1,2,6,7 K-8-10,11,22,24 I-41-46
7	Teeth tukumalarining hereditary diseases. Aetiology, clinic, diagnostic and comparative diagnosis.	2	1	Tooth tissues hereditary diseases.	2	brain storming	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computers, projectors, multimedia materials, test questions, and case studies.	A-1,2,6,7 K-8-10,11,22,24 I-41-46
8	After the prisoners shall be nokaries diseases. Giperesteziya, pathological decay. Classification, clinic, diagnostics and comparative diagnosis.	2	1	Pathological methods of treatment degraded the sensitivity of the teeth.	2	"Free ourselves "	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computers, projectors, multimedia materials, test questions, and case studies.	A-1,2,6,7 K-8-10,11,22,24 I-41-46

9	After the prisoners shall be nokaries diseases. A wedge of recurrence, and the erosion of the dental hard tissue necrosis. Clinic, diagnostics and comparative diagnosis.	2	1	Dental hard tissue diseases additional verification methods.	2	"Pen "in the center of the table; "How? " Chart cluster and actions ;	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computers, projectors, multimedia materials, test questions, and case studies.	A-1,2,6,7 K-8-10,11,22,24 I-41-46
10	After the prisoners shall be nokaries diseases. Mechanical injuries of teeth. Clinic, diagnostics and comparative diagnosis.	2	1	Fissure sealants. Administration equipment.	2	"Who more? Who is faster? 'Pyramid chart and a cluster of actions ;	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computers, projectors, multimedia materials, test questions, and case studies.	A-1.2 K-8-10,11,22,24 I-41-46
11	After the prisoners shall be nokaries diseases. Teeth chemicals injuries. Clinic, diagnostics and comparative diagnosis.					brain storming	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computers, projectors, multimedia materials, test questions, and case studies.	A-1.2 K-8-10,11,22,24 I-41-46
12	Nokaries local and general treatment of diseases.	1	2	Nokaries modern methods of treating diseases.	2	The method of "hot potato "	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computers, projectors, multimedia, handouts, and case studies.	A-1,2,6,7 K-8-10,11,14,22,24,29 I-41-46

13	Nokaries diseases physical therapy.					"Free oursel ves "	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computers, projectors, multimedia, handouts, and case studies.	A-1,2,6,7 K-8-10,11,14,22 ,24,29 I-41-46
14	Tooth tissues nokaries restoration in patients with clinical principles.	1	2	Diseases of the teeth nokarioz charxlashning biological, mechanical and aesthetic principles.	2	"Who more? Who faster? "; Table of catego ries of actions ;	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computer, multimedia, test questions,	A-1,2,6,7 K-8-10,11,14,22 ,24 I-41-46
15	Okara methods of teeth.					The metho d of "hot potato "	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computer, multimedia, test questions,	A-1,2,6,7 K-8-10,11,14,22 ,24 I-41-46
16	Methods of resistance to the tooth tissues.	1	1	Okara style teeth. Arrangments.	2	"Roun dtable"	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computer, multimedia, handouts, and case studies.	A-1,2,6,7 K-8-10,11,22,24 I-41-46
17	Fissuralarni germitizatsiya making methods.					"Who more? Who faster? "; Table of catego ries of actions ;	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computer, multimedia, handouts, and case studies.	A-1,2,6,7 K-8-10,11,22,24 I-41-46

18	Diseases of the dental tissues caries and nokaries on the Protection of the history of the disease.	1	1			The method of "hot potato"	medical biology, genetics, biophysics, medicine and biological chemistry, anatomy, physiology, pharmacology, Preclinical dentistry restavratsion	Computer, multimedia, handouts, and case studies.	A-1,2,7 K-8-10,11,22,24 I-41-46
	total:								

Plan of the lecture material for students II course in the III-IV semesters.

number	Topic	Clock	The connection between academic disciplines	interactive teaching methods	Means of education	Recommended reading
1	Methods of examination of patients in the clinic of therapeutic dentistry. Structures tooth enamel and other hard tissues.	2	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology, medical court expert, infectious	Question answer	Computer proektormultimedii, handouts, test questions, situational problems	A: 1.2.6. K: 8.9-18.21.24.33.
2	Clinic and dif.diagnostika different kinds of dental caries.	2	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology,	Question answer	Computer, projector, multimedia, handouts, test questions, situational problems	A: 1.2.3 K: 11-18.28
3	Methods of medical treatment of caries. caries prevention.	2	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology	Brainstorm	Computer, projector, multimedia, handouts, test questions, situational problems	A: 1.2.3.6. K: 8-18.22-25.31.

4	Methods of surgical treatment of different types of tooth decay.	2	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology,	Brainstorm	Computer, projector, multimedia, handouts, test questions, situational problems	A: 1.2.3.6. K: 8-18.22-25.31.
5	Nekarioznye disease arising before prorezovaniya teeth. Hereditary diseases. Etiology, pathogenesis, clinical manifestations, diagnosis, treatment and prevention.	2	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology,	Question answer	Computer, projector, multimedia, handouts, test questions, situational problems	A: 1.2.3.7. K: 8.10-18.22-24.
6	Nekarioznye disease arising after prorezovaniya teeth. Etiology, pathogenesis, clinical manifestations, diagnosis, treatment and prevention.	2	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology,	Brainstorm	Computer, projector, multimedia, handouts, test questions, situational problems	A: 1.2.3.7. K: 8.10-18.22-24.
7	Otbelovanie teeth. Indications and contraindications.	2	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology,	Brainstorm	Computer, projector, multimedia, handouts, test questions, situational problems	A: 1.2.3.7. K: 8-10-18.22.24.30-40
8	The main stages of restoration of dental hard tissues modern kompazitami. Indications and contraindications.	2	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology	Question answer	Computer, projector, multimedia, handouts, test questions, situational problems	A: 1.2.3.4.7.K: 8-10-18.22.24.30-40
	Total:	16 h				

Plan of practical training for students II course

III- semester.

number	Topic	Clock	Clock	The connection between academic disciplines	interactive teaching	Means of education	Recommended reading	Independent work	Clock
1	Dental offices (therapeutic, surgical, parodontolonicheskoe, physiotherapy, etc.). Responsibilities Jr. med.personala. Documentation. Sterilization.	2	1	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology,	The weakest link	Computer, projector, multimedia, handouts, test questions, situational problems	A-1,2,3 K-8-10,11,24, 33 I-41-46	Sterilization methods in terapevtiches Coy dentistry	2
2	Survey Methods stomatologicheskiz patients. Disease history.	2	1	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology,	Handle in the middle of the table	Computer, projector, multimedia, handouts, test questions, situational problems	A 1.2 K-8-10,11,24 I-41-46	Equipping the therapeutic department. Requirements.	2
3	Caries. Classification. Etiology. Pathogenesis. Clinic.	2	1	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology	Round table	Computer, projector, multimedia, handouts, test questions, situational problems	A 1.2 K-8-10,11,15-18,22,24 I-41-46	caries factors (local and general)	2

4	Caries in the stage of spot. Clinic, diagnostics, dif.diagnostika.	2	1	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology,	Crossword	Computer, projector, multimedia, handouts, test questions, situational problems	A 1.2 K-8-10,11,15-18,22,24,28 I-41-46	Patologichskaya anatomy caries.	2
5	Methods of treatment of patients with acute and chronic caries. Formulation.	1	2	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology,	Round table	Computer, projector, multimedia, handouts, test questions, situational problems	A-1,2,6 K-8-10,11,22,23,24 I-41-46	Origin a caries.	2
6	Surface caries. Acute and chronic. Diagnosis and dif.diagnostika.	2	1	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology,	blitz	Computer, projector, multimedia, handouts, test questions, situational problems	A 1.2 K-8-10,11,15-18,22,24,28 I-41-46	Epidimiologiya caries.	2

7	The clinical course of the surface caries.	1	2	biochemistry, bionoorganinichesk aya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology, neurology, psychiatry and medical psychology, marketing and management	bee honeycomb	Computer, projector, multimedia, handouts, test questions, situational problems	A-1,2,6 K-8-10,11,15-18,22,23,24 I-41-46		
8	Middle caries. Clinic. Dianogostika and dif.diagnostika.	2	1	biochemistry, bionoorganinichesk aya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology, operative surgery and marketing and management	Round table	Computer, projector, multimedia, handouts, test questions, situational problems	A 1.2 K-8-10,11,22,24,28 I-41-46		
9	Clinic secondary caries and treatment.	1	2	biochemistry, bionoorganinichesk aya chemistry, biology, biophysics, human anatomy, histology, cytology, neurology, psychiatry and medical psychology, marketing and management	Blitz	Computer, projector, multimedia, handouts, test questions, situational problems	A-1,2,6 K-8-10,11,22,23,24 I-41-46		

10	Deep caries. Clinic, diagnostics and dif.diagnostika. Fizioterapechticheskoe treatment.	1	2	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, neurology, psychiatry and medical psychology, marketing and management	Pig in a poke	Computer, projector, multimedia, handouts, test questions, situational problems	A 1.2 K-8-10,11,22, 24,28 I-41-46	General treatment of caries.	2
eleven	Methods of treating acute deep caries.	2	1	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, physiotherapy, clinical pharmacology, medical psychology, marketing and management	Pig in a poke	Computer, projector, multimedia, handouts, test questions, situational problems	A-1,2,6 K-8-10,11,22, 23,24 I-41-46	Local treatment of caries.	2
12	Methods of treating chronic deep caries.	2	1	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology	Handle in the middle of the table	Computer, projector, multimedia, handouts, test questions, situational problems	A 1.2 K-8-10,11,22, 23,24 I-41-46	Root caries: clinical features, diagnosis, treatment.	2

thirteen	Restoration cavity class I Black.	1	2	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology	The weakest link	Computer, projector, multimedia, handouts, test questions, situational problems	A-1,2,3,4,5 K-8-10,11,13, 21,22,24, 27 I-41-46	caries prevention.	2
14	Restoration cavity class II Black.	1	2	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology	Handle in the middle of the table	Computer, projector, multimedia, handouts, test questions, situational problems	A-1,2,3,4,5 K-8-10,11,13, 21,22,24, 27 I-41-46	Universal adhesive system.	2
fifteen	Restoration cavity class III Black.	1	3	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology	The weakest link	Computer, projector, multimedia, handouts, test questions, situational problems	A-1,2,3,4,5 K-8-10,11,13, 21,22,24, 27 I-41-46	Methods of application for restoration composites.	2
	Total:	23	23						24

Plan of practical training for students II course
IV- semester

number	Topic	Clock	Clock	The connection between academic disciplines	interactive teaching methods	Means of education	Recommended reading	Independent work	Clock
1	Restoration cavity 4 classes by Black	1	2	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology,	The weakest link	Computer, projector, multimedia, handouts, test questions, situational problems	A-1,2,3,4,5 K-8-10,11,13, 21,22,24, 27 I-41-46	Minimum algezivnye methods. tehnikasi.	2
2	Restoration of cavities by Black Class	1	2	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology,	Round table	Computer, projector, multimedia, handouts, test questions, situational problems	A-1,2,3,4,5 K-8-10,11,13, 21,22,24, 27 I-41-46		
3	Restoration of cavities by Black Class	1	2	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology	Handle in the middle of the table	Computer, projector, multimedia, handouts, test questions, situational problems	A-1,2,3,4,5 K-8-10,11,13, 22,24,27 I-41-46	Medical and isolation pads.	2
4	General treatment of caries. Nutrition and tooth decay.	1	2	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology,	Crossword	Computer, projector, multimedia, handouts, test questions, situational problems	A 1.2 K-8-10,1114,22,24,29 I-41-46	Nutrition and tooth decay.	2

5	Mistakes and complications in the treatment of dental caries.	2	1	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology,	Round table	Computer, projector, multimedia, handouts, test questions, situational problems	A 1.2 K-8-10,11,22,24 I-41-46	The use and choice of starting kompaozitov caries location.	2
6	caries prevention.	1	2	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology,	Handle in the middle of the table	Computer, projector, multimedia, handouts, test questions, situational problems	A 1,2,6,7 K-8-10,11,14,22,24,25 I-41-46		
7	Nekariznye disease arising Czubay to prorezovaniya teeth. Hypoplasia, hyperplasia.	2	1	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology, neurology, psychiatry and medical psychology, marketing and management	Crossword	Computer, projector, multimedia, handouts, test questions, situational problems	A 1,2,6,7 K-8-10,11,22,24 I-41-46	The influence of saliva in the pathology of dental hard tissues.	2

8	Fluorosis. Clinic, diagnostics and dif.diagnostika.	2	1	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology, operative surgery and marketing and management	Pig in a poke	Computer, projector, multimedia, handouts, test questions, situational problems	A 1,2,6,7 K-8-10,11,22,24 I-41-46	Additional methods obledovaniya diseases hard tooth tissues.	2
9	Hereditary diseases hard tooth tissues. Etiology, clinical features, diagnosis.	2	1	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, neurology, psychiatry and medical psychology, marketing and management	Pig in a poke	Computer, projector, multimedia, handouts, test questions, situational problems	A 1,2,6,7 K-8-10,11,22,24 I-41-46	Hereditary diseases hard tooth tissues.	2
10	Nekarioznye disease arising after prorezovaniya teeth. Hyperesthesia, patogicheskoe erasure. Clinic, diagnostics, dif.diagnostika.	2	1	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, neurology, psychiatry and medical psychology, marketing and management	bee Sotho	Computer, projector, multimedia, handouts, test questions, situational problems	A 1,2,6,7 K-8-10,11,22,24 I-41-46	Methods of treatment of sensitivity in pathological erasing.	2
eleven	Carious dental disease arising after prorezovaniya teeth. Necrosis, erosion. Clinic, diagnostics.	2	1	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, physiotherapy, clinical pharmacology, medical psychology, marketing and management	Blitz	Computer, projector, multimedia, handouts, test questions, situational problems	A 1,2,6,7 K-8-10,11,22,24 I-41-46	Additional methods obledovaniya diseases hard tooth tissues.	2

12	Carious dental disease arising after prorezovaniya teeth. The mechanical and chemical damage to teeth. Clinic, diagnostic, dif.diagnoz.	2	1	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology	Blitz	Computer, projector, multimedia, handouts, test questions, situational problems	A 1.2 K-8-10,11,22,24 I-41-46	Application technology fissure sealants.	2
thirteen	Local and general treatment carious diseases. Physiotherapy.	1	2	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology	Handle in the middle of the table	Computer, projector, multimedia, handouts, test questions, situational problems	A 1,2,6,7 K-8-10,11,14,22,24,29 I-41-46	Current treatments carious diseases.	2
14	Restoration of carious diseases. Teeth whitening.	1	2	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology	Blitz	Computer, projector, multimedia, handouts, test questions, situational problems	A 1,2,6,7 K-8-10,11,14,22,24 I-41-46	Biologichsekoe, mechanical and aesthetic treatment of carious diseases.	2
fifteen	Methods of improving the resistance of hard tissues of teeth. Methods of sealing the teeth.	1	1	biochemistry, bionoorganinicheskaya chemistry, biology, biophysics, human anatomy, histology, cytology, embryology, normal physiology, pathological anatomy, pathological physiology, hygiene and ecology	Crossword	Computer, projector, multimedia, handouts, test questions, situational problems	A 1,2,6,7 K-8-10,11,22,24 I-41-46	Technique of teeth whitening.	2

16	Protection history carious diseases and dental caries dental hard tissues.	1	1		Pig in a poke		A-1,2,7 K-8-10,11,22, 24 I-41-46		
	Jamie:	23	23						**26c**

Foydalaniladigan adabiotlar rÿyhati

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6.3. tests

1. Dental School opened in Uzbekistan:

A. 1954 in Tashkent *
B. 1954 in Bukhara
C. 1977 in Samarkand
D. 1976 in Tashkent
E. 1954 in Samarkand

2. Department of Therapeutic Dentistry at the Tashkent Medical Institute opened in:

A. 1956 *
B. 1967
C. 1965
D. 1999
E. 1954

3. Which Tashkent State Dental Institute was established?

A. 2014 *
B. 2015
C. 2000
D. 2005
E. 2012

4. Who and when first used foot drill?

A. 1870 Morrison *

B. 1866 John Thoms
C. 1770 John Smith
D. 1990 Lauren
E. 1953 Borovsky EV

5. setting rotational speed MLD-30.
A. 10,000-30,000 rev / min. *
B. 1000-3000 rev / min.
C. 30,000 rev / min.
D. 30000-60000 / min.
E. 100000-300000 rev / min.

6. When the turbine drill on the tooth falls power:
A. 15-20 g *
B. 800-1000 g
C. 80-100 g
D. 150-200 g
E. 25-35 g

7. When the electric drill on the tooth falls power:
A. 800-1000 g *
B. 15-20 g
C. 80-100 g
D. 150-200 g
E. 25-35 g

8. The structure of the turbine nozzle does not include:
A. Sleeve*
B. rubber tube
C. beam transmission system
D. Rotor
E. Collet

9. The tools for inspection of the oral cavity include:
A. dental mirror *
B. broach
C. excavator
D. putty knife
E. plugger

10. The tools for inspection mouth include:
A. Dental probe *
B. needle Miller
C. curette
D. putty knife
E. diamond blade

11. The degree of tooth mobility is determined by:
A. dental forceps *
B. dental mirror
C. dental probe
D. metal spatula
E. excavator

12. Tool for applying a seal to the cavity is:

A. ironing board *
B. Dental mirror
C. Probe
D. Putty knife
E. Excavator

13. The degree of tooth mobility is determined by:
A. Stom. tweezers *
B. Stom. mirror
C. spatula
D. excavator
E. Stom. probe

14. Periodontal probe of the inspection probe is different:
A. blunt tip, the working portion is divided into millimeters *
B. sharp probe tip, the working portion is divided into millimeters
C. blunt tip, the working portion is laterally bent
D. blunt tip, the working portion of line
E. is not different

15. Types of dental spatula:
A. metal, plastic *
B. wooden, metal
C. wooden, plastic
D. ceramic, wood
E. only plastic

16. With the help of plugger performed:
A. seal of blood clots in the cavity *
B. removes tartar
C. the cavity is treated with medication
D. It is determined by the depth of the cavity
E. seal completely polished

17. The tools for mixing and blending fillings include, but are.
A. shovel, a probe, tweezers *
B. putty knife, trowel, probe
C. mirror plugger, spatula
D. curette, plugger, ironing board
E. plugger, trowel, spatula

18. hog size handpiece for:
A. 4.4-4.7 cm *
B. 2.2-2.7 cm
C. 1.7-2.2 cm
D. 3.2-3.6 cm
E. 3.0-3.5 cm

19. hog size handpiece:
A. 2.2-2.7 cm *
B. 1.7-2.2 cm
C. 4.0-4.4 cm
D. 3.2-3.6 cm
E. 3.0-3.5 cm

20. For final processing use seals:
A. disc, polishing, abrasive stones *
B. drive pins, abrasive stones
C. disc, polished, hooks
D. Probe polish curette
E. probe, finishing burs, tweezers
21. For final polishing seals do not use:
A. Curettes, excavators *
B. Cutter, polisher
C. Finishing burs, drive
D. Abrasive stones, polishing
E. Cutter, a disc
22. Filling materials are classified:
A. Strelyuhinoy *
B. Borovsky EV
C. Gofungom
D. Ivanov
E. Patrikeyev
23. Temporary filling material:
A. Dentin paste *
B. silidont
C. Unica
D. Charisma
E. Tsemion
24. Time of hardening water dentin:
A. 2-3 min. *
B. 10 minutes.
C. 1 hour
D. 2 hours
E. 6 o'clock
25. Indifferent seal:
A. artificial dentin *
B. phosphate cement
C. silicate cement
D. composite
E. silikofosfatnye cement
26. The properties of artificial dentin:
A. indifferntnost to tissues *
B. irritate the pulp
C. It has no adhesion to the tooth
D. mechanical strength
E. antiseptic
27. The properties of the dentin-paste:
A. ease of use *
B. placed on the 1-2 day
C. indifferntnost to tissues
D. no mechanical strength

E. toxic effect on the pulp

28. Negative properties of artificial dentin:

A. no mechanical strength *
B. good sealing cavity
C. mechanical strength
D. ease of use
E. indifferntnost to tissues

29. Negative properties of the dentin-paste:

A. hardens slowly (2-3 hours) *
B. mechanical strength
C. indifferntnost to tissues
D. ease of use
E. good sealing cavity

30. By the zinc-phosphate cement include:

A. Unica, Adgezor, Tenet *
B. Silitsin, Tenet, Infante
C. Silidont, Unifas, Charisma
D. Adgezor, Belatsin, silidont
E. Charisma, Tenet Silitsin

31. By the silicate cements are:

A. Silitsin Plus, Friteks *
B. Silidont, Adgezor
C. Tenet Belatsin
D. Tsemion, Adgezor
E. Friteks, Laktodont

32. By silikofosfatnye cements include:

A. Laktodont, Beladont *
B. Silidont, Adgezor
C. Tenet Belatsin
D. Tsemion, Adgezor
E. Unica, Adgezor

33. For Class III include -

F. The contact surface of incisors and canines are not razruzhena crown angle *
G. The contact surface in the molars
H. The contact surface of incisors and canines razruzhena coals crowns
I. The contact surface of the molars and canines are not razruzhena crown angle
J. In fissures and blind pits

34. The first stage of preparation:

A. oral disclosure *
B. necrosectomy
C. Expansion
D. cavity formation
E. Finishing the edges of the enamel

35. When additional class III platform is wide ..... mm

A. 1.5 -2 *
B. 1-2
C. 2-3

D. 1.2-3
E. 1.2-2

36. When additional class III platform is depth ..... mm
A. 1 -1.5 *
B. 0.5-1
C. 0.5-1.5
D. 12
E. 1,5-2

37. Carious cavity on the contact surface in the cervical area of the tooth 11 on the classification refers to the class of Black:
A. III *
B. II
C. IV
D. V
E. VI

38. Necrectomy hard tissues of the tooth is advantageously carried out with boron
A. nodular *
B. cylindrical
C. conical
D. rotate
E. obratnokonusnym

39. The steep wall cavity expedient to form boron
A. cylindrical *
B. nodular
C. conical
D. obratnokonusnym
E. rotate

40. The most frequent localization of cavities class V:
A. vestibular surface *
B. lingual surface
C. contact surface
D. palatal surface
E. chewing surface

41. By the 5th class cavities by Black include:
A. caries cervical area of the teeth groups *
B. caries contact surfaces of molars and premolars
C. natural fissure caries and recesses enamel any group of teeth
D. caries contact surfaces incisors and canines with violation of the integrity of the cutting edge or corner tooth crowns
E. caries contact surfaces of incisors and canines without violating the integrity of the cutting edge

42. Carious cavity on the lateral contact surface 11 of the tooth with a lesion of the cutting edge by Black refers to the class:
A. IV *
B. II
C. III
D. V
E. VI

43. Polycarboxylate cement is:
K. Belakor *
L. Tsemion

M. Unetsem
N. Belatsin
O. Adgezor

44. Negative properties of copper amalgam:
F. Tooth stain fabric in a dark color *
G. It has a greater hardness
H. It does not stain the tooth tissue
I. It has good ductility
J. good adhesion

45. Tooth decay is:

A. The pathological process in which there is a softening and demineralization of hard tooth tissue with the subsequent formation of the defect *
B. Pathological erasability enamel and dentin
C. Inflammation of the dental pulp
D. Pathological process in periodontal
E. enamel erosion

46. According to topographic classification distinguished caries:
F. At the stage of the spot *
G. Acute
H. Chronic
I. Primary
J. Secondary

47. Prophylactic expansion conducted to:
A. prevent the recurrence of caries *
B. to create a retention point
C. sustainability seal
D. increasing the adhesive contact material
E. all of the above is true

48. For class 1 cavities by Black include:
A. caries occlusal surfaces of molars and premolars and the blind holes of the teeth groups *
B. caries contact surfaces of molars and premolars
C. cervical caries of tooth groups
D. caries contact surfaces incisors and canines with impaired cutting corner tooth crown integrity
E. caries contact surfaces incisors and canines

49. Class 2 cavities by Black include:
A. caries contact surfaces of molars and premolars *
B. caries contact surfaces incisors and canines
C. natural fissure caries and recesses enamel any group of teeth
D. cervical caries of tooth groups
E. caries contact surfaces incisors and canines with violation of the integrity of the cutting edge or corner tooth crowns

50. Movement at preparing boron cavity must be:

Movement at preparing boron cavity must be:
A. from the bottom of the cavity outwards *
B. sharp, from the bottom to the walls
C. from the walls of the cavity to the bottom
D. circular perimeter of the cavity
E. all of the above is true

51. The basis on Blake put signs cavities classification:
A. anatomic and topographic *
B. histological
C. clinical
D. topographical
E. clinical and topographical

52. cavities in fissure on the chewing surface of a tooth 18 on the classification relates to a class of Black:
A. I *
B. II
C. III
D. IV
E. V

53. Actions dentine adhesive to dentin
A. Fills the dentinal tubules *
B. Strengthens current dental liquor
C. Stops current dental liquor
D. wet
E. disinfects

54. A shiny, "wet", easily removable layer on composite tool surface is:
A. Layer inhibited oxygen *
B. smear layer
C. The hybrid layer
D. insulating layer
E. shiny layer

55. When using adhesive systems 5 generations held:
A. The total etching *
B. Only etching dentin
C. Only enamel etching
D. fabrics etching is not carried out
E. Only enamel etching

56. preventive extension method cavity suggested:
A. Black *
B. WHO
C. I.G.Lukomsky
D. EV Borowski
E. Fisher

2. biological appropriateness method is:
A. gently removing only the carious dental hard tissues *
B. in the treatment cavity, followed by filling of excavated cavity formed glass ionomer cements
C. a wide excision susceptible caries tooth retaining portions resistant zones
D. a wide excision caries tooth portions susceptible
E. in fissure sealing of permanent teeth

3. Size of boron with respect to prepariruemoy cavity should be:
A. smaller*
B. irrelevant
C. more
D. the same size with the cavity
E. depending on the density of tissue prepariruemyh

4. The second stage of the preparation of cavities is:

A. expansion*
B. filling
C. necrotomy
D. disclosure
E. formation

5. Prophylactic expansion conducted to:
F. prevent the recurrence of caries *
G. to create a retention point
H. sustainability seal
I. increasing the adhesive contact material
J. all of the above is true

6. Class 1 cavities by Black include:
F. caries occlusal surfaces of molars and premolars and the blind holes of the teeth groups *
G. caries contact surfaces of molars and premolars
H. cervical caries of tooth groups
I. caries contact surfaces incisors and canines with impaired cutting corner tooth crown integrity
J. caries contact surfaces incisors and canines

7. Class 2 cavities by Black applies:
F. caries contact surfaces of molars and premolars *
G. caries contact surfaces incisors and canines
H. natural fissure caries and recesses enamel any group of teeth
I. cervical caries of tooth groups
J. caries contact surfaces incisors and canines with violation of the integrity of the cutting edge or corner tooth crowns

8. class III cavities by Black applies:
A. caries contact surfaces of incisors and canines without violating the integrity of the cutting edge *
B. caries contact surfaces of molars and premolars
C. natural fissure caries and recesses enamel any group of teeth
D. cervical caries of tooth groups
E. caries contact surfaces incisors and canines with violation of the integrity of the cutting edge or corner tooth crowns

9. Movement of boron at preparing cavity must be:
F. from the bottom of the cavity outwards *
G. sharp, from the bottom to the walls
H. from the walls of the cavity to the bottom
I. circular perimeter of the cavity
J. all of the above is true

10. Finishing - is:
A. smoothing enamel margins *
B. Disclosure cavity
C. forming cavity
D. finishing seals
E. all of the above is true

11. The bottom of the cavity is:
A. wall, contiguous to the cavity of the tooth *
B. the bottom wall of the cavity
C. horizontally located cavity wall
D. wall adjacent to the gum
E. the circular wall of the cavity

12. There is no element of cavity:

A. roof*
B. the edges
C. bottom
D. angles
E. wall

13. Class 4 cavities by Black include:
    A. caries contact surfaces incisors and canines with violation of integrity or incisal tooth crown angle *
    B. caries contact surfaces of molars and premolars
    C. natural fissure caries and recesses enamel any group of teeth
    D. cervical caries of tooth groups
    E. caries contact surfaces of incisors and canines without violating the integrity of the cutting edge
14. The basic principle of the preparation of cavities:
    A. very complete excision of diseased tissue and gentle attitude towards healthy *
    B. prophylactic excision of hard tissue of the tooth to immune zones
    C. the principle of minimally invasive preparation
    D. biological principle of expediency
    E. the technical feasibility of the principle of
15. The principle of "Yaschikoobraznosti" cavity:
    A. the cavity walls are at an angle of 90 ° to the cavity bottom *
    B. cavity walls are at an angle of 90 ° to each other
    C. cavity walls are at an angle of 90 ° to the bottom of the cavity and to each other
    D. cavity walls are at an angle of 45 ° to the cavity bottom
    E. cavity walls are at an angle of 45 ° to each other
16. The treatment of the edges of the enamel manufacture:
    A. diamond bur *
    B. korborundovoy head
    C. cylindrical steel bur
    D. polisher
    E. finishing burs
17. cavities placed in the necks of the teeth groups are:
    A. Class V *
    B. class I
    C. class II
    D. class III
    E. class IV
18. A criterion for final preparation of cavities:
    A. the presence of light and dense dentine when probed *
    B. the presence of light and dense percussion dentin
    C. the presence of light softened dentin
    D. presence of dense pigmented dentin in deep cavities
    E. the presence of light and dense in probing the dentin
    F. the presence of pigmented dentin
19. The most frequent localization of cavities class V:
    F. vestibular surface *
    G. lingual surface
    H. contact surface
    I. palatal surface
    J. chewing surface
20. 5th class cavities by Black include:
    F. caries cervical area of the teeth groups *

G. caries contact surfaces of molars and premolars
H. natural fissure caries and recesses enamel any group of teeth
I. caries contact surfaces incisors and canines with violation of the integrity of the cutting edge or corner tooth crowns
J. caries contact surfaces of incisors and canines without violating the integrity of the cutting edge

21. Class III classification Black refers carious cavity on the surface:
A. contact cutters *
B. contact premolars
C. vestibular incisors
D. chewing molars
E. masticatory premolars

22. The basis on Blake put signs cavities classification:
F. anatomic and topographic *
G. histological
H. clinical
I. topographical
J. clinical and topographical

23. cavities in fissure on the chewing surface of a tooth 18 on the classification relates to a class of Black:
F. I *
G. II
H. III
I. IV
J. V

24. cavities in natural fossa in the buccal surface of the tooth 37 on the classification relates to a class of Black:
A. I *
B. II
C. III
D. IV
E. V

25. cavities on the rear contact surface 36 of the tooth refers to Black's classification Class:
A. II *
B. I
C. III
D. IV
E. V

26. The cavities on the contact surface in the cervical area of the tooth 26 on the classification refers to the class of Black:
A. II *
B. III
C. IV
D. V
E. VI

27. cavities in the cervical area on the vestibular surface of the tooth 16 on the classification relates to a class of Black:
A. V *
B. II
C. III
D. IV
E. VI

28. cavities at the middle of the contact surface 12 of a tooth refers to a class classification Black:
A. III *
B. I
C. II
D. IV
E. V
29. The cavities 12 in the blind fossa of a tooth refers to a class classification Black:
A. I *
B. II
C. III
D. IV
E. V
30. cavities at the contact surface in the cervical region 11 of the tooth refers to a class classification Black:
F. III *
G. II
H. IV
I. V
J. VI
31. The cavities in the front of the contact surface 14 of the tooth refers to Black's classification Class:
A. II *
B. I
C. III
D. IV
E. V
32. cavities on the rear contact surface 15 of a tooth refers to a class classification Black:
A. II *
B. III
C. IV
D. V
E. VI
33. The cavities in the front of the contact surface 16 of the tooth refers to Black's classification Class:
A. II *
B. I
C. III
D. IV
E. V
34. cavities on the front and rear contact surface the contact surface 17 of the tooth include the class classification Black:
A. II *
B. III
C. IV
D. V
E. VI
35. The cavities on the lateral contact surface 11 of the tooth with a lesion of the cutting edge by Black refers to the class:
F. IV *
G. II
H. III

I. V
J. VI

36. By Class II classification applies to Black carious cavity:
    A. on the contact surface of the molars *
    B. on the contact surface of the canines
    C. on the buccal surface of the molars
    D. on the middle surface incisors
    E. on the lateral surface of the incisor
37. The first stage of preparation cavity
    A. Disclosure cavity *
    B. processing enamel margins
    C. expansion cavity
    D. necrectomy
    E. forming cavity
38. The second stage of preparation cavity
    A. expansion cavity *
    B. processing enamel margins
    C. Disclosure cavity
    D. necrectomy
    E. forming cavity
39. The final stage of preparation cavity
    A. processing enamel margins *
    B. Disclosure cavity
    C. expansion cavity
    D. necrectomy
    E. forming cavity
40. necrectomy tooth hard tissue is advantageously carried out with boron
    F. nodular *
    G. cylindrical
    H. conical
    I. rotate
    J. obratnokonusnym
41. Sheer wall cavity expedient to form boron
    F. cylindrical *
    G. nodular
    H. conical
    I. obratnokonusnym
    J. rotate
42. Kariesimmunnye zone located
    A. on the hills and vestibular surfaces *
    B. on the vestibular surfaces and fissures
    C. in the fissures and hillocks
    D. in the blind pits
    E. all of the above is true
43. The method of improving the fixation of cement fillings
    A. the creation of additional grounds and retention points *
    B. creating rounded shapes cavity
    C. refusal to overlay the insulating gasket
    D. use of the anchor pins
    E. all of the above is true
44. The method of improving the fixation of cement fillings
    A. application parapulparnyh pins *

B. creating rounded shapes cavity
C. refusal to overlay the insulating gasket
D. use of the anchor pins
E. all of the above is true

45. The bottom of the additional grounds must be located
A. 1-2 mm below the enamel-dentine border *
B. within the enamel layer
C. on the border of the enamel and dentin
D. on the border vasodentin
E. any possible alternative

2-Response

1. According to topographic classification distinguished caries:
A. At the stage of the spot *
B. Central *
C. Primary
D. Secondary

2. For Class 2 cavities by Black include:
A. caries contact surfaces of molars
B. caries contact surfaces of premolars *
C. natural fissure caries and recesses enamel any group of teeth
D. caries contact surfaces incisors and canines
E. The positive properties of copper amalgam:

3. Colors the tooth tissue in the dark
V.Imeet greater hardness *
S.Ne tooth stain fabric
D. It features good ductility *

5. cavity 3 class include:
A. The cavity on the medial wall of the tooth 12 *
B. The cavity in the lateral wall 33 of a tooth with intact cutting edge *
C. The cavity 41 on the lateral wall of the damaged tooth with a cutting edge
D. The cavity in the medial wall 14 of the tooth

5. preparation and filling of cavities class V some additional tasks must solve a dentist?
A. Protect gingival margin against mechanical and chemical damage *
B. Create a retraction of the gums *
C. Create additional space
D. Leave necrotizing dentine on the cavity walls

46. In the preparation and filling of cavities class V some additional tasks must solve a dentist?
A. Save dryness cavity *
B. Provide micromechanical retention seals *
C. Create additional space
D. Create rebate and retention points

47. 4th class by Black refers carious cavity is located:
A. On the contact surface and the cutting edge of the tooth 22 *
B. On the contact surface and the cutting edge of the tooth 23 *
C. On the contact surface and the cutting edge 26 of the tooth
D. On the contact surface and the cutting edge 14 of the tooth

48. 5th class by Black refers carious cavity is located:
A. In the cervical region of the tooth 22 *
B. In the cervical region of the tooth 47 *

C. The blind fossa tooth 26
D. The blind fossa tooth 11

49. Negative properties makronapolnennyh composites:
A. marked accumulation of plaque *
B. the difficulty of polishing *
C. pressure resistant
D. sufficient strength

50. The negative properties of micro-filled composites:
A. Low mechanical strength *
B. High polymerization shrinkage *
C. The difficulty of polishing
D. the color does not match

51. The positive properties of the hybrid composites:
A. Rentgenokontrasnost *
B. Sufficient strength *
C. The ideal surface quality
D. High polymerization shrinkage

52. The micro-hybrid composites are:
A. Sharisma, Te - economy Plus *
B. Venus, Filtek Z250 *
C. Fujii, Simile
D. Ceram X, Versaflo

53. Composites chemical otvorzhdeniya are:
A. prism *
B. Alfacomp, Compolux *
C. Polofill
D. Visio Molar, Glacier

1. By the anatomic structures of the teeth are.
A. A sign of the curvature of the crown *
B. A sign of the angle of the crown *
C. Symptom tooth cavity
D. A sign of the number of hillocks

2. The anatomic structures of the teeth are.
A. root sign *
B. A sign of the angle of the crown *
C. Symptom tooth cavity
D. A sign of the number of hillocks

3. What does the surface of the tool?
A. vestibular *
B. oral *
C. chewing
D. the cervical

4. What does the surface of the tool?
A. contact *
B. oral *
C. chewing
D. the cervical

5. Anatomic features maxillary central incisor.
A. Crown Chisel shaped, well-developed root cone *

B. Lingual concave surface has a triangular shape *
C. Vestibular surface has an elongated quadrangle in length
D. On the chewing surface of the hill, there are two - the buccal and palatal

6. Anatomic features canines of the upper jaw.
A. Crown massive, cone-shaped *
B. Crown tapers to the cutting edge, and ends with a pointed hill *
C. Vestibular surface has an elongated quadrangle in length
D. On the chewing surface of the hill, there are two - the buccal and palatal

7. Anatomical features canines of the upper jaw.
A. Cutting crown margin ends up the hill and has two obtuse angles *
B. The root of the cone-shaped, slightly laterally compressed *
C. The tooth has two roots, buccal and palatal
D. On the chewing surface of the hill, there are two - the buccal and palatal

8. Anatomical features of the upper jaw premolars.
A. Form closer to a rectangle, elongated in the bucco-palatal direction *
B. It has two occlusal - buccal and palatal protuberance divided fissure *
C. The root of the cone-shaped, slightly compressed laterally
D. The lingual surface is concave, it has a triangular shape

9. cavity 3 class include:
E. The cavity on the medial wall of the tooth 22 *
F. The cavity in the lateral wall 33 of a tooth with intact cutting edge *
G. The cavity 41 on the lateral wall of the damaged tooth with a cutting edge
H. The cavity in the medial wall 14 of the tooth

10. For filling the cavity 3 by Black-grade as the insulating spacers used:
A. Tsemion, Vitrimer *
B. Ionoseal, Fuji *
C. Charisma, Evikrol
D. Silitsin, Tsemion

11. In the preparation and filling of cavities class V some additional tasks must solve a dentist?
E. Protect gingival margin against mechanical and chemical damage *
F. Create a retraction of the gums *
G. Create additional space
H. Leave necrotizing dentine on the cavity walls

12. In the preparation and filling of cavities class V some additional tasks must solve a dentist?
E. Save dryness cavity *
F. Provide micromechanical retention seals *
G. Create additional space
H. Create rebate and retention points

13. Requirements for temporary fillings materials:
A. Do not dissolve in saliva *
B. To ensure a tight closure of the cavity *
C. Has antiseptic properties
D. Have an irritating effect on the pulp

14. Requirements for materials for temporary fillings:
A. Easily inserted and removed from the cavity *
B. Be indifferent to the pulp *
C. Has antibacterial properties
D. Toxic influence on the pulp

15. Class 1 according to Blake relates carious cavity is located:
A. In the natural fossa on the buccal surface of the tooth 37 *
B. In a blind pit tooth 12 *
C. On the vestibular surface of the tooth 31

D. At the contact surface 23 of the tooth
16. Class 2 by Black refers carious cavity is located:
A. On the contact surface 17 of the tooth *
B. On the contact surface 44 of the tooth *
C. At the contact surface 22 of the tooth
D. At the contact surface 31 of the tooth
17. 3 class by Black refers carious cavity is located:
A. On the contact surface 22 of the tooth *
B. At the contact surface of the tooth 41 *
C. At the contact surface 26 of the tooth
D. At the contact surface 14 of the tooth
18. 4 Blake relates to the class of carious cavity is located:
E. On the contact surface and the cutting edge of the tooth 12 *
F. On the contact surface and the cutting edge of the tooth 32 *
G. On the contact surface and the cutting edge 26 of the tooth
H. On the contact surface and the cutting edge 14 of the tooth
19. 5th class by Black refers carious cavity is located:
E. In the cervical region of the tooth 22 *
F. In the cervical region of the tooth 47 *
G. The blind fossa tooth 26
H. The blind fossa tooth 11
20. Choose the most appropriate permanent filling material for filling Class 2:
A. Gerkulayt *
B. Charisma*
C. Silitsin
D. Amalgam
21. According to the chemical structure of the JRC are divided into:
A. Traditional*
B. Hybrid*
C. Main
D. Aesthetic
22. The disadvantages of traditional glass ionomer cements include:
A. hydrophilicity *
B. Final polishing after 24 hours *
C. Adhesion to the tooth
D. anticaries effect
23. glass ionomer cements do not belong:
A. Adgezor, Silitsin *
B. Khingan, Friteks *
C. Friteks, Tsemion
D. Aqua Meron, Fuji I
24. The zinc-phosphate cement does not apply:
A. Tsemion, Belatsin *
B. Silitsin, Cha *
C. Adgezor, Tenet
D. Unica, Unifas
25. According to the composition Medicated Pads are divided into:
A. The calcium hydroxide *
B. combined *
C. primary
D. Secondary
26. Medicated Pads are:

A. Kaltsimol, Kaltsikur *
B. Life, Daykal *
C. Adgezor, Charisma
D. Evikrol, Kaltsikur

27. is not used as therapeutic gaskets:
A. Adgezor, Friteks *
B. Silitsin, Unifas *
C. Life, Kalmetsin
D. Daykal, Kaltsimol

28. Sorts of insulating spacers:
A. Base*
B. Liner*
C. Silicate
D. a calcium

29. The insulating spacers are:
A. Adgezor, Tsemion, Unifas *
B. Ketak Molar, Tenet, Unica *
C. Kaltsikur, Krezofen, Evikrol
D. Charisma, Daykal, Life

30. is not used as insulating spacers:
A. Charisma, Daykal, Gerkulayt *
B. Life, Evikrol, Kalmetsin *
C. Tsemion, Ketak Molar, Unica
D. Unifas, Tenet Adgezor

31. The composition of artificial dentin includes:
A. Zinc oxide *
B. Zinc sulfate *
C. calcium oxide
D. magnesia

32. The structure of dentin paste includes:
A. Zinc oxide *
B. Peach oil *
C. Quartz
D. calcium oxide

33. The powder composition of zinc phosphate cement includes:
A. Zinc oxide, magnesium oxide *
B. Aluminum oxide, zinc oxide *
C. Kaolin, orthophosphoric acid
D. Quartz, magnesium oxide

34. The cement composition of the silicate powder include:
A. Silica, alumina *
B. calcium fluoride, sodium fluoride *
C. Zinc oxide, magnesium oxide
D. Kaolin, orthophosphoric acid

35. The composition of glass ionomer includes:
A. Silica, alumina *
B. calcium fluoride, aluminum fluoride *
C. Kaolin, orthophosphoric acid
D. Magnesium oxide, polyacrylic acid

36. The disadvantage of amalgam is:
A. Galvanism*
B. Thermal conductivity*

C. bactericidal
D. mechanical strength

37. The positive properties of silver amalgam:
A. high strength, does not change the color of the tooth, plasticity *
B. bactericidal, mechanical strength *
C. thermal conductivity, galvanism, ductility
D. high strength, thermal conductivity, ductility

38. compomer seal is:
A. Direct Sight *
B. Lyuksat *
C. Charisma
D. Gerkulayt

39. ormokeram include:
A. Admira *
B. sculpture *
C. Evikrol
D. Dyract

40. Negative properties makronapolnennyh composites:
E. marked accumulation of plaque *
F. the difficulty of polishing *
G. pressure resistant
H. sufficient strength

41. Preparations for the chemical expansion of the root canal are as follows:
A. Largal uilra *
B. Canal + *
C. Cresophene
D. Grinazole

42. For non-solidifying plastic paste for root canal are as follows:
A. Pastes based on long-acting antiseptic *
B. Pastes based on metronidazole *
C. Preparations based on zinc oxide and eugenol
D. glass ionomer cements

42. By the plastic hardening materials for root canal are as follows:
A. Preparations based on resorcinol-formaldehyde *
B. Zinc phosphate cements *
C. Pastes based on long-acting antiseptics
D. Pastes based on antibiotics and corticosteroids

43. Methods of determining the approximate length of the root canal:
A. Tabular method *
B. Electrometric method *
C. visual way
D. direct way

44. Methods of determining the approximate length of the root canal:
A. * X-ray method
B. Dissecting the way *
C. physiological method
D. direct way

45. a method for determining an estimated length of the root canal include, in addition:
A. Physiological method *
B. Direct way *
C. X-ray method
D. Dissecting the way

3 correct response

1. Insulating spacers are:
A. Adgezor *
B. Tsemion *
C. Unifas *
D. Kaltsikur
E. Krezofen
F. Evikrol

2. Insulating spacers are not:
A. Life *
B. Kaltsimol *
C. Daykal *
D. Adgezor
E. Ketak Molar
F. Unifas

3. Medicated Pads are:
A. Kaltsimol, Kaltsikur *
B. Daykal, Kalmetsiin *
C. Life, Daykal *
D. Krezodent, Charisma
E. Evikrol, Adgezor
F. Direct Sight, Life

4. By filled polymeric filling materials include:
A. composites *
B. compomers *
C. Ormokery *
D. glass ionomer cements
E. acrylates
F. epoxides

5. The composition of the inorganic filler composites includes:
A. Crystal Quartz *
B. Aluminosilicate glass *
C. Borosilicate glass *
D. Bisfenolglitsidilmetakrilat
E. Aluminium oxide
F. magnesia

6. The tools for inspection mouth include:
A. Dental probe *
B. tweezers*
C. dental mirror *

D. needle Miller
E. curette
F. putty knife

7. The tools for mixing and blending fillings include:
A. ironing board *
B. Putty knife*
C. plugger *
D. Dental mirror
E. dental probe
F. Gracey curette
G.

8. The tools for mixing and blending fillings include, but are.
A. Excavator*
B. Tweezers*
C. Mirror*
D. Putty knife
E. ironing board
F. plugger

9. For final processing use seals:
A. disc, polishing, abrasive stones *
B. disc cutter, finishing burs *
C. disc, polishing, finishing burs *
D. Probe polish curette
E. scaler, finishing burs, tweezers
F. putty knife, file, tweezers

10. For final polishing seals do not use:
A. curettes, excavators *
B. rasp, mirror *
C. file spatula *
D. cutter, polisher
E. finishing burs, drive
F. abrasive stones, polishing

11. The properties of artificial dentin:
A. no mechanical strength *
B. indifference to the tissues *
C. rapid curing *
D. one-component
E. hardens slowly (2-3 hours)
F. mechanical strength

12. Properties dentin paste:
A. mechanical strength, ease of use *
B. hardens slowly (2-3 hours), one-component *
C. requires no mixing, mechanical strength *
D. quickly hardens, indifferntnost to tissues
E. mechanical strength is not irritating the pulp
F. One-component, no mechanical strength

13. Property of artificial dentin is not:
A. hardens slowly (2-3 hours) *
B. mechanical strength *
C. One-component *
D. no mechanical strength

E. indifference to the tissues
F. rapid curing

14. Property dentin-paste is not:
A. indifferntnost to the tissues, quickly hardens *
B. mechanical strength is not irritating the pulp *
C. One-component, no mechanical strength *
D. mechanical strength, ease of use
E. hardens slowly (2-3 hours), one-component
F. requires no mixing, mechanical strength
G.

15. By the temporary filling material does not apply:
A. Gerkulayt *
B. Evikrol *
C. Kalmetsin *
D. Tsinkevgenolny cement
E. Dentin-paste
F. artificial dentin

16. The properties of the combined treatment of gaskets:
A. Odontotropnoe *
B. Anti-inflammatory *
C. antiseptic *
D. mummified
E. Immobilizing
F. Impregnatsionnoe

17. For therapeutic pads does not apply:
A. Adgezor, Gerkulayt *
B. Silitsin, Tenet *
C. Evikrol, Cha *
D. Kaltsikur, Kaltselayt
E. Daykal, Kaltsimol
F. Kaltsesil, Life

18. the permanent filling materials requirements:
A. Good adhesion *
B. It is harmless to the body and the mouth *
C. To maintain the constancy of shape and volume *
D. Have a high thermal conductivity
E. Be chemically resistant to the action of saliva
F. Shrink during curing

19. the permanent filling materials requirements:
A. Be mechanically robust *
B. Be chemically resistant to the oral fluid *
C. Have a low thermal conductivity *
D. Have a short shelf life
E. Be mechanically durable
F. Be harmful to the body and the mouth

20. the permanent filling materials requirements:
A. Have a long shelf life *
B. Maintain color stability *
C. Have a high cosmetic effect *
D. Have a high thermal conductivity

E. Have a short shelf life
F. Change the color and painted

21. Groups cements based on phosphoric acid:
A. Zinc phosphate, silicate *
B. Silikofosfatnye silicate *
C. Silicate, silikofosfatnye *
D. Polycarboxylate, silicate
E. Glass ionomer, polycarboxylate
F. Silicates, glass ionomer
G.

22. For bactericidal phosphate cements include:
A. Argyle, Fostsin bactericidal *
B. Phosphate cement containing silver *
C. Visfat cement, Dioksivisfat *
D. Unica, Tsemion
E. Phosphate cement, Argyle
F. Silitsin, Laktodont

23. Positive properties of zinc phosphate cements:
A. Plastic*
B. Low thermal conductivity *
C. Good adhesion *
D. Low mechanical strength
E. Differs from enamel color
F. Chemical instability saliva

24. Negative properties of zinc phosphate cements:
A. Different from the color of enamel *
B. Chemical imbalance in saliva *
C. Low mechanical strength *
D. Plastic
E. Low thermal conductivity
F. good adhesion

25. By the zinc-phosphate cement include:
A. Adgezor, Unifas *
B. Tenet, Unica *
C. Dioksivisfat, Adgezor *
D. Laktodont, Infantid
E. Silidont, Beladont
F. Tsemion, Belatsin

26. Positive properties of silicate cements:
A. Transparency, gloss *
B. The high content of fluoride *
C. Easy to mix, plasticity *
D. abrasiveness
E. Irritant effect on the pulp
F. Nerentgenokontrastnost

27. Negative properties of silicate cements:
A. Irritant effect on the pulp *
B. abrasiveness *
C. Nerentgenokontrastnost *
D. The high content of fluoride

E. Easy to mix, ductility
F. Transparency, gloss

28. Silicate cement is:
A. Silitsin plus Friteks *
B. Silitsin P Silikap *
C. Alyumodent, Silikap *
D. Unica, Beladont
E. Adgezor, Unifas
F. Tsemion, Ketak molar

29. Positive properties silikofosfatnye cements:
A. Mechanical strength *
B. Archery adhesion than the silicate cements *
C. radiopacity *
D. Color mismatch to the tooth
E. Toxicity
F. Solubility and instability in the saliva

30. Negative properties silikofosfatnye cements:
A. toxicity *
B. Solubility and instability in saliva *
C. Color mismatch to the tooth *
D. mechanical strength
E. radio-opacity
F. Archery adhesion than the silicate cements

31. Silikofosfatnye cement is:
A. Laktodont, silidont-2 *
B. Infantid, Beladont *
C. Posters cement Laktodont *
D. Unica, Beladont
E. Tenet Unifas
F. Tsemion, Ketak molar

32. Positive properties of polycarboxylate cements:
A. Chemical bonding to the tooth structure *
B. Low toxicity to pulp *
C. Good adhesion properties *
D. Instability to oral liquid
E. low strength
F. Unsatisfactory aesthetic qualities

33. Negative properties of polycarboxylate cements:
A. Unsatisfactory aesthetic qualities *
B. Instability in the oral fluid *
C. Low strength *
D. High biocompatibility with the tooth
E. Low toxicity to pulp
F. Good adhesive properties

34. Polycarboxylate cement is:
A. Khingan *
B. Durelon *
C. Adhesor Carbohine *
D. Tsemion
E. Friteks

F. Tenet

35. As classified glass ionomer cements?
A. On application *
B. The shape of the release *
C. On the chemical composition *
D. Biological composition
E. Particle size
F. On the composition of the basic substance

36. On the use of glass ionomer cements are divided into:
A. JRC for fixing *
B. Restorative JRC *
C. Quick-JRC *
D. aesthetic JRC
E. fissure sealants
F. JRC gasket

37. The positive properties of the JRC:
A. Good chemical adhesion to the tooth structure *
B. Non-toxic *
C. Anticaries action *
D. Toxic effect on the pulp
E. high thermal conductivity
F. Low adhesion to other filling materials

38. The positive properties of the JRC:
A. High biocompatibility with the tooth structure *
B. Low thermal conductivity *
C. Anticaries action *
D. High polymerization shrinkage
E. high thermal conductivity
F. Low adhesion to other filling materials

39. The composition of the copper amalgam:
A. Copper 32-37% *
B. Mercury 59-66% *
C. Zinc 2.4% *
D. Fluoro 4%
E. Calcium 20%
F. Aluminum 5%

40. The composition of the silver amalgam:
A. Silver 65-66% *
B. Copper 2-6% *
C. Mercury 45-50% *
D. Quartz 20-25%
E. Fluoro 2-7%
F. Calcium 10-12%

41. Negative properties of copper amalgam:
A. It does not have the adhesion to the cavity walls *
B. It has good thermal conductivity *
C. Tooth stain fabric in a dark color *
D. It has a greater hardness
E. It does not stain the tooth tissue
F. It has good ductility

42. By appointment composites are separated:
A. For posterior teeth *
B. For the front teeth *
C. Universal *
D. chemical
E. light
F. adhesive

43. By way of curing composites divided:
A. thermal *
B. chemical *
C. light *
D. hybrid
E. flowable
F. pakuemogo

44. The consistency of the composites are divided:
A. conventional *
B. flowable *
C. pakuemogo *
D. hybrid
E. chemical
F. polymer

45. Methods of polymerization composite fillings:
A. Thermal response *
B. Chemical reaction *
C. Photochemical reaction *
D. dual responders
E. triple reaction
F. combined response

46. The positive properties of the chemical curing composites:
A. Uniform Polymerization *
B. Easy to use *
C. The minimum production time of restoration *
D. Working without waste
E. High aesthetic results
F. Do not require mixing of components

47. Negative properties of chemical curing composites:
A. Low aesthetic properties *
B. Low wear resistance *
C. Potemenenie seals *

D. uniform polymerization
E. Easy to use
F. Minimum time of restoration fabrication

48. For composites chemical curing are:
A. Composite *
B. Compolux *
C. Charisma F *
D. Herculit XRV
E. Filtek A-110
F. te Econom
G.

49. Svetoaktiviruemyh advantages of composite materials:
A. Requires no mixing of material *
B. Allow to simulate longer seal *
C. Polymerization by the decision of the doctor *
D. Change viscosity during operation
E. The low degree of polymerization
F. Low aesthetic results

50. Disadvantages svetoaktiviruemyh composite materials:
A. More time with the seals *
B. High price*
C. Light bulb is bad for the eyes *
D. Requires no mixing material
E. High aesthetic results
F. Do not darken

51. Classification of the composites as a function of filler particle size:
A. Makronapolnennye *
B. microfilled
C. hybrid *
D. polygonal
E. monotone
F. Two-component

52. Negative properties makronapolnennyh composites:
A. polishing difficulty *
B. The lack of a "dry shine" *
C. Marked accumulation of plaque *
D. radio-opacity
E. sufficient strength
F. Suitable optical properties

53. Positive properties makronapolnennyh composites:
A. Sufficient strength *
B. Suitable optical properties *
C. radiopacity *
D. Color change
E. The difficulty of polishing
F. Marked accumulation of plaque

54. Positive properties of micro-filled composites:
A. Good polishing *
B. High color stability *
C. Resistance glossy surface *
D. Color change

E. The difficulty of polishing
F. Marked accumulation of plaque

55. Negative properties of micro-filled composites:
A. Nerentgenokontrastnost *
B. Insufficient mechanical strength *
C. High coefficient of thermal expansion *
D. Low abrasion
E. Good aesthetic quality
F. good polishability

56. Adhesives may be
A. self-curing *
B. light-curing *
C. Dual-curing *
D. triple cure
E. combined
F. physical

57. The disadvantages of adhesive Generation IV systems are
A. multicomponent *
B. The complexity of the application *
C. Big time*
D. poor adhesion
E. Easy to use
F. saving of time

58. dentin surface treated with dentine adhesive to:
A. Improve bonding dentin and composite *
B. Increasing the mechanical strength of the thinned dentin *
C. Reducing dentin sensitivity to irritants *
D. Reduces the dentin bonding and composite
E. Reduces the mechanical strength thinned dentin
F. Uvelichevaet dentin sensitivity to stimuli

59. What types of adhesives:
A. enamel *
B. dentin *
C. Universal*
D. cement
E. Amelodentinal
F. Enamel-cement

60. List the advantages of fotokompozitnyh filling materials:
A. match the color and transparency of the enamel and dentin of the tooth *
B. color fastness *
C. sufficient time for restoration modeling *
D. color fastness is not
E. Not enough time simulation
F. Does not match the color and transparency of the enamel and dentin of the tooth

61. Disclosure cavity Class 3 can be carried out:
A. Direct access*
B. Lingual access *

C. Vestibular access *
D. incisal access
E. gingival access
F. tunnel access

62. According to topographic classification distinguished caries:
A. At the stage of the spot *
B. Average*
C. Surface*
D. Acute
E. Chronic
F. Primary

63. Class 1 cavities by Black include:
A. caries chewing surfaces of premolars *
B. caries chewing surfaces of molars *
C. Blind holes all groups of teeth *
D. caries contact surfaces of molars and premolars
E. cervical caries of tooth groups
F. caries contact surfaces incisors and canines with impaired cutting corner tooth crown integrity

64. For Class 2 cavities by Black include:
A. caries contact surfaces of molars *
B. caries contact surfaces of premolars *
C. caries contact poverhnostey36, 37 and 38 *
D. Blind holes all the groups of teeth
E. natural fissure caries and recesses enamel any group of teeth
F. caries contact surfaces incisors and canines

65. Polycarboxylate cement is:
A Poly-F Plus *
B. Durelon *
S. Adhesor Carbohine *
D. Tsemion
E. Friteks
F.Tenet

66. Show accesses 2nd class on Blake:
A. Direct *
B. Vestibulyarny *
S. Tunnel *
D. buccal
E. Inzitsialny
F. Marginal

67. Show accesses 2nd class on Blake:
A. occlusal *
B. Vestibulyarny *
S. Tunnel *
D. buccal
E. Inzitsialny
F. Marginal.

68. Elements of the cavity 1 class:
A. The bottom of the cavity *
B. wall 4 *
S. angle point 4 *

D. Krisch cavity
E. wall 5
F. 5-point angle

1. On what and where the tooth is an abnormal bump Carabelli:
A. On the palatal surface of the medial-palatal tooth protuberance 16 *
B. On the palatal surface of the anterior palatal tooth protuberance 27 *
C. On the medial-palatal tooth hill 16 *
D. On the palatal surface of the distal-palatal protuberance 16 of a tooth
E. In the distal-palatal tooth hill 17
F. On the palatal surface of the medial-palatal protuberance 18 of a tooth

2. The non-solidifying plastic paste for root canal are as follows:
A. Pastes based on antibiotics and corticosteroids *
B. Pastes based on calcium hydroxide *
C. Pastes based on long-acting antiseptic *
D. Zinc phosphate cements
E. glass ionomer cements
F. Preparations based on resorcinol-formaldehyde
3. For non-solidifying plastic paste for root canal are as follows:
A. Pastes based on metronidazole *
B. Pastes based on calcium hydroxide *
C. Pastes based on long-acting antiseptic *
D. Zinc phosphate cements
E. Preparations based on zinc oxide and eugenol
F. Polymeric materials based on calcium hydroxide
4. plastic hardening paste for root canal are as follows:
A. Zinc phosphate cements *
B. Preparations based on zinc oxide and eugenol *
C. Polymer materials based on calcium hydroxide *
D. Pastes based on metronidazole
E. Pastes based on calcium hydroxide
F. Pastes based on long-acting antiseptics
5. plastic hardening paste for root canal are as follows:
A. Zinc phosphate cements *
B. Glass ionomer cements *
C. Preparations based on resorcinol-formaldehyde *
D. Pastes based on metronidazole
E. Pastes based on calcium hydroxide
F. Pastes based on long-acting antiseptics
6. Disadvantages of zinc phosphate cement for root canal:
A. Fast curing *
B. The material does not resolve *
C. Inability to unsealing *
D. Ease of administration into the channel
E. Low solubility in the interstitial fluid
F. A good fit to the channel walls
7. Positive properties tsinkoksidevgenolnyh cement for root canal:
A. Easily introduced and removed from the root canal *
B. It has an optimal curing time *
C. radiopacity *
D. Possibility of toxic and allergic effects

E. The probability of dispersal paste in the channel
F. Composites polymerization process destroys

8. Negative properties tsinkoksidevgenolnyh cements for root canals:
   A. Possibility of toxic and allergic effects *
   B. The probability of dispersal paste in the channel *
   C. Composites disrupts polymerization process *
   D. Easily introduced and removed from the root canal
   E. It has an optimal curing time
   F. It has antiseptic and anti-inflammatory action

9. Positive properties pastes based resorcinol-formalin for root canals:
   A. Decontamination content deltoid branches *
   B. Strong antiseptic *
   C. Biologically neutral after curing *
   D. Irritant effect on periodontal tissue
   E. The probability of dispersal paste in the channel
   F. Composites polymerization process destroys
10. Negative properties pastes based resorcinol-formalin for root canals:
   A. Irritant effect on periodontal tissue *
   B. High toxicity of components *
   C. The staining of the tooth crown *
   D. Decontamination content deltoid branches
   E. Strong antiseptic
   F. Biologically neutral after curing
11. Classification filling materials for root canal:
   A. Non-solidifying plastic *
   B. plastic hardening
   C. Pervichnotverdye *
   D. gutta-percha pins
   E. cements
   F. glass ionomer cements
12. The composition of arsenious paste:
   A. Arsenic trioxide *
   B. Cocaine hydrochloride *
   C. Thymol*
   D. zinc oxide
   E. Resorcinol-formaldehyde
   F. Iodoform
13. The composition of paraformaldehyde paste:
   A. paraformaldehyde *
   B. Lidocaine hydrochloride *
   C. Phenol*
   D. cocaine hydrochloride
   E. arsenic trioxide
   F. Iodoform
14. The insulating spacers are:
   A. Adgezor *
   B. Tsemion *
   C. Unifas *
   D. Kaltsikur

E. Krezofen
F. Evikrol

15. The insulating spacers are not:
A. Life *
B. Kaltsimol *
C. Daykal *
D. Adgezor
E. Ketak Molar
F. Unifas

16. Medicated Pads are:
A. Kaltsimol, Kaltsikur *
B. Daykal, Kalmetsiin *
C. Life, Daykal *
D. Krezodent, Charisma
E. Evikrol, Adgezor
F. Direct Sight, Life

17. Filled Polymer filling materials are
A. Composites *
B. Compomers *
C. Ormokery *
D. glass ionomer cements
E. acrylates
F. epoxides

18. The composition of composites includes an inorganic filler:
A. Crystal quartz *
B. aluminosilicate glass *
C. Borosilicate glass *
D. Bisfenolglitsidilmetakrilat
F. Aluminium oxide
G. magnesia

19. endotool to expand the mouth of the root canal:
A. Peeso-reamer (Largo) *
B. Gates-glidden *
C. Orifice Opener *
D. Hedstroem file
E. K-Reamer
F. needle Miller

20. endotool for prohodzheniya root canal:
A. K-Reamer *
B. K-FIexoreamer Golden Medium *
C. K-FIexoreamer *
D. TO- file
E. Hedstroem file
F. Gates-glidden

21. endotool for expansion and alignment of the root canal:
A. Hedstroem file, K-FIexofile Golden Medium *
B. KFile, Hedstroem file *
C. KFile, K-Fiexofile *
D. Gates-glidden, K-Reamer
E. Hedstroem file, Peeso-reamer (Largo)
F. K-Fiexofile, Orifice Opener

22. For filling the root canal are used, except:

A. Broach, depth *
B. Hedstroem file, K-Reamer *
C. Orifice Opener, K-Fiexofile *
D. Kanalnapolnitel, spreader
E. Plugger, kanalnapolnitel
F. Plugger, spreader

6.4. criterions otsenki

ЎЗБЕКИСТОН РЕСПУБЛИКАСИ СОҒЛИҚНИ САҚЛАШ ВАЗИРЛИГИ
АБУ АЛИ ИБН СИНО НОМИДАГИ
БУХОРО ДАВЛАТ ТИББИЁТ ИНСТИТУТИ
ТЕРАПЕВТИК СТОМАТОЛОГИЯ КАФЕДРАСИ

«ТАСДИҚЛАЙМАН»
Ўқув ва тарбиявий ишлар бўйича проректор,
доц. Г.Ж.Жарилкасимова_____
«____»_____2018 йил

ТЕРАПЕВТИК СТОМАТОЛОГИЯ КАФЕДРАСИДА
ТАЛАБАЛАРНИНГ БИЛИМИНИ БАҲОЛАШ
РЕЙТИНГ ТИЗИМИ ТЎҒРИСИДА
Н И З О М

Бухоро-2018

1

Bukhara State Medical Institute
Therapeutic dentistry students in the department evaluation rating system
I Z O N M

"Dental diseases of the Department of Pediatric Dentistry, Pediatric Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" subjects "to assess students 'knowledge and assessment of students' knowledge and higher education system and the Regulations on the medical panel of the rectors of higher educational institutions developed on the basis of the proposed regulations.

I. General Provisions

1. Students' knowledge and purpose of a rating system to assess the quality of management and competitive in the preparation of students to achieve the formation of gaps in the development of prevention, detection and elimination of.
2. The main objectives of the rating system is as follows:
a) in accordance with state educational standards of the students, the skills, knowledge and skills related to the level of control and analysis;
b) the basic principles of assessment of students' knowledge, skills and abilities; State educational standards of fairness and reliability, and easy assessment;
c) subjects by students in a systematic manner and the terms of mastering and analysis;
g) develop students' skills to work independently, effective use of information sources;
d) taladalar objective and fair assessment of the knowledge and the results of its time;
c) to provide students a comprehensive and systematic training;
or) to create a process to provide computer training.
3. "dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" the knowledge of students in the fields of dentistry 3-4-5 courses per semester for evaluation of control sheets and on the basis of the evaluation criteria.

II. Types of control and the implementation of the

4. control, it ruled that the criteria and procedure for the recommendation of the head of the department faculty teaching methods were discussed and approved by the Board, as well as "the prevention of dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" science training program in conjunction with the types of training provided to workers .
Department of Pediatric Dentistry students' knowledge assessment system was developed as a regulatory document. Evaluation of the student's level of knowledge and practical skills and theoretical and practical training materials, materials and interactive methods of education are participating in discussions on the level of activity, as well as on account of the level of development of practical knowledge and skills.

Fannie covers a number of topics maturely knowledge or theoretical part of the training after the completion of the student's knowledge evaluated and the student's specific tasks to answer the question or problem solving skills and ability. The volume of the block system subjects less than 72 hours with the resident and is not transferable.

YuTaking into consideration the qoridagilarni department are evil. Dental disease prevention lectures, 6 hours, 30 hours, Practical Training, Clinical Training, i / m 34 hours, 36 hours, 106 hours, in case that the two planned to Resident Evil.
8 hours of lectures on the subject of Pediatric Dentistry, Practical Training, 50 hours, 60 hours clinical Training / m 58 hours, 176 hours, in case that 1 OB.
4 students for the science of surgical stomatology of the speech - 8S, Practical Training-28s, Clinical Training-36 i / s., M-26s, -98 hours, in case that 1 OB.

5-year students of Stomatology Hospital of therapeutic training in the form of a cycle of lectures on the subject of '16s, Practical Training-92s, Clinical Training 108 hours / m - 126 s, 342s. It is also 2 times to assess the science, at the end of the cycle, and the purpose of the transfer.
5-year surgical lectures - 6 hours, 20 hours Practical Training, Clinical Training - 31 hours / m-30s, 87 hours, 1 Taking into consideration that the resident is planned.
The institute has been developed in accordance with the standard procedure for the World Bank and evil in each case posed orally, in writing of the characteristics of science, test, and control the work of the OSCE and other forms can also be carried out. Taking into consideration that the department JN Evil - oral, written form.
5. control charts, control type, shape, and allocated to the control of a maximum number of points, as well as information about the current and interim control points
"Dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" The first training session on the subject of the students.
6. The students' level of knowledge and the development of state educational standards, the types of controls to ensure compliance with the following techniques:
the current assessment "Dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" aviation 3-4-5 year students of the faculty of dentistry, each subject to determine the level of knowledge and practical skills assessment. The truths of science in the control properties, seminars, workshops, oral questioning, testing, interviewing, reference works, colloquium, and control the functions that can be carried out in other ways, such as;
intermediate - V-VI-VII-VIII-IX-X (on the basis of a number of topics related to the curriculum throughout the semester, which includes the completion of the section) to determine the level of knowledge and practical skills assessment.
- At the end of the semester final assessment by a scientific theoretical knowledge and practical skills of students a method to assess the level of development. According to the control of the final test and DCI (the objective) in the form of clinical trials.
7. Intermediate process control committee, led by the head of the department periodically conduct studies and could be canceled in case of any violation, intermediate results of the control. In this case, the intermediate control.
8. The order of the head of the institute of internal control and monitoring commission under the ultimate control of the process periodically conduct studies and could be canceled in case of any violation, the final results of the control. In such cases, the ultimate control.

III. Evaluation criteria and procedure

10. The students' level of knowledge, skills and control system talabalaning on the basis of "the prevention of dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" is characterized by the level of development of science points.
11. "The prevention of dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" the development of science During the semester, students estimated 100-point system.
This type of control points are distributed as follows:
Current rating - 45 points;
Evaluation - 20 points;
Independent business - 5 points;
The assessment of the final 30 points.
Faculty of Dentistry 3-4-5 courses "Dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology taking into account the specifics of the" science of teaching methods to assess students' knowledge DB, Finance, OB and YaBlarning to take into account the value of the coefficients .

№	Evaluation of type	The maximum score	Sort Ball	coefficient
1	Current rating	45	24.75	0.45
2	TMI	5	2.75	0.05
3	evaluation	20	11.0	0.2
4	The final evaluation	30	16.5	0.3
	total:	100 points	55.0	1

13. "student dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" control the development of aviation recommended the following criteria:

a) 86-100 points on the student's level of knowledge must meet the following requirements:
The conclusion and decision-making;
creative thinking;
independence and autonomy;
that knowledge into practice;
To understand the essence;
Learn to tell;
an idea;
b) a score of 71-85 the student's level of knowledge must meet the following requirements:
independence and autonomy;
that knowledge into practice;
To understand the essence;
Learn to tell;
an idea;
c) 56-70 points in the student's level of knowledge must meet the following requirements:
To understand the essence;
Learn to tell;
an idea;
g) the student's level of knowledge can be assessed with a score of 0-55 in the following cases:
be clearly understood;
not knowing.

14. The criteria for the prevention of dental diseases, "expertise, Children's Hospital of Pediatric Dentistry" therapeutic stomatology, surgical stomatology disciplines of higher education institutions (IDA) for the final control, evaluation criteria and instructions developed and approved by the Scientific Council of the Institute and related institutions of higher education.

15. "Student dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" independent of the subject of the current, intermediate and final control and allocated to perform the tasks posed by the assessment is based.

16. "student dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" fan rating:

$$f = \frac{V \bullet O'}{100}$$

Where: O1 on the development of science degree (in points).
V-VI semester, the science of dental diseases the total training load (106 hours)
The seventh and eighth semester, the total teaching load of the science of Pediatric Dentistry (176 hours)
The seventh and eighth semester, the science of surgical stomatology total training load

(98 hours)
IX-X semester, Children's Hospital of Stomatology of therapeutic science of the total training load (342 hours)
IX-X semester, the science of surgical stomatology total training load
(87 hours)
17. "The prevention of dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" science of the current, intermediate and final control of 55 percent of the selected points.
The current and intermediate control points in each of more than 55 per cent below average scores of all students in this subject to the final inspection.
If you have the ultimate control of this type of control students received scores high points, the points accumulated in the current and interim control points. Otherwise, the student "Dental disease prevention, Pediatric Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" mastered subjects.

IV. The duration of the types of control

18. Interim and final inspection in accordance with the thematic plan by the dean on the basis of rating control. The final control over the last 2 weeks of the semester.
19. The current and interim control points points and the reasons did not participate in the control of the student plan for this type of control, the last in the current period and controls.
Submitted in time and space is added to the Control Points assessment scores and will not be allowed to transfer.
Because of attendance, as well as the terms of the current, intermediate and final control on the basis of an instruction to students who have not passed the dean of the faculty, are allowed to submit, within two weeks after the start of study.
20. At the end of the semester, "the prevention of dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" The current, interim, final or the subject of TMI types of control points below average, each student nutrition (malnutrition) of the academic debtors.
At the end of the semester, the students re-development of academic debtors for 2 weeks time. At the same time, "the prevention of dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" failed to master the disciplines established by the recommendation of the dean of students, faculty, students be removed from the ranks of the order of the rector.
21. If a student disagrees with the results, "the prevention of dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" type of control subjects from the moment the results were announced a day may apply to the Dean of the faculty. In this case, the Dean of the Faculty according to the order of the rector of not less than 3 (three) appeal commission.
Appeals Committee considered the statements of the students, the conclusion on the same day.
22. This assessment requirements on the basis of the established time limits and clearances, the dean of the faculty of the department, training, and is controlled by the internal control and monitoring.

V.Reyting the order of the results and analysis

23. "student dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" science of control points with the squad at the end of the semester, all the numbers. The curriculum of the book "allocated" column for the semester, "the prevention of dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" fans hours of total training load,

"Dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" of the column "Assessment is poured into the development of a 100-point system. Students received scores lower o'zdashtirish the book are not.

24. "The prevention of dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" control the types of results to be held on the subject of the group of professors and teachers magazines and statements and on the same day (in the form of written work, (2 two) days from the date) brought to the attention of the students.

25. According to the final results of the control dean of students, "the prevention of dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" rating on the subject of both a book and your account fills.

26. The rating of the student's level of knowledge, skills and experience. The student's V-VI-VII-VIII-IX-X (3-5 courses per semester) of the total rating of all accumulated points will be determined by the sum of the subjects.

27. The total rating of students in each V-VI-VII-VIII-IX-X will be announced after the end of the semester and academic year.

28. diploma or academic dean "to formalize the prevention of dental diseases, Children's Dentistry, Children's Hospital of therapeutic stomatology, surgical stomatology" Science is a V-VI-VII-VIII-IX-X semester, while the sum of the ratings.

29. Students in the intermediate and final achievements and related documents (the control group, the teacher's personal diary, Bill, said the dean of the indicators and the development of teaching departments in memory of the computer, analysis carried out on a regular basis.

30. The current, interim and final results of the control department meetings, faculty and the Academic Council of the Institute of Pediatric Dentistry are discussed and appropriate decisions.

VI. The final rules

31. The Ministry of Higher and Secondary Special Education of the Republic of Uzbekistan and the State Testing Center under the Cabinet of Ministers of the Republic of Uzbekistan test ratings and the rating points of the investigation and the identity of control.

32. The interactive display of the target dates and the responsibility of the department to fill the t.f.n. Kamalova FR assigned to.

Department of therapeutic dentistry
The Students Organization of work
And control of

INSTRUCTIONS

National Training Program, along with a deep theoretical and practical knowledge, which operate independently in the field of your choice, regardless of their knowledge and skills to improve the positive, issue-oriented analysis to identify problematic situations, the training of specialists capable of adapting quickly to changing conditions is one of the main tasks as defined.

Data, information and knowledge rapidly expanding the scope of current conditions, all of the information is difficult to convey to the students during the lessons.

Experiments have shown that, regardless of the student involved and the risks of mastering the knowledge ishlasagina. Students with the basic knowledge, skills and experience in the process of self-education

neither occurs, the ability to operate independently and have a positive interest in the work.

Therefore, the students' individual education plan, organize and create all the necessary conditions for teaching, training students as well as teaching them to read more, learn ways to show a ticket for the independent study is one of the main tasks of the teachers.

Each professors initially arouse confidence in their ability and mental capabilities of their patience to learn independently, with step-by-step on the right way to go.

Independently by the students the knowledge and skills to develop value-course complex, taking into account the expansion of their initiative and increase the role. He began to adapt to the independent education student identified only by the teacher works not only fulfilled their needs, interests and capabilities, additional information that it deems necessary to examine the development of the independent selection.

(TMI) - the work of independent students in certain subjects in the curriculum knowledge, skills and skills in a specific part of the student by the teacher based on the advice and recommendations of the audience and outside the audiyatoridan development-oriented system.

Students must be taken into account in determining the shape and size of the work on the following aspects:

- learning process;
- a specific feature of science learning and the level of difficulty;
- the student's ability and level of theoretical and practical training (basic knowledge);
- provision of science information resources;
- the level of student work with sources of information.

Independent study for the shape and size of orders, the level of difficulty in the semester in accordance with the terms doubts skills increase. In other words, students perform tasks gradually raise the level of independence of their assignments should be structured and creative approach to teaching.

Wish taking into account the student's level of academic development and ability to use the following forms:

- some of the themes of literature and science with the help of independent development, educational resources;
- practical, seminars and laboratory preparation;
- abstract on the subject;
- calculation and graphic works;
- on the make, model and works of art;
- where to find a solution to the problem, lawsuits, test questions and assignments;
- scientific articles, abstracts, and reports;
- applied to any non-standard situations solving and creative work;

- Please fill in the patient card (043) to write the history of the disease, household tasks and others.

Science students work independently on the basis of the nature of the tasks for other forms can also be submitted. What kinds of tasks students should be determined by the department. Think instructions carefully developed and targeted audience of students training to strengthen, deepen and expand the knowledge you need to fill.

Independent development of the subject. Fanning the property, depending on the level of students' knowledge and ability to work independently of the topics included in the curriculum necessary to students for the development of delivery. At the same time understand the key questions which will reveal the contents of expression and attention to the primary literature and information sources.

Students complete the task independently of the academic literature on this topic konspektlashtiradilar basic understanding of the nature of the expressions prepare answers to questions related to the topic. If necessary, the (difficult questions, the development of literature, the system is unable to explain the theme, etc.), teacher recommendations. Independent development of the text are protected by the department on the subject.

Preparing. Students for the level of difficulty in his personal capacity, the level of knowledge and ability, which submitted an abstract on the subject. The students basic reading additional books (monographs, scientific articles, information obtained from the Internet, electronic library, etc.) using the collection, analysis, log in, and the subject of a wide range of fully as possible. If necessary, the teachers advice and instructions.

Visual training. Students to describe a particular topic and to help the development of better materials (paintings, drawings, photographs, maps, models, models, graphics, templates, phantoms, etc.). ' Thread the specific requirements for teacher instruction, yo'riklar. Visual equipment, form and content students are selected by an independent. Such a task may be the subject of a number of student papers.

Student use of visual materials and written recommendations to the department.

Subject of tests, controversial questions, case studies and assignments. Tests students on a particular topic, difficulty level is different from case studies and assignments submitted questions to establish the basis for the discussion.

At the same time teachers by student test requirements and the rules of law-planned target, the formation of problematic questions for discussion on methods to create the moment there is no need to separate the tasks of guidance. Counseling works when task and requirements to determine the level of control (or may be invited to fill).

Test questions, complex situation and issue instructions to the department with the participation of experts will be protected.

Preparation of scientific articles, abstracts and articles. Any subject a student can choose the subject (student) (abstract) nature of articles, abstracts or scientific report may be submitted. The student academic books, research papers, theses, monographs and articles, as well as other sources of information relevant materials, analysis, and highlight the need for regulation, personal experience and scientific knowledge, based on the results of the additions, comments, and their point of view and Main. The students work in collaboration with the teacher.

Articles, abstracts or speech protected by the department.

Applied to any non-standard issues and creative work.

A theme or category of non-standard applications that require a special approach to the theoretical value tasks, required a creative approach to scientific and creative tasks, the task of creating models, models, samples may be submitted. Practical tasks to solve the issue aims to find the optimal option.

Depending on the student's interest and ability, in cooperation with the scientific nature of assignments, teacher preparation and publishing scientific articles.

Ambulatory (043) to fill in the card and write the history of the disease. Children's therapeutic stomatology students on the subject of children in clinic closed in conjunction with the dentist makes a patient fills a 043-patient card, depending on the child's illness. Under the supervision of a doctor actively participate in treatment procedures, daily operations will be replenished daily.

During the semester, the subject of children's surgical stomatology (cycle) of one or two patients recorded in the history of the disease, the Department for protection. This is based on the clinical features of science in the history of the disease, are taken into account to comply with the order.

The history of the disease to protect the student's full coverage of the analysis, the analysis of clinical and laboratory investigations can take, the end can justify the diagnosis, treatment plan based on properly, and pay attention to others.

Students work independently to establish effective:

- a systematic approach;
- and coordination of all phases of uzviylashtirish;
- strict control over the implementation;
- and the establishment of control mechanisms for improvement.

Independent work assignments for the successful completion of
The following requirements must be adhered to:

- (of strengthening the development of new skills, knowledge, ijldiy activity, based on the talent and skills for development);
- set clear objectives and tasks;
- complete algorithms and methods have enough students to be aware of;
- counseling and other types of help correct) orientation and instruction, to understand and explain the essence of the problem tasks, methods of understanding, to solve some problematic moments together);
- accounting methods and evaluation criteria;
- time, and a clear definition of the types of control (workshop, laboratory training, more time for consultation or control, report or abstract text, contacts, tasks performed control book, homework, tests, papers, non-standard tasks, FAQs, articles visual equipment, and artistic works, a question-and-answer, to explain the nature of the work done and in written form).

Students work can be conditionally divided into:

Outside the auditorium of the TMIlari. Some of the topics of the curriculum is an independent development house tasks, practical laboratory work and preparation, artistic and scientific works.

The first round of students to classes at the level of theoretical and practical skills to learn, practice, laboratory, seminar classes (preparation) in order to check the level and quality of performance of household tasks, usually controlled, question-and-answer dialogue, discussion, practical tasks and bajartirib etc. according to the current practice control (control).

In the control of the student during the course of the development of metriallarni and homework to do, and the level of activity, performance, and the extent to which it is taken into consideration.

The second round of the subject in the curriculum development outside the auditorium on the topic and to seek independent information, analysis, konspektlashtirish (or abstract form of registration), and the development of practical, creative approach to tasks carried out in the form. This type of work in process development and quality control classes, the special consultation hours.

An independent evaluation of the work of students. TMI "as a result of assessment of students' knowledge and evaluated according to the" Regulations on the rating system.

5 course "Children are the subject of surgical stomatology"
development and evaluation criteria

development

	types of control	The number of	Max.ball	Intake.	total points
	JB 1.1. practical training 1.2. clinical training 1.3.T.M.I.	 10 10 8	 100 100	 0.45 0.05	 45 5
	ON	1	100	0.20	20
	Ya.B. 3.1. Ya.B. 3.1.2. DCI 3.1.3. Test (30 questions)	1	 100 100	 0.15 0.15	 15 15
TOTAL:			100	1.0	100

Evaluation criteria

1. Practical training by the department to assess each subject was prepared in accordance with the evaluation criteria. Each training a 100-point system (86-100 evaluated satisfactory for good, 71-85, 55-70). The average value of the 0.45 multiplied by the coefficient.

2. Students work independently evaluated depending on the size and quality of the implementation of 100-point system, found the average value of 0.05 is multiplied by the coefficient.

3. Intermediate oral and written assessment of student will be evaluated on a 100-point system, and 0.2 multiplied by the coefficient.

4. The final assessment carried out in two stages:

1. DCI assessed a 100-point system, and the ability to master the ability to 0.15 multiplied by the coefficient.

2. Test test test center, 50-question than 100-point system will be evaluated and multiplied by the coefficient 0.15.

5. The student collected for each type of control points added to the total score, and the learning is assessed.

DB + 0.45 + 0.05 = 0.3 + 0.2 + Foreign ON TFI UO'

Students in the case of consultations
the organization of the

1. Students work independently (TMI), is designed to carry out consultation workshops outside the auditorium on the independent work trips and it will be established in order to monitor the implementation.

2. TMI consultation workshops held in accordance with the calendar of science-themed design.

3. The consultation held by the class teacher.

4. Science teacher advisory class will do the following:

- TMI tasks on the ticket;
- supports the assignment plan;
- recommends that the relevant literature and information sources;
- TMI on the development, reporting, settlement and assignment papers will accept and evaluate the results.

5. TMI consultations on the establishment of the educational process, depending on the students in their free time teaching schedule.

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