MINISTRY OF HIGHER AND SECONDARY EDUCATION OF THE REPUBLIC OF UZBEKISTAN

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«NURSING CARE OF SICK CHILD»

Treatment work-5510100, vocational education-5111000 (treatment work-5510100), pediatric work-5510200 educational learning direction

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ANNOTATION

This publication is an important guide for junior students in children's medical and preventive institutions, where the "approach" to the child is developed, the student learns to talk to him in a mutually acceptable language, begins to understand the psychology of children of different ages.

The most important part of this course is to develop a sense of mercy and empathy for the fate of their patients from the first years of study at the medical institutes , the formation of love for the chosen difficult and restless profession of a children's doctor. This is essentially a preparatory stage for the study of propaedeutics of children's diseases, mastering the knowledge of secondary medical personnel. The proposed textbook is intended for first-year students who are engaged in the subject of **"NURSING CARE OF SICK CHILD"**, and remained years students who are undergoing nursing practice.

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CHAPTER I

ORGANIZATION OF WORKING AT CHILDREN'S MEDICAL AND PREVENTIVE INSTITUTIONS

The state system of medical and preventive care for children, adopted in our country, consists of three main functionally related units: children's polyclinic - children's hospital - children's sanatorium.

The main types of children's medical and preventive institutions: children's hospital(inpatient), children's polyclinic, children's sanatorium.

It is recommended for children in specialized departments of hospitals and polyclinics for adults, children's maternity hospitals, consulting and diagnostic centers, etc.

Medical and preventive care, mainly preventive, is also provided in educational institutions, such as a children's home, a kindergarten complex, a school, a health camp (including a sanatorium type), etc.

Knowledge of the specifics of the work and purpose of each institution is necessary for the future pediatrician. In the system of children's medical and preventive institutions, the children's hospital plays a special role. It is here that the seriously ill are hospitalized, where modern diagnostic equipment is concentrated, and highly qualified doctors and nurses work.

Children's hospital — a medical and preventive institution for children up to and including 14 years of age who need permanent (inpatient) medical care, intensive care, or specialized care. There are different types of children's hospitals. According to the profile, they are divided into multi-profile and specialized, according to the organization system, they are combined with a polyclinic and unconnected, in terms of the volume of activity — to hospitals of a particular category, determined by the capacity (number of beds). In addition, depending on the administrative division, there are district, city, clinical (if a department of a medical or research institute operates basis on a hospital), regional, and republican children's hospitals.

The main goal of a modern children's hospital is to restore the health of a sick child. To achieve this goal, the following three-stage care tasks are solved for each patient: diagnosis of the disease, emergency therapy, the main course of treatment, and rehabilitation (including social assistance measures).

The children's hospital has certain responsibilities, the main of which are the following:

- providing children with highly qualified medical care;
- introduction of modern methods of diagnostics, treatment, and prevention into practice;
- advisory and methodological work.

Each children's hospital has an emergency department (emergency room), a hospital (medical departments), a medical and diagnostic department or corresponding offices and laboratories, a pathology department(morgue), auxiliary sub-divisions (pharmacy, food department, medical statistics office, medical archive, administrative and administrative part, library, etc.).

The development of inpatient medical care for children currently tends to centralize away from individual hospital services. Medical-diagnostic and consultative centers, pathology departments, sterilization departments, and other services are being created to support the work of several hospitals in the city and region.

The staffing table of the children's hospital includes the positions of a chief physician, deputy chief Physician for the medical part, deputy chief physician for the economic part, heads of departments, doctors(residents), senior nurses, nurses, junior nurses, whose duties include:

- providing highly qualified medical care and care for sick children. In large children's hospitals, there is a position of a teacher who conducts educational work with children. The staff is divided into separate economic and technical specialties (cooks, engineers, locksmiths, accountants, etc.).

The work of the reception department (rest). The first meeting of the sick child with the medical staff takes place in the emergency department. The main task of the reception department is to organize the reception and hospitalization of sick

children. The success of subsequent treatment largely depends on the correct and prompt work of this department. When a patient is admitted, a preliminary diagnosis is made, the grounds for hospitalization are evaluated, and emergency medical care is provided if necessary.

The reception department consists of a waiting room, reception and examination boxes, isolation boxes for 1 bed, a sanitary checkpoint, a doctor's office, a dressing room, a laboratory for urgent examinations, a room for medical personnel, a toilet, and other premises. The number of reception and examination boxes should be 3 % of the number of beds in the hospital.

Employees of the reception department keep records of the movement of patients (registration of incoming, discharged, transferred to other hospitals, deceased), conduct a medical examination of the patient, provide emergency medical care, carry out referral to the appropriate department, sanitary treatment, isolation of infectious patients. In the same department, there is a reference book.

The presence of several examination boxes allows for separate reception of therapeutic, surgical, and infectious patients, infants, and newborns.

The intensive care unit is usually located nearby with the emergency department, therefore, when a patient is admitted in an extremely serious condition, he is immediately placed in the intensive care unit, essentially bypassing the emergency department. All the necessary documentation is made out "in the course" of providing the necessary intensive care. Emergency care for the child, in addition, can be provided in the intensive care unit, which is located in the emergency department.

Children are taken to the hospital by ambulance or by their parents by the refferral to the hospital given by the doctor of the children's polyclinic and other children's institutions or without a referral ("gravity"). In addition to the ticket (referral) for hospitalization, other documents are also provided: an extract from the child's development history, data from laboratory and instrumental studies, information about contacts with infectious patients. Without a doctor, patients can be admitted to the hospital only in case of emergency conditions.

When a child is admitted to the hospital without the parents ' knowledge, the parents are immediately notified by the staff of the emergency department. If it is impossible to obtain information about the child and his parents, the patient's admission is registered in a special journal and a statement is made to the police.

In large children's hospitals, patients are received by specially designated staff, in small hospitals by on-duty staff. Admission of a sick child is carried out in a strict sequence: registration, medical examination, necessary medical care, sanitary treatment, transfer (transportation) to the appropriate department.

The nurse registers the admission of the patient in the journal, fills in the passport part of the "Medical card of the inpatient patient", Form No. 003/u (medical history), enters the number of the insurance policy, measures the body temperature, and informs the doctor of the information received.

After the child is examined by a doctor, the nurse receives recommendations from the doctor about the nature of the sanitary treatment. Usually, sanitary treatment consists of carrying out a hygienic bath or shower; if pediculosis (lice) is detected or nits are detected, the appropriate treatment of the hairy part of the head and underwear is performed. The exception is made by patients who are in an extremely serious condition. They are provided with first aid and only if there are no contraindications, they are sanitized.

After sanitary treatment, the child is transported medical department. So-called planned patients should not stay in the emergency room for more than 30 minutes.

In the case of mass admission of patients, a certain order of priority of hospitalization is observed: first, the seriously ill are treated, then the patients with moderate severity, and last of all, the "planned" patients who do not need urgent treatment.

Children with signs of an infectious disease are placed in isolation boxes. Fill out the "Emergency statement about an infectious disease, food poisoning, acute occupational poisoning, unusual reaction to vaccination" (F. No. 058/y), which is immediately sent to the center for sanitary and epidemiological surveillance.

The staff of the reception department keeps logs of the admission of hospitalized children, refusals in hospitalization, the number of available places in the departments, as well as an alpha vital book (for reference service).

Children of the first years of life are hospitalized with one of the parents. The number of beds for mothers should be 20 % of the total number of beds in a children's hospital. Newborns and infants are hospitalized together with their mothers.

When transferring a child to a medical department, the staff of the emergency room warns the head of the department, the post nurse informs them about the arrival of a new patient, informs them about the severity of the condition and the behavior of the child during the reception. In the evening and at night (after 15 hours), all this information is transmitted to the post nurse, and when the seriously ill are admitted - to the doctor on duty.

The staff of the reception department should be attentive and friendly with children and parents, take into account the condition of the child, the experiences of parents. It is necessary to strive to reduce the time of adaptation of the child to a new environment for him.

The reference (information service) is organized at the reception department. Here parents can learn about the health status of their children. The reference information should contain information about the place of stay, the severity of the condition, and the body temperature of each child. You can tell your parents this information by phone.

Children's transportation ways includes:

Children can be transported from the emergency room to the medical departments of the hospital in several ways. The type of transportation is chosen by the doctor. Children who are in a satisfactory condition go to the department themselves, accompanied by a medical worker. Young children and infants are carried in their arms. The chutes are transported on a stretcher mounted on a special gurney.

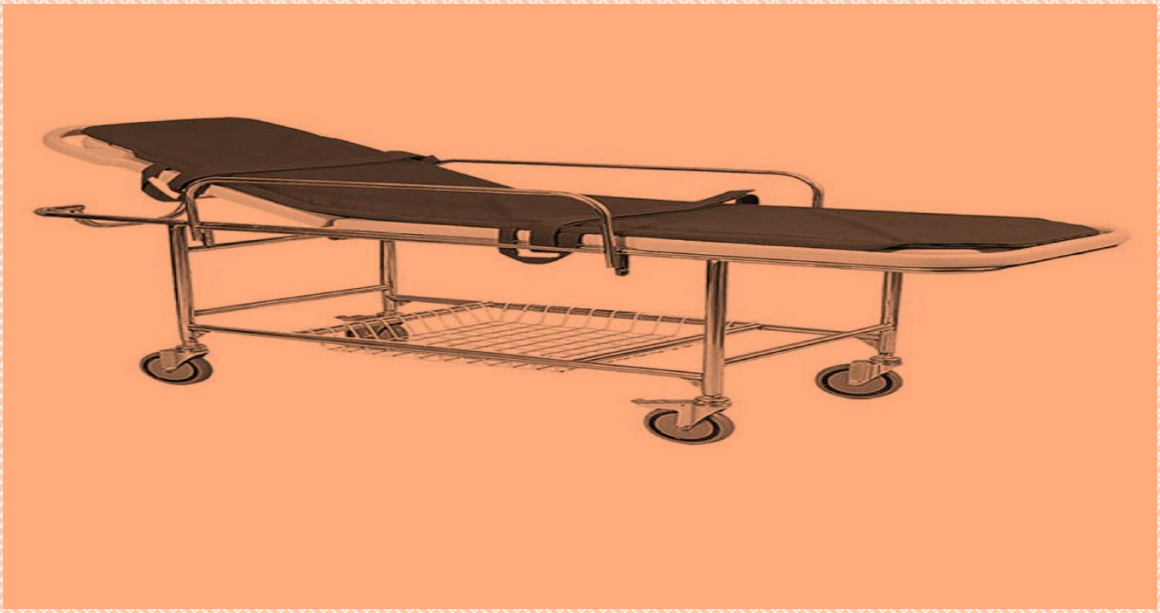


Fig., 1a-special gurnay

All stretchers should be filled with clean sheets, and in the cold season, with blankets. The sheets are changed after each patient, and the blanket is ventilated. Some patients, for example, children with hemophilia in the presence of hemorrhage in the joints, are delivered in a wheelchair (Fig. 1, b).

Fig. 1b- wheelchair

The emergency department is provided with the necessary number of stretchers and wheelchairs for transporting sick children to the departments.

Children who are in an extremely serious condition (shock, convulsions, massive bleeding, etc.) are sent immediately to the intensive care unit or intensive care unit. In the ward of a seriously ill patient, a stretcher is moved to the bed: one hand is placed under the shoulder blades, and the other under the patient's thighs, while the child wraps his arms around the nurse's neck. If the patient is carried by two people, then one supports the patient under the shoulder blades and lower back, the second under the buttocks and shins.

The position of the stretcher concerning the bed is chosen each time based on the optimal position for the patient (Fig. 2).

Fig 2- Easy changable stretcher

The work of the medical department. The main tasks of the medical staff of the medical department are the correct diagnosis and effective treatment. The success of treatment depends on the clear work of doctors, secondary and junior medical personnel, as well as compliance with the medical and protective (hospital)

regulations, sanitary and anti-epidemic regimes, the coherence of the work of auxiliary services.

Under the hospital regime, we understand the established schedule of stay and treatment of a sick child in a hospital.

The hospital regime is determined by several factors, primarily the need to create conditions for full-fledged treatment, as well as rapid social and psychological adaptation of the child to new conditions. To create a comfortable environment, the treatment and cooling regime include psychotherapeutic activities and educational activities. Strict requirements are imposed on the observance of the sleep and rest regime. The surrounding environment (comfortable furniture, flowers, TV, telephone, etc.) must meet modern requirements.

The daily routine for sick children, regardless of the profile of the medical department, includes the following elements: getting up, measuring body temperature, performing doctor's appointments, medical rounds, medical and diagnostic procedures, taking food, rest and walking, visiting children by parents, cleaning and airing rooms, sleeping. It is essential to carry out sanitary and anti-epidemic measures.

The hospital of the medical department consists of

isolated bathroom tent sections with 30 beds each,

and for children under the age of 1 year — 24 beds each.

Tent sections must not be passable. It is recommended to make glass openings in walls and partitions. For children of the first year of life, boxing and semi-boxing are provided-boxed wards: from 1 to 4 beds in each box.

Inwards for children over 1-year-old, no more than 4-6 beds. For the convenience of service, a nursing post is organized for several wards.

The system of boxes and separate sections allows you to prevent the spread of diseases in case of accidental infection. The latter usually occur if children are hospitalized during the incubation period of the disease.

For children's hospitals, special standards have been developed for the number of rooms in the medical department and their areas, which are presented below.

List of premises of the medical department of the children's hospital

Room	Area, m2
Half-box for 1 bed	22
Room for 1 bed, without lock	9
" for 1 bed, with lock	12
Wards for 2, 3 and 4 beds	6 for 1 bed
Doctor's office (resident's room)	10
Procedural	18
Post of a nurse in the department for children:	
up to 1 year 10 over 1 year	4
Pantry equipped with a washing	
and sterilizing machine	25
Dining room (for children over 3 years old)	18
Game room	25
Space for wheelchairs and mobile chairs 4	4
Heated veranda (at the rate of 50 %	
number of beds)	2.5 per 1 bed
Sanitary units for patients: washbasin (separate for boys and girls)	
with footwash	
(1 washbasin for 6 beds)	4 + 4
toilet (separate for boys and girls)	**6 + 6**

bathroom for children over 1 year old (2 baths with shower net in each bathroom;	
baths for children under 1 year are established in the wards)	12
potted	8
cabin for personal hygiene of girls	5
Office of the head of the department	12
Senior sister's room	10
"Host sisters	10
" staff	8
Physiotherapy room	15
Staff toilet	1.5

Rooms for mothers should be allocated outside of the hospital but close to children under the age of 1 year. The equipment of the wards and the equipment of the departments depend on their profile, the specifics of the work of medical personnel need to create optimal conditions for your dismissal of official duties by the staff. The specifics of the work of the medical department are the need for maximum isolation and separation of children, constant work on the prevention of nosocomial infections of child. For this purpose, the wards are used once-personal kind of screens, boxes and semi-boxes are provided. The departments are equipped with bactericidal lamps. Inventory and premises are periodically treated with Dez infecting agents. Staff and visitors observe the sanitary and hygienic regime of the department.

To provide emergency care to children in the medical department, intensive care and temporary isolation wards are organized, and they are served by specially trained nurses. Intensive care wards should be provided with centralized oxygen supply, devices for intravenous dosing of fluids, small surgical kits, electric pumps, sets of drugs for emergency therapy, schemes for assisting in cases of poisoning and emergency conditions, and treatment of toxicosis.

If necessary, it should be possible to quickly transfer the child from the treatment department to the intensive care unit.

The staff list of the medical department includes the following positions: head of the department, doctors, senior nurses, medical nurses, junior nurses,nurse-nurse.

In large hospitals, teachers-educators work in each department, whose functions include organizing classes and recreation for children. Children from the age of 6 are engaged in the school curriculum and study the main subjects: mathematics, language, etc.; when discharged from the hospital, they are given grades.

After recovery and persistent improvement of the child's condition, they are discharged from the hospital, and if necessary (providing specialized care) they have transferred care facility. Parents and the children's polyclinic are notified about the child's condition. The doctor prepares a discharge epicrisis.

Wards for the sick. There are usually 2-6 patients in each ward. According to the accepted standards, one bed has 6.5-7.5 m2 of floor space with a ratio of the window area to the floor area of 1:6. The distribution of children in the wards is carried out according to age, gender, or the principle of uniformity of diseases.

Beds in the wards are placed so that the child can be approached from all sides. In many children's medical institutions, the wards are separated by glass partitions, which allows monitoring of children.

The modern arrangement of the wards includes a centralized supply of oxygen to each bed, as well as a signal to the nursing station or the corridor - a sound (a quiet buzzer) or a light (a red light) to call the staff.

Wards for newborns, in addition to cots, are equipped with a changing table, scales, a baby bath, oxygen is supplied; hot and cold water, a bactericidal lamp is necessarily installed. Instead of a changing table, you can use individual cots with folding backs.

Infants are assigned based on the nature of the disease and the severity of the condition. The sequence of filling the wards is observed. New-born and premature

babies are placed separately. There are wards (boxes) for newborns with pneumonia, purulent-septic diseases, etc. Only uninfected children can be placed in one ward.

Sick newborns and premature babies are mainly contacted by medical personnel who strictly observe the sanitary regime (change of shoes, clean robes, masks, etc.). Mothers are allowed to visit the baby during the feeding period. If necessary, the mother takes part in the care of the child. Currently, in several maternity hospitals, the mother in the postpartum period is together with the child in the same ward.

Boxes of the children's department. The main purpose of the box is to isolate infectious patients and children with suspected infectious diseases to prevent nosocomial infections. You divide open and closed boxes (semi-boxes). In the covered boxes, the patients are separated by partitions, which are installed between the beds. Insulation in open boxes is imperfect and does not protect against the spread of drip infections. Closed boxes are a part of the ward with a door, separated by a partition glazed to the ceiling. Each box should have natural lighting, a toilet, and the necessary set of medical and household items to serve children.

The disadvantage of this method of isolation is that the boxes have access to the general corridor of the department.

The most justified is the isolation of children in an indoor, individual, or Melzer's box (Fig. 3).

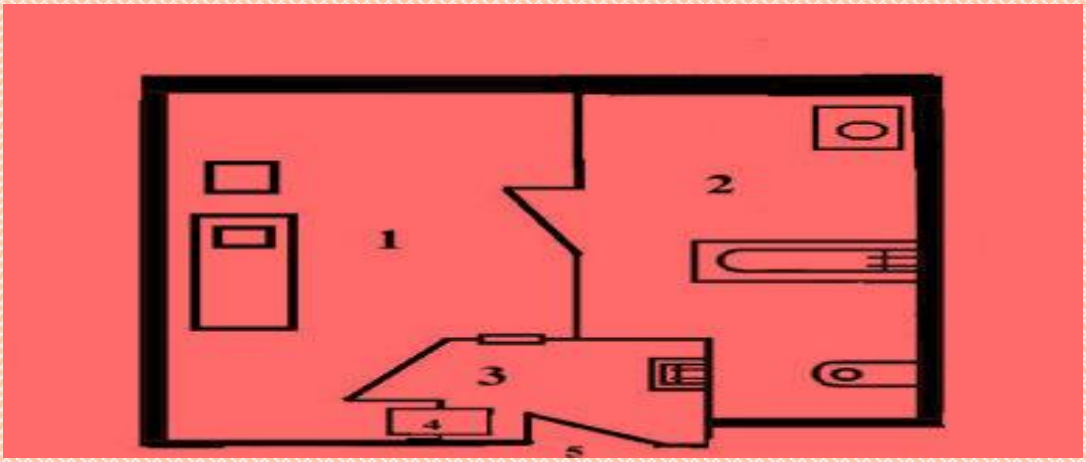


Figure 3. Melzer's box

The design of the Melzer box provides for the elimination of any contact of the patient with other children throughout the entire period of treatment.

A sick child enters the box intended for him directly from the street, and when transferred to another hospital or discharged, he leaves it in the same way. New patients are placed in the Melzer box only after its thorough wet disinfection.

Each box usually consists of the following rooms: a pre-box (front with a vestibule-room); the ward or examination room (where the child remains for the entire period of isolation); a sanitary unit with hot and cold water, a sink, a bath, and a toilet; a lock for staff.

The exit of patients from the box to the inner corridor is prohibited. The nurse (or doctor) enters the airlock from the inner corridor, closes the outer door tightly, washes her hands, if necessary, puts on a second robe, a cap, or a scarf, and then goes to the room where the sick child is. When leaving the ward, all operations are performed in reverse order. To prevent the spread of infection, it is necessary to ensure that the door leading to the ward with the ballroom child is tightly closed when opening the door from the airlock to the inner corridor of the ward. Food for the sick is passed through the food delivery window.

If there is a child with chickenpox in the box, then there is a need for more strict isolation. In this case, the doors of the airlock opening into the inner corridor of the department are tightly closed, and the windows of the doors are sealed with paper. The staff enters the box from the street side.

Organization of the work of the district medical nurse at the pediatric department. Organization of proper child care at the pediatric level is determined by the level of theoretical training of the nurse and the technique of possession of medical manipulations.

The work of a district nurse is divided into the following sections::

- preventive maintenance,
- medical treatment,
- organizational.

Preventive work. The struggle for a healthy child begins long before its birth when the district nurse performs prenatal patronage. Patronage work with pregnant women is carried out jointly with the midwife of the women's consultation.

The first prenatal care for a pregnant woman is provided by a nurse within 10 days of receiving information about the pregnant woman's consultation. During the acquaintance with the future mother, a trustful relationship is established, which allows you to have a conversation about the great responsibility of being a mother and about the necessity of mandatory pregnancy preservation. The nurse finds out the health status of the pregnant woman, factors that harm the health of the woman and child (harmful habits, occupational hazards, hereditary diseases in the family, extragenital pathology), gives advice on the nutrition of the pregnant woman, the daily routine, invites the pregnant woman to the school of mothers.

At the 32 - 34th week of pregnancy, the district medical nurse conducts second prenatal patronage, during which she finds out the state of health of the pregnant woman for the period that has passed between the two visits, the transmitted diseases, monitors compliance with the daily routine, nutrition, specifies the expected delivery dates and the address where the family will live after the birth. The pregnant woman is trained in the technique of breast massage, recommendations are given on the maintenance of the children's room, the organization of the newborn's corner, the purchase of necessary items of care for the newborn, and clothing.

An important section of preventive work with a newly born child is patronage-nurses visits at home. The first patronage to the newly born is carried out jointly by the district pediatrician and district nurse in the first days after discharge from the maternity hospital. Children from the "risk group" are visited on the day of discharge. The child is examined by a pediatrician and based on the data of the anamnesis and examination, a comprehensive assessment of the child's health is carried out, in connection with which the pediatrician gives recommendations on the daily routine, nutrition, and child care. The nurse treats the baby's skin and navel ring, explains and shows the mother how to follow the doctor's advice,

teaches the mother the technique of "free swaddling", cares for the baby's skin, eyes, nose, preparation, and bathing techniques. If necessary, it is present at the first bath.

The nurse explains to parents the order of storage and care of the newborn baby's underwear, the organization of walks, the rules of applying to the breast, explains the rules of daily wet cleaning of the room, ventilation, compliance with the temperature regime, careful hygiene when caring for the child, tells about the need to change the position of the child in the bed, introduces the mother to the working procedure of the children's polyclinic.

Repeated patronages to the child in the first half of the year life are carried out 2 times a month, in the second half of the year -1 time a month or more often - at the discretion of the district pediatrician. During repeated visits to the newborn and the child of the first year of life, the district nurse checks compliance with the sanitary and hygienic requirements, examines the child, evaluates the mother's compliance with the recommendations and her skills in caring for the child, whether the child has the skills and abilities appropriate to the age, trains the mother to conduct massage and gymnastics.

In the preventive work with children of the second and third years of life, the leading place is occupied by the issues of tempering and physical education. In the second year of life, the nurse visits the child once a quarter, in the third year-once every six months. The purpose of the patronage is to monitor the implementation of the district doctor's appointments, to conduct conversations on the organization of the diet, hardening procedures, and physical exercises.

The preventive work of the district nurse also includes participation in the conduct of a medical appointment. The district doctor and the district medical center are responsible for the medical examination of all children living in the pediatric area, especially preschool children who are brought up at home. If the polyclinic does not have a pre-school department, the district nurse helps the doctor to perform all the necessary work on the medical support of organized groups.

Medical work. The medical work includes the provision of medical care to acutely ill children and children suffering from chronic diseases in the period of exacerbation, as well as dispensary monitoring of children classified as "at-risk", as well as for children suffering from congenital and chronic diseases.

Very important and responsible is the work of the medical nurse to provide medical care to seriously ill children, for whom a "home hospital" is organized. This form of treatment is used when it is impossible, for any reason, to hospitalize a seriously ill child in a hospital. In such cases, the medical nurse regularly visits the child several times a day, performs the necessary medical appointments, monitors the conduct of laboratory and diagnostic tests at home, examinations of specialist doctors, as well as the implementation of the parents ' recommendations of the attending physician. The nurse should explain in detail to the mother the signs that indicate a deterioration in the child's health, and recommend that if they appear, immediately contact a doctor or call for "quick help".

When sending a child to a hospital, the district nurse monitors (by phone or during a direct visit to the family) the course of hospitalization. If the child is not hospitalized for any reason, immediately inform the district pediatrician or the head of the pediatric department.

Organizational work. The nurse should be well acquainted with the accounting and reporting documentation,

used in the work at the pediatric site. The main document to be filled out in the polyclinic is the "History of the child's development" (F. No. 112/y). The stories are stored in the registry, on the clear activity of which the rational organization of the reception of children depends. Back to work secondary and junior medical personnel are involved in the registration and record-keeping process. In recent years, in some clinics, the history of the child's development is given to parents in their hands. This makes it easier and faster for the doctors on duty and emergency medical services called to the house to determine the severity of the child's condition and the nature of the disease and to observe the priority in providing medical care.

The registration of all children with chronic pathology is conducted according to Form No. 030/y, which allows you to organize systematic active monitoring, filling in the results of laboratory and diagnostic examinations, anti-relapse therapeutic, and health measures that prevent exacerbation and progression of diseases.

The work of the district nurse is carried out by following the plan drawn up under the guidance of a pediatrician, based on the analysis of children's health indicators and the results of medical and preventive work at the pediatric site for the previous period. Below is a diagram of the work plan of the district nurse for one month.

Children's polyclinic is a medical and preventive institution that provides services in the area of activity out-of-hospital medical care for children from birth to 18 years of age inclusive.

Reception of sick children in the polyclinic is conducted by pediatricians - doctors of other specialties. The polyclinic also performs laboratory, radiological and other types of examinations. Primary ill children, especially those with an elevated body temperature and suspected infectious disease, receive medical care from the doctor and nurses of the polyclinic at home. When recovering or improving their health, children visit a doctor in a polyclinic. In addition, healthy children are constantly monitored in the polyclinic. The doctor examines a healthy child in the first year of life every month, then once a quarter, and children older than 3 years-once a year. The main purpose of such monitoring is the prevention of diseases. Doctors and nurses of the polyclinic advise parents on the issues of nutrition, nutrition of children, and care for them.

All children are registered at the dispansery, regularly examined not only by pediatricians but also by doctors of other specialties. Many children's polyclinics have centralized emergency rooms that work around the clock.

A children's polyclinic should have basic pediatric departments, specialized offices (where an otolaryngologist, an ophthalmologist, a neuropathologist, an orthopedic traumatologist, a surgeon, etc.), diagnostic offices, physiotherapy, and therapeutic physical therapy rooms, and a breast milk donation center. In each polyclinic, there is a treatment room where vaccinations, injections, banks are placed, and other

medical measures are carried out. The rehabilitation department can have a swimming pool, sauna, gym, and sports hall. A list of premises of children's polyclinic is presented below.

List of premises of the children's polyclinic

Room	Area, m2
Lobby-dressing room	0,4 per child, located in the polyclinic
The registration number is	at least 10
Waiting room	2,3 for each child and the maintainer
Filter for receiving children	12
Individual box for reception children	15
Procedural	18

Milk distribution point:

lobby-waiting room	**20**
handout	15
utility rooms	10

# Name of events	Deadline	Mark of	Reason
p/p	Of performance	dropped out	impossible

Diagnostic department by the treatments, doctors ' offices, and rules department of restorative building codes laboratories, as well as utility rooms premises.

1. Conducting prenatal visits to pregnant women (according to the family list)
2. Conducting patronages for newborns (by name list)

3. Conducting patronage visits to healthy children of the 1st year of life who do not attend preschool institutions (by name list)
4. L* Name of the activities Term Mark Reason
5. n/a of the execution of the non - execution of the execution
6. Conducting patronage visits to healthy children from 1 to 3 years old who do not attend preschool institutions (by name list)
7. Conducting patronage visits to healthy children from 3 to 7 years old who do not attend preschool institutions (by name list)
8. Conducting patronage visits to children from the "risk" group (by name list)
9. To calculate the nutrition of children suffering from hypotrophy (by name list)
10. Ensure that prophylactic vaccinations are carried out (according to the family list)
11. Carrying out specific prevention of rickets (prophylactic list)
12. Patronage visits to children to monitor their placement in children's and school institutions
13. Ensure deworming
14. Analyze the vaccination work for the past month
15. Conduct a conversation in the office of a healthy child with the parents of children of the 1st year of life about the importance of rational feeding of children
16. Prepare a review on the topic proposed by the district doctor
17. Make a presentation at the Conference

The children's polyclinic carries out extensive sanitary and educational work. Parents are taught the rules of individual disease prevention. Serious attention is paid to the patronage of newborns. Doctors and nursing staff take part in this work. Per the vaccination calendar, vaccinations are carried out.

District or city consultation and diagnostic centers. In large cities, diagnostic centers equipped with modern equipment (doppler imaging, thermal imaging, computed tomography, immunoassay, etc.) are being created based on hospitals or

individual polyclinics. Their task is to examine children from some attached polyclinics and determine the necessary recommendations for treatment.

A dispansery is a medical and preventive institution whose functions are active early detection of patients with certain groups of diseases, their registration, and examination for diagnosis, provision of specialized medical assistance, active dynamic monitoring of the health status of patients with a certain profile, development and implementation of necessary measures for the prevention of diseases.

Children receive the necessary assistance in the children's departments of dispensaries. Depending on the nature of the activity, the following types of dispensaries are distinguished: tuberculosis, oncological, neurological, medical and physical education, etc. Similar functions can be performed by specialized centers created at individual children's hospitals: rheumatology, gastroenterological, pulmonological, genetic, hematological, etc. A significant role in the work of these institutions belongs to nurses who keep records of patients in the hospital or the polyclinic, fill out a "Single statistical ticket" for each patient received, other necessary documentation, help the doctor during the reception, provide patronage of patients at home, and conduct sanitary and educational work.

Children's sanatorium — inpatient medical and preventive institution for conducting among sick children treatment and rehabilitation and general health measures, mainly with the use of natural physical factors in combination with diet therapy, physical therapy, and physiotherapy, while observing the appropriate treatment regimen, school education, and recreation. About a third of all children's clinical beds are concentrated in health resorts.

Children's health resorts are organized in specialized resort areas. In addition, there are so-called local sanatoriums, sanatorium-forest schools. They are usually located in rural areas with very pleasant landscapes and microclimatic conditions. Great importance is also attached to the organization of treatment and recreation of children with their parents. Treatment of children in such cases is carried out in

sanatoriums and boarding houses of mother and child, sanatoriums-dispensaries, where special visits "mother and child" are organized during the school holidays.

A children's home is a medical and preventive institution intended for the maintenance, upbringing, and provision of medical assistance to orphaned children, children with physical or mental disabilities, and children whose parents are deprived of parental rights. Children under the age of 3 are admitted to children's homes on vouchers issued by health departments. The capacity of children's homes is usually not less than 30. Depending on the age of the children, they are divided into the infant, middle, and older groups. Children drop out of the children's home parents can be adopted, and when they reach the age of 3-4 years, they are transferred to children's institutions of the Ministry of Education or the Ministry of Social Security (children with disabilities).

Preschool institutions are divided into several types, depending on their purpose.

nursery school — a health care facility designed to educate children aged 2 months to 3 years and provide them with medical care.

kindergarten — an institution for the public education of children aged 3 to 7 years, which is under the jurisdiction of public education bodies or other agencies, enterprises, and private organizations. There is a unified type of preschool institution—nursery—kindergarten, where children are brought up during the nursery and preschool periods.

Great importance is given to the work of medical centers in pre-school and school departments of children's polyclinics, providing therapeutic and preventive monitoring for children, in addition to nurseries, kindergartens, in such educational institutions as schools, rehabilitation camps (including sanatorium type), boarding schools.

QUESTIONS

1. What children's medical and preventive institutions do you know?
2. What are the main structural divisions of the children's hospital?

3. What accompanying documents must be submitted for the hospitalization of the child?
4. What information can I get about a sick child through the information desk of the emergency department?
5. How is the transportation of a seriously ill patient to the department carried out?
6. List the main rooms of the medical department of the children's hospital.
7. What is individual (Melzer) boxing?
8. What are the children's educational institutions where medical and preventive work is carried out?
9. List the main premises of the children's polyclinic.

CHAPTER 2

THE MEANING OF SOME ANATOMICAL AND PHYSIOLOGICAL FEATURES THE CHILD'S BODY WHEN ORGANIZING CHILD CARE

The body of a child, especially in the first months and years of life, differs in many ways from the body of an adult. Knowledge of the anatomical and physiological characteristics of the child's body is the basis for the correct organization of care and upbringing techniques throughout the entire period of childhood.

The following periods of a child's life are distinguished:

- **newborn** (first 4 weeks) - **infant** (up to 1 year); - **toddler** (1-3 years); - **preschool age** (3-7 years); - **early school age** (7-11 years) - **high school age** (12-17 years).

The processes of growth and development of the child proceed in a wave-like manner. The most intense increase in body weight and length in the first year of life, during the periods of the first (5-8 years) and the second (12-15 years) physiological stretching, what causes the need for adequate and rational nutrition, taking into account the size of educational, psychological and physical loads, depending on the age of the child.

Emotional and mental development of the child. During the first 3-4 years, the mass of the brain increases especially rapidly, although the functional activity of the nervous system is still imperfect. As a result, the movements of the newborn are disordered, uncoordinated, and non-directional. Throughout the first year of life, there is a development of coordination of movements of various muscle groups. Initially, coordinated movements of the muscles develop, and the newborn at the age of 3 weeks already fixes his gaze on a moving toy, which is suspended or held above him at a distance of 60-100 cm. By 1.5—2 months, the coordination of neck muscle movements is formed, the child begins to hold his head. At the age of 2-3 months, there are purposeful movements of the muscles of the upper shoulder girdle (arms) — children grab small toys with the whole hand. The color perception is formed. The child reacts more with bright colors (red, yellow, green, blue), so the needles should be bright and small. By 4-5 months, the coordination of the back muscles develops, and from 4 months, the child begins to roll from the back to the stomach and back. Then the coordination of the movements of the lower extremities develops. The child begins to stand independently at 6-7 months, to crawl at 7-8 months, to stand with support at 8-9 months, to stand independently at 10 months, and to walk at 12-14 months. The timing of the formation of movements allows the doctor to assess the correctness of the child's development. Therefore, the deadline is as late as possible. Improving and complicating the movements of the longitudinal-they are kept together throughout childhood. The timely formation of movements is facilitated by systematic classes with children, the correct selection of toys following the age of the child. Massage and gymnastics are also of great importance.

The first years of life, the child does not fully understand the speech addressed to him. He responds more to intonation than to the meaning of words. For the child to temporarily learn to speak, you need to constantly talk to him, starting from birth. During the first half of the year, the child utters unintelligible sounds, but their originality is a reflection of a certain state. Understanding these sounds allows an adult to promptly eliminate the reasons for the child's lack of

well-being (hunger, wet diaper, etc.). In the second half of the year, the child begins to pronounce the first meaningful syllables, and by the end of the first-year — individual words (mom, dad, baba, etc.).

Speech develops only if the child constantly hears the voice of an adult. Observations of children who did not hear the speech of adults at an early age show that later these children were never able to learn to speak, even when they reached adulthood. In the second year of life, the vocabulary increases rapidly. The peculiarity of the speech of children of the second year of life is the fact that the individual syllables spoken by the child do not mean the full content of the words. By the end of the second year, the child begins to speak in short phrases, like a rule, in the third person ("Mary wants to go!" etc.). Only in the second half of the third year of life does the word " I " appear " ("I want to", "I'll go", etc.). This is essentially the first statement of the child as a person. In the future, speech develops with increasing speed, and by the age of 5, the child speaks fluently. From this age, there is a tendency to draw, as the coordination of the movements of the small muscles of the hand is formed, and from school age (6-7 years), children can write. The development of the child proceeds successfully only when communicating with adults. Children are very curious, but they have not yet developed a sense of self-preservation. Therefore, young children require constant supervision from adults. Their understanding of the danger is formed gradually. Even younger students often commit-some rash actions, not understanding sometimes their danger, which explains various accidents (street and domestic injuries, accidental poisoning, etc.).

Along with the development of motor skills and speech, the child's character is gradually formed. Educational activities conducted with children under 5 years of age are of particular importance. If a child of the first year of life, as a rule, communicates only with family members, then children older than 1.5 years need to communicate with their peers. They have friends, i.e. the child becomes more and more socially oriented. Solving the contradictions that arise in the game is a serious educational task. It is especially difficult to resolve the "possessive"

tendencies of young children when the child believes that all the toys belong only to him. It is necessary to try to distract such an "egoist", to make clear the wrongness of his actions and thereby prevent the brewing conflict. It should be remembered that the commanding tone, prohibitions as measures of educational character are ineffective.

Games become more and more collective with age. It is through the game that the child learns about the world around him. Games are becoming more complex and more abstract. The degree of complexity of the game, as a rule, is the main criterion for the neuropsychiatric development of the child.

Physical development of the child ocurs also simultaneously.

The baby's skin and mucous membranes are very delicate and easily vulnerable**.** The skin performs various functions, one of the most important — protective. However, in a child, it is insufficient, since due to the weak development and easy peeling of the stratum corneum, micro defects such as abrasions can form on the skin, which are the entrance gate of infection**. Therefore the medical worker must strictly observe the following rules when working with children:**

1) the nails on the hands should be cut short, so as not to damage the baby's skin;

2) hands should be thoroughly washed. To prevent infectious diseases, after communicating with one child, you need to wash your hands again and only then you can deal with another baby;

3) all jewelry must be removed from yourself.

The skin performs a respiratory function. In a child, skin respiration is much more intense than in an adult. Therefore, for children's clothing, diapers, too dense fabrics that prevent breathing through the skin are unsuitable for bed linen.

Hygienic care of the skin and mucous membranes in children is extremely important. It is necessary to gradually teach the child from an early age to wash his hands, wash his face, etc.

The characteristics of the skin and mucous membranes determine the need to specifically select the composition of external medicines and their dosage. This is due to the increased permeability of the skin, especially in young children.

The skeletal system continues to develop after birth. Bones in young children are soft, easily deformed. During the first 5 years of life, there is constant growth and restructuring of bone tissue. In structure, the long tubular bones begin to resemble the bones of an adult-only after the child learns to walk steadily. But even in school-age children, when using incorrectly selected furniture (desks, tables, chairs), it is easy to have violations of posture in the form of curvature of the spine (for example, school kyphoscoliosis). Therefore, it is important to choose the right furniture for children of different age groups.

The proper development of the bone system depends on the nature of nutrition, the time spent in the open air, and the nature of sun exposure. From the first months of life, you need to carefully follow the rules of child care to avoid injuries. For example, when turning a child over, you should carefully take his hand (shoulder) and hip. It is forbidden to turn the child by holding only the leg. When the child is led by the hand, you can not allow quick and sharp movements, so as not to dislocate his arm.

The respiratory system (respiratory organs) continues to develop from the moment of birth of the child. Breathing in children is much more frequent than in adults (Table 1).This is due to the greater need of children in the acid genus (due to the underdevelopment of the alveoli sacs), which is achieved not by increasing the depth of breathing, but by learning it. The horizontal position of the edges also matters. In children under 2 years of age, the anteroposterior and transverse dimensions of the chest are almost the same, so breathing is carried out mainly due to the movement of the diaphragm (abdominal type of breathing).

Table 1. Respiratory rate in children, depending on age

Age	Respiratory rate in a minute
Newborn	40-50
1 year	30-35
5 year	25
12 year	20

Due to the peculiarities of the development of the tongue (the tongue at birth is relatively large and fills almost the entire oral cavity, which is a communication device), breathing through the mouth in children is difficult. Children breathe exclusively through the nose, the passages of which are narrow, and the mucous membrane is very delicate and has a good blood supply. Therefore, it is important to take care of the nasal cavities. Even mild rhinitis (inflammation of the nasal mucosa) can cause respiratory problems. It is important to remember that breathing through the nose ensures that the inhaled air is cleaned, moistened, and heated. Prolonged breathing through the mouth contributes to more frequent colds and lesions of the lower respiratory system, and this can ultimately lead to a delay in the development of the child. Young children have a relatively narrow lumen of the larynx, trachea, and bronchi, which creates certain prerequisites for a more severe course of respiratory diseases. For the same reason, with inflammation of the respiratory tract (laryngitis, tracheitis, bronchitis), as a rule, it is difficult to pass the air jet (obstructive syndrome), which is life-threatening. Therefore, when caring for children, especially newborns and the first year of life, you should wear a gauze mask to protect them from infection and diseases, since most respiratory diseases in children are viral or bacterial infections.

To ensure normal breathing, it is important to observe the principle of free swaddling, and it is also necessary to put the child in a bed with an elevated head end. The cardiovascular system in children has several features. The size of the heart cavities (especially ventricles) are relatively small, their increase is uneven throughout the entire period of childhood, which should be taken into account when determining the permissible loads. At the same time, growing organs and tissues require an abundant blood supply. This is achieved in children by more frequent heart contractions (Table 2)

Table 2. Heart rate according to age

Age	Rate in 1 minute
newborn	140
6 month	130
1 year	120
5 year	100
12 year	80
adult	60-70

The size of the heart relative to the size of the chest children have more body mass than adults; its limits are significantly higher than those of an adult.

The lumen of the arteries and veins at birth is almost the same. As you grow, the lumen of the veins increases faster. Up to 12 years of age, the diameter of the trunk of the pulmonary artery is greater than the diameter of the aorta. From the age of 12, their diameters become the same. The relatively small volume of the left ventricle with a relatively large aortic lumen and a significant elasticity of the arterial walls cause low blood pressure, characteristic of children.

At birth, the own muscle sheath develops only in the arteries of the small circle of blood circulation, in the arteries of the large circle of blood circulation, it begins to form from 5 years. That is why in children under 5-7 years of age, an increase in blood pressure (hypertension) is rarely observed, while in children of the first months of life, hypertension easily develops in a small circle of circulation due to anatomical and physiological characteristics of the lungs.

The blood flow rate (blood flow rate) in children is faster than in adults, which provides adequate blood supply to growing organs and tissues. Uneven growth of the heart and blood vessels in different age periods- explain the frequent occurrence of various noises that are heard over the heart area.

Organic heart lesions in children are divided into congenital and acquired . In children of the first year of life, congenital heart defects are mainly detected, and in children older than 1 year, among the primary heart diseases detected, the greater

proportion was acquired defects. Most heart diseases are accompanied by the development of shortness of breath, cyanosis (cyanosis of the skin), and an increase in heart rate.

When observing a child from the first years of life, the impression is created that he never gets tired. A healthy child is always on the move. A child with a heart condition periodically stops and sits down (sniffs).

The digestive system (esophageal organs) of the newborn is far from perfect. The oral cavity is small, the mucous membrane of the mouth is tender, and it is abundantly supplied. Salivation up to 3 months is insignificant,

In the future, it becomes plentiful. Only by the year, the baby can swallow all the saliva formed. The first teeth of the child appear by 6 months. For massaging the gums and to minimize the inconvenience that a child experiences when teeth appear at this age, use a special rubber silikon rings ("teethers").

The first teeth are the lower medial incisors. By 8 months, such incisors appear on the upper jaw. By 10 months, the upper lateral incisors erupt, and by 12 months — the lower ones. At the age of 1 year, the child has 8 baby teeth. By 14 months, the lower first molars (premolars) erupt, and by 16 months — the upper ones. Then the fangs and second molars appear. By the age of 2, the child has 20 baby teeth. From the age of 5, the first large molars (molars) appear, and from the age of 6-7, they occur! gradual replacement of baby teeth with permanent ones in the same order as the eruption of baby teeth occurred. After this, the second large, crooked teeth appear. Usually, by the age of 12, all the teeth of a child are permanent. Only the third molars (wisdom teeth) erupt at a later age.

In the first months of life, it is unacceptable to wipe the mouth (you can damage the delicate mucous membrane).

After the appearance of baby teeth, children should be taught to clean them before going to bed. If this is a habit, then these children are less likely to have diseases of the oral cavity. For the same reason, it is not recommended to give sweets before going to bed (at night).

The lumen of the esophagus increases with age, which determines the diameter of the probes and endoscopes used for research. The stomach of children at birth is small (30-35 ml). Its physiological volume after the start of feeding increases rapidly and by the end of the first year of the child's life, the stomach holds 200-250 ml. This should be taken into account when determining the amount of food that should be given to the child in one feeding. In children of the first years of life, functional and anatomical insufficiency of the cardiac sphincter of the stomach is noted, and its formation is completed only by the age of 8. The pyloric part of the stomach, on the contrary, is functionally well developed already at birth, which, with a relatively poorly developed cardiac part, makes it possible to compare the stomach of a child in the first months of life with an open back. If we take into account that the place of exit from the stomach (antrum pylorus) in the horizontal position of the child is located higher than the bottom of the stomach (fundus ventriculi), then the tendency of children to regurgitation and the easy occurrence of vomiting is understandable. Therefore, in the first months of life after feeding the child is held vertically or placed in a bed with an elevated head end (at an angle of 60*).

The acidity of the gastric contents and the activity of enzymes (pepsins) at birth are low and gradually increase after 6 months — 1 year. The length of the small intestine relative to the length of the body in children is greater than in an adult. This is a compensatory addition since due to the low activity of the same gastric enzymes, the small intestine plays a leading role in the process of esophageal digestion. All these features determine the nature of the food that is used for feeding children.

The colon in children of the first year of life is underdeveloped, relatively short, which causes frequent defecation. At the same time, the submucosal layer of the rectum is well expressed, but it weakly fixes the mucous membrane, this is the reason for the loss of the latter when unstable stool (diarrhea, constipation) in young children.

At the birth of a child, the pancreas is anatomically already formed, but its external secretory function is imperfect. In the juice of the pancreas in for the first 3 months, the activity of amylase, trypsin, and lipase involved in the digestion of starch, protein, and fat is low. At the same time, the endocrine function of the pancreas (the release of the hormone insulin) is sufficient. After the introduction of complementary foods into the diet, the external secretory function reaches the values characteristic of an adult.

The newborn's liver is large and occupies the entire right and left hypochondrium. The lower edge of it can be felt in children up to 7 years old. The functions of the child's liver are still imperfect, especially the barrier — detoxification, which ensures the neutralization of toxic products both in the process of metabolism and when they are absorbed from the intestine. This explains the frequent development of toxicosis in various diseases.

Bile in newborns is produced little, which hinders the absorption of fats, so with feces (feces), the child secretes a relatively large amount of them (steatorrhea). With age, the secretion of bile acids increases.

The kidneys at the birth are not yet fully developed. Therefore, in children of the first 2-3 years of life, the filtration processes occur at a lower level, which should be taken into account when choosing a water regime. When overloading with water, fluid retention in the body easily occurs. The concentration capacity of the kidneys is also reduced: urine in children of the first year of life has a low relative density. The glomerular permeability is increased, which is manifested by the appearance of glucosuria (the presence of glucose in the urine), proteinuria (the presence of protein in the urine), and the appearance of shaped blood elements (red blood cells and white blood cells) in the urine. At the same time, the kidneys do not remove sodium ions from the body, so it is necessary to limit the amount of table salt. Gradually, by the age of 2, the main indicators that characterize the functional state of the kidneys, begin to approach those of an adult.

The urinary tract to the birth of the child are completely formed, but their delicate mucous membrane is easily inflamed when pathogenic microorganisms enter.

The child's hygiene skills become the most important elements that prevent the development of urinary tract infection. This is especially true for girls, who should be taught to take systematic care of the genitals (washing after each act of defecation). The number of urination in children of the first year of life is 10-20 times a day, in children of 2-3 years-8-10 times children of school age — 5-7 times a day. The amount of urine released depends mainly on the amount of liquid consumed.

The peripheral blood for the development of the child's growth and development also undergoes great changes. Immediately after birth, the blood is characterized by an increased content of hemoglobin and red blood cells; their number decreases in the first days after birth and the numbers stabilize. Hemoglobin and the number of erythrocytes, respectively, at 125-135 g/l and 4-5 x 1012/l. To maintain this amount of hemoglobin and red blood cells at a constant level, the nature of nutrition is of great importance, the violation of which often causes the development of iron deficiency anemia.

The total number of white blood cells in children is relatively constant. The percentage ratio of individual forms of blood leukocytes (leukocyte formula) undergoes drastic changes, which is mainly due to the formation of the immune system. After birth, almost 2/3 of white blood cells are represented by neutrophils, the number of neutrophils gradually decreases, and the content of lymphocytes increases and on the 5th day, their number becomes approximately the same. After the 5th day, the level of neutrophils continues to decrease, and the number of lymphocytes increases, which after the 10th day of life and until the end of the first year account for more than half of all blood cells. In the second year, there is again a gradual increase in the number of neutrophils with a decrease in the number of lymphocytes. In 5 years, their content becomes the same, and in subsequent years, the number of neutrophils continues to increase. The cellular composition of the blood also changes in various diseases.

Endocrine glands (glands of the internal secretions) produce substances (hormones), under the action of which the growth and development of the human

body take place. The somatotropic hormone regulates the growth of the body or the increase in its parts. The lack of this hormone leads to a delay, and excess production leads to increased growth. With reduced pituitary function, the growth of the child does not stop immediately after birth, but by the end of the first year of life.

Thyroid hormones affect the processes of metabolism in the body, including the development of the central nervous system. The lack of these hormones in the congenital underdevelopment of the thyroid gland leads to a delay in the physical and mental development of the child.

The development of the endocrine glands in childhood proceeds in waves. In certain periods, the role and significance of individual glands are different. In children of the first years of life, sometimes with various diseases, insufficiency of the adrenal cortex develops. This is due to the lack of development of the cortical substance (cortex) of the adrenal glands. The endocrine function of other glands (parathyroid glands, pancreas) is sufficient at the time of birth once a year.

During puberty (10-15 years), the endocrine glands are reorganized due to an increase in the production of hormones of the sexual glands.

The function of the endocrine glands is influenced by the nature of nutrition, various diseases, intoxication other factors.

Metabolism in children has some features that require significant attention to the construction of the nutrition regime and water regime.

The child's growth and development are impossible without providing the body with full-fledged proteins. It is known that about half of the body weight gain is due to protein synthesis. In the human body, proteins can not be replaced we do not eat any fat or carbohydrates. Therefore, the child should constantly receive protein from food. The optimal product for the composition of amino acids is milk, which is included in the diet throughout childhood. Full-fledged proteins are also found in such products as meat, fish, etc.

An important indicator of protein metabolism is its quantitative content in blood plasma.

General protein content in blood plasma in children, especially young children, is slightly lower, and the ratio of protein fractions is different than in adults. During the first 6 months, the blood of children contains fewer Gamma-globulins, which include antibodies. In children aged 5-6 years, the composition of blood proteins differs little from that of adults.

The lack of protein in the diet of children causes severe disorders, accompanied by a decrease in immunity to various infectious diseases, a delay in neuropsychiatric development, growth, and the rapid formation of the endocrine system.

Carbohydrates are the main source of energy in the body. Newborns can absorb disaccharides (lactose, sucrose, maltose, etc.), which are broken down in the small intestine by special enzymes — disaccharidases. A decrease in the activity of these enzymes causes diarrhea (diarrhea), which in young children quickly leads to dehydration and severe disorders of electrolyte metabolism in the body. After 5 months, children are already able to absorb polysaccharides well (crash is small, glycogen).

The basis of carbohydrate metabolism in humans is the cleavage of glucose, so the various carbohydrates that come with food are first converted into glucose. Congenital disorders of this transformation cause severe diseases. An important indicator of carbohydrate metabolism is the concentration of glucose in the blood (glykemia). In children, the content of sugar in the blood is lower than in an adult, and glucose introduced into the blood is more quickly absorbed. Disorders of carbohydrate metabolism in children are quite common.

Ligands are substances of dissimilar chemical structures, which are united by the ability to dissolve in organic solvents. The exchange of substances in the human body takes place in an aqueous environment, so the transfer of lipids (fat) can only occur in the appropriate transport form with the participation of protein. In the first 6 months of life, fat accumulates, and then its content gradually decreases. This largely explains the appearance of a child of a particular age. The composition of fat, especially in subcutaneous fat, in children of the first year of life differs from that of an adult.

Fat has a higher melting point. Therefore, when the child is re-cooled, it is hardening easily occurs. In addition, oil-based drugs injected under the skin do not dissolve for a long time and can cause tissue necrosis. In this regard, young children have been prescribed only water-soluble drugs.

The total content of lipids in the blood of newborns is low. It increases during the first year of life by almost 3 times. The composition of lipids also changes. The diet of a nursing woman and baby food products, if artificial feeding is necessary, should be balanced to create optimal ratios of saturated and polyunsaturated fatty acids, the amount of fat, carbohydrates, and proteins.

Disorders of fat metabolism associated with the deposition of lipids in the form of plaques on the walls of blood vessels, in the skin, observed in adults, are less common in childhood.

Water in the body of a child at birth is 3/4 of its body weight. After birth, the water content is gradually reduced, but even in a 5-year-old child, it is higher than in adults. The fluid in the body is not evenly distributed. In children, extracellular fluid predominates. This explains the lability of water metabolism in young children.

High levels of extracellular fluid, as well as imperfect mechanisms of fluid fixation in cells and intercellular structures, cause the development of dehydration in various infectious diseases, temperature disorders, and insufficient intake of water from food. Dehydration (water loss) is accompanied by severe disorders of the general condition.

The need for fluid in children, which is significantly higher than in adults, is shown in Table 3.

Children should get the necessary amount of water drink. In the first year of life, if the child receives breast milk, the additional amount of water usually does not exceed the volume of one feeding. A newly born child usually does not need additional water intake. The amount of liquid required in the summer increases, as well as in diseases with a rise in body temperature, diarrhea, vomiting. Children older than 1 year, as a rule, ask to drink themselves. These requests should be met

on time, as the deprivation of water can lead to an increase in body temperature and severe disorders of water-salt metabolism.

Table 3. Children's daily fluid requirement

Age	Amount of water in ml	
	Avarage amount	In 1 kg weigt mass
Newborn	250-500	80-150
6 month	950-1000	130-150
1 year	1100-1300	120-140
5 year	1800-2000	90-100
10 year	2000-2500	70-85
14 year	2200-2700	50-60

It is known that, a certain amount of mineral salts and vitamins is necessary for growth and proper development. Of the mineral salts, the most important are sodium, potassium, calcium, magnesium, and phosphorus. Children also have a high need for trace elements: iron, zinc, copper, etc. Usually, the children's need for mineral substances is met with appropriate nutrition for the child's age. Additionally, children need only a small amount of table salt — no more than 5 g per day, even with a bodyweight of more than 25 kg. For timely mineralization of growing bones, children should receive daily water-soluble (C, group and especially fat-soluble vitamins (D, A, E). For this purpose, in the first months of life, vitamin D3 (cholecalciferol) is prescribed daily for 1-2 drops (500-600 ME), and children from 5 months of age once for 1.0 ml or 200,000 ME (vitamin D3) every six months until 4-5 years inclusive.

It is advisable to give vitamin D together with vitamin A. With a properly formulated diet, the main need of the child's body in vitamins is satisfied.

However, in various diseases, the need for them increases. In such cases, vitamins should be given in the form of drugs.

The body temperature for the first time in life is unstable and depends on the ambient temperature. The child is easily overheated or, conversely, overcooled.

When caring for children, it is necessary to take into account the peculiarities of heat regulation and heat formation of the child's body. There are certain requirements for the clothing of children of different ages, as well as the temperature of the rooms where the children are located.

The resistance of the human body to adverse external influences is determined by the state of the immune system and non-specific protection factors. By the time a child is born, the non-specific protective factors are not perfect enough. This applies to the barrier function of the skin, phagocytic and complementary activity. In addition, the content of the number of enzymes is reduced in the blood and many-body fluids (separated from the salivary and lacrimal glands). The specific immunological protection at the time of birth of the child is also not mature enough, although the child receives a certain amount of antibodies in the form of immunoglobulins through the mother's milk in the future. This is since immunoglobulins of classes A, G, and M prevent the introduction of bacteria, viruses, toxins, and food antigens into the intestinal mucosa. It is no coincidence that children who receive mother's milk have a 10-15-fold lower risk of developing intestinal infectious diseases than those who are artificially fed.

In addition to this, immunoglobulins, colostrum and women's milk contain various humoral and cellular factors, the combination of which provides a high level of resistance of the child to many infectious diseases. Humoral and cellular factors of human milk are presented below.

Due to the presence of cellular elements in women's milk, in particular lymphocytes, macrophages, etc., mother's milk is called live "white blood". T-lymphocytes of human milk, which have an immunological memory, provide the child with a faster formation of local immunity in the intestine.

Table 4. Humoral and cellular factors of female milk

factors	function:
Lactoferrin	Binds to iron and catalyzes the processes of lipid peroxidation of the
Lactoperoxidase	

Lysozyme	membrane of bacterial cells, thereby disrupting their metabolism and ability to reproduce destroys streptococci, enterococci, and Escherichia coli; inhibits the enzyme systems of staphylococcus; Promotes the reproduction of bifidobacterias synthesize immunoglobulins that provide cellular immunity phagocytosis; increases the production of Lactoferrin
Antistaphilococci factor	
Bifidum factor	
B-lymphocytes	
T-lymphocytes	
Macrophages	

The immune system, which has a limited number of antibodies in newborns, is stimulated during childhood due to contact with pathogens of various types, which leads to the formation of protective mechanisms against infectious diseases. Therefore, the spectrum of diseases that mainly occur in childhood is significantly different from the diseases that are characteristic of adults.

Due to the lack of maturity of the immune system, it is necessary to keep the child in special conditions to prevent his infection. For this purpose, after birth, the child is wrapped in sterile underwear, and the staff who cares for him should thoroughly wash his hands with soap (and even disinfect them), wear masks (often change them).

After discharge from the maternity hospital, you must strictly observe the rules of sanitation and hygiene. Communication of permanent people with children of the first year of life is undesirable since their active immunity develops gradually. Only by the age of 5, the content of antibodies (immunoglobulins) in children reaches a "protective" minimum degree. The development of immunity in children is largely determined by the peculiarities of care and upbringing.

QUESTIONS

1. What is the significance of the functional state of the nervous system of children in the organization of care and the process of education?
2. What is the significance of the features of the structure of the skin and bone system in children?
3. What are the specifics of caring for children of different ages in connection with the anatomical and physiological features of the cardiovascular system?
4. What are the specifics of caring for children of different ages in connection with the anatomical and physiological features of the digestive organs?
5. What are the specifics of caring for children of different ages in connection with the anatomical and physiological features of the organs of the urinary system and urinary excretion?
6. How are the diet and water regimes of children of different ages built?

CHAPTER 3

ETHICS AND DEONTOLOGY OF THE MEDICAL WORKER IN CHILD CARE

Caring for a sick child is an integral part of the treatment process and is designed to ensure not only the high effectiveness of the complex therapeutic effects but above all the complete recovery of the patient.

Patient care is provided by both medical staff (doctor, nurse) and relatives of the patient. The duration of contact between health workers and the sick child and their immediate family may vary. These contacts sometimes last for many weeks or months (and even years). Such circumstances lead to strict compliance with ethical and deontological principles in the relations of medical workers, as well as medical workers with sick children and their relatives.

Medical ethics, which is an integral part of ethics, considers humanistic, moral principles in the activities of medical workers. The word "ethics" comes from the Greek ethos-custom. It is the norms, rules, and customs that regulate the behavior and relationships of people in society. On this basis, the most generalized concepts of morality or ethical categories for medical workers are formed: duty, honor, dignity, conscience, happiness.

The principles of medical ethics must be followed by physicians in their daily activities.

A medical worker has to provide assistance to the patient at the highest professional level never, under any pretext, participate in actions directed against the physical and mental health of people.

The range of issues of medical ethics also includes problems on the successful solution of which the life and health of not only living people but also future generations depend.

These include the struggle for peace, the struggle against the creation and accumulation of weapons of mass destruction, and the protection of the environment.

For a nurse, the duty is primarily to follow all the doctor's prescriptions (regime, diet, injections, distribution of medicines, measurement of body temperature, etc.). The implementation of medical orders will be more effective if the medical or junior nurse does not work formally, but, obeying the inner desire to help the patient, will ease his suffering, accelerate recovery. All this requires self-discipline, continuous improvement of professional skills, and replenishment of knowledge.

The identity of the medical nurse is of no small importance. If a medical worker is a qualified specialist, professionally performs his duties, but does not know how to establish contact with patients, then his actions will not bring the proper therapeutic effect. Showing care, attention, polite and affectionate treatment, and a kind smile are also elements of duty, as they help the child to adapt to a new environment.

The concepts of honor and dignity are inseparable from the concept of duty, which are expressed in the corresponding self-consciousness of the individual, i.e., the

desire of a medical worker to maintain his reputation, good fame, understanding of the social significance of his profession, professional pride, and a constant desire to improve the skills and quality of work.

The concept of "conscience", unlike other categories of medical ethics, includes a person's moral self-knowledge, responsibility for their behavior. The message is closely combined with such moral values as honesty and truthfulness, justice, respect for the rights of other people, and the performance of their professional duties. The concept of "happiness" means a philosophical and ethical answer to the question of the meaning of life, and the concept of a happy life is inseparable from the concept of health. The medical worker must have a high sense of their work in helping the sick, and feel and receive satisfaction from their work.

Medical deontology (from the Greek denotes-due, proper) is a set of ethical norms and principles of behavior of medical workers in the performance of their professional duties. It is included in the category of medical ethics since the latter covers a broader range of issues. Deontology studies the principles of behavior of medical personnel aimed at maximizing the effectiveness of treatment, eliminating adverse factors in medical activity, and the harmful consequences of defective medical work.

According to the International Code of Medical Deontology, there are two strategic requirements for a doctor and an average medical worker:

1) knowledge

2) a friendly attitude towards people.

Relationships of medical workers. In a hospital setting, the relationship of medical workers is of particular importance. Any violation of the ethics of relations between medical workers, their failure to fulfill their professional duties, affects the effectiveness of the treatment process. It is not possible to clarify the relationship between medical workers-nicknames of any positions in the presence of sick children or their relatives. A remark to a junior officer should be made tactfully. It is necessary to observe subordination in the relations between medical workers, i.e.

subordination of a junior employee to a more senior one: junior nurse- post-nurse-procedure nurse-senior nurse-doctor-head of the department.

Medical professionals should not talk about professional topics in front of sick children. It is important to keep in mind that some are suspicious, easily suggestible, and they can develop iatrogenies, i.e. diseases provoked by the action of a medical professional and related to psychopathies relation to children. To children of any age, the attitude should be even, friendly. This rule must be observed from the first days of your stay in the hospital. Remember that children react violently to your arrival in the group (ward); after you leave, it can be difficult for the standing medical staff to calm them down.

Medical professionals who directly find children should always take into account the psychological characteristics of the patients, their experiences, and their feelings. Older children, especially girls, are the most sensitive and in the first days of their stay in the hospital often close up, "go into themselves". For a better understanding of the condition of children, it is important, in addition to finding out the individual psychological characteristics of the child, to know the situation in the family, the social and official position of the parents. All this is necessary for the organization of proper care for a sick child in a hospital and its effective treatment.

When communicating with patients, the nurse experiences emotional stress, sometimes caused by the wrong behavior of children, their whims, unreasonable demands of parents, etc. In these cases, the nurse, like any medical worker, must remain calm, not give in to the moment be able to suppress irritability and excessive emotionality. It is unacceptable to divide children into "good" and "bad", and even more so to distinguish "favorites".

Children are extremely sensitive to affection and subtly feel the attitude of adults towards them. The tone of the conversation with children should always be smooth, friendly. All this contributes to the establishment of a friendly, trusting relationship between the child and the medical staff and has a positive impact on the patient.

Of great importance when communicating with a child is sensitivity, i.e. the desire to understand his experiences. A patient conversation with the child allows you to identify personal characteristics, the dominant experience and helps in making a diagnosis. It is necessary not only to formally listen to the complaints of a sick child but to show warm participation, responsibly responding to what is heard. The patient is reassured by seeing the attitude of the medical worker, and the patient receives additional information about the child. On the contrary, a sharp or familiar tone in conversation creates an obstacle to the establishment of normal relations between the patient and the nurse. Always remember the words of the outstanding prominent doctor , that during the examination the patient himself examines the medical worker. That is why superficial questioning, insufficient attention to a newly admitted child can cause distrust, increased anxiety, and alertness in children, especially those who are brought up in a family and do not attend children's institutions.

The relationship of medical workers with the parents and relatives of the patient. Parents, especially mothers, in most cases, are seriously affected by the child's illness, the mother is more or less mentally traumatized and her reactions may be inadequate. Therefore, an individual approach to the mother is necessary on the part of all medical professionals without exception. Special attention should be paid to mothers who take care of a seriously ill child in a hospital. It is important not only to reassure the woman with words, but also to create the necessary conditions for proper rest, nutrition, and to convince her that the child is receiving the right treatment and is in "good hands". The mother should pony the mother the importance and correctness of the doctor's prescriptions and manipulations performed by a nurse, procedures, etc., if necessary, train parents (mother) to perform individual manipulations, such as injections, inhalations, etc.

Most parents treat medical workers with warmth, trust, and gratitude for their hard work. However, there are also "difficult" parents who try to get the special attention of the hospital staff to their child by rudeness and tactless behavior. With such

parents, medical professionals should show internal restraint and external calm, which in itself has a positive effect on poorly educated people.

A nurse's conversation with the parents and relatives of a sick child on the days of visits and receiving transfers requires great tact. Despite the workload, the medical worker must find time to calmly and unhurriedly answer all questions. Special difficulties may arise when parents try to find out the diagnosis of a child's illness, to clarify the correctness of the treatment, the appointment of procedures. In these cases, the conversation of a medical nurse with relatives should not go beyond her competence. She has no right to talk about the symptoms and possible prognosis of the disease. The nurse should politely apologize, complain about ignorance and refer relatives to the attending doctor or the head of the department.

You should not go "on about" the parents, try to fulfill unreasonable requirements, for example, to stop the injections prescribed by the doctor, change the regime

This kind of "responsiveness" can only be harmful and has nothing to do with the principles of humane medicine.

The form of treatment is of no small importance in the relationship between medical workers and parents. When addressing parents, the nurse should call them by their first name and patronymic, avoid familiarity, and avoid using terms such as " mother" or "dad."

Contacts of medical workers with parents in children's departments are close and frequent. The correct tactics of communication of the nursing staff with the relatives and friends of the sick child create the right psychologists-social balance of interpersonal relationships medical worker-sick child-his parents.

Tactics of the behavior of medical personnel and caring for a child, in addition to professional training, requires a lot of patience and love for children from a medical professional. It is important to have an idea of the degree of correspondence between the mental and physical development of the child, to know his personal qualities. I get sick often young children already look more infantile from an early age than their healthy peers.

It should be remembered that children of preschool and primary school age often have a fear of pain, fear of white coats, loneliness, etc. In this regard, such children often develop neurotic reactions (incontinence of urine or feces, stuttering, etc.). A nurse should help the child overcome fear. It is necessary for a confidential conversation with the child to find out the reasons for this or that fear, to dispel it, to encourage the patient, especially before manipulations (injections, procedures). It is desirable to take blood from a vein, perform injections, etc. to carry out at the same time recently fasted children and those who are in the hospital for a long time. Children in these cases, as a rule, are much easier to tolerate unfamiliar manipulations.

A medical professional should be able to compensate children for the absence of their parents and relatives. Children under 5 years of age are particularly ill-tolerated when separated from their parents. However, even children who are painfully experiencing a temporary separation from their parents quickly get used to the new situation and calm down. In this regard, frequent visits to parents in the first days of hospitalization can traumatize the child's psyche. It is advisable to avoid frequent visits of parents during the adaptation period (3-5 days). At the end of this period, if the parents or close relatives for some reason can not regularly visit the sick child, the nurse should recommend them to send letters more often, to wear gloves, so that the child feels care and attention.

The medical worker plays a leading role in creating a favorable psychological environment in a medical institution that reminds the child of a home environment (organizing games, watching TV programs, etc.). Walking in the fresh air brings you closer to children and the attention and warm attitude of the medical family ensure the adaptation of sick sick children to new conditions.

It is necessary to maintain goodwill, unity of style, and coherence in the team of the medical institution work that helps to provide a high level of care and treatment for children. In a team, each employee has a range of responsibilities. So, for the post nurse, strict compliance with the schedule of the day and the implementation of doctor's appointments are mandatory, for the junior nurse-maintaining

cleanliness in the wards and the neat appearance of children. A nurse, being among children and observing their behavior and reactions, should see the individual characteristics of children, the nature of relationships, etc. Such a nurse is a good assistant to the attending physician, as it contributes to the creation of a healthy psychological atmosphere of the medical institution. Compliance with the ethical principles and norms of medical deontology is mandatory and does not depend on the place of work and position of the medical worker. The norm of the behavior of a medical worker also includes a careful attitude to the public domain, friendliness, a sense of collegiality, compliance with discipline, and a conscientious attitude to work. It is necessary to show restraint and tact, to be mutually polite.

It is very important to be able to keep yourself among the patients and the number of patients, to be able to conduct a conversation according to the situation, etc. Anyone working in a medical and preventive institution should have a neat appearance, monitor the cleanliness of their body, clothes, shoes, avoid jewelry, and excess cosmetics. Work clothes (dressing gown, cap or kerchief, replacement shoes) must always be in exemplary cleanliness and order, be of the established form adopted in this institution.

Smoking causes great harm to the baby's health. "Passive" smoking, which the baby is exposed to, negatively affects his health and development. Therefore, smoking is prohibited in children's medical and preventive institutions. The ethical norms of behavior also include the form of greeting each other. Senior comrades are addressed only by their first name and patronymic.

Ethical and deontological features of work in various medical and preventive institutions. The medical staff of children's polyclinics has a long-term contact with children, and therefore it is possible to plan to distribute the work of providing medical care to children for a sufficiently long time. The main section of the work of a nurse in a children's polyclinic is prevention. The hospital pays more attention to diagnosis, treatment, and rehabilitation. During home visits, the nurse teaches parents the rules of nursing, feeding, the need for preventive vaccinations, etc.

Normal human contact (and professional knowledge) will allow you to solve quickly and correctly all the problems necessary for the child.

When a child on an outpatient basis receives a course of treatment (injections of medicines, physiotherapy procedures, physical therapy, water treatment, etc.), it is possible to influence children with the help of deontological techniques. In recent years, many polyclinics have organized one-day hospitals that allow the patient to be treated in full: regularly take dietary food and medicines, perform the necessary medical procedures, etc. A nurse, occupying a middle position in the medical hierarchy, participates in the following activities: collective therapeutic actions. To consolidate the therapeutic success, her spiritual sensitivity, good manners, and competence help.

A different situation occurs when a child is hospitalized if he or she is suspected of a particular disease that requires inpatient examination and treatment. This happens either as planned or in an emergency by emergency or ambulance. At the stage of hospitalization, the medical worker has relatively little opportunity to influence the sick child and his parents or relatives. But it is necessary to show maximum tact to strengthen the opinion of parents in the need for hospitalization and examination of a sick child.

The relationship between the medical worker and the child in the hospital is more diverse, and the profile of the inpatient department should be taken into account. The most widespread-The most common are pediatric departments where children with diseases of the respiratory system, cardiovascular system, kidneys, digestive organs, etc. are treated. Most diseases of the internal organs are characterized by a long, chronic course, which requires prolonged treatment and, accordingly, contact between the sick child, his parents, and medical professionals. Prolonged separation from the family and the usual school environment in older children can cause various psychogenic reactions. This aggravates the course of the underlying disease and creates an unfavorable psychological background. Neuropsychiatric disorders easily develop in children with an anxious and suspicious mood, especially in pre-and puberty age. In addition to the main somatic disease, which

causes a variety of complaints, such children are characterized by neurosis-like behaviors: rapid fatigue, mood changes, often occurring for no reason, poor sleep, headache, palpitations, unreasonable anxiety, etc. Similar complaints are often made in children with vegetative-vascular dystonia, diseases of the digestive system. Children, mostly girls, "go into the disease". They complain for a long time about abdominal pain or dyspeptic disorders (nausea, heartburn), although there is no objective data for the development of the underlying disease. These patients especially require the attention of medical professionals, who must skillfully use any psycho-therapeutic effect.

The medical and protective regime in a children's institution. In our country, thanks to the work of I. P. Pavlov, one of the principles of the organization of treatment — the so-called therapeutic and protective regime-was established. In essence, this is the creation of optimal conditions for the stay of patients in the hospital. The elements of the therapeutic and protective regime are the elimination of all unpleasant factors of the situation, providing patients with the necessary conditions for sleep, rest, eating, strict compliance with internal regulations, combating pain, fear of isolation, fear of therapeutic and diagnostic procedures, distracting the child from going into the disease, strict compliance with the psychotherapeutic principles of treatment of medical personnel with the patient.

The effect of the therapeutic and protective regime on the child begins already upon admission to the hospital.

Children are greatly influenced by the general appearance of the hospital, its location, and the nature of the territory, where there should be a place for walking and playing. The contact of medical professionals is of exceptional importance as a child in the emergency department. In addition to a good organization of work in this department of the hospital, the medical staff requires kindness, sensitive attention to any patient and his parents, and efficiency in providing first aid.

A favorable influence on the patient's psyche is exerted by the appearance and good sanitary condition of the rooms of the reception department, corridors, wards,

canteens, sanitary units, game rooms, etc. Cleaning of these and other hospital premises should be carried out at a strictly regulated internal time.

When a child is admitted to the department, medical workers are required to show attention, efficiency in placing the patient, and professionalism, which often allows them to avoid complications of the disease or to exclude unwanted contact with other children. Important principle of the rational placement of patients taking into account their psychological compatibility. Age differences are important since older children (11-14 years old) have a beneficial effect on preschoolers who want to imitate their elders.

The role of proper nutrition management, including the transfer of permitted products, is important in the implementation of the therapeutic and protective regime. Delicious and varied food, fresh vegetables and fruits, good table setting, a favorable environment when eating - this is far from an incomplete list of components of therapeutic nutrition in the hospital.

We should not forget about the possibility of the influence of such psycho traumatic factors as diagnostic (blood collection, endoscopy) and therapeutic (puncture) procedures.

Medical confidentiality. The medical worker has no right to disclose information about the patient obtained during the examination, treatment, and observation. It is not necessary to express an opinion aloud about the patient's condition, the possible prognosis of the disease, to assess the treatment being used, etc. The proper storage of medical records is of particular importance in the preservation of medical confidentiality. None of the documents should be a source of disclosure of medical (medical) secrets.

Legal liability. Medical personnel is not only morally responsible for protecting the health of patients and performing their duties. Local organizations legislation provides for the legal liability of doctors and medical professionals in the following cases: 1) negligent attitude to their duties, which led to a deterioration in the health of the patient, is considered as criminal negligence; 2) violation of sanitary and hygienic and anti-epidemic rules, if these violations have caused or could cause the

spread of the epidemic and other infectious diseases, is considered as a crime against public health; 3) gross violation of manipulation techniques, resulting in the death of the patient, is considered as manslaughter; 4) theft of medicines and equipment is considered as theft of state or other property; 5) theft of narcotic drugs- is considered a particularly dangerous crime; failure to assist a patient by a person who is obliged to provide it, if as a result of these serious circumstances (death, serious condition) has occurred, is considered a criminal offense.

QUESTIONS

1. What is medical ethics?
2. What is the ethical duty of medical personnel?
3. What does deontology study?
4. What are the tasks of medical deontology?
5. How relationships between medical professionals are built
6. children's hospital conditions?
7. What is the ethics of the relationship between a medical nurse and the parents of a sick child?
8. What rules and principles of behavior should a medical professional follow?
9. What is a medical secret?
10. What violations of ethics and deontology on the part of the medical staff can lead to legal consequences?

CHAPTER 4

RESPONSIBILITIES OF SECONDARY JUNIOR'S MEDICAL PERSONNEL

Hospitals have a two-stage (doctor, nurse) and three-stage (doctor, nurse, junior nurse) system of patient care. Since 1968, the position of the junior nurse (nursing nurse) has been introduced in children's hospitals instead of junior personnel. With a two-stage system, the nurse not only performs doctor's appointments and performs procedures, but also provides care for patients. Under

the three-stage system, the junior nurse cleans the premises, monitors the timely change of linen, the cleanliness of care items, helps patients, and takes care of them.

The junior nurse performs the following duties:

a) wet cleaning of wards, offices, operating rooms, corridors, common areas;
b) change of underwear and bed linen;
c) sanitary treatment of patients;
d) daily toilet, care of the skin, hair, ears, eyes, oral cavity of patients, etc.
e) feeding of the bedpan, urinals, their disinfection;
f) prevention of bedsores;
g) swaddling and washing of children;
h) monitoring of the sanitary condition of bedside tables.

The medical nurse is a representative of the secondary medical level. This is a doctor's assistant in medical and preventive, preschool, and school institutions. The position of a nurse is assigned to persons who have graduated from medical schools with a training period of at least 2 years and have received a certificate of qualification of a nurse. Students of the medical institutions who have completed three full-time courses can work as nurses.

The duties of a nurse are diverse and require serious professional skills. The medical nurse carefully and strictly, according to the instructions of the attending physician, performs all appointments, and in emergency cases — the appointment of the doctor on duty. She is obliged to make sure that the child takes the prescribed medications, and if necessary — to help. At the same time, the nurse takes care of the patients. She monitors the sanitary condition of the wards assigned to her, makes the necessary records in the medical records of inpatient patients about the performance of medical and hygienic appointments.

The nurse is present at the medical rounds of patients, informs the doctor about the state of health of children, receives further instructions on the care of patients.Controlles recommendations sheet and fulfills them. The duties of the nurse include measuring the patient's body temperature and registering it in the

temperature sheet of the patient's medical record, counting the pulse, respiratory rate, determining blood pressure, body weight, etc. At the doctor's appointment, the nurse (with the help of a junior nurse) measures the daily amount of urine and sputum.

The nurse monitors the cleanliness, the silence, and order in the wards; teaches children and their parents the rules of personal hygiene; takes care of the timely provision of patients with everything necessary for treatment and care, conducts hygienic baths, monitors the change of underwear and bed linen, takes part in sanitary and educational work.

At the doctor's appointment, the nurse collects materials for tests (urine, feces, sputum, etc.), sends them to the laboratory, receives the results of the studies, and glues the answer forms in the medical records of inpatient patients. Monitors the exact compliance of patients, as well as junior medical staff and visitors, with the established rules of the internal order of the hospital, carries out transportation of patients (for research, etc.). The duties of the medical nurse include monitoring the medical nutrition, if necessary, and personal participation in the distribution of food, feeding seriously ill and young children; control over transfers to patients and their proper storage.

The nurse is responsible for the exemplary maintenance of the nursing station, the serviceable state of medical and household equipment; observes the rules for storing medicines; makes requirements for medicines, dressings, and child care items; accompanies children (at the doctor's request) to X-ray, endoscopic, radiological and other studies; monitors the temporary return of medical records of inpatient patients from specialists, makes them the results of research. Compiles the portion requirements for the treatment of patients following the prescriptions and transmits them to the food department.

At the appointment of the head of the department or the attending physician, the nurse calls for a consultation with the specialists from other departments, orders a car to transport the child to another medical and preventive institution.

The nurse takes the newly admitted children to the department, examines the skin and scalp of the child to exclude infectious diseases and pediculosis, places the sick children in the appropriate wards, reports the newly admitted patients to the doctor. Her duties include familiarizing newly admitted children with the rules of the internal routine, the daily routine, and the rules of personal hygiene.

The distribution of the work of the ward nurse during the day is presented below.

Table 5. The approximate work plan of a ward nurse

During a day

Time	Activities, Scope of work
5:30-6:00	Awakening and feeding of infants performing the necessary tasks Morning toilet of infants, body temperature measurement, weighing of children. Recording of the received data in the medical care of the inpatient patient. Performing injections. First feeding of the children, after which the infants are put to bed
7:00-7:30	Awakening, measurement of body temperature in older children and registration of the obtained data in the temperature sheets of medical records of inpatient patients
7:30-8:00	Morning toilet, assistance to children in carrying out the morning toilet, care for the seriously ill and young children

	treatment of the oral cavity,nose, eye washing, combing the hair of the sick child, re-laying the beds. Sending the collected urine, feces to the laboratory
8:00-8:15	Distribution of medicines, assisting patients in the use of medicines

Time	**Activities**	**Scope of work**
15-8.45	Breakfast	Monitoring of compliance with the diet, assistance in the distribution of food, feeding treatment of seriously ill patients. Second feedinfant care
45-9.15	transfer of duty	Patient visits, transfer of medicines, documentation. Participation in the morning conference
15-10.00	medical bypass	Participation in medical rounds of patients, assistance to the doctor

		(undressing, dressing) when examining seriously ill and young children
00-11.00	performing medical appointments	Performing injections, probing, and other appointments. Transportation of children for research. Care for the seriously ill
00-11.30	Distribution of medicines	Distribution of medicines, drug administration, injection of drugs
30-12.00	Lunch	Assistance in the distribution of food, third feeding of infants, distribution of gear
12:30-15:00	Sleep	Ventilation of wards. Preparing bed children. Control over the observance of order and silence. Clarification (according to the

		medical record of a medical list stationary patient)of the doctor's appointments and amendments to the (list of appointments)
15:30-16:30	Lunch	Monitoring of compliance with the diet, assistance in the distribution of lunch, fourthfeeding of infants
17:00-18:30	Performing evening medical appointments	Measurement and recording of body temperature. Distribution of medicines, execution of injections
18:30-19:30	Dinner	Help with the distribution of dinner, feeding the children
19:30-20:00		Fifth feeding of infants

Time	Activities	Work scope
20:00-21:00	Performing night medical appointments	Preparation of children for X-ray examination for the following-the next day (setting enemas). Just giving medicines. Filling cans, compresses, mustard plasters, performing injections
21:00-21:30	Sleep Evening toilet:	Ventilation of the wards, monitoring of timely switching off of the light, silence in the wards and the ward washing, washing, re-making the bed.
23:30-24:00		Sixth feeding of infants
0.00-2:00	Working with documentation	Reconciliation of appointments (according to the medical care of the inpatient patient), making changes to the nursing lists. Writing out reports on laboratory examinations and consulting specialists.Pasting forms with test results in

		medicine medical records of inpatient patients
2:00-5:30	Night works	Monitoring the condition of children. Night rounds of patients, shelter of children, change of wet clothes.

Call the doctor on duty, if necessary, and help him with the procedur es. Filling in the requirements for medicines and food for the next day

A nurse in the pediatric department of a hospital should be able to perform the following manipulations: 1) feed the child through a probe, probe, and wash the stomach; 2) put enemas of all types (cleaning, siphon, etc.); 3) insert a gas outlet pipe; 4) catheterize the bladder with a soft catheter (in children older than 1 year); 5) put mustard plasters, cans, compresses; 6) rub the medicine into the bladder-7) give medicines through the mouth; 8) instill medicinal solutions into the eyes, nose, and ears; 9) apply a patch; 10) make intradermal, subcutaneous, intramuscular, and intravenous infusions (with the doctor's permission); 11) measure arterial pressure; 12) perform indirect heart massage; 13) perform artificial lung ventilation (ventilator); 14) take swabs from the throat; 15) collect material for laboratory tests. tests (urine, feces, sweat, vomit, etc.); 16) perform physiotherapy procedures (as prescribed by a doctor); 17) monitor the patient and notice deviations on the display; 18) perform duodenal and gastric probing.

The work of the nurse is based on the schedule approved by the head of the department. While on duty, a nurse may not leave the department without the doctor's permission.

The staff schedule of the department provides for a medical nurse of the treatment room, who performs the most complex medical manipulations; she helps the doctor in carrying out those manipulations that only a doctor has the right to perform (blood transfusion, punctures, administration of contrast agents).

In addition, a hostess sister is allocated, who is responsible for household inventory, general cleaning of all premises.

The role of the medical profession in the proper organization of child care, nutrition, and strict implementation of all medical requirements is extremely important. The senior nurse organizes the work of the middle and junior medical staff, in addition, her duties include compliance with the sanitary and epidemiological regime and training of new employees entering the department. In the department of newborns, the senior nurse conducts daily examinations of the staff and mothers (body temperature measurement, examination of the throat and skin) before the start of work.

The reception and delivery of duties is the most responsible moment of the nurse's work in the implementation of the priority in the treatment of patients. A nurse does not have the right to leave the post independently, even if her replacement did not appear, and the transfer of duty by nurses should be carried out regularly. The nurse who passes the post introduces the nurse who takes the post to the sick children, transmits the necessary information about individual features of treatment and care. At the morning conference, the nurse makes a report on the work done.

On-duty nurses (passing and receiving the post) jointly conduct a round of patients, with special attention paid to the seriously ill, the sanitary condition of the wards, compliance with the rules of personal hygiene. The amount of work not completed during the previous shift is recorded in the duty log of this or that patient, as well as medical appointments of the doctor on duty, data on the distribution of strong medicines, the preparation of children for laboratory tests.

The nurse on duty receives thermometers, syringes, medicines, care items (drinking cups, hot water bottles, padding vessels, urinals, etc.), inventory, keys to cabinets with medicines of the general list. She receives a pre-arranged list of research assignments and referrals to various laboratories and offices. It is necessary to check the availability of a sufficient amount of clean linen for the entire shift. At the end of the shift, the nurse makes a summary of the movement of patients: the number of patients in the department at the beginning of the day, the

number of admitted, retired (separately: discharged, transferred to other departments or medical institutions, deceased) and those who are at the beginning of the next day. This information is transmitted daily to the hospital's emergency department.

The medical post is the workplace of the medical staff (Fig. 4). The medical post is located near the wards, so that children, especially the seriously ill, are under constant visual control. For this purpose, the walls of the chambers or the partitions between them are made of thick-layer or organic glass. The nurse's post must have the following necessary items: a table with lockable drawers for storing medical records of inpatient patients, forms, medical instruments, etc.; a cabinet for storing medical records of inpatient patients, storage of medicines; telephones of the city and local network; refrigerators; table lamps.

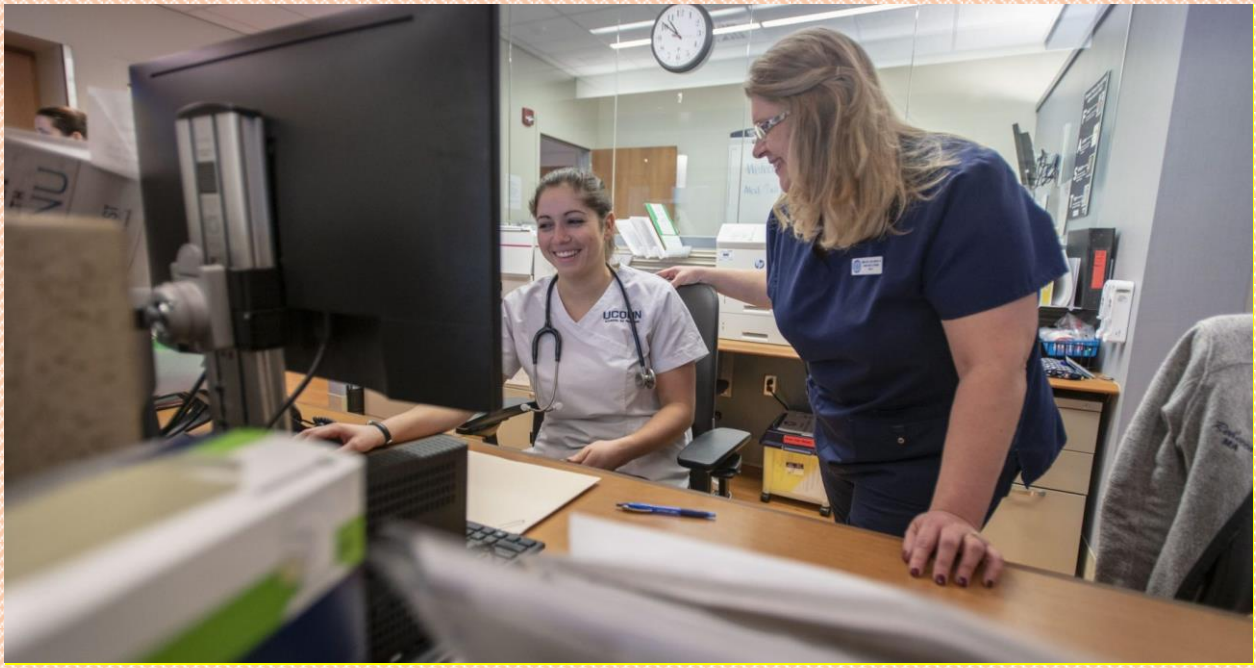


Fig. 4. Nursing medical post.

The nurse's workplace must be kept clean and equipped with the necessary items. The effectiveness of the medical system depends largely on the readiness of the workplace. The senior nurse of the department, finishing the working day, supplies the nursing posts with everything necessary for the next day.

Medical documentation is approved by the Ministry of Health and is used in medical and preventive institutions in the form of unified forms.

The medical care of the inpatient hospital (form No. 003/y) (medical history) is the main primary medical document that is filled in for each patient who is in the hospital of a medical institution. All data about the patient, including the results of dynamic observation and treatment, is entered into the medical record of the inpatient patient. It is pasted into it the results of laboratory, instrumental and other studies, daily record the values of morning and evening body temperature, pulse and respiratory rate, blood pressure, and if necessary the daily amount of urine (diuresis).

In the medical record of the inpatient patient, the nurse notes the time of admission of the patient to the department and the results of the examination. you check for pediculosis, sign it. In the prescription sheet, the patient notes the time of delivery of the drug, in the temperature sheet-the weight and height of the child at admission, the temperature of the patient in the morning and the evening, then once every 7-10 days notes the days of taking a bath and changing clothes, daily-the child's stool.

The medical record of an inpatient is a legal document. It is stored for 25 years therefore, it must be conducted strictly by the established form. It is not allowed to make any corrections; it is forbidden to glue, erase, cross out previously written, add. The nurse is responsible for keeping the medical records of inpatient patients, which are stored in a drawer or cabinet that is locked with a key, not accessible to children and their parents.

Referrals to the laboratory are filled in by a nurse. They note the last name, first name, and age of the child, the number of the medical care of the inpatient patient, the title of the department, and the list of indicators that should be determined.A nurse makes medical appointments for each patient from the medical records of inpatient patients. The form of filling in is arbitrary. It is better to make individual nursing lists for each child separately, but you can fill them out according to the type of manipulations, diets, medicines with the list of children's surnames.

In the log of delivery (transfer) of duties, the number of children on duty, the names of newly admitted and retired patients with an indication of the diagnosis are noted. In addition, they list feverish children with an indication of body temperature, assess the dynamics of clinical symptoms in seriously ill patients, list all unscheduled manipulations and measures taken to help, performed by the doctor on duty and according to his appointment. A separate list of children prepared in the sot is provided- in accordance with medical prescriptions for diagnostic purposes medical procedures (endoscopic, X-ray, ultrasound, etc.).

The department's patient movement log records information about the movement of patients: the number of patients who have left and those who have been admitted.The register of infectious patients records the last name, first name, age of the child, delivered with an infectious disease, diagnosis, date, contact you, and the measures are taken.

Emergency notification of infectious disease, food poisoning, acute occupational injury, or an unusual reaction to vaccination (form No. 058/y) is made by a medical worker (nurse) and sent to the center for sanitary and epidemiological surveillance.

Working with medicines. One of the most important duties of a nurse is to participate in the treatment process, which is manifested primarily in the distribution of medicines. Medications have a variety of effects on the body, including local and general. However, in addition to the main therapeutic effect, they can cause side effects or undesirable effects. The latter is reduced and even eliminated after reducing the dose and discontinuing the drug. There may be cases of intolerance to drugs, leading to severe complications (for example, anaphylactic shock). A nurse must not only be aware of all possible adverse reactions to the administration of a particular drug but also be able to provide emergency pre-medical care.

The storage of medicines is carried out in special lockable cabinets, which are under the control of the post nurse. In the cabinet, medicines are arranged in groups on separate shelves with the corresponding inscription: sterile, internal, external, eye drops, injectable. The back wall is put larger dishes, in front — small. This

allows you to read the label and select the desired drug without moving the drugs. In addition, each shelf should be divided: for example, "internal" - into compartments for powders, tablets, and medicines. You can put powders on one shelf, tablets, capsules, on the other — medicines, solutions, etc.

This is how medicines of the general list are stored.

Particularly strict requirements are imposed on toxic substances strong drugs. For them, small safes or metal cabinets are allocated, which are constantly under lock and key. Safe (cabinet) with the inscription " A " are toxic narcotic drugs, and in the safe (cabinet) with the inscription " B " — strong drugs. On the inner surface of each of the safes, a list of toxic and potent medicines is placed, indicating the highest single and daily doses (depending on the age of the child). There should also be tables of antidotes. Stocks of toxic substances narcotic drugs should not exceed the five—day requirement, and strong drugs should not exceed the ten-day requirement.

To account for the arrival and consumption of toxic and highly effective medicines, a specially numbered, laced, and sealed with a sealing wax seal of the medical institution is kept in the following form:

The arrival of the medicine	**Medicine consumption**	**Signature**
Date №	Received from	Amount
Date № of the medical card of the patient	Family name and name of the patient, age	Amount

The journal, as well as the requirements for obtaining and disposing of toxic and potent medicines, are kept in the department for 3 years. Then these documents are destroyed in the presence of the commission, and the act is signed.

The keys to the safes (cabinets) "A" and " B " are stored only persons appointed by the order of the medical institution. These persons are responsible for the storage and distribution of toxic and potent medicines. For non-compliance with the rules of storage and theft of these medicines- medical personnel is criminally liable for

the use of medical devices. Medicines that have a strong odor (iodoform, Lysol, ammonia, etc.) and are highly flammable (ether, ethyl alcohol) are stored in a separate cabinet. Coloring medicines (iodine, diamond green, etc.) are also stored separately. The shelf life of factory-made medicines is usually 2-5 years, but it can be big. The shelf life is determined by the label. Each industrial batch of manufactured medicines is assigned a factory series, which is marked with at least five digits. The last two digits of the spread are the year of production, the previous two are the month of production, and the main ones are the factory series.

Medicines prepared in a pharmacy have shorter expiration dates. All containers (boxes, cans, vials) containing medicines manufactured in a pharmacy are provided with the appropriate labels, which indicate the name, date of manufacture, and shelf life. The terms of storage and sale of medicinal products prepared in pharmacies are established: 2 days-for injectable solutions, eye drops, infusions, decoctions, mucus; 3 days — for emulsions; 10 days — for other medicinal products. Sterile solutions in bottles (not included ampoules) can be stored for no more than 3 days. Signs of spoilage of medicines are changes in appearance, in particular the appearance of plaque, flakes, spots on the tablets, the appearance of an additional smell, a color change. There should be no expired or unusable medicines at the medical post.

When storing medicines, certain temperatures and humidity, the degree of sedimentation, and the quality of the packaging should be observed. Liquid medicines, such as infusions and decoctions, quickly deteriorate and should therefore be stored in the refrigerator at a temperature of 2 ° to 10 °C. The same requirements apply storage of emulsions, certain antibiotics (penicillin, etc.), serums, solutions containing glucose, insulin, etc. Drugs, quickly destroyed when exposed to light (bromine, iodine), should be stored in dark glass containers and a dark room.

Figure 5. Solid dosage forms

a- tablets; b-dragees; c-powders (in sachets); d-powders or microspheres with an enteric coating in gelatin capsules.

When storing medicines, it is forbidden to place them together with disinfectant solutions and means for technical purposes. The nurse has no right to transfer the medicinal product from one container to another, to peel off and re-glue these kettles, to arbitrarily connect the medicinal products (for example, tablets with powders, etc.).

The distribution of medicines is carried out by a nurse in strict accordance with the doctor's instructions, which indicate in the medical record of the inpatient the date of appointment and withdrawal of medicines. Medications are taken before, during, after meals, and before bedtime. The most common, simple, and convenient method of drug administration is the enteral route, i.e. oral or oral administration. This method is reliably controlled. Inside, solid dosage forms are mainly taken: tablets, dragees, powders, capsules (Fig. 5). The pots in the sachet are intended for dilution with water. Less often, liquid dosage forms are prescribed inside: solutions, decoctions, potions, etc. It should be remembered that the lower the age of the child, the more widely the use of liquid dosage forms is used.

When starting the distribution of drugs, the nurse should clean herself up, wash her hands with soap. To avoid mistakes, it is necessary to be able to identify medicinal

products by their shape, color, smell, and taste. The child should only take the medication in the presence of medical personnel — a nurse, a doctor.

There are several ways to distribute medicines in the conditions of the children's department. You can use the trays divided into cells with the names of the patients. In them, medicines are laid out in advance. Before you put the drug in the cell, you should check the name indicated on the package with the name of the drug in the medical record of the inpatient patient or the nursing sheet. Then the nurse goes around with a tray to all the wards. Another method is to use a mobile table on which medicines for oral administration, a carafe of water, beakers, spoons, and clean triggers are laid out. The nurse rolls this table into the room and moves it to the bed of each patient if he is on bed rest. Walking patients automatically approach the table, where they take medicines under the control of the nurse.

When distributing powders, the paper in which the powder is packed is unwrapped and, having given it the shape of a trough, the powder is poured on the child's tongue, then offered to drink it with water. You should not give medicines to the child on the hands, especially several tablets at once. It is important to follow the sequence of taking medicines. After swallowing the tablet, you need to wash it down with liquid, making small but frequent sips. This is explained by the fact that the tablet passes through the esophagus for 2-5 minutes. If you take a big sip, the water quickly passes by the tablet and the latter can stop the pear-shaped space. Frequent small sips of water or lumps of food contribute to a faster passage of the drug into the stomach.

Currently, a large number of medicines in syrup are produced. Children, especially young children, are very willing to accept them. Pills: kids swallow them with difficulty, and children under 3 years of age seldom can swallow them. Therefore, before taking the tablets, they are crushed. The tablet or powder is sometimes dissolved in sweet water, syrup, given to the baby along with food, etc. In infants, the prescribed dose of the drug in liquid form is often administered fractional, so that the child does not choke. If the child does not want to take the drug, then you have to forcibly open your mouth as follows: 1) two fingers gently press on the

cheeks; 2) hold the nose and at this moment the child opens his mouth. Some medicines (which do not irritate the oral mucosa) can be given to children in the first months of life from the nipple.

Medicines, decoctions are given in graduated cups divisions of 5, 10, 15, 20 ml. In the absence of graduated dishes, take into account that the water solution in a teaspoon is about 5 ml, in the dessert - 10 ml, in the dining room-15 ml. Alcohol infusions, as well as liquid extracts, are measured using clean single-use pipettes. The use of the same pipette for the distribution of different medicines is prohibited. Some heart medications (valid, nitroglycerin) are taken under the tongue. If it is impossible to administer drugs through the mouth, they are injected in the form of candles into the rectum. Candles are administered to children only by medical nurses.

It is necessary to warn patients that when taking certain medications (bismuth, iron, quinoline, etc.), the color of urine and feces may change.

The release of medicines to children in policlinic. If a sick child needs medicines, the district doctor writes out regular or preferential prescriptions (for children under 3 years old, children with disabilities from childhood, people with disabilities due to the disease), with partial or full payment. Nurses should know the main medicines that are in demand in pediatric practice, indications, and contraindications to their appointment, rules of use (forms of medicines, connection with food intake), possible side effects. In addition, some countries have created a market without prescription forms of medicines, which allows the population to independently use certain dosage forms.

QUESTIONS

1. What is a two- and three-stage system of child care in a hospital?
2. List the responsibilities of a junior nurse.
3. List the duties of a ward nurse.
4. What is the approximate work plan of the ward nurse during the day?

5. What manipulations should the medical nurse possess?
6. What is the delivery and reception of duty in the children's department of the hospital?
7. How is the nurse's post equipped?
8. What types of medical records are used in the therapeutic department?
9. What data is entered in the temperature sheet?
10. What are the rules for storing medicines?
11. What are the features of the distribution of medicines taken by mouth to children of different ages?
12. How are the storage periods of individual medicines regulated?

CHAPTER 5

SANITARY AND ANTI-EPIDEMIC REGIME CHILDREN'S HOSPITAL

Special importance is attached to the activities of the children's hospital to maintain order, cleanliness, and efficiency in the work of the medical staff. Junior nursing, nursing, and medical personnel must comply with the rules of the sanitary and anti-epidemic regime, which provides for the organization and implementation of the necessary sanitary and preventive, and anti-epidemic measures. In the hospital, sick and weakened children are concentrated, so the most serious attention should be paid to the prevention of in-hospital (nosocomial) infections. To ensure that, in the children's hospital, it is necessary to adhere to the essential sanitary rules: to observe the principle of isolation of individual groups of children when filling departments (wards, boxes, etc.), to use the available premises for their intended purpose; to create an optimal air and heat flow in the premises; to strictly observe the rules of operation of the food hall and canteens-handouts; to observe the rules of hiring staff and ensure timely passage of mandatory preventive medical examinations; to children and staff to observe the rules of personal hygiene; have the means to carry out disinfection measures (a sufficient number of special

clothing, cleaning equipment, detergents, and disinfectants); carry out engineering, technical and sanitary improvement of the institution and its land plots.

Sanitary and anti-epidemic regime in the reception department. When referring a child to a hospital, the district pediatrician should find out whether the child had contacts, infectious patients, at home or school (kindergarten) for the last 3 weeks (the maximum duration of the inactivation period of most children's infectious diseases). The information received is noted in the board for hospitalization.

Even in the absence of contact with infectious patients, all children in the emergency department of the hospital are especially examined by a doctor to exclude a possible infectious disease. Examine the skin pores, visible mucous membranes; measure the body temperature. Most childhood infections are characterized by an increase in temperature, the appearance of a rash. If an infectious disease is diagnosed or there is a suspicion of infectious disease, the patient is immediately isolated in a box or sent to an infectious hospital.

Basic treatment of patients will be carried out the emergency department. After examining the child, the doctor of the emergency department, if necessary, prescribes a hygienic bath or shower. If the patient's condition is extremely serious, then he is sent to the intensive care unit without sanitary treatment, where they provide the necessary assistance, conduct intensive therapy.

The observation room and the bathroom should be kept clean. At the end of the examination of the child, the treatment of objects (spatulas, thermometers) and furniture (couches, chairs, etc.) that the patient touched is carried out. The oilcloth pillow and oilcloth on the couch after each patient is wiped with a 2 % solution of chlorine min or 0.5 % solution of bleach, and at the end of the shift is washed with hot water and household soap. The sheets on the couch should also be changed after each patient.

If an infectious disease is detected in a child, the room where the patient is located, objects and furniture are decontaminated (disinfected).

In the emergency department, at least 2 times a day, general cleaning of the premises is carried out in a wet way with the use of disinfectants.

For the sanitary treatment of the patient, disinfecting solutions and equipment are necessary. The following disinfectants are usually used: high-quality soap, Lysol, table vinegar, chlorine water, chloramine, calcium hypochlorite, 0.5% solution of hexachloride. Use combs, washcloths, cotton wool, kerchiefs, hair clippers, alcohol burners, pots for clean and dirty washcloths, buckets for preparing Dez infecting solutions. Marked inventory (buckets, basins, etc.) are stored in a special cabinet.

Examination for lice (pediculosis) and scabies.

In the emergency department, the child must be examined to detect pediculosis and scabies. So sick the hospital can infect other children with lice and ticks.

Pediculosis is transmitted by direct contact with patients, the use of clothing and underwear of the patient. According to the phenomenon of pediculosis, as well as scabies, uncleanliness, large crowding of people, violation of sanitary and hygienic rules, poor organization of sanitary and educational work, low level of culture of individuals contribute to the phenomenon.

There are head lice, dress lice, and pubic lice. Dress lice live and lay their eggs mainly in the folds of underwear. The size of lice is 1.5-4 mm, and their eggs (nits) — no more than 0.6-1 mm. Head lice nits are oblong as if they are glued to the hair shaft a special adhesive mass, and almost always located near the roots of the hair.

In case of detection of pediculosis, a special disinsection treatment of the child is carried out, and if necessary, its underwear (or bed linen). If lice or nits are found on the scalp, the patient is seated on a couch without undressing and the hair is treated with one of the insecticidal solutions or cut off. 20% water-soap suspension of benzyl benzoate (10-30 ml); lotion "Nittifor" (50-60 ml); shampoos "Grinnid", "Reed" are used.

Figure 3. Antipedicular agents

After treatment of the scalp with a solution, wet hair is covered with a plastic napkin and tied with a kerchief for 20-30 minutes (when using Nittifor lotion, the exposure is increased to 40 minutes). Then wash your hair with hot water and household soap. After that, the hair is carefully combed (on glue or paper) with a frequent comb with cotton wool, moistened with an 8 % solution of table vinegar (mechanical removal of dead lice and nits), rinsed with clean water. The procedure is repeated after 7-10 days. The cut hair is collected in oilcloth or paper and burned together with it.

To remove nits, use table vinegar heated to 27-30 °C. Cotton wool soaked in vinegar, treat individual strands of hair, tie a head scarf for 15-20 minutes, then carefully comb out the hair with a frequent comb and wash your head.

To detect scabies, examine the skin of the hands, torso. If scabies is detected, mandatory treatment of the patient, preventive treatment of persons in contact with him, disinsection of clothing and bedding to avoid re-infection is carried out. This is a contagious disease that is easily transmitted by direct contact with the skin of the patient or indirectly through clothing, gloves, bedding, or toiletries (for more information, see the chapter "Care and monitoring of children with skin diseases".

The patient's clothes and underwear are placed in an oilcloth bag, sprayed outside with one of the disinfectant solutions (0.5 % bleach solution), and sent to the disinfection chamber for chamber cleaning-insecticides.

Then the underwear and bed linen are boiled, treated with a hot press or iron.

The staff of the department who carried out the sanitary treatment of the patient, at the end of it, should wash, clothes, if necessary, are handed over for processing in the disinfection chamber. In the room where the sled treatment of a sick child was carried out, the floor, benches, etc., are irrigated with a 0.5 % solution of chloramine at the rate of 100 ml per person on m2, 2-3 hours of ventilation, and then perform a wet cleaning of the room.

On the title page of the medical care of the inpatient patient, in this case, put a special mark — the letter " P "or write "Pediculosis". Such a patient is under the special supervision of a medical professional. If necessary, the hair treatment is repeated until the complete elimination of pediculosis. Each patient with pediculosis is reported to the center for sanitary and epidemiological surveillance at the place of residence.

Sanitary and anti-epidemic regime in pediatric departments. This includes measures to meet sanitary and hygienic requirements and carry out disinfection measures. Sanitary and hygienic standards provide for the allocation of a bed made with clean linen for each child, a bedside table for storing personal belongings. If necessary, the child is given a pot, a lining vessel, items of individual care (a drinking cup, a mug), and clothing. In the department, the patient takes personal hygiene items with him.

On individual tables or nightstands located next to the beds, put a glass; they store toilet accessories (toothbrush, toothpaste, soap, paint) and some personal items (paper, pencils, pens, books, toys). It is strictly forbidden to store food on the bedside tables. To store food items in the pantry or dining room, there should be a refrigerator.

Each patient is given a hygienic bath with a complete change of underwear and bed linen at least once every 7-10 days (if necessary). A child's toilet is provided daily.

Before each meal, patients must wash their hands. For heavy and bedridden patients, washing is organized at the bedside.

The department must strictly observe the sanitary regime. Ventilate the wards at least 4 times a day, preferably during the period when the children are in the dining room. When the room is ventilated at other times and when the wards are quartered, children are taken to the corridor or the playroom. For early detection of infectious diseases, children are examined daily. Carefully examine the skin and visible mucous membranes, keep a strict record of all children with elevated body temperature (37.5 °C above); if necessary, conduct bacteriological and bacterioscopic examinations of blood, feces.

Proper organization of children's nutrition, food preparation, food transportation, and distribution are of great importance in the observance of the anti-epidemic regime in the hospital.

Personal hygiene of medical personnel. One of the most important factors in the observance of the anti-epidemic regime in a children's hospital is the personal hygiene of medical personnel.

Only healthy people who have passed medical and preventive training are allowed to work in a children's medical and preventive institution.

|A medical professional should have a neat and tidy appearance. The nurse takes a shower before going on duty, puts on clean underwear. Hands should be washed with soap, and nails should be cut short. Clothing should be of the prescribed form (Fig. 6); a white coat worn on a short-sleeved dress, and a cap (kerchief) covering the hair should be clean ironed. While on duty, the nurse puts on special shoes (slippers) that allow you to move silently. Slippers should be easy to disinfect. After the end of the duty (shift), the dressing gown, headdress, and slippers are left in a locker specially reserved for the medical worker.

In some cases, medical workers must wear a mask that should cover the mouth and nose (**Fig. 7**).

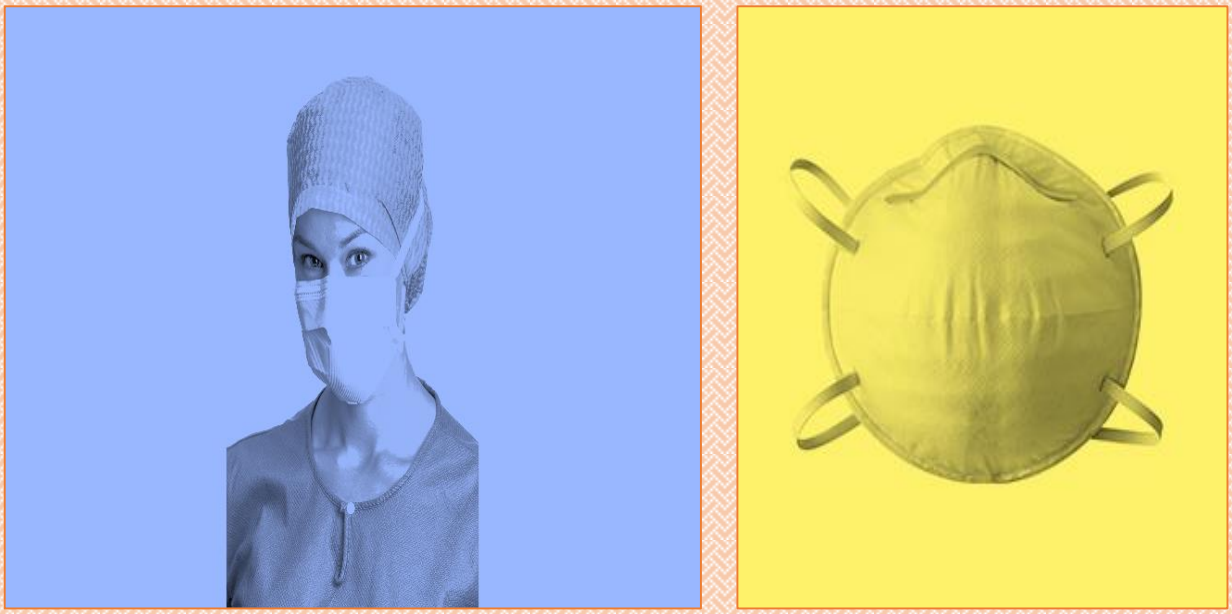


Figure 7. Face mask

It is mandatory to wear a mask for the staff of the department of newborns, infants, infectious wards and boxes, the treatment room, as well as during epidemics. Masks are usually made of gauze, folded in 4 layers, as the thinner ones allow microorganisms to pass through. Long-term carrying-

of the mask reduces the effectiveness of its action as a filter for microorganisms. Therefore, every 4 hours, the mask must be changed. The used masks are put in a separate bowl, boiled, and ironed with a hot iron. In recent years, disposable sterile masks made of non-woven textiles have been used.

There are two types of disinfection: prophylaxis and carried out in the epidemic center, which subsequently is divided into the current and final turn.

Preventive and routine disinfection in the epicenter is carried out by junior nurses and nurses. Employees of the center for sanitary and epidemiological surveillance and disinfection stations may be invited to carry out the final disinfection in the epidemic center.

The equipment for carrying out disinfection measures (buckets, mops, rags, etc.) is marked and used only in those rooms for which it is assigned.

Preventive disinfection is carried out on the premises, regardless of the presence of infectious diseases, to prevent the accumulation and spread of pathogens. For air disinfection, ultraviolet rays and ventilation are used. Furnishings, toys, floors, etc.

wipe (at least 2 times a day) with a cloth moistened with 0.2—1% solution of chloramine or other disinfectant solutions.

Wet wiping of furniture is done daily. The panels are washed or wiped with a damp cloth once every 3 days. The upper parts of the walls, ceilings, plafond are cleaned of dust 1 time a week, with the same frequency wiped frames of the windows and doors. Daily wet wiping of radiators and central heating pipes is very important, as the existing dust can burn out, while carbon monoxide is formed, which is unacceptable. Soft things (carpets, curtains, bedspreads, blankets) are cleaned and shaken out in the open air or cleaned with a vacuum cleaner.

Here are the most common sanitizers solutions and methods of their preparation,

1. Bleaching powder (calcium hypochlorite) it is a fine white powder with a pungent smell of chlorine. Store in a dry place, away from the excessive light .

It is used in a dry form to disinfect the patient's secretions.

Quite often, a clarified solution of bleach is used. Solutions of chlorine-containing substances are prepared in wooden, enameled, earthenware, or other containers.

Corrosion protection for metal cookware with a lockable lid. Typically, 10 % and 20% of the races are used. The calculated amount of bleach mixing agent at first, are mixed in a small amount of water until a uniform slurry is formed, then, continuing to stir, they add water to the total volume, mix again until a homogeneous suspension is formed, and leave under the lid for 24 hours. During the first 4 hours, it is necessary to mix the mixture at least 3 times. After 24 hours, carefully, without stirring the sediment, the clarified solution is drained. For disinfection, usually use 0.2-1 % working solution, made of from the initial clarified solution (200-1000 ml of the initial clarification of 10 % solution is required for 10 liters).

2. Chloramine B (N-chlorobenzene sodium sulfonamide) is a white crystalline powder containing 25-29 % active chlorine. For disinfection, a 0.2—4% solution of chloramine is used. Prepare a 1 % solution of chloramine B, stirring the powder in a small amount of hot water (50-60 °C), then bring the solution with water to the

desired volume. For 10 liters of water, 0.1 kg of mina chlorine is required. The shelf life of the finished solution is not more than 5 days.

3. The two-three-base salt of **calcium hypochlorite** is a white, dry, crystalline powder containing 47 to 52 % active chlorine. A 5% solution of calcium hypoclorite is prepared, adding a small volume of water to the calculated amount of dry matter at first, then (after stirring) it is brought to the total volume with water. For 10 liters of water, 0.5 kg of 2,3- basic salt of calcium hypochlorite for disinfection is required. The shelf life of the finished solution is not more than 5 days. When working caution should be taken with its solutions: use rubber gloves and cotton-gauze bandages.

4. Polisept (polyhexamethylene guanidine hydrochloride polymer). To prepare 1% of the working solution, the initial 25% concentrate is diluted with water 25 times. For 1 liter of solution, 40 ml of concentrate and 960 ml of water are required, for 10 liters — 400 and 9600 ml, respectively. Working solutions can be prepared in containers made of any material.

Polysept is intended for preventive, current, and final disinfection in medical and preventive institutions and foci of infectious diseases of bacterial etiology (except tuberculosis). Disinfection is performed by wiping, loading, and soaking. When preparing and working with poly sept solutions, you should use rubber gloves. Persons with an allergic predisposition should not be allowed to work with the drug.

5. A soap-soda solution of 1-2 % is prepared by adding an appropriate amount of household soap and sodium bicarbonate (soda) to the water. To prepare a 1% solution of 0.1 kg of household soap and 0.1 kg of soda, dilute in 10 liters of water. The solution is prepared immediately before use. In the form of concentrates, therefore, 0.5— 2% aqueous solutions of these drugs are used for disinfection.

Preventive disinfection measures also include washing hands with soap (it is necessary to carry out a system for both staff and sick children), boiling water, compliance with sanitary rules when distributing food.

Current disinfection is carried out to reduce the infection of furniture items, places located near the source of infection. All the patient's secretions and objects that the patient has touched are disinfected, especially the current disinfection in intestinal infectious diseases is important.

There are mechanical, physical, and chemical methods of disinfection. Mechanical method consist of washing the laundry, and your hands, remove dust and dirt with a damp cloth. Physical methods include boiling, the effectiveness of which increases when sodium bicarbonate (20 g per 1 liter of water), household soap (10-20 g per 1 liter of water) is added to the water. Water vapor is also used, which destroys not only microorganisms but also spores. Chemical methods of disinfection are the most common and consist of the use of various disinfectant solutions.

The final disinfection is carried out for the complete elimination of pathogens in the box, ward, department. Disinfection is carried out on the premises, household items, and clothing. The most important method for the final disinfection of premises is their treatment with a mixture of various disinfecting solutions from a hydropult. The final step may be to disinfect the surfaces of objects by wiping or washing them. Some items (such as upholstered furniture, books, shoes, etc.) should be disinfected in disinfection chambers.

Parents are allowed to visit a sick child on certain days and hours and in consultation with the attending physician (head of the department). Special attention is paid to the fact that children are not visited by sick relatives.

In winter, visitors must have a change of shoes. Control of the quantity and quality of products that are brought to children is carried out. This is necessary for the warning-prevention of food poisoning, overfeeding, and transmission of unauthorized products. The food products checked by the medical nurse are stored in the refrigerator (fruits, vegetables) or a special cabinet (cookies, waffles).

All products should be stored in plastic bags with the mandatory indication of the patient's last and first name.

It is allowed to transfer fruits and berries (except strawberries) — no more than 0.5 kg; vegetables-1 kg; cookies, waffles, marshmallows up to 0.5 kg; juices and compotes of industrial production in sealed containers from 0.25 to 0.8 l. Books and toys must be new.

It is not allowed to transfer the following confectionery products: cakes, chocolate, canned food, milk and dairy products, pickles, spices, homemade juices and compotes, gastronomic products.

QUESTIONS

1. What are the main elements of anti-epidemic regime?
2. What is the personal hygiene of the staff of children's schools?
3. How to treat the scalp with pediculosis?
4. What factors contribute to pediculosis?
5. How is the sanitary treatment of a sick child carried out?
6. What are the main methods of disinfection?
7. What equipment is necessary to have for carrying out the indoor cleaning of the room?
8. How is the current and final disinfection performed?
9. What disinfectant solutions are used most often in children's institutions?
10. What products are allowed to be transferred to a sick child and where can they be stored?

CHAPTER 6

PERSONAL HYGIENE OF THE CHILD

Children should be kept clean, have a neat appearance. The staff is obliged to comb the children's hair, cut their nails, and help them dress if necessary.

Children, preschool- children of the same age who are on the general regime should wash themselves daily in the morning and the evening, brush their teeth and wash their ears. After washing, wipe your face and hands with a dry towel. In some

children of preschool and often school age, the skin from frequent washing and poor wiping turns red, becomes dry, becomes covered with cracks and abrasions. To avoid this, you need to teach children the rules of hygiene, to prevent the skin at night, it is recommended to apply a baby cream, for example, "Djonsons' baby", "Alice", etc.

If necessary, you need to help your child choose the right children's toothpaste and explain how to use the toothbrush correctly, following a certain sequence of actions (Fig. 8).

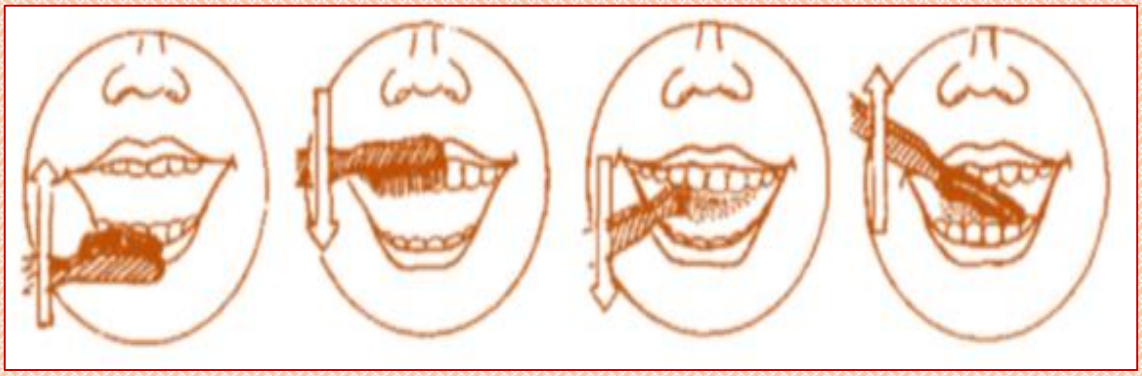


Figure 8. The technique of brushing teeth.

From the moment of the eruption of the child's first tooth, it is necessary to wash and clean the tooth with ordinary water after each feeding. From the age of two, the child should brush his teeth with a toothbrush. The paste is chosen without abundant foam so that it does not cause a gag reflex. You can use the gel. Use children's toothpaste (Colgate, etc.). It is better to use modern toothbrushes with a movable head and body such as Oral-B, Quip, Hum, Philips Sonicare ,etc.

Nurses should help patients of early childhood and preschool age. For example, girls should comb their long hair with an individual comb, and wash their external genitals with warm boiled water in the direction from front to back, towards the anus, every day in the morning and the evening. Once a week, check the condition of the nails, once in 7-10 days organize a hygienic bath. On the same day, change the bed and underwear, clothes. If necessary, clothes and underwear are changed more often.

Hygienic maintenance of the bed. The bed should be nickel-plated to make it easier to be disinfected and wet cleaned. The use of wooden beds is allowed, but

with the condition that their dimensions correspond to the age of the children. The bed is placed in the ward in such a way that it is convenient to approach it either side, with the head end facing the wall. The distance between adjacent beds should not be less than 1.5 m. The net on the bed should be well stretched, with a flat surface, put the mattress on it and cover it with a sheet, the edges of which are tucked under the mattress so that it does not curl and does not gather in folds. If the patient takes food in bed, then the bed should be re-made to remove crumbs from the sheet, food debris, and to straighten the folds. Clean pillowcases are put on pillows made of feather or cotton wool (lower) and down (upper). The blanket should be flannelette since it is well ventilated and disinfected.

In the summer, patients can use fabric blankets. Duvet covers are worn on fabric and flannelette blankets. Children should not be allowed to sit on other people's beds, especially if they are not allowed to sit on other people's beds. Parents should sit on chairs.

A certain category of patients, for example, with diseases of the spine, joints, with pathological mobility of internal organs (for example, a wandering kidney), the grid in the bed is replaced with a wooden shield, on top of which a mattress is placed.

For the seriously ill, special functional beds are needed, which allow you to provide the required position (for example, semi-sitting, etc.). The functional bed consists of a frame with panels, two backrests, two side grilles, a bedside table, and a basket. The bed panel consists of three movable sections: head, hip, and leg (Fig. 9).

The sidebars of the functional bed are removable they can be used to ensure the safety of young children or as auxiliary devices, with which bandages can be used to fix the hands and feet of the patient during prolonged intravenous infusions, etc. The bedside table consists of a tray and two legs and is installed directly above the bed in front of the patient's face if the latter- the condition is in a semi-sitting position. There is a basket for the pot.

Figure 9. Multifunctional medical bed

Next to each bed, a bedside table is placed, here they put the child's hygiene items, his underwear, toys, books. The state of the bedside tables for personal use is monitored by a nurse.

Bed linen and underwear are changed in the department every 7-10 days after the hygiene bath, but if necessary, the linen is changed more often. Older children who are in satisfactory condition are changed by themselves, and younger patients are assisted by nurses or junior nurses.

When changing underwear for a seriously ill person who is on strict bed rest, the medical nurse grabs the edges of the shirt, removes it over the head, and then frees the hands. Clean underwear is put on in reverse order. If the patient's arm is damaged, then first remove the sleeve from the healthy arm, and then from the patient. They put the shirts first on the patient, and then on the healthy arm.

Usually, bed linen is changed simultaneously with the change of underwear. If the patient can sit, the nurse moves him from the bed to a chair and rearranges the bed. The change of underwear in bedridden patients is carried out in two ways:

1) the dirty sheet is rolled up with a roller from the side of the head and legs, and then removed. A clean sheet, rolled up on both sides, like a bandage, is brought under the patient's sacrum and spread out along the length of the bed;

2) the sick child is moved to the edge of the bed, then the dirty sheet is rolled up along the length, a clean one is spread out in a free place, on which the patient is placed, and on the other side the dirty one is removed and the clean one is spread out.

Dirty laundry — separate bed linen and underwear-is collected in plastic tanks with lids or oilcloth bags and taken out of the ward to a special room. The nurse-hostess, wearing a change of dressing gown and an oilcloth apron, sorts the laundry and passes it to the central laundry room of the hospital, from where it is sent to the laundry. After changing the linen, the floor and surrounding objects in the ward are wiped with a rag soaked in a 1% solution of calcium hypochlorite.

The department has a stock of laundry for a day. It is forbidden to dry laundry on central heating radiators .

Untimely and incorrect change of linen, mainly bed linen, contributes to the occurrence of bedsores.

Assistance in the administration of physiological needs. A child who is on strict bed rest is placed on a vessel (enameled or rubber bedpan) or given a urinal (enameled or glass). The patient who is allowed to get up should use a pot that is placed under the bed. The pot is numbered, its number corresponds to the number of the bed. The marking is necessary for the child to use only his pot. The vessel, urinal, or pot is washed daily with hot water and household soap then it is treated with a 1 % solution of chloramine or 0.5 % solution of bleach. To eliminate the smell of urine, dishes for shipments are treated with a weak solution of potassium permanganate.

Prevention of bedsores. Skincare is especially important for children who are on strict bed rest for a long time and do not have the opportunity to take hygienic baths. The skin is wiped with a towel or a clean soft cloth (gauze), moistened with one of the disinfectants (semi-alcohol water solution, eau de cologne, table vinegar, camphor alcohol, etc.). One end of the towel is wetted, lightly wrung out, and rubbed behind the ears, neck, back, buttock area, front of the chest, under the muscle and inguinal folds, folds on the arms, and legs. Then, with the dry end of the towel, wipe the skin dry in the same order.

Bedsore-necrosis of soft tissues (skin with subcutaneous fat). Most often, bedsores occur in weak children in the area of the sacrum, shoulder blades, large vertebrae, elbows, heels, where soft tissues are squeezed between the surface of the bed and the underlying bone protrusion.

The formation of bedsores is promoted by poor skincare, an uncomfortable bed, and a rare re-dressing of it, which leads to a violation of blood circulation in the skin and surrounding tissues. First, there is a pallor of the skin, followed by redness, puffiness, and thawing of the epidermis. The appearance of blisters and skin necrosis indicates more pronounced local disorders and a clear underestimation of the initial symptoms of bedsores by the medical personnel. In severe cases, not only the soft tissues but even the periosteum and the surface layers of the bone tissue are subjected to necrosis. The rapid addition of infection leads to sepsis.

Preventive measures aimed at preventing bedsores are turning the sick child on his side (if his condition allows), daily repeated shaking of crumbs, removing wrinkles on the underwear and bed linen, wiping the skin with disinfectant solutions. Seriously ill patients who have been in bed for a long time should be placed in a rubber (inflatable) circle wrapped in captivity.

At the same time, you need to make sure that the sacrum is in the lumen of the circle. If there is hyperemia of the skin, then this area is carefully wiped with a dry towel to improve local blood circulation. Ultra-violet irradiation is used. The skin in the places of maceration is washed with cold water with baby soap and wiped with alcohol, and then powdered with talcum powder or a simple powder.

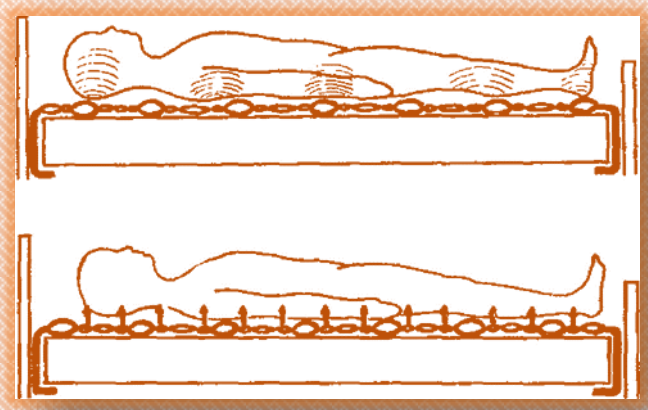


Figure 10. Aeropad.

The blisters are treated with a solution of brilliant green, then a dry dressing is applied. When necrosis is detected, the doctor removes the dead tissue and closes the wound with a sterile cloth moistened with a solution of furacillinum. In the future, 2-3 times a day, the medical nurse changes the dressing, informs the doctor about the condition of the wound. As the wound surface is cleansed, ointments are used for their healing — solcoseryl, iruxol, with kamado, Vishnevsky ointment, etc. Ointments are applied to the wound surface in a thin layer, the procedure is repeated 2-3 times a day until complete healing.

Recently, for the prevention of bedsores, for extensive burns, so-called airplanes are used — air mattresses with a corrugated surface air supply through special openings (fig. 10).

The appearance of bedsores in children is evidence of extremely poor care, the low medical culture of the department staff, and an irresponsible attitude to their direct duties.

Oral care. In the morning and the evening, the sick child should brush his teeth using the children's toothpaste. Children after each meal should rinse their mouth with warm water, preferably slightly salted (a quarter of a teaspoon of table salt per glass of water) or soda water (3-5 g of sodium bicarbonate per glass of water).

Eye care. Special eye care is required. The child washes his eyes during the morning and evening toilet. However, if there is a discharge that glues the eyes, the eyes are washed with water. The power of a sterile gauze swab soaked in warm, strong tea. In case of eye diseases, drops are instilled or rubbed according to the doctor's prescription. The ointments are used for the external use of (toilet). Before the eye nursing procedure, the nurse washes her hands thoroughly with soap and a brush, wipes them with alcohol. Pipette for instilling drops the spatula for laying the ointment is boiled before use.

To instill drops in the eyes, a drug is collected in an eyedropper. With the index finger, slightly open the lower eyelid, with the other hand, slowly release one drop from the pipette (closer to the nose). The patient should look in the opposite direction. After some time, they bury the second drop and ask the child to close his eyes. After use, the eyedropper is washed with warm water and placed in a special case.

The eye ointment is laid with a glass spatula. To do this, the lower eyelid is pulled back and an ointment is placed on the conjunctiva, the eyes are asked to close, and the ointment is rubbed along the eyelid with gentle movements of the fingers.

Ear care. During the daily morning t of summer, when the child washes, he should also wash his ears. If a sulfur plug is found in the external auditory canal, it is removed. To do this, a few drops of a 3% solution of hydrogen peroxide or sterile vaseline oil are instilled into the ear, and the plug is removed with a cotton turunda by rotating movements (Fig. 11).

Figure. 11

When instilling drops in the left ear, the patient's head is tilted to the right shoulder. With the left hand, the earlobe is pulled back, with the right hand, a few drops are instilled into the auditory canal passage. After that, a small cotton swab is placed in the ear for a few minutes or the head is tied with a braid.

Care for the nasal cavity. If the child can not independently release the nose, then he is assisted by a nurse-removes the formed crusts. To do this, a cotton turunda moistened with vaseline oil (preferably sterile), glycerin, or other oil solution is alternately injected into the nasal passages. In this case, the child's head is thrown back and after 2-3 minutes, the bones are removed with rotational movements. Nose care requires a certain skill and patience.

Nail clipping. To do this, use small scissors with rounded branches, so as not to hurt the skin. After the end of the nailcut, the scissors must be wiped with cotton wool moistened with alcohol or 0.5 % chloramine solution.

Haircare. It consists of washing the hair, combing the hair, braiding the braids, etc. Only individual combs are used for combing the hair. Combing short hair in boys is usually easy. Long hair in girls should be divided into separate strands, comb each separately, if necessary, braid pigtails. In the presence of abundant dandruff or contamination of the hair, use a thick coarse, moistened with the solution of table vinegar. The head is washed with baby soap or shampoos.

Visual hygiene in school-age children. In school-age children, serious attention should be paid to the prevention of visual disorders. You should follow the recommendations for reading and writing:

1) keep the book below the level of the chin at a distance of no closer than 50 cm; 2) do not read in the sun and bright light or, conversely, in poor lighting; 3) while reading, you should blink more often, preferably at the end of each line; 4) perform exercises to train the eyeballs (turns up, down, left and right, focus on any far-standing object and move your eyes to a nearby object; repeat the exercises up to 10-50 times);

5) do not watch TV for a long time and at close range;

6) do not play with the computer for more than 30 minutes a day.

QUESTIONS

1. **Name the elements of the morning toilet of a sick child.**

2. **What are the requirements for the post-spruce device and hygienic content?**
3. **How to use a functional bed?**
4. **What is the technique of changing bed linen and underwear?**
5. **What does daily skincare consist of?**
6. **What is the prevention of bedsores?**
7. **How is the treatment of bedsores performed?**
8. **What are the rules for taking care of the patient's ears, eyes, mouth, and hair?**
9. **How to properly put a rubber circle pad?**
10. **What are the rules for storing clean and dirty be**

CHAPTER 7

NUTRITION OF CHILDREN IN THE HOSPITAL

During the illness, children need therapeutic nutrition - diet therapy.

Diet — a person's diet that provides for certain quantitative and qualitative ratios of food substances and products, cooking methods, as well as intervals in the intake of food. The organization of children's nutrition in the hospital uses two main principles — individual and group. An individual diet is prescribed by a doctor, in this case, the food is prepared specifically for a particular child. With the group principle of nutrition, one or another generally accepted diet is prescribed from among the previously developed and having a certain therapeutic effect. We use therapeutic diets (tables) No. 1-14 and general No. 15-16, developed at the Institute of Nutrition. Many diets have several options. Options are indicated by letters that are added to the number of the main diet.

Diet # 1. Recommended for gastric and duodenal ulcer during periods of "acute" ulcers and pepitas-ulceration; chronic gastroduodenitis in the stage of acute or incomplete clinical remission.

General characteristics: moderate mechanical and chemical damage to the mucous membrane and the gastrointestinal tract receptor apparatus, restriction of

gastric secretion stimulators, and substances that remain in the stomach for a long time. Food intake 5-6 times, table salt up to 8-10 g per day.

Recommended dishes: yesterday's fresh bread, dry sponge cake. Soups on a slimy broth with the addition of mashed boiled vegetables and cereals, egg-milk mixture, cream. Low-fat varieties of fish, meat, and poultry, mostly chopped, steamed, or boiled in water. Vegetables boiled and rubbed in the same form (mashed potatoes, steamed souffle). Pureed porridge (except millet) with the addition of milk or cream, steamed puddings, boiled vermicelli. Soft-boiled eggs, steamed omelets, dishes of whipped egg whites (snowballs, meringues). Kissels, jellies, mousses, pureed compotes made from sweet berry varieties, fruit and berry juices mixed with water and sugar, honey, jam made from sweet varieties of berries and fruits, apple marmalade. Whole milk, condensed milk, cream, fresh sour cream, fresh low-fat cottage cheese. Weak tea, milk, a decoction of rosehip with sugar. Butter, vegetable (olive, sunflower).

Prohibited: white cabbage, turnips, radishes, rutabagas, radishes, sorrel, spinach, onions, garlic, mushrooms, beans, spices, and coffee.

Diets 1a, 1b, and 1 denote different ways of cooking processes: 1a — very strict mechanical and chemical treatment, all food is served in liquid and semi-liquid form; 1b-strict mechanical and chemical treatment, puree-like dishes; 1-moderate mechanical and chemical treatment — chopping, chopping, cooking, steaming.

Diet # 2. Recommended for Acute gastritis, chronic gastritis with reduced gastric secretion, enteritis, and colitis during convalescence (recovery) as a transition to a rational diet, colitis the period of remission.

Main characteristic: the diet is physiologically complete except for products and dishes that are stressful for the gastrointestinal tract, long-lingering in the stomach, difficult to digest, but contributing to increased gastric secretion. Food intake is fractional, 4-5 times a day, table salt up to 15 g per day (children of high school age).

The list of **recommended dishes:** yesterday's wheat bread, 1-2 times a week a limited number of inedible buns or baked pies. Soups on low-fat meat and fish

broth with various cereals (except millet), vermicelli, vegetables. Low-fat varieties of meat and poultry, boiled in a piece or chopped, fried in breadcrumbs, and baked. Fish is not fat in a piece or chopped, boiled, fried without passivation. Vegetables boiled, stewed, and baked in pieces; in the form of mashed potatoes; vegetable casseroles. Crumbly porridge (except millet and pearl barley) on the water with the addition of milk. Soft-boiled eggs; steamed, baked, and fried omelets; dishes made from whipped egg whites. Jelly, compot, a mousse made from sweet varieties of berries and fruits, raw sweet varieties of berries and fruits (strawberries, etc.), baked apples, marmalade, sugar. Fresh milk only as dishes; fermented milk products (kefir, acidophilus); cottage cheese, fresh, non-acidic raw, and baked. Dill, parsley, cinnamon, cloves, vanilla, small amounts of bay leaf, allspice, meat sauces, fish sauces, sour cream, and vegetable puree. Tea, coffee with milk, a decoction of rosehip, black currant.Butter and sunflower oil.

Legumes and mushrooms are **prohibited.**

Diet # 3. Recommended for chronic bowel diseases with a predominance of constipation during periods of exacerbation and incomplete clinical remission.

General characteristics: an increase in the diet of foods rich in plant fiber and foods that enhance motor function. Meals 3 times, table salt up to 12-15 g per day (children of high school age).

The list of **recommended dishes:** wheat bread made from coarse flour or with the addition of wheat bran, with good tolerance, black bread (Orlovsky, rye) is allowed. Soups on weak low-fat meat, fish broths, vegetable broth (mainly with vegetables). The meat of low-fat varieties gon yad and veal, chicken, etc. Low-fat fish (cod, carp, walleye, etc.) boiled, steamed, aspic, in a piece, sometimes in chopped form. A variety of vegetables: raw and cooked to garnish, in the form of salads, vegetable casseroles (beets, carrots, tomatoes, pumpkin, etc.). Porridges (buckwheat, pearl barley). Soft-boiled eggs or in the form of steamed omelets. Fresh, ripe, sweet fruits and berries are raw and in dishes in increased quantities. Mo loco in dishes and for tea. Kefir, acidophilus, curdled milk, etc. The cheese is not sharp. Tea, rosehip

broth, sweet fruit juices (especially plum, apricot), vegetable juices (tomato, carrot, etc.). Butter and olive oil in dishes.

Prohibited: vegetables rich in essential oils (turnips, radishes, onions, garlic, radishes), as well as mushrooms.

Diet # 4. Recommended for acute and chronic intestinal diseases in the period of profuse diarrhea and pronounced dyspeptic phenomena, malabsorption syndrome.

General characteristics: a sharp restriction of mechanical and chemical stimuli of the mucous membrane and the receptor apparatus of the gastrointestinal tract except for foods and dishes that enhance the motor function of the intestine. Food intake 5-6 times, table salt 8-10 g per day (children of senior school age).

The list of **recommended dishes:** crackers from the highest varieties of white bread, thinly sliced. Soups on low-fat meat or fish broth with the addition of slimy decoctions, steamed or boiled in water meat or fish dumplings, meatballs, egg flakes. Steamed or water-cooked meat and fish cutlets, dumplings, meatballs, souffle made from boiled meat or fish. Low-fat meat in chopped form, boiled or steamed. Poultry and low-fat fish, chopped (boiled or steamed). Pureed porridge on water or low-fat meat broth (rice, oatmeal, buckwheat, semolina). Eggs (with good tolerance) no more than 1-2 pieces in the form of steamed omelets. Jelly, blueberry jelly, cherries

From Latin malus (bad) + absorption (absorption) — a violation of absorption in the small intestine, accompanied by a profuse altered stool and as a result of this hypovitaminosis, anemia, and hypoproteinemia, chee, ripe pears, and other berries and fruits rich in tannins. Natural tea, cocoa on water, the decoction of rosehip, blueberry, cherry.

Prohibited: pasta, milk, sauces, spices, snacks, pickles, smoked meats, legumes. Sugar and butter are limited.

Diet # 5. Recommended for chronic hepatitis, biliary dyskinesia, cholelithiasis. Acute hepatitis during recovery.

General characteristics: maximum liver sensitivity. Strong stimulators of gastric and pancreatic secretion (extractive substances, products rich in essential oils),

fried dishes containing products of incomplete fat breakdown (acroleins and aldehydes), refractory fats, products rich in cholesterol, purines, and oxalic acid are excluded.

The content of lipotropic substances, cells, pectins, and liquids is increased. Food intake is fractional (5-6 times a day), table salt 8-10 g per day (school-age children).

The list of **recommended dishes:** yesterday's wheat and rye bread, breadcrumbs, dry sponge cake. Soups on vegetable broth with various cereals and oatmeal, dairy, fruit. Low-fat varieties of meat and poultry boiled, baked after boiling. Low-fat boiled or steamed fish, cut into pieces, and chopped. Vegetables and herbs in raw, boiled, and baked form (salats, vinaigrettes), sour sauerkraut. Egg white dishes (steamed and baked protein omelets, snowballs, meringues). Various sweet varieties of berries and fruits, fresh and dried, in their natural form and dishes. Sugar, honey, marmalade, marshmallows, toffee, jam, marshmallows. Fresh milk in its natural form and dishes, sour milk drinks, fresh cottage cheese, cheese. Eggs in dishes. Weak tea with milk and without milk; fruit, berry, vegetable juices, a decoction of rosehip. Butter and vegetable oil (do not fry, add to ready meals).

Prohibited: turnip, radish, radish, sorrel, spinach, onion, garlic, mushrooms, spices, cocoa.

Diet # 6. Recommended for: urate (increased formation of uric acid salts) and oxalate (increased formation of oxalic acid salts) nephropathies.

General characteristics: product restrictions: rich in purines, oxalic acid, calcium, restriction of proteins, fats. Increase the amount of liquid. Meals 3-4 times, table salt up to 6-8 g (children of high school age) per day.

The list of **recommended dishes**: lean beef, lamb, pork, fish. Milk, dairy, and fermented milk products, eggs. Potatoes, rice, pasta, cereals, carrots, melons, cabbage, cucumbers, onions, tomatoes, fruits (grapes, plums, cherries, pears, peaches, apricots, etc.), berries.

Prohibited (liver, kidneys, lungs, brains), meat broth, the meat of young animals (veal, chickens, pigs), teas, coffee, cocoa, chocolate, spicy cheeses, canned food,

sausages. Limit green polka dots, beans, lentils, sorrel, spinach, lettuce, rhubarb, radish, mushrooms.

Diet # 7. Recommended for nephritis without extrarenal (extrarenal) manifestations and signs of renal decompensation.

General characteristics: restriction of protein and table salt to 3-5 g, liquid to 800-1000 ml; extractive substances, spicy seasonings; maximum fortification of the diet due to the introduction of fruit and vegetable juices and the addition of vitamin C.

The list of **recommended dishes:** white bread or bran without salt, vegetarian soups without salt with vegetables and cereals. Low-fat varieties of meat, poultry, fish (up to 30-50 g per day). Vegetables in natural, boiled form, vinaigrettes, salads (without salt). Cereals and macaroni products in the form of cereals, puddings. Egg-0.5-1 piece. Fruits and berries in any form, honey, sugar, jam. Milk and fermented milk products, cottage cheese. Butter and vegetable oil.

Prohibited legumes, cream, sour cream.

Diets #. 7a, 76, 7b are used for kidney diseases with signs of kidney failure. These are chloride diets with a restriction of protein and liquid and a gradual approach to a full-fledged diet (diet No. 7), the usual water regime.

Diet # 8. Recommended for obesity.

General characteristic: restriction of energy value by 20-50 % (depending on the degree of obesity and physical activity) mainly due to carbohydrates and fats with an increase in the amount of protein. Restriction of table salt and liquid. Meal — 5-6 times.

The list of recommended dishes: yesterday's rye bread. Vegetarian soups with vegetables and cereal, meat, fish. Meat, fish, poultry (low-fat) boiled (piece). Vegetables (zucchini, pumpkin, beets, porridge, etc.) with vegetable oil, buckwheat porridge. Milk and fermented milk products (skimmed). Fruits and berries in raw form and juices from them. Tea, coffee, milk.

Prohibited: flavoring condiments. Butter, sour cream, and potatoes are limited.

Diet # 9. Recommended for diabetes mellitus. Diet except for water-soluble carbohydrates, the restriction of animal fats. The diet helps to eliminate metabolic disorders caused by an insufficient amount of insulin in the body. Meals 4-5 times, table salt-according to age norms.

The list of **recommended dishes:** bread, rye, cookies on xylitol. Soups on vegetables, broth with vegetables, and cereals. Buckwheat porridge, oatmeal. Potato, zucchini, cucumbers, etc. Eggs no more than 1-2 pieces. Low-fat varieties of meat, fish, and poultry. Fruit juice, xylitol, fruit and vegetable juices, fruits, and berries. Whole milk, sour cream in dishes. Butter in dishes, sunflower, and olive oil. Sweets are limited to 20-50 g per day (sugar in the form of fructose, xylitol, sorbitol).

Prohibited sugar in its pure form, products containing glucose. Limited to legumes, pasta.

Diet # 10. Recommended for cardiovascular diseases with circulatory disorders.

General characteristics: moderate restriction of proteins, fats, and excipients under conditions of a regime with limited mobility. Limit the intake of table salt to 2-3 times in the liquid.

The list of **recommended dishes:** coarse gray bread, crackers. Soups of cereals, milk, vegemite, borscht, low-fat meat broth 1 time a week. Low-fat varieties of meat, poultry, and fish in boiled and baked form. Oatmeal and buckwheat porridge, puddings, casseroles. Protein omelet. Vegetable vinaigrettes and salads (except sorrel and mushrooms). Fruits, berries, juices. Fats — 50 % in the form of vegetables. Weak tea.

Prohibited: I fatty dishes of meat, fish, butter dough, brains, kidneys, liver, salty snacks, canned food, caviar. Limited to strong tea, coffee, cocoa, radish, radish, garlic, onions, legumes.

Diet # 11 . Recommended for anemia, exhaustion and reduced reactivity of the body, various suppurative processes, pulmonary tuberculosis.

General characteristics: a diet with increased energy value, an increase in animal proteins, lipotropic substances, calcium, phosphorus, and vitamins. Eating 5 times a day.

The list of **recommended dishes:** the most diverse products. At least half of the protein must come in the form of animal proteins (meat, fish, cottage cheese, milk, and eggs).

Prohibited: poultry (duck and goose).

Diet # 13. Recommended for acute infectious diseases, postoperative period (except for oral operations).

General characteristics: restriction of proteins, fats, carbohydrates, chemical and mechanical irritants of the mucous membrane and the receptor apparatus of the gastrointestinal tract. Food is the most liquid restriction of plant fiber, milk, snacks. Eating 6-8 times a day at a dependent time from the condition of the child, in small portions, table salt to 2/3 vegetable norm.

The list of **recommended dishes:** white bread and crackers. Meat broth, meat souffle. Soup - mashed meat on a slimy broth. Eggs as scrambled eggs. Porridge pureed. Fruit juices, berry juices, fruit drinks, jelly. Butter.

Prohibited: spicy dishes, seasonings, canned food.

Diet # 14. Recommended for phosphaturia (elevated urinary excretion of disubstituted salts of phosphoric acid).

General characteristics: the content of proteins, fats, carbohydrates within the physiological norm.The diet includes foods rich in calcium;food substances that excite the nervous system. Meals 4 times, table salt under age-related needs.

The list of **recommended dishes:** meat, fish, bread, and cereal products.

Prohibited milk and dairy products, vegetables, spicy snacks, spices, etc.

Diets # 15 and 16. They are not intended to be used as medical devices. Diet No. 15 is used for the rational nutrition of children from 3 to 15 years, No. 16 - for children from 1 year 3 months to 3 years. These diets provide the physiological needs of the child in food ingredients in the absence of indications for therapeutic nutrition.

In **allergic diseases**, elimination diets are used, when the most common and well-known allergens are excluded from the diet: citrus fruits, nuts, chocolate, fish, caviar, eggs, strawberries. Other variants of elimination diets are dairy-free, gluten-free (gliadin), etc. In these cases, the food is prepared individually.

The hospital sets a 7-day menu for basic diets. The management of therapeutic nutrition is carried out by a dietitian. Together with the nurse on the diet, he updates the menu daily.

The necessary diet for a sick child is prescribed by the attending physician. If the child is admitted to the hospital in the evening, then the doctor on duty should do it. The nurse transfers the number of the diet from the hospital patient's medical record to the nurse's list. Against the diet number, enter the names of patients and ward numbers, so that it is easy to summarize the data for each diet. Every day until 13 hours, the senior nurse of the department makes and sends an order for food to the food department (portioner), which indicates the number of patients and the distribution of diets. On the reverse side of the portion book, numbers and words indicate the number of additional products (milk, cream, cottage cheese, meat, etc.) and the names of patients. The order is signed by the head of the department and the senior nurse of the department.

The dietetic nurse summarizes the orders of the departments in the form of a consolidated portion list for all patients for the next day. From the emergency department daily at 9 o'clock, information about the transfers of patients from 13 o'clock of the past day, i.e., the time of drawing up the portion list, is received by the food department. Specify the number of children who arrived and left, and the number of diets. Based on these data, necessary adjustments are made to the distribution list for the delivery of food to the departments, which is also compiled by the medical nurse on diet.

Food hall. In children's hospitals, food is prepared centrally in the food hall, from where it is received by the barmaids for breakfast, lunch, afternoon tea, and dinner at strictly defined hours. For transportation and storage of food, use thermos flasks,

clean dishes with lids, necessarily marked ("For first courses", "For second courses dishes", "Side dish", "Milk", etc.); dishes are placed on special mobile tables-carts. Great attention from medical workers is required to monitor compliance with the rules of culinary processing of products, to conduct measures for the prevention of food poisoning. Medical workers are present when laying the main products in the boiler and check their output. Every day, a daily sample of ready meals is left in the refrigerator for possible epidemiological control. It is periodically carried out due to the compliance of food rations with the physiological needs of children. Control over the sanitary condition of the food unit consists in daily quality control of cleaning the kitchen and all utility rooms, compliance with the rules of washing dishes, the use of appropriate detergents, timely change of special clothing for working in the kitchen by the staff of the food unit. The daily inspection of the employees of the food department for the presence of pustular skin diseases is carried out.

Employees of the food department are forbidden to fasten sled clothing with pins, needles, keep foreign objects in their pockets (money, keys, cigarettes), wear beads, brooches, rings, clips, etc.

Buffet-handout. In each department, there is a buffet distribution room, and in the departments, for older children, there is also a dining room.

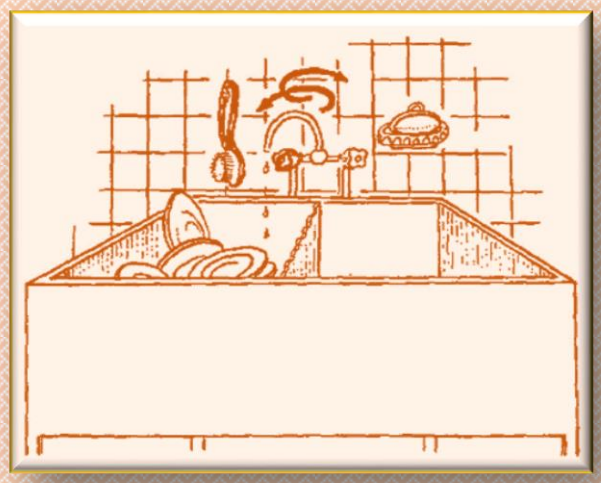
In the buffet, I write, delivered from the food department, if necessary, they are heated, divided into portions, and distributed. The distribution must be completed no later than 2 hours after the food is made, including the time of its delivery.

Food is distributed by the barmaids and nurses on duty at the department. Food distribution is carried out in special dressing gowns.

Technical personnel engaged in cleaning the wards and other rooms are not allowed to distribute food.

Barmaids are obliged to observe the rules of personal hygiene. Before visiting the toilet, the robe is removed, after visiting the toilet, the hands are treated for 2 minutes with Deoxane-1 or 0.2 % chloramine solution.

Figure 12. Two-section washing baths.



The senior nurse of the department supervises the order and compliance with the rules of the buffet distribution room.

The premises of the canteens must be provided with cold and hot water (Fig. 12);

nets for rinsing and drying dishes; an electric stove for heating food; cabinets for storing tableware and appliances, products (bread, salt, sugar); a table with a hygienic coating for serving food; a set of dishes at the rate of one deep, shallow and dessert plate, fork, spoon — dining room, and tea room, a circle for one patient (in children's department's storage); a tank for soaking or boiling food; a dry-burning cabinet for drying dishes; detergents and disinfectants; cleaning equipment (buckets, rags, brushes, etc.) marked "For the pantry".

Older children, who are allowed to walk, eat in the dining room at a table set for 4 people. Children of the same age who receive the same diets are usually put at the table. Plastic chairs or with easy-to-clean up holstery. On the windows in the summer should net from flies, as they are carriers of many infectious diseases.

Food distribution is carried out at certain times: for breakfast from 9.00 to 9.30; lunch from 13.00 to 13.30; afternoon tea from 16.00 to 16.30; dinner from 18.30 to 19.00. It should not exceed 60 °C and cold-10 °C. A single serving should correspond to the age of the child.

Before eating, finish all medical procedures, Children should visit the toilet and wash their hands with soap. The nurse is involved in feeding the children dining room: monitors the correct table setting, the appearance of dishes. The type of food must arouse the appetite. Children over 3 years of age are allowed to use cutlery. During the meal, the medical staff should make sure that the children eat neatly, do

not rush, do not interfere with each other. If the child does not eat, then you should find out the reason for refusing food, convince him if there is no need to eat, make sure that the child first eats the more complete protein portion of the meal; force-feeding is not allowed.The dining room must be kept quiet and orderly.

The nurse strictly controls that those children who are late for lunch for any reason can eat. For them, it is necessary to save food, warm it up before serving.

After each distribution of food, the barmaid or junior nurse thoroughly cleans the buffet and dining room areas with the use of disinfectants.

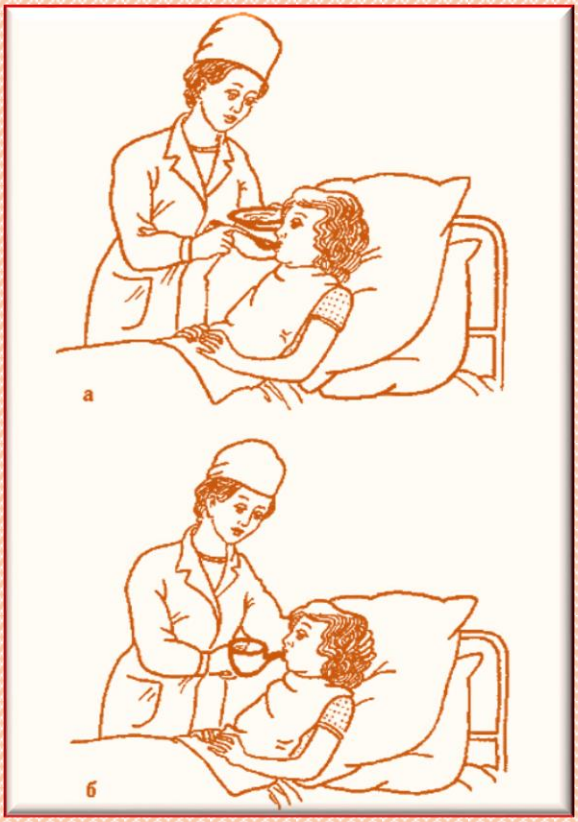
Cleaning material (rags, rags) after washing the floors, pour 1 % solution of chloramine (or 0.5 % clarified solution of bleach) for 60 minutes in a bucket for cleaning, then rinse in running water and dry. Make sure that the inventory is used strictly for its intended purpose.

Feeding of severe patients. Children who are on bed rest take their meals in the ward. If the child can sit, then after washing his hands, he eats by himself at the bedside table. If it is difficult for the patient to sit independently in bed, then you should give him a semi-sitting position, lift the headrest of the functional bed or put it under his back a few pillows. The neck and chest are covered with an apron. A comfortable position is created as follows the image of the child: With your left hand, the child's head is slightly raised, with the right hand, a spoon with food or a special tray is brought(Fig. 13) since the child can aspirate (inhale). The nurse notes the amount of food eaten by the child in the medical history.

Washing dishes, storing food. Strict compliance with the sanitary and hygienic requirements for the storage of food and ready meals plays a crucial role in the prevention of food poisoning.

Figure 13. Feeding a seriously ill person:

a - from a spoon; b - from a drinking bowl.



In the buffet, you can store bread in special bags (no more than a day), sugar, and tea. Due to the special technological requirements for the preparation of medical food (grinding, wiping), diathetic dishes are a particularly favorable environment for the development of pathogenic microorganisms.

It is strictly forbidden to keep food leftovers in the buffet, as well as to mix them with fresh dishes and use food leftover from the previous meal for children's food. The sideboard stores tableware. After each feeding of children, it is decontaminated. Washing is carried out according to the purpose and degree of contamination. First, wash the mugs and teaspoons, and then the plates. Dry and disinfect the dishes in a dry oven at a temperature of 130 °C for 30 minutes. In the room of the buffet-handout, instructions on the technique of washing and disinfecting dishes are posted in a prominent place.

Washcloths (rags) for washing dishes at the end of washing are soaked in a 1 % solution of chloramine or a 0.5 % clarified solution of bleach for 60 minutes or boiled for 15 minutes, then dried and stored in specially designated places.

Clean dishes are kept in a dedicated cabinet.

Medical personnel should not be allowed to use dishes intended for sick children.

Food waste is collected in specially marked tanks with lids. They must be removed from the department on the same day.

Transfers to patients. The nutrition of children in the hospital is designed to meet the needs of basic food ingredients, but children need additional vitamins. To do this, hospitals will organize receiving transmissions from parents and relatives. These are usually fruits and sweets. The transmissions also have an important psychological impact.

Delivery of transfers is made after the main meal 2 times a day; in the afternoon at 11 o'clock and high tea. Pre-washed vegetables, fruits, and berries, as well as other products, are distributed on plates to each child individually.

QUESTIONS

1. **What are the child nutrition systems adopted in the hospital?**
2. **Give a general description of the diet no. I and give examples of the dishes used.**
3. **Determine the indications for the appointment of the 1-14 diet and re-list the products prohibited for use.**
4. **For which patients is the diet prescribed?**
5. **What foods are prohibited for children with diabetes?**
6. **What is a portioner? What are the rules for filling it out?**
7. **How is the distribution of food to children organized?**
8. **What are the responsibilities of the medical staff when feeding children in the canteen?**
9. **What products are allowed to be stored in the buffet handout?**
10. **What sanitary and hygienic rules should be observed by employees of the food department and the buffet distribution room?**
11. **How are dishes washed and disinfected?**
12. **What are the requirements for storing dishes in the hospital?**
13. **How is the nutrition of seriously ill patients organized?**

14.How to use a drinking bowl when feeding a seriously ill person?

CHAPTER 8

CARE FEATURES. INFANT CARE

Children of the first-year lives especially, need to carefully observe the daily routine. It is most important to monitor the time of wakefulness, sleep, frequency, and time of feeding of the sick child. The main elements of the daily routine of children of different ages are shown in **Figure 14.** In newborns and infants, all the pathological processes in the body are extremely rapid. Therefore, it is important to timely note changes in the patient's condition, accurately record them notify the doctor in time to take urgent measures. The role of a nurse in the care of a sick infant is difficult to re-evaluate.

The basis of care is the observance of the strictest cleanliness, and for a newborn child and sterility (asepsis). Nursing care for infants is carried out by secondary medical personnel with mandatory control and the participation of a doctor. Persons with infectious diseases and purulent processes, malaise, or increased body temperature are not allowed to work with children. Medical workers of the department of infants are not allowed to wear woolen things, jewelry, rings, use perfume, bright cosmetics, etc.

Figure 14. Daily schedule of a child.

The medical staff of the department where infants are located should wear disposable or white, carefully ironed dressing gowns (when leaving the department, replace them with others), caps, four-layer stamps-get masks and a change of shoes. Strict personal hygiene is mandatory.

When a newborn is admitted to the children's ward, the doctor or nurse checks the passport data of the "bracelet" (on the child's neck in the maternity unit).' bracelet', which indicates the mother's last name, first name, and body weight, gender, date and hour of birth) and 'medallion' (same entries on a medallion worn over a blanket)

with records in the history of its development and notes, in addition, the time of admission of the patient.

For newborns and children of the first days of life with jaundice, it is fundamentally important to control the level of bilirubin in the blood, a significant increase in which requires heretic measures, in particular, the organization of replacement blood transfusions. Bilirubin in the blood is determined by the usual but traditional chemical method. Currently, "Blest" is also used, which allows using photometry, one touch to the skin to obtain operational information about the level of hyperbilirubinemia (an increase in the level of bilirubin in the blood).

Skin and mucosal care. Care, which should be taken, needs to take into account the child's condition. It should not cause unpleasant sensations.

Wash newborns with baby soap under warm (temperature 36.5—37 *C) running water, dry the skin with a diaper, light blotting movements! With a swab moistened with vegetable oil, the folds are sprayed, removing excess cheese-like grease. To prevent diaper rash, the skin of the buttocks, submachine areas, and the folds of the thighs are lubricated with 5% tannin ointment. Every day, in addition to the skin toilet, 70% ethyl alcohol is treated and the umbilical cord residue is cauterized with a 5% potassium permanganate solution. After the fall of the umbilical cord (4-5 days), the umbilical wound should care with a 3 % solution of hydrogen peroxide, if there are any needs for this.

The morning toilet of the newborn consists of washing the face with warm boiled water, washing the eyes with a sterile cotton swab moistened with boiled water. Each eye is washed with a separate swab in the direction from the outer corner to the bridge of the nose, then dried clean napkins. During the day, the eyes are washed as needed.

The nasal passages of the child have to be cleaned quite often. Use cotton flagella made from sterile cotton wool. The flagellum is smeared with sterile vaseline or vegetable oil and gently pushed into the depth of the nasal passages by 1.0—1.5 cm with rotational movements; the right and left nasal passages are cleaned with separate flagella. This manipulation should not be carried out for too long.

It is strictly forbidden to use dense objects, such as sticks (matches) with twisted cotton wool, etc.

The toilet of the external auditory passages is cleaned rarely, they are wiped with dry, cotton flagella.

The oral cavity healthy children do not wipe, - as the mucous membranes are easily injured.

It is unacceptable to wash children with non-flowing water, for example, in a basin. After washing, the child is placed on a changing table and a clean diaper is blotted on the skin. Then the skin folds are lubricated with a sterile cotton swab moistened with sterile vegetable (sunflower, peach) or vaseline oil. For this purpose, you can also use baby cream, special chatterboxes, cosmetic oils such as "Alice", "Baby Johnson-and-Johnson", etc. Bathing. The first hygienic bath is performed for the newborn after the umbilical cord falls off and the umbilical wound is epithelized (7-10 days of life). During the first 6 months, they bathe daily, in the second half of the year — every other day. For bathing, you need a bath (preferably enameled), baby soap, a soft sponge, a water thermometer, a jug for rinsing the baby with warm water, a diaper, a sheet.

Fig. 15. Bathing an infant

a — position when bathing; b — dousing after bathing.

Pre-wash with hot water and soap with a brush, then treated with a 0.5 % solution of chloramine (if bathing is carried out in a children's institution) and rinsed with hot water.

For children of the first half of the year, the water temperature in the bath should be 36.5-37 °C, for children of the second half — 36-36. 5 °C. The duration of the bath in the first year of life is no more than 5-10 minutes. One hand gently holds the head and back of the child, the other soaps the neck, trunk, and buttocks; especially carefully wash the folds in the neck, in the elbow, inguinal areas, behind the ears, under the knees, between the buttocks (Fig. 15, a). At the final stage of bathing, the child is taken out of the bath, turned back up, and doused with clean water (Fig. 15, b). The child is quickly wrapped in a diaper dry with blotting movements, after which, treat the skin folds with specific oil, they are dressed and put in a crib.

Soap when bathing is used no more than 2 times a week, it is better to "Baby". In some children, daily bathing, especially in hard water, can cause skin irritation. In these conditions, a bath with the addition of starch is recommended: 100-150 g of starch is diluted with warm water and the resulting suspension is poured into the bath.

Children of the first half of the year are bathed in a lying position, the second half of the year — sitting.

Sometimes, after frequent washing with soap, the hair becomes dry. In such cases, after bathing, they are lubricated with boiled vegetable oil or a mixture consisting of 1/3 castor oil and 2/3 vaseline (or boiled sunflower) oil. After the treatment, the hair is wiped with a dry cotton swab.

Rules of swaddling and clothing for children of the first year of life. For the first 2-3 weeks, it is better to hold a full-term newborn with your hands, and then, at the appropriate air temperature in the ward, put your hands on top of the blanket. Given that tight swaddling restricts movement, the newborn is dressed in special clothing:

first, two long-sleeved vests are put on (one light, the second flannel), then wrapped in a diaper.

In this form, the child is placed in an envelope made of cotton fabric. Usually, a soft flannel blanket is placed in the envelope, and, if necessary, a second flannel blanket is placed on top of the envelope.

The changing table and the oilcloth mattress are thoroughly wiped with 0.5—1% chloramine solution after each child is shrouded. On the changing table, children are swaddled without purulent manifestations; if it is necessary to isolate the child, all manipulations (including swaddling) are performed in bed.

Under the condition of daily washing and boiling of laundry for children of the first months of life, a certain set of underwear is provided, which is presented below.

A thin shirt is wrapped on the back, and a warm one is placed on the child's chest. The sleeves of a warm shirt are longer than the arms, they should not be sewn up. The lower edge of the vests should cover the navel. Set of underwear for children of the first months of life

Type of clothing Quantity for one day

a shirt made of white cotton fabric	**6-8**
"flannel 5	**6**
A thin diaper made of cotton fabric size 100x100 cm	**20-24**
Warm flannel diaper size 100x100 cm	**8-15**
Gauze diaper size 50x50 cm	**20-24**
Diapers	**10-20**
Kerchief thin on the head	**2-3**
Duvet cover	**2-3**
Blanket flannelette	**2**
"wool	**1**
" cotton	**1**

Children's oilcloth size 100x100 cm	**1**
""" 30x30 cm	**1**

When swaddling, the baby is placed in such a way that the upper edge of the diaper reaches the armpits. The diaper is placed on the perineum, after which the child is wrapped in a thin diaper. Put a plastic diaper (oilcloth) with a size of 30x30 cm (the upper edge is at the level of the lower back, the lower one is up to the level of the knees). Then the baby is wrapped in a warm diaper. If necessary, the child is covered with a blanket on top.

At the age of 1-2 months, diapers are replaced with sliders during the daytime "wakefulness", from the age of 2-3 months, diapers are used (usually on walks), which are changed every 3 hours, and at 3-4 months, when heavy salivation begins, a bib is put on over the rasp of the shawl.

A scarf or a cap made of cotton fabric is put on the head only after a bath and during a walk.

In 9-10 months, the vests are replaced with a shirt, and the floor special tights (in winter with socks or booties). Figure 16 shows the basic clothing of children in the first year of life.

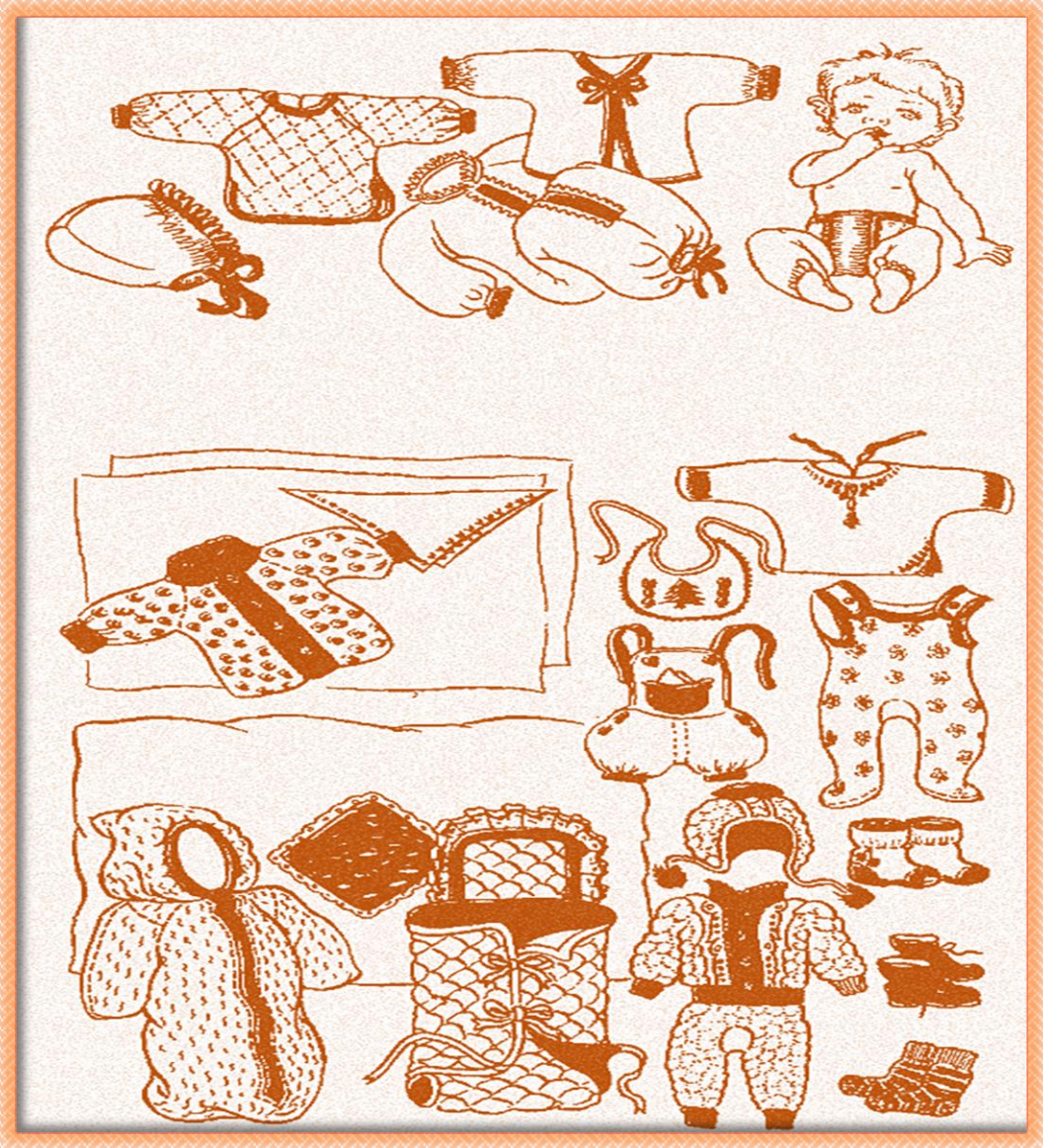


Fig. 16. Clothing of children of the first year of life.

Feeding children of the first year of life. There are three types of feeding: natural (breast), mixed and artificial.

Natural (breast) feeding is called the feeding of the child with the mother's milk. Women's milk is a unique and only balanced food product for a newborn baby. No milk formula, even close to the composition of women's milk, can not replace it. It is the duty of any medical professional, whether a doctor or a nurse, to constantly emphasize the benefits of breast milk, and to make every effort to ensure that every

mother breast-feeds her baby for as long as possible. Mother's milk contains proteins, fats, carbohydrates, macro - and microelements in optimal proportions.

In the first drops of milk (in the first 5-7 days after the birth of the child — this is colostrum), the newborn receives a complex of specific and non-specific protective components. Thus, in particular, immunoglobulins (Ig) of classes A, M, and G ensure the transfer of passive immunity factors from mother to child. The level of these immunoglobulins is particularly high in colostrum.

That is why early application of the baby to the mother's breast, immediately applying it in the delivery room, improves the mother's lactation and ensures the transfer of several (5-8) to tens (20-30) grams of immunologically complete protein to the newborn. For example, IgA in colostrum contains from 2 to 19 g/l, IgG — from 0.2 to 3.5 g/l, IgM — from 0.5 to 1.5 g/l. In mature milk, the level of immunoglobulins decreases, averaging 1 g/l, which nevertheless provides natural protection against various pathogenic microorganisms.

Great importance is attached to the early application of the child to the breast, in this case, the newborn is better the intestinal microflora is formed faster. By itself, feeding leads to the development of a so-called dynamic food stereotype that ensures the interaction of the child's body with the external environment. It is not unimportant that natural feeding allows the newborn to better tolerate the conditions inherent in this period of life. They are called transient or borderline-this is a transient loss of primary bodyweight, hyperthermia, etc.

From the moment of the first attachment of the child to the mother's breast, special relationships are gradually established between them, in fact, the process of raising the newborn begins.

When breastfeeding a child, it is necessary to observe the following rules:

1. Before feeding, the mother should carefully wash the breast with boiled water with cleanly washed hands.

Figure 17. Feeding

2. Express a few drops of milk, which is removed the bacteria from the end parts of the breast glandular ducts

3 Take a comfortable position for feeding: sitting, putting the left leg is placed on the bench if it feeds from the left breast, and the right leg when feeding on the right breast (Fig. 17).

It is necessary that when sucking, the child captures not only the nipple with his mouth but also the circumflex circle. The baby's nose should be free to breathe properly. If nasal breathing is difficult, then before feeding, the nasal passages are cleaned with a cotton flagellum moistened with vaseline oil, or with an electric pump.

The duration of feeding should not exceed 20 minutes. During this time, the child should not be allowed to fall asleep.

If the mother has milk left after feeding, then its remains are decanted into a sterile container (in a bottle funnel or glass). The most effective method is the suction of milk by a vacuum device. In its absence, use a rubber pad, a breast pump with a rubber canister. By the beginning of feeding, the breast pumps should be sterilized. In the absence of a breast pump, the milk is pumped by hand. First, the mother washes her hands with soap and wipes them dry. The thumb and index finger are placed on the outer border of the circumflex circle, and the fingers are tightly and rhythmically squeezed. The nipple should not be touched.

To prevent the formation of cracks and mastitis at the end of the feeding, the breast should be washed with warm water and drained with a clean, thin cloth diaper.

When breastfeeding, the child himself regulates the amount of food he needs. However, to know the exact amount of milk they receive, it is necessary to systematically carry out the so-called control feeding. For this, the baby is swaddled as usual before feeding, then weighed (in diapers), fed, re-weighed in the same clothes, without changing the diapers. By the difference in mass, the amount of milk sucked out is judged. Control feeding is mandatory in case of insufficient weight gain of the child and case of illness. If the child has sucked an insufficient amount of milk, as well as if he is ill or the mother is ill, then he is fed or fed with expressed female milk. The expressed milk must be stored in the refrigerator at a temperature not exceeding 4 °C. Within 3-6 hours after pumping and in case of proper storage, it can be used after heating to a temperature of 36-37 °C. When stored for 6-12 hours, the milk can only be used after pasteurization, and after 24 hours of storage, it must be sterilized. To do this, put a bottle of milk in a saucepan, add warm water slightly above the level of milk in the bottle; then, during pasteurization, the water is heated to a temperature of 65-75 °C. A bottle of milk is kept in it for 30 minutes, during sterilization, the water is brought to a boil and boiled for 3-5 minutes.

Bottles of expressed milk are stored at the nurse's post in the refrigerator along with milk mixtures. Each bottle should have a label that says what it contains (breast milk, kefir, etc.), the date of preparation, and on the bottle with the expressed milk — the hour of pumping and the name of the mother.The unjustified introduction of partial feeding through a bottle (other food and drink) should be prohibited since this can negatively affect breastfeeding. In addition, nursing mothers should know that returning to breastfeeding is very difficult.

It is an extremely difficult and responsible task to raise premature babies.

If there is no swallowing reflex or there is a respiratory arrest during feeding, feeding is obtained through a probe (Fig. 18).

Figure 18. Feeding through the probe

Feeding with a single probe is carried out when it is inserted into the child's stomach for only one feeding, and permanently if the probe is left in the stomach for 2-3 days. A permanent probe, unlike a disposable one, is smaller in diameter, so it can be inserted through the nasal passages, although the introduction of the probe through the mouth is considered more physiological since it does not disrupt external breathing.

Mixed feeding is, in which the child, along with breast milk, receives artificial milk mixtures.

Artificial feeding is called feeding a child in the first year of life with artificial milk mixtures.

Special dishes are used for hygienic feeding of infants: bottles made of the purest and heat-resistant glass, teats made of rubber silicone, and quick sterilizers for them (fig. 19). Feeding the baby with formula milk with mixed artificial feeding mainly delivered through teat from a bottle.

Figure 19. Baby food bottles, teats, pacifiers, thermoses and sterilizers for bottles, brushes for washing bottles.

Use graded bottles with a capacity of 200-250 ml (the price of dividing 10 ml). A teat with a hole is put on the bottle. The opening in the nipple should be small, so that when the bottle is turned over, the milk flows out in drops, and does not flow in a stream.

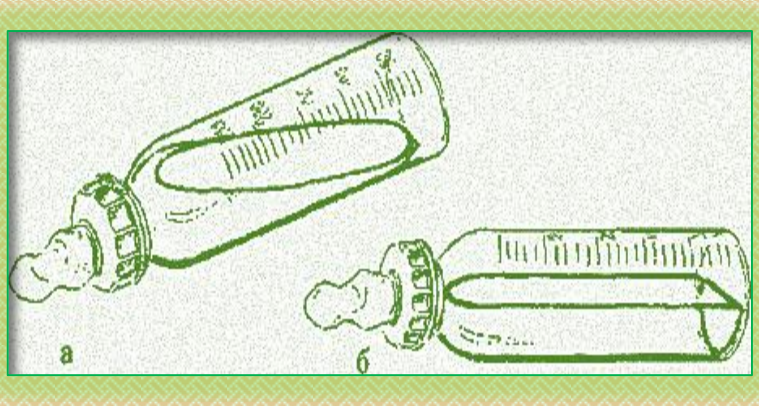


Figure 20. Correct (a) and incorrect (b) position of the bottle during artificial feeding.

The mixture of milk should be given to the child warmed up to a temperature of 37-40 °C. To do this, before feeding, the bottle is placed in a water bath for 5-7 minutes. The water bath (saucepan) must be marked "For heating milk". Each time you need to check whether the mixture is warm enough, not too hot.

When feeding children with adapted (similar in composition to mother's milk) milk mixtures such as "Detolact", "Baby", "Bona", the sequence of preparatory operations is somewhat different. In a sterilized bottle, pour boiling water, add the dry milk mixture with a measuring spoon and shake the bottle. Then a clean pacifier is placed on the bottle. After feeding, the bottle is washed with soda with a brush.

When feeding, the bottle should be held so that its neck is always filled with milk, otherwise, the child will swallow air, which often leads to regurgitation and vomiting (Fig. 20).

The baby is held in his arms in the same position as when breastfeeding, or in a position on his side with a small pillow placed under his head.

During feeding, you can not move away from the child, you need to support the bottle, watch how the baby sucks. You can't feed a sleeping baby. After feeding,

the skin around the baby's mouth should be thoroughly dried, the baby should be gently lifted and moved to the vertical position to remove the swallowed the air.

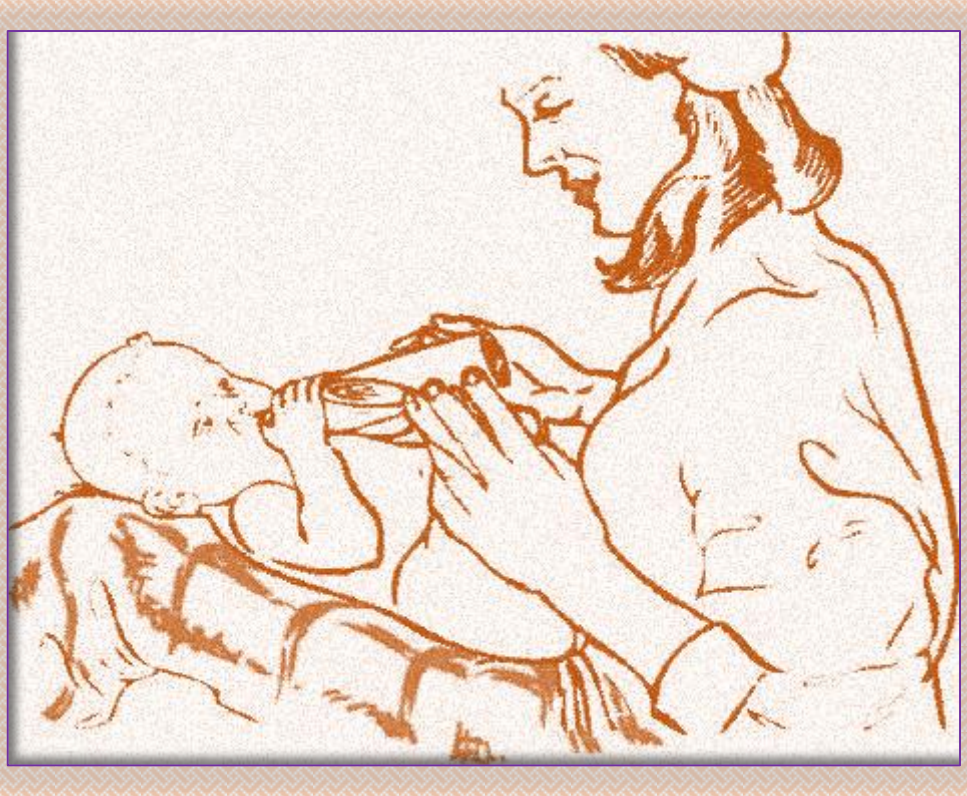


Figure 21. Feeding "in the hem".

The mother is usually recommended to use the "feeding in the hem" position (Fig. 21). The proposed pose prevents the violation of the motility of the gastrointestinal tract, eliminates the possibility of curvature of the spine, and for parents, this method presents several amenities.

For better assimilation of food, it is necessary to observe the established feeding hours. If the general condition is not disturbed and the appetite is preserved, then the diet of patients can be the same as healthy children of the same age (children up to 2 months are fed approximately, 6-7 times, up to 5 months — 6 times, from 5 months to 1-1.5 years-5 times). In a serious condition, the child with poor appetite is fed more often (after 1-1,5 hours) and in smaller portions.

Sick children are sometimes very difficult to feed, not only because they have a poor appetite, but also because of the habits acquired in the home environment. Great patience is required, as even a short-term refusal to eat weak and emaciated

children can adversely affect the course of the disease. In the state hospitals, all mixtures for children of the first year of life are obtained at the food department. Dry mixes in the buffet are turned into ready-to-use immediately before feeding the baby. The type of mixture, its volume, and frequency of feeding for each child are determined by the doctor.

If necessary, to replace breast milk with adapted milk mixtures, for example, "NAN", "Nutrilon", "Nestogen", etc., as well as adapted cis-milk mixtures, such as "AGU", acidophilic "Malutka", "Lactofidus", etc. There are also children's therapeutic mixtures that are prescribed to newborns with low birth weight ("Alprem", "Humana-0"), with intolerance to milk sugar (A1—110," Nutri-Soy"), polyvalent allergy to cow's milk proteins, soy, severe diarrhea ("Alfaro"," Prosobi"," Porta-gen", "Similak-Isomil").

In artificial feeding, the volume of the suckled milk mixture is determined by the graduated scale of the bottle. The amount of milk sucked from the mother's breast or the mixture from the bottle is noted after each feeding in an individual nursing sheet, which is filled out for each infant.

Already in the first year of life, starting from the 4th-5th month, the child is gradually accustomed to new types of food (when feeding). When introducing complementary foods, you should follow certain rules. The bait is given before feeding with medical pear or mixtures, and with a spoon. Complementary foods include porridge, vegetable puree, meat gashes (minced meat, meatballs), egg yolk, broth, cottage cheese, and so on. Since the child begins to sit from 6 months, it should be fed at a special table or sitting on the lap of an adult. When feeding a child, an oilcloth apron or just a diaper is tied to the breast. In the first year of life, especially in the departments for infants, sterile dishes should be used for feeding. Rules for the sterilization of the nipple and the bottle check. Dirty nipples are thoroughly washed first in running water, and then with warm water and soda (0.5 teaspoons of baking soda per glass of water), while they are turned inside out. Then the nipples are boiled for 10-15 minutes. The nipple is sterilized once a day, usually at night. It is conducted by a ward nurse. Clean rubber teats are kept dry in a closed

(glass or enamel) container marked "Clean teats". Clean nipples are taken out with a sterile pin, and then put on the bootle with clean washed hands. Used teats are collected in a dish with the label "Dirty teats".

The bottles are sterilized in the pantry. First, the bottles are degreased in hot water with mustard (50 g of dry mustard per 10 liters of water), then washed with a brush, washed with running water from the outside and inside (use a device in the form of fountains for rinsing bottles) and rinsed. Clean bottles with the neck down are placed in metal nets, and when the remaining water drains, the bottles in the nets are placed in a dry-burning cabinet for 50-60 minutes (the temperature in the cabinet is 120-150 °C).

The bottles can be sterilized by boiling. To do this, they are placed in a special dish (tank, pot), filled with warm water, and boiled for 10 minutes.

Store sterile bottles with necks covered with sterile cotton-gauze swabs in separate cabinets allocated for this purpose.

Stool monitoring and registration. In newborns, the original feces (meconium), which is a thick, viscous mass of dark color, departs by the end of the first day of life. On the 2nd-3rd day, the so-called transitional stool appears, having a mushy consistency, darkish color, and then a normal yellow stool with a sour smell (a lumpy stool) is established. The frequency of stool in newborns is 2-6 times a day, in older children — 2-4 times a day.

The nature and frequency of stools depending on the type of feeding. When breastfeeding, the stool is 3-4 times a day, yellow, mushy, with a sour smell. With artificial feeding, the stool is observed less often, 1-2 times a day, more dense, decorated, light green, sometimes grayish-clay, the consistency resembles putty, with a sharp smell.

Liquid stools can be associated with eating disorders; the color of the feces changes, there are pathological signs in the form of mucus, greens, blood, etc.

The nurse should be able to determine the nature of the stool since it can reveal the initial signs of the disease by its appearance. You should report the pathological changes in the stool to the doctor (it is better to show the defecation). In the nurse's

list, it is necessary to note how many times the stool is, and a special conditional sign — its character: mushy (normal), liquefied stool, mucus in the sstool, green in the stool, blood in the stool, decorated stool.

Fig. 22. Methods of carrying an infant.

Prevention of skeletal deformities. Deformities of the scale ta occur if the child lies in the crib for a long time in one position, with tight swaddling, if the insole is soft, a high pillow, with the wrong position of the child in his arms.

To prevent deformations of the skeleton, a dense mattress stuffed with cotton wool or horse hair is placed on the cotton. For the child of the first months of life, it is better to put a special pillow under the mattress: this protects against excessive compression of the head, and also prevents regurgitation.

The child in the crib must be placed in different positions, periodically picked up. Given the weakness of the musculoskeletal system, you can not put children up to 5 months of age. If the child is taken in his arms, then the forearm of the left hand should hold the buttocks, and the other hand-the head and back.

Transportation of infants. Transportation of infants is usually not difficult. Children are usually carried on their hands (Fig. 22). It is necessary to use the most physiological and comfortable position. Such a position can be created if-using only one hand to carry the child, leave the other free to perform various manipulations (Fig. 22).

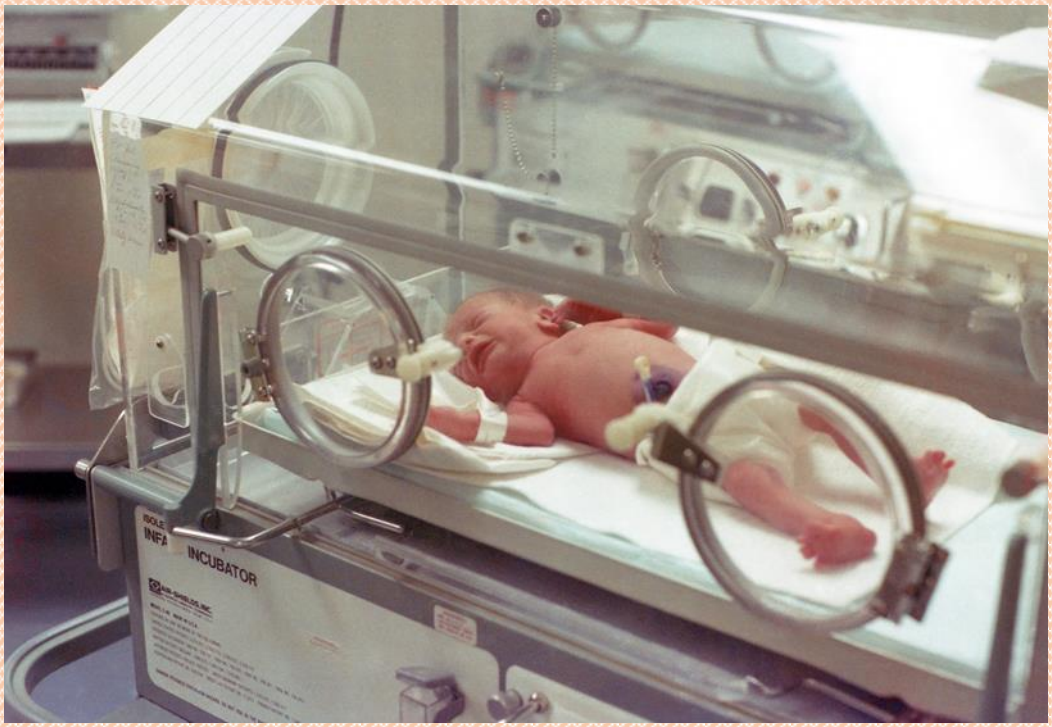


Figure 23.Closed-type cuvez.(incubator)

Rules for using the cuvez. For the care of weak newborns, premature babies, and children with low body weight, use couvezes. Cuvez is a special medical incubator that maintains a constant temperature, humidity, and the necessary oxygen supply in the air. Special devices allow you to organize the necessary care for the child, to carry out various manipulations up to weighing, without taking the child out of the cuvez (Fig. 23). The upper part of the cuvez is made of organic glass or plastic, transparent, which allows you to monitor the condition and behavior of the child. On the front wall of the hood, a thermometer and a hygrometer are mounted, according to which it is possible to judge the temperature and humidity of the air inside the cuvez.

Before using the cuvez, it should be well ventilated and disinfected. According to the operating instructions, it is recommended to disinfect the car with formalin. To do this, a piece of cotton wool moistened with 40% formalin solution is placed under the cap, and the cuvez is turned on for 6-8 hours, after which the cotton wool is removed and the incubator is left on with the cap closed for another 5-6 hours. In addition, the inner walls of the cap, the bed for the child the mattress pad is thoroughly wiped with 0.5 % chloramine solution.

The inclusion of the cuvez is carried out in the following sequence: first, the water vapor system is filled with water, then connected to the network, then the necessary microclimate is selected by a smooth rotation of the temperature and humidity controller.

The child in the cuvez is naked. A constant temperature of 34-37 °C and relative humidity of 85-95 % is maintained. Oxygen is supplied to the tank in a mixture of atmospheric air, and the concentration of oxygen does not exceed 30 %. A special alarm system alerts you with an audible signal about a violation of the parameters. The duration of stay in cuvez is determined by the general standing of the child. If the newborn is in it for more than 3-4 days, then the microbial contamination increases significantly. According to the existing rules, in such a case, the child should be transferred to another incubator, washed, and ventilated.

Nursing premature infants in a cuvez for 3-4 weeks significantly increases the effectiveness of therapeutic measures, reduces the risk of various complications.

QUESTIONS

1. **Which persons are not allowed to take care of infants?**
2. **What are the care of the skin and mucous membranes of the newborn and infant?**
3. **How is a hygienic bath performed?**
4. **What is included in the set of clothing for children of the first months of life and the second half of the year?**
5. **Name [The poison of breastfeeding the baby.**
6. **How is the control of suckled milk carried out during breastfeeding?**
7. **What are the requirements for the storage and use of expressed breast milk?**
8. **What are the features of feeding a baby from a bottle with a pacifier?**
9. **How to sterilize baby teats and bottles a receipt?**
10. **How is stool registered in infants?**
11. **How to prevent the development of skeletal deformities in infants?**
12. **How do I prepare the cuvez for work?**

CHAPTER 9

BASICS OF PARENTING CHILDREN IN THEIRS EARLY LIFE

The medical staff takes an active part in the process of raising children. You can not treat children or take care of them, excluding educational methods. Proper care not only ensures good health but also contributes to the proper physical and mental development of the child. Conducting educational work requires some experience with children and familiarity with the basic principles of education and training. The scope and tasks of educational work are largely determined by the location of

the child, i.e. the conditions of the hospital, the children's home, the kindergarten, etc.

In any case, it is necessary to ensure the aesthetic design of the premises, the area for walking, playpens, a sufficient set of toys and books. At the same time, it is necessary to take into account the age and state of health of children, especially the upbringing of children at home, at school, etc.

Elements of education. Education is purposeful management of the child's development, preparation for life, and work in society. The activity of adults is aimed at the complex physical, mental, moral, and aesthetic development of the child. When raising children under 3 years of age, a greater share is taken by means for physical development, and for older children, priority is given to methods of mental education.

Physical education is a holistic system of activities aimed at the timely formation of children's correct motor skills and abilities, health promotion, and full and timely physical development. To develop physical skills use various methods that exclude gymnastics, massage, tempering, etc.

Moral education is the formation of an individual's relationship to society. Morality (morality) — a set of principles and norms of behavior that are characteristic of people in a given society.

Aesthetic nutrition is the education of aesthetic feelings, aesthetic attitude to reality, love for everything beautiful in nature, life, and art. The means of aesthetic education are fiction, drawing, singing, and music.

Mental education — the formation of children's correct ideas about the phenomena of nature and life, the development of mental abilities (attention, imagination, thinking, speech, memory). Mental education also involves the development of the ability to independently acquire knowledge and apply it in practice.

The child's constant contact with adults, as well as other children, plays an important role in the development of the mental activity. The child must hear the speech addressed to him, otherwise, it is difficult to expect great success in learning

the native language. If necessary, for the development of speech therapy with the child should be conducted by a speech therapist.

Speech therapy (from the Greek logos — word, speech, paideia-education, training) is a branch of pedagogy that is closely related to medicine, studying speech disorders and developing methods for their correction and prevention.

A favorable microclimate in the family is a prerequisite for raising a healthy child. The even distribution of loads between the father and mother for the care and upbringing of the child strengthens the family, brings new trends in adult relationships. Among the ideals of modern man, as a prerequisite, there should be a moderate intake of alcohol, a complete cessation of smoking, the use of" strong " words, the cult of sports. When choosing a means of education, proceed from the age of the children. While on duty in the hospital (children's home, kindergarten) medical workers (tutors, full-time teachers, students of the medical institute) special attention is paid to the organization of various types of activities, games, educational conversations with children. For each age, there is a different set of toys, games - for nannies. For example, an approximate list of games and activities for children aged 10-12 months can be as follows: the display of story toys (dogs, cats, etc.), games-classes with a ball, cubes for the development of movements, games-entertainment such as "hide-and-seek", display of wind-up toys. Classes are available for children aged 1 to 2 years with pictures and, "building" material for the development of speech and coordination of movements, are given tasks to distinguish objects by their size and shape. With children from 2 to 3 years old, you can hold conversations, read books to them, form their primary numerical representations, etc. You should organize games for attention, the development of fine motor skills of the fingers, the ability to distinguish objects and toys not only in size and shape but also in color. For children from 3 to 5 years old, we recommend games for teaching elementary numeracy, drawing, modeling, animation, music, gymnastics or physical education, pony, and board games.

It should be remembered that for preschool children, the game is a kind of form of social life. The life experience of a child, especially at an early age, is still small,

and therefore in games children reflect on what they can do and what adults have taught them. Game elements are needed for the development of hygiene skills. They should be used during feeding, toilet, and before going to bed. The game should also be the basis of cognitive activity. It is in the game that a child with a passion independently rees, sculpts from plasticine, cuts and glues applications, designs, makes homemade toys, sings songs, tells, and invents fairy tales. It is necessary to believe that " The spiritual life of a child is complete only when he lives in the world of games, fairy tales, music, fantasy, creativity. Without this, he is a dried flower" (V. A. Sukhomlinsky).

Parenting is a complex, multi-faceted process. However, when conducting collective and individual educational work with children, it is necessary to take into account not so many fundamental pedagogical concepts: when presenting the material, the simple should precede the complex, the easy should precede the difficult, and specific information about the objects and events should precede their abstract symbolism.

The rational distribution of the elements of education over time is aimed at preventing disruptions of the child's nervous system. It is necessary to strive to strictly observe the daily routine. It is necessary to evoke positive emotions in children, to stimulate their desire to help their elders to their friends, to perform each task to its logical conclusion, to develop the child's independence.

Mode of the day. The basis of educational work in the children's team is the daily routine, i.e. the correct distribution of time and a certain sequence of active activities, sleep, meals, etc. Pediatricians, together with teachers and hygienists, have developed standardized daily routines for various medical and preventive institutions and children's institutions, depending on the specifics of their work and the age of the children.

In a children's institution, including medical institutions, children are divided into age groups, taking into account the peculiarities of the daily regime. The smaller the child and the more energetic he grows, the more often they change the regime.

For example, in the group of infants, the regime is changed 4 times a year, in the middle group — 2 times (Table 4).

Baby Sleep Schedules Chart

BABY'S AGE	NUMBER OF NAPS	NAP DURATION	DAYTIME SLEEP HOURS	NIGHTTIME SLEEP HOURS	NIGHTTIME HOURS IN A STRETCH	TOTAL SLEEP HOURS PER DAY
Birth to ~6 weeks	Varies	30 mins-4 hrs	Varies	Varies	Possibly 4 hrs	14-17 hrs
2 months	3-5	30 mins-3 hrs	7-9 hrs	8-9 hrs	Possibly 6 hrs	14-17 hrs
3 months	3-4	30 mins-2 hrs	4-8 hrs	8-10 hrs	6 hrs, sometimes	14-16 hrs
4 months	2-3	1-2 hrs	3-6 hrs	9-10 hrs	6-8 hrs, sometimes	12-16 hrs
5-6 months	2-3	1-2 hrs	3-4 hrs	10-11 hrs	10-11 hrs, sometimes	12-16 hrs
7-8 months	2	1-2 hrs	3-4 hrs	10-12 hrs	10-12 hrs, maybe	12-16 hrs
9 months	2	1-2 hrs	3-4 hrs	10-12 hrs	10-12 hrs, often	12-16 hrs
10-12 months	2	1-2 hrs	3-4 hrs	10-12 hrs	10-12 hrs, usually	12-16 hrs

TODDLER & NEWBORN SCHEDULE

NEWBORN		TODDLER
WAKE UP, CHANGE, NURSE	7:30	WAKE UP BY 8:00
NAP	8:30	BREAKFAST, CHORE, PLAY OUTSIDE OR ACTIVITY
WAKE UP, CHANGE, NURSE, TUMMY TIME	10:30	BOOK WITH MOM WHILE BABY NURSES, PLAYTIME
NAP	11:30	INDEPENDENT PLAY, MOM MAKES LUNCH
NAP	NOON	LUNCH
NAP	12:30	NAP OR QUIET TIME, MOM GETS A BREAK!
WAKE UP, CHANGE, NURSE	1:30	WAKE UP, BOOK WITH MOM WHILE BABY NURSES
NAP	2:30	OUTSIDE PLAY OR ACTIVITY
WAKE UP, CHANGE, NURSE, TUMMY TIME	4:30	BOOK WITH MOM WHILE BABY NURSES
NAP	5:30	HELP MOM COOK DINNER
NAP	6:30	DINNER
WAKE UP, BATH, NURSE	7:30	BATH, BEDTIME ROUTINE
BEDTIME	8:30	BEDTIME
WAKE UP, CHANGE, NURSE	10:30	SLEEP
DREAM FEED (BABY SETS NIGHTTIME FEEDS)	MID NIGHT	SLEEP

Table 4. Day routine for children aged 1 month to 7 years

The regime for sick and physically weakened children should be different from the regime for healthy children of the same age. Therefore, in physically weakened children, the duration of the waking period is shortened and the time for rest and sleep is increased. In the hospital department, a nurse monitors the implementation of the regime. For individual patients, individual elements may be included in the regimen as prescribed by a doctor.

Personal hygiene skills. A serious role in the proper upbringing of the child is assigned to the skills of personal hygiene. Neatness and cleanliness must be developed in children from the first days of life. These goals are served everyday washing, bathing children, changing clothes; from 5-6 months of age, it is necessary to teach the child to ask for a potty. The attention of older children should be paid to dirty hands, face, nose and try to cause this is a negative attitude. In the period from 1.5 to 2 years, the child should be taught to use a handkerchief independently.

In the 3rd year of life, it is necessary to teach the child to wash his hands before eating, and on his initiative, in the morning, in the evening, wash your face, wipe yourself only with your linen, a napkin. If the child is brought up in a collection, then personal items must be marked: drawings the image of fruits, vegetables, etc. In 1.5 years, the child should be able to rinse his mouth and brush his teeth. At first, for 2-3 months, the teeth are cleaned only with a wet toothbrush, and then with toothpaste. Brush your teeth in the morning and the evening before going to bed.

Equipment of children's institutions. Furniture and toys are selected taking into account the age of children. In the group room of the orphanage (nursery-garden), there should be the following equipment: playpen, slide-playpen (for children over 10 months old), tables, chairs, sofa; high tables for feeding, shelves, cabinets for toys, allowances, linen; toilet tables(changing pads), a barrier for children. In the bedroom and on the veranda, beds should be placed according to the number of children, In the changing room, it is necessary to have individual lockers for each child, low hangers for piglets, low sinks, etc.

To make the child feel comfortable, starting from the first days and the first years of life, special baby cots, seats, chairs (high chairs), magnets are used- walkers, night pots, scales (Fig. 24, a). For walking, we use wheelchairs and strollers that are comfortable for any time of the year (Fig. 24, b).

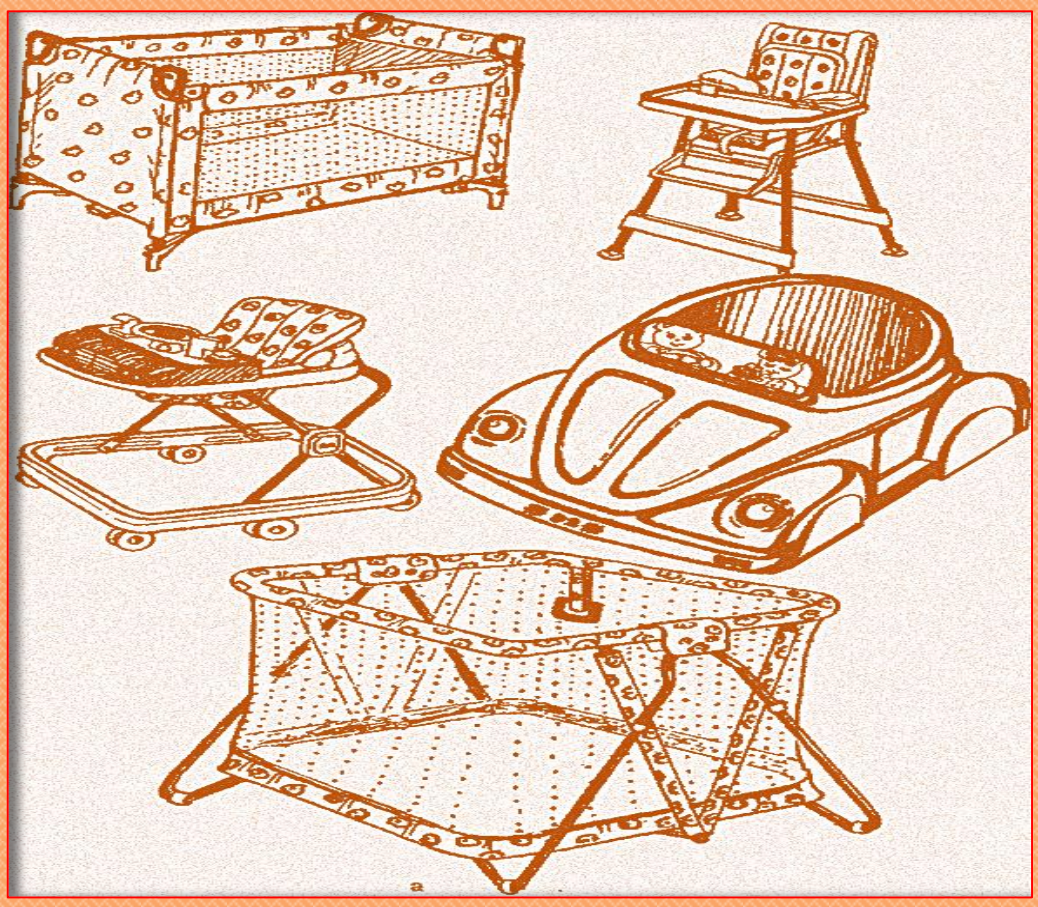


Figure 24. Equipments of children's rooms, a-furniture for children; b-strollers for children.

Depending on the age of the children, the playpen and changing rooms are displayed. The variety is created not so much by the number of games, but by the presence of both simple and more complex toys. In the children's homes, special game rooms are equipped — models of the kitchen (Fig. 25), living room, bedroom with sets of furniture, toys for developing the skills of family life, and imitation of "home" situations.

Set of toys for children of the first year of life: rattle fly with handle, ball, rubber toy, tumbler, ball, saucepan with lid, bark barrel, plastic bowl with a small toy, feasts yes, pencil case with chopsticks.

Set of toys for children 2-3 years: mosaic, pyramid, matryoshka, mushroom (layout), a keg of "change".

In addition to toys, you can use sets of cards to organize games in which children must name the objects depicted in the drawing, the actions performed by the character in the picture, the color of clothing, the shape of objects, etc. You must also have children's books, construction kits, drawing albums, sets for children's creativity.

Children's institutions are also equipped with a music room and a gym, where classes with children are held 1-2 times a week.

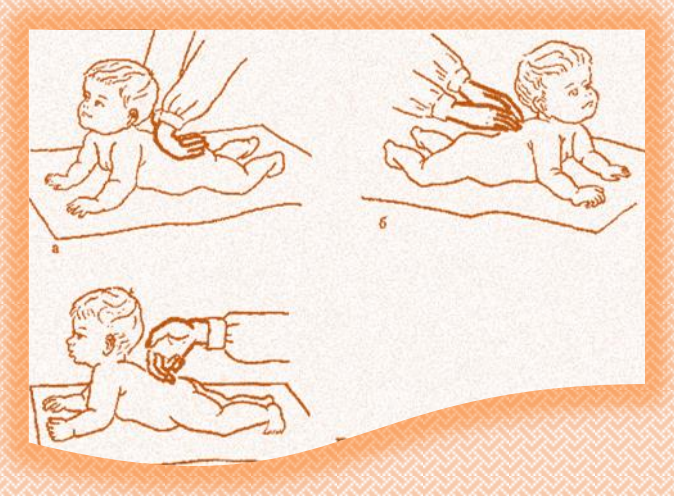
Clothes. For the proper development of physical skills- it is necessary to monitor the children's clothing, which should not restrict movement, corresponding to the age, season.

Figure 25. Game room kitchen for children.

Massage and gymnastics. Among the means used for the physical development of children, a large place is occupied by massage and gymnastics. Massage for children of the first months of life is necessary primarily for the development of the child's psyche since the first speech reactions (walking) occur in response to

tactile stimuli — stroking, while verbal appeals of adults do not cause any response from the child. Stroking, rubbing, and kneading strengthens the braking processes, i.e., they act on the child soothingly; vibration (patting) increases the excitatory processes.

Massage. Children of the first months of life are given two types of massage — stroking and growing (in the position of the child on the back, stomach). Stroking (26) - these are light sliding movements with the palms or the back of the hand on the surface of the skin. Rubbing (Fig. 26) - this is a more intense compression of the fingers of the hands than stroking.



Elements of massage (26 a, b, c)

Figure 26d. Forms of massage

For older children, massage is performed in five ways: stroking, rubbing, kneading, rocking, and vibration. Kneading the effect of massage techniques on the skin, muscles, tendons, joints.

Pounding is performed with the back of one finger, then with two and a large number of fingers. Massages, obtained by vibrating devices, are used for children with obesity. It acts reflexively on the internal organs, increases the metabolism of deep-seated tissues.

When performing a massage, it is necessary to remember that deep stroking (rubbing, kneading, pounding, and vibration) should be performed longitudinally along the course of the lymphatic vessels, usually from the periphery to the center, i.e. in the direction of the nearest lymph nodes .

Gymnastics classes. With a young child, an adult is engaged in gymnastics. In children up to 4-6 months of age, all exercises are associated with passive movements, and in the future, active movements are included in the set of exercises. In infants, gymnastic exercises are combined with elements of massage.

Start with light exercises, gradually moving on to more complex ones.

Alternate movements of the arms, legs, and torso to distribute the load on all muscle groups. No violence should be allowed. You can use the following the best approximate complexes of exercises for children from 1 to 12 (fig.28).

Complex for children from 1 to3 month: straightening of the spine (a) crawling (b) by the proposal "the swimmer" (in).

Complex for children from 3 to 4 months: the position of the "swimmer" (in), "box" (g), crossing arms on chest (d), turn back on the belly (e).Complex for children from 4 to 6 months: "boxing" (d), crossing hands on the chest (d), turn the back of the abdomen (e), bending and extension legs (g), sitting down from a supine position(s).

Complex for children from 6 to 9 months: turning back on the belly (e) sitting down of the position lying on the back (s), circular hand movements getting up from a lying position on the stomach (k).

Complex for children from 9 to 12 months: sitting down from the supine position (h), circular movements with the hands (i), getting up from the supine position on the stomach (k), sitting down (l), walking behind the gurney (m).

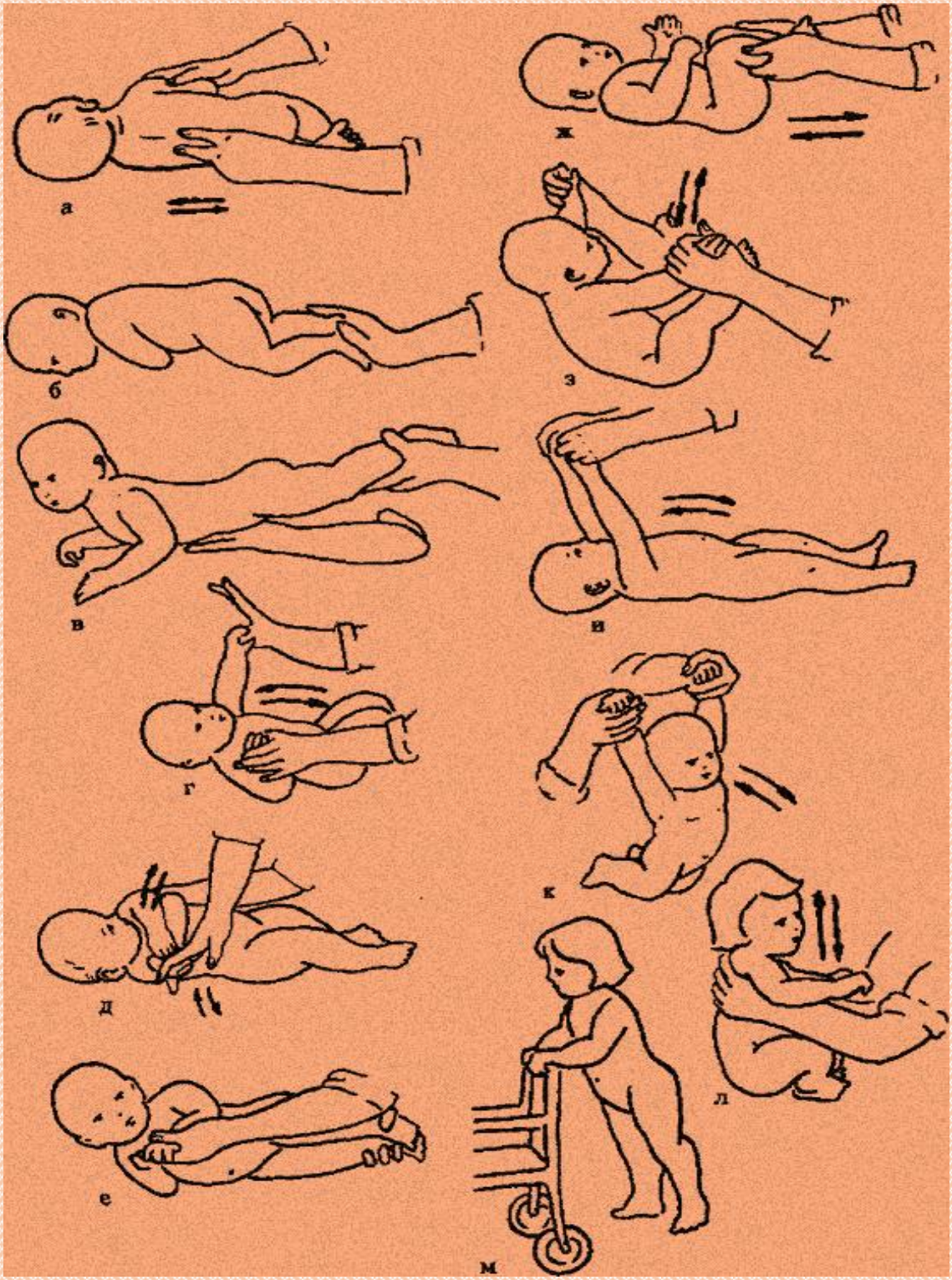


Figure 28. Gymnastic exercises in children of the first year of life.

With children 1-2 years old for physical education, they conduct gymnastics classes, outdoor games, and from 2-2. 5 years old-also morning gymnastics. The duration of physical education classes for children under 2 years is 10-15 minutes and for children under 3 years— 15 — 2 0 min. When explaining gymnastic tasks, it should be remembered that the word for young children is a weak irritant and commands can not be forced to engage the child.

Therefore, the child must have a gymnastics, he perceived the physical exercise as a game and actively participated in the lesson. For this purpose, small gymnastic objects are used in the classroom: sticks, balls, hoops, short jump ropes, benches, ladders, etc.

When conducting gymnastics classes, the following basic principles are observed:: 1) coverage of all muscle groups (shoulder girdle, legs, back, abdomen); 2) alternation of exercises and rest; 3) alternation of starting positions; 4) in children 1-3 years of age, the exercise is performed in the following ways: research institutes are aimed at developing motor skills.

For physical education of children over 4 years of age, sports exercises are widely used (elements of sports games, relay races, ball games, etc.). Physical education classes are built according to the generally accepted scheme: the introductory part (walking, running, walking), general development exercises for the main muscle groups (4 - 5 exercises), outdoor games, and the final part (walking and breathing exercises).

It should be remembered that such methods of physical nutrition as massage and gymnastics are not only means of improving the motor skills of a healthy child and increasing its resistance to harmful environmental influences but also ways of treating sick children.

The physical skills that children acquire must be constantly improved. For exercises that develop muscle strength, endurance, and flexibility, you can also use commercially available sports simulators. All gyms of children's medical and preventive institutions should be equipped with such simulators.

Monitoring the development and behavior of the child. The medical worker should be able to organize the activities of children, use every contact with the child for maximum communication with him. You should pay attention to the implementation of the daily regime. It is important to regulate the work of a nurse, a young nurse, and a caregiver.

A child in the first year of life goes through the development path from a helpless being with a limited set of protective reactions to a person endowed with a certain intelligence — such is the rapid age-related evolution of the brain.

Table 5 shows the characteristics of behavioral reactions, speech development, sensory perception, mental and motor development of the child by month during the first year of life. It is necessary to know clearly whether this or that child corresponds to the development of the age norm or lags, in this case, it is necessary to determine what age corresponds to the development of his mental and motor skills at the time of the study. Observing the behavior of children older than 1 year, you need to pay attention to the general mood in the group. They note how children behave: noisy or quiet, crying or mischievous, busy playing or walking aimlessly, and bored. It is necessary to determine the degree of accessibility of toys for children's understanding, the degree of development of independent skills.

Monitoring the development and behavior of children is necessary for the appointment of the correct daily routine, the choice of means of physical and mental education methods. When caring for children, during feeding, hygienic care, preparing for bed, etc., it should be noted what independent skills the children possess and whether these skills correspond to the age of the child.

BABY'S 1ST YEAR

GUIDE TO BABY'S SENSORY + MOTOR SKILL DEVELOPMENT

0 Newborn
- Communicates through cries
- Can see best from 8-12 inches away

1 Month
- Hearing is fully developed
- Likes sweet smells, and can probably pick your breast milk out of a lineup
- May respond to familiar sounds

2 Months
- Begins to lift head
- Comforted by touch and recognizes your face
- Starts to lift shoulders during tummy time

3 Months
- Makes eye contact
- Mimics sounds, and starts to babble
- Opens and closes hands

4 Months
- May begin teething
- Loves to reach for toys
- Looks at things in the distance

5 Months
- Sees color better
- Listens to your voice

6 Months
- Laughs and giggles—a lot
- Begins to learn to sit up
- Likely rolls from stomach to back

7 Months
- Sees in full color
- Hearing is fully developed
- Bears weight on legs when held upright

8 Months
- Sits up unassisted
- Distinguishes different shapes

9 Months
- Has learned object permanence
- May understand words like, "No", "Mama" and "Dada"
- May start to crawl

10 Months
- Recognizes everyday sounds
- Can often pick up things with thumb and pointer finger
- May start calling parents "Mama" or "Dada"

11 Months
- Looks and listens at the same time
- Recognizes and points to objects
- May begin to hold onto furniture while walking

12 Months
- Loves feeling different textures, like running water
- Understands one-step commands
- Can probably sit for long periods of time
- Looks and listens at the same time—no wonder story time is so fun

Table 5. Developmental milestones for the 1st year of life

When communicating with a child, it is necessary to identify how the child's movements and speech are developed; what relationships the child has with adults and other children; what are his characteristics; does the child finish the job he has started; whether it helps other children; whether it gets satisfaction and joy from independent actions; whether it knows what toys can be used and how to handle them. It is necessary to identify the causes of the deterioration of the child's mood. It is interesting to keep track of the activity of the child for 15-20 minutes, recording everything that he did, what he said. The analysis of the obtained results provides a specific material for the characteristics of the child, allows you to individualize the use of physical and mental education.

Age	**Behavioral reaction, features of motor development,features of voice reactions and speech development,features of sensory education and mental**
1month	Wakes up if hungry or wet, Quickly falls asleep.The cry is loud, clear, with a short, inhale and an elongated exhalation. Short-term fixes it looks at the object and follows it. On the voice of an adult, stops or changes the crying.Lying on his back, he briefly fixes his head. Symmetrical increase in flexor tone, overcome with passive movements
2month	A clear rhythm of sleep and wakefulness.Falls asleep immediately. Calm wakefulness (if full and dry).

	Smiles when addressed.The cry is intonationally expressive.Initial gullies.Monitors the toy moving in a horizontal plane.Listens to sounds.Lying on his stomach, he keeps his head in an upright position, but not constantly.Spontaneously, symmetrically withdraws the arms at the shoulder joints and raises them to a horizontal level. Resists passive foot movements
3month	Actively awake, enlivened by communication.A cry with distinct intonations, a singsong hum.Smoothly follows the toy in all directions.Turns his head and eyes to the source of the sound. Directs the hands to the object.In an upright position, he holds the head well.Spontaneously, symmetrically,he pulls his hands to the sides.Slightly resists passive foot movements
4month	An indicative reaction to communication precedes the revival.Sing song humming and laughter.He reaches for the toy. He looks at his hands.Searches for and finds the sound source in space.Lying on his back, when stretching his arms, he raises his head.Turns from the back

	to the side performs passive and voluntary movements in full
5month	The indicative reaction is replaced by a quickening or a reaction of fear.Sing song humming with strings of sounds,laughter, whimpering.Looks from one object to another.He reaches for the toy and grabs it with both hands. Adequately reacts to the mother's voice.Lying on his stomach, he leanson his outstretched arms, on one hand.On the back, when pulled by the hands, it reaches for the hands.Confidently turns over from the back to the side
6month	A clear orientation reaction, at the sight of the mother, the reaction of "animation", considers the surrounding objects and people.Short babbling sounds.Grabs the toy from either side.Holds an object in each hand.Actively monitors others.Sits.Lying on his back, he sits down or pulls himself up by the hand.Keeps your feet on the weight while lying on your back
7month	Carefully examines adults before entering into communication.The fear reaction is replaced by cognitive interest.Distinguishes between

	"friends" and " strangers".Active babbling.Recognizes the voice of loved ones.Moves the object from hand to hand.Pats the toy with his hand.Sitting, sitting, crawling on his stomach, standing with support
8month	Comes into play with adults.He speaks with gestures and babble.Good at distinguishing between "friends" and " strangers".Active intonation-expressive babble.Repels objects.Throws knock an object on an object manipulates 2-3 objects distinguish faces people who know their name.He sits down and sits without leaning.He gets down on all fours.Grabbing the support, he kneels down
9month	Different emotional reactions when coming into contact with the mother of the mother.In babbling, a variety of sound combinations, intonation-melodic imitation of the phrase.Responds by acting on verbal instructions.Looking for a hidden toy.Picks up small objects with two fingers.Maintains balance while sitting while manipulating toys.He stands up, grabbing the support.Steps over with the support of the hands

10month	There are reactions of displeasure to various situations.The voice signals the needs.Plays with adults imitate gestures.Imitation of sounds and syllables, babbling.Imitative hand movements — "goodbye".Puts his fingers in the holes under the control of vision.Shows the other person's body parts.Fingers grab toys.It stands on its own.Walks with one hand on the support
11month	It responds adequately to the word "impossible".Fulfills some requests. Selectively treats others.Understands the names of individual items.Says the words " mom", "ba-ba", "de-da",etc.He throws the toys out of the bed, puts his fingers in the holes by touch.Makes imitative movements ~ flips through the pages, "starts" the car.Distinguishes between the parts of his body.Confidently stands without support.Crouches walk, holding on with one hand, takes several steps without support
12month	Communicates with adults by voice, using sound combinations.Obeys some requests.Draws attention to the speaker's face.Speaks 5-6 babbling

	words, the intonation of the request is expressed.Puts one item into another.Opens a box, a drawer. Recognizes images.Uses the spoon for its intended purpose.Walks without support, squats, and stands up

Tempering. Hardening is understood as a system of measures that provide an increase in the body's resistance to adverse environmental factors (temperature changes, unfavorable epidemiological situations, stressful situations, etc.) by systematic dosed exposure to natural factors. The most important means of hardening are natural factors: air, water, and sunlight.

The essence of tempering consists primarily in the training of thermoregulation mechanisms.With this systematic hardening, the body's responses to hypothermia are improved, weather sensitivity is normalized, and children are less likely to develop colds.

It is possible to carry out hardening at any time of the year, but it is better to start in the warm period of the year and continue systematically throughout the subsequent period. Air baths should precede water bath's solar procedures. It is necessary to start hardening in the absence of an acute disease or exacerbation of a chronic one.

Rules of tempering. When performing tempering activities, the following three rules should be observed:: 1) individual approach to the choice of hardening agent for each child; 2) injection should be carried out sequentially, with a gradual increase in the time or intensity of exposure to the hardening factor; 3) hardening should be carried out systematically.

Hardening air-air baths, which are carried out at rest or in motion (on the veranda, the area for walking). Air baths at rest are shown mainly to young children, starting from the 2nd-3rd week of life, at a room temperature of 22 °C. At first, the child is undressed for 1-2 minutes 2-3 times a day, then the procedure time

is gradually increased to 15 minutes a day, by the end of the first year of life, the air temperature can be reduced to 16-17 " C.

The most popular water hardening procedures (Fig. 29), which are carried out in the form of washing, wiping, general and local dousing.

Rubdown is carried out for children older than 6 months. They start dry wiping, then proceed to wipe with a wet mitten. The sequence of wiping: the upper limbs — from the hand to the shoulder, the lower ones-from the foot to the hip, chest, abdomen, back. After wiping, each area of the body should be rubbed with a towel until redness. The water temperature should first be 33-35 °C, then it is reduced by 1-2 °C, in the next 2-3 days - to 28-30 °C for children under 1 year, to 25-26 °C - for children aged 3-6 years up to 16-28 °C - for school children.

Dousing start with 1-1. 5 years from a jug or under a shower with water at a temperature of 33-35 °C, then gradually reduce the water temperature to 27-28 °C, and for preschool children-to 22-25 °C. The procedures are carried out in the bathroom or shower room. During the procedure, the head is not doused. The water jet should be strong, and the handle of the hose should be kept close to the child's body (20-30 cm).

first of all, pour on the back, then the chest and stomach, last of all — the left and right shoulder. After the procedure, the child is wiped dry. Local dousing dousing the legs, torso to the waist, etc. After dousing, the feet of the feet are rubbed with a towel until redness. The water temperature is gradually reduced from 30-32 °C to 16-18 °C. An effective procedure is contrasted foot baths, during which cold and warm water are always used. A similar procedure can be used in children with sufficiently pronounced signs of adaptive stability. Fill two basins (or buckets) with water: one with water at a temperature of 37-38 °C, the other-3-4 °C lower.

Figure 29. Water hardening procedures

a-washing; b-wiping; c — dousing the feet; d-showering.

It is necessary to pour such an amount of water that it covers the legs to the middle of the shins. The child alternately immerses his feet in a basin of warm water for 1-2 minutes, and then for 5-10 seconds with cold water. The number of alternate dives in the first days is 3-4, in the future — up to 6. Increase the length

of time of immersion of the limbs in a basin with cold water to 15-20 s. Finish the procedure by immersing your feet in cold water. After the procedure, the legs grow until the appearance of a slight pinkness of the skin. Usually, foot baths are done either immediately after sleep or in the afternoon between 17 and 18 hours, during the most active period of the child.

They also use general contrast dousing with water of different temperatures (colder and more ordinary, which the child is used to).

In recent years, it has become popular to harden infants by swimming. In the absence of contraindications, this type of hardening can be used from the age of 3. Classes are usually organized in children's clinics, conducted by nurses. Special cork devices are used to teach swimming in the bath or pool. Systematic swimming exercises cause children to have pronounced positive emotions, have a beneficial effect on their growth and development.

It should be remembered that swimming in the river or sea can be started from 3 years, and the water temperature should be at least 22 °C.

Tempering with sunlight is carried out carefully, as overheating of the body and heat stroke are possible. For tempering infants, only reflected or scattered light is used sun rays. For a child over 1 year old, such procedures are still recommended only in the morning hours from 9 to 11 hours. The duration of the sunbath is initially a few minutes, then it is brought to 10-20 minutes. A white hat is always worn on the child's head. It is better to use scattered sunlight.

QUESTIONS

1. **What is the work of mental education of children?**
2. **What examples of games and activities can you give for children?**
3. **What principles are used when composing a set of gymnastic exercises?**

4. **What are the features of the daily routine for children of different ages?**
5. **What is the control of the child's activities by the medical staff?**
6. **What measures are taken to prevent disruptions in the behavior of children?**
7. **What are the massage techniques?**
8. **List the three basic rules of tempering?**
9. **What are the features of the technique of conducting air baths, water procedures, and sunbaths?**
10. **Make a set of exercises for children aged 1, 3, 6, and 9 months.**

CHAPTER 10

PATIENT CARE AND SUPERVISION WITH HIGH BODY TEMPERATURE

In children, in comparison with adults, an increase in body temperature (hyperthermia) is observed more often, which is associated with the insufficient development of the thermoregulation center in them. An increase in body temperature can occur against the background of acute infectious diseases (acute respiratory viral infections, pneumonia, intestinal infections, etc.), with dehydration, overheating, and damage to the central nervous system etc.

The normal body temperature measured in the axillary area of a child over one year old or in the femoral fold in a child under one-year-old is 36-37 °C. Temperature oral cavity and rectum (anal temperature) - 1 °C higher.

Thus, if we evaluate the most common method of measuring body temperature in children in the submachine region, then the body temperature of 37-38 °C is called subfebrile, 38-38. 9 °C — febrile,39-40.5 °C — pyretic (from the Greek pyrites — heat), above 40.5 °C — hyperpyretic.

In the development of hyperthermia, there are three main periods: a gradual increase in body temperature, its peak, and decrease. Knowledge of these periods is necessary when providing care to patients. In the initial period, an increase in

body temperature is accompanied by chills, headaches, and deterioration of the general condition. An increase in body temperature in children during the first year of life can often be preceded by vomiting.

During this period, the child should be carefully covered with a blanket,

apply a warm hot water bottle to his feet, drink strong tea, the room where the child is located should not be draughty.

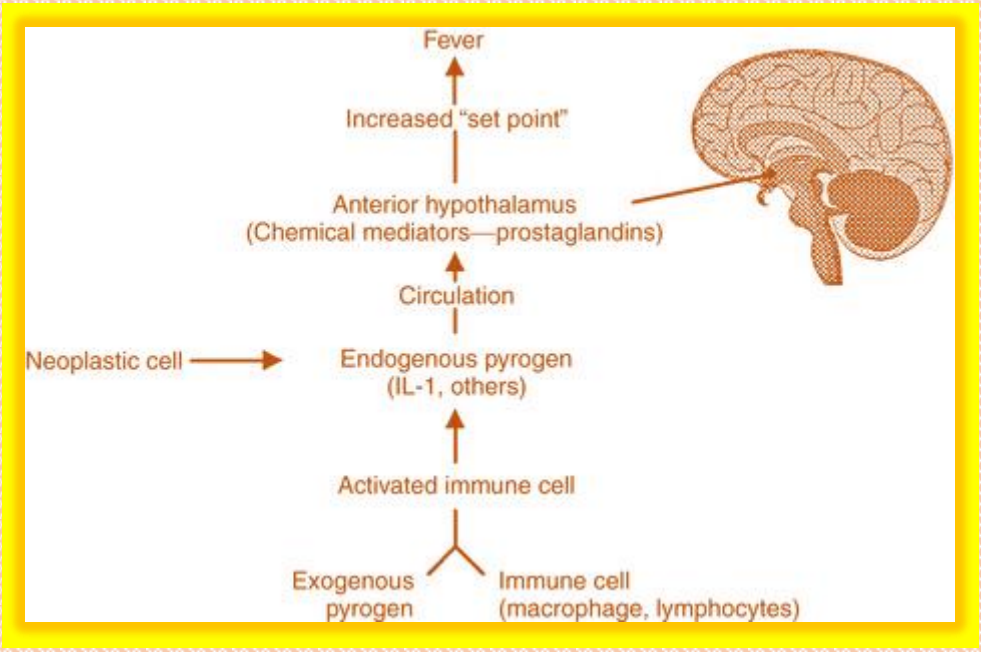
The period of maximum increase in body temperature is characterized by a deterioration in the general condition: there is a feeling of heaviness in the head, a feeling of heat, sharp weakness, aches throughout the body. More often than in adults, there is anxiety, which is more pronounced, often there are convulsions. Delusions and hallucinations are possible. During this period, you can not leave the child alone, as he may fall out of bed, hit, and so on. In such patients, an individual post of a nurse is established or constant monitoring is carried out. About the deterioration of the child's condition and the progressive increase in body temperature, the post nurse should not slowly inform the doctor.

The child during the period of maximum increase in body temperature should be frequently and abundantly watered: give liquid in the form of fruit juices, fruit drinks, mineral waters. If the body temperature rises above 37 °C, an additional injection of 10 ml of liquid per 1 kg of body weight is required for each dose. For example, a child is 8 months old with a bodyweight of 8 kg at a temperature of 39 °C, it is additionally necessary to give 160 ml of liquid.

In case of dry mouth and cracks on the lips, you should periodically wipe your mouth with a weak solution of sodium bicarbonate and lubricate the lips with new oil or other fat. If the headache is severe, then put an ice pack on the forehead through a folded diaper or put a cold compress. The medical nurse should make sure that the room is warm. It is necessary to periodically determine the pulse and blood pressure.

As therapeutic measures for hyperthermia, physical and medicinal products are used (Fig. 30). To increase heat transfer, air baths are used, blowing the child's body with a fan, wiping the skin with an alcohol solution, cooling the head and

areas of the body where large vessels are located close (the liver area, the upper third of the front surface of the thigh), using a bubble of ice or cold water. Enemas with cool water (from 10 to 20 °C) are also used, which is administered through a gas outlet tube of 20-150 ml for 2-5 minutes, depending on the age. The end of the tube is clamped, then after 2-5 minutes the clamp is released, and the remaining water is removed. The procedure is repeated until, until the body temperature drops to 37.5 °C.The pathogenesis of hiperthermia is given below:



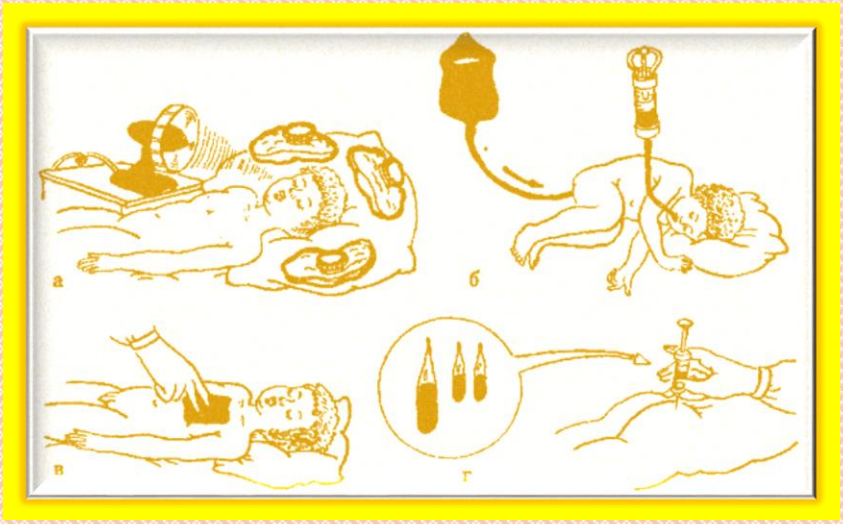


Fig. 30. Help with hyperthermia, a- covering the head with ice bubbles; b-gastric lavage introduction of cool water into the rectum, c-wiping the skin with a spiracular solution or ether; d-administration of medicines.

Carefully make sure that the volume of the injected liquid does not exceed the volume of the withdrawn liquid. In addition, gastric lavage with a cool (18-20 °C) isotonic solution of sodium chloride is recommended. Intravenous administration of 10-20 ml of 20% glucose solution, cooled to a temperature of 4 °C, is indicated, drugs (paracetamol, Analgin) are used. The administration of medicinal products is allowed only on the prescription of a doctor. The period of decrease in body temperature can be critical or lytic. A rapid drop in body temperature (from 40 to 36 °C) is called critical. At the same time, there is a sharp decrease in vascular tone and blood pressure. The pulse becomes weak, the thread is visible. The child develops weakness, excessive sweating, and the limbs become cold to the touch. This state, called a crisis, requires emergency measures. The patient is warmed, hot water bottles are applied to the body and limbs. Give strong warm tea. Due to excessive sweating, the child must be changed into clean and dry underwear, previously dry after wiping the body, especially the creases. If required, I am also provided with the bed linen. A gradual decrease in body temperature, called lytic, is accompanied by slight perspiration and moderate weakness. The child falls asleep quietly. Wait The nurse makes sure that the patient is not woken up, as sleep restores strength.

A high-temperature child needs to be prescribed an appropriate diet. Taking into account the decrease in appetite, it is necessary to feed the sick child more often and in fractional portions, reducing the amount of animal protein in the diet.

When caring for patients with fever, carefully monitor the condition of the skin and mucous membranes, take measures to prevent bedsores. To meet the natural needs of the ship and the ducks are served in bed.

Sunstroke occurs when the body is generally overheated as a result of the influence of external thermal factors. Heatstroke occurs in a child who is in a poorly ventilated room with high air temperature and humidity. Warm clothing and non-

compliance with the drinking regime contribute to heatstroke. In infants, heatstroke can occur when wrapped in warm blankets, when a baby cot (or stroller) is located near a central heating battery or stove. Emergency care consists of the fact that the patient is urgently taken to a cool place where fresh air is provided; the child is undressed, given a cold drink, and a cold compress is placed on the head.

Sunstroke occurs in children who are exposed to the sun for a long time (walking, working in the field). Emergency help for sunstroke is similar to the help provided to patients with heatstroke. In severe cases, urgent hospitalization is indicated.

QUESTIONS

1. What is hyperthermia?
2. What kind of help is provided to a child during a period of increased body temperature?
3. How to calculate the additional amount of liquid, that should be given to a child with a body temperature of 39 °C (the child's body weight is 30 kg)?
4. Under what conditions can heat stroke occur in children of the first year of life?
5. What kind of emergency care is provided to a child who has received a sunstroke?

CHAPTER 11

CHILD CARE AND SUPERVISION WITH SKIN DISEASES

Skin lesions are more common in young children. A nurse should know the specifics of skincare and be able to provide qualified assistance. Skin lesions in children that require medical care should include eczema, sweating, purulent or fungal lesions, and diaper rash.

Eczema is the most common skin disease of allergic origin in children. It is manifested by redness and puffiness of the skin (most often) of the face, a large

number of microvesicles (small bubbles), wetness, followed by the formation of crusts and peeling. Often, the scalp, ear wounds, neck, and trunk are affected. During care, special attention is paid to the nutrition of the child and mother. The diet excludes foods that can cause an exacerbation of the disease (all identified allergens), limits sweets and pickles.

Allergens are most often cow's milk, eggs, fish, meat, chocolate, nuts, some vegetables, and fruits (strawberries, oranges, carrots). For the removal of allergens, it is important to control the body's reaction to food. For this purpose, they keep a food diary, which records all the foods eaten by the child and the nursing mother, the time of feeding, the nature of skin rashes, etc. In children who are breastfed or artificially fed, the initial signs of sensitization (increased sensitivity) to various products, especially cereals, may occur in the first weeks and months of life. Allergic rashes in the form of skin eczema are observed- diseases (all identified allergens), limit sweets and pickles.

It is recommended if milk mixtures prepared on decoctions from cereals are used.

Products that are contraindicated for the child should be marked in the nursing list and listed in the medical care of the inpatient patient. Careful observance of the daily routine, prolonged exposure to the air (in the summer, in the absence of photodermatosis, it is recommended to take sunbaths), sufficient and deep sleep are recommended.

In the case of wet eczema, lotions are prescribed as a local treatment — a solution of the drug in distilled water. Gauze napkins made of 4-5 layers of gauze, soaked in the prescribed medication, are applied to the affected area of the skin. Napkins are changed every 15-20 minutes. This procedure provides a reduction in inflammation and wetness.

After the disappearance of acute inflammatory phenomena of the skin, they switch to the use of talkers-suspensions, which contain talc or zinc. Before use, the chatterbox is shaken and applied with a cotton swab to the affected area, partially capturing healthy body tissues.

A good effect is given by the use of emulsions (septicidal, neomycin), pastes (zinc, naphthalene, ichthyol, tar, etc.), and ointments (diphenhydramine, etc.). All these forms are used during the period of inflammation and in the absence of wetness. Ointments containing hormones are given to children of the first year of life under strict medical and nursing supervision.

Children often suffer from itching. To protect the skin from scratching, the child is put on mittens, sew up the arm, and in some cases, cardboard splints are applied to the area of the elbow bend, which is reinforced with bandages so that the child can not bend the arms at the elbow joints.

When eczema is prescribed by a doctor, therapeutic baths are also carried out, which can be general or local. Baths are prescribed every other day or less often. These baths differ from the hygienic ones in that special medicines are added to the water (starch, herbal infusion, etc.). The most common baths are starch, soda, with an infusion of the grass of the turn or chamomile. A starch bath softens the skin and soothes itching. To prepare such a bath, 100 g of potato flour is diluted in cold water and added to the water prepared for the bath. A soda bath (1 tablespoon sodium bicarbonate per bucket of water) has the same effect.

A bath with an infusion of the grass of the series is a common remedy for the prevention and treatment of skin diseases. For a one-year-old child, it is recommended to add a glass of infusion of the series to the bath. The infusion is prepared at the rate of 1 tablespoon of herbs per glass of boiling water (pour for 10 minutes).

A bath with chamomile infusion is used for the treatment of inflammatory phenomena. The principle of preparation of this bath is the same as the bath with an infusion of the grass of the series.

For dry forms of eczema, which are less common, you can use baths with tannin (20 g per bath), a decoction of oak bark (200 g per 1 liter of water), or a solution of potassium permanganate (0.3 g per 10 liters of water).

Sweating is a common skin lesion in newborns and infants; it develops as a result of irritation of the excretory ducts of the sweat glands. It usually occurs when the

hygienic requirements for skincare are not met. To prevent sweating, you should use rational clothing, taking into account the ambient temperature. The temperature of the room where the child is located should not exceed 22 °C.

In the presence of sweating, it is useful to make baths with potassium permanganate. Such baths have a disinfectant effect.

Dying effect. They are used not only for sweating but also for various pustular skin lesions and diaper rash. A 5% solution of potassium permanganate is poured into the bath until a weak pink color appears, the bath time is 5-7 minutes.

Sweating can be complicated, especially in children of the first year of life, by the development of pyoderma.

Pustular skin lesions (pyoderma) include the group of the most common dermatoses in children, especially at an early age. The causative agents of pyoderma are staphylococci and streptococci. In children, streptococcal pyoderma (streptodermit) predominates, except for the neonatal period, when there is mainly staphylococcal pyoderma (staphyloma). The entrance gate for infection in a newborn is the navel area, as well as any, even very minor skin damage that easily and imperceptibly occurs during hygienic procedures (washing, swaddling), feeding, etc. The appearance of pyoderma is promoted by contamination of the skin with irrational hygienic care.

Streptoderma is characterized by superficial localization of pustules, their tendency to peripheral growth. Pustules are usually located in the area of hair follicles, sebaceous, and sweat glands.

Local treatment for pustular skin lesions depends on nature (streptodermya, staphylodermya) of the pain, the depth, and prevalence of the lesion.

Pustular elements, erosions are treated with a 1 % solution of aniline dyes (diamond green, methyl violet, gentian violet), in school-age children-with disinfectants (5% streptocidal ointment, 1-2 % yellow mercury ointment, "Oxycort", "Locacorten"). After the removal of purulent crusts, streptocide powder or 1% erythromycin or 5% polymyxin ointment, etc., are applied to the affected areas.

Healthy areas around the affected skin are treated with 2 % salicylic-boric or camphor alcohol, for which a cotton or gauze tampon, screwed on a tweezer or wooden stick, is moistened in alcohol.

In medical practice, it is very often used for binding with Vishnevsky ointment, especially in the presence of inflammatory infiltrate. To do this, use sterile clothes, consisting of 5-6 layers of gauze, which is smeared with Vishnevsky ointment with a wooden or glass stick and placed on the affected area of the skin, then covered with a compress paper, and then with cotton wool. The cotton layer should be 2-3 cm wider and longer than the gauze layer. The entire bandage is strengthened with a bandage or kerchief.

In case of abscesses after opening, it is necessary to apply bandages with hypertonic solutions. Sterile gauze napkins are impregnated with a hypertonic solution (8-10 % sodium chloride solution or 25 % magnesium sulfate solution, etc.) and applied to the affected area. The skin area is covered with a layer of hygroscopic cotton wool and fixed with a bandage.

Newborns and children of the first year of life with purulent skin diseases (pyoderma, abscess) should be isolated, and a separate hospital should be allocated for their care. Constant prevention of staphylodermya in newborns is necessary. So, the wards in which newborns are born should be systematically treated with a mercury-quartz lamp(ultraviolet irradiation), disinfectant solutions.

If a child has pustular skin diseases, then it is necessary to sharply limit the intake: no sugar-no chocolate, no candy! Carbohydrates in large quantities enter the skin cells and form a breeding ground for pathogenic microorganisms, the main causative agent of skin infections. Restrictions on sugar intake should be observed by breastfeeding mothers.

Diaper rash — redness in the skin folds, buttocks, perineum in infants, especially the first months of life. Diaper rash is most cases indicates improper skincare, although individual predisposition should also be taken into account. So, diaper rash occurs more often in children with excess body weight. In case of diaper rash, free swaddling and timely changing of diapers are recommended. Do not use

artificial materials or oilcloth. If the diaper rash appears only in the form of redness the affected areas should be treated with zinc paste, sprinkled with powder containing zinc oxide, talc, lubricated with sterilized oil, or baby cream. Do not use vaseline oil, which sometimes causes skin irritation. The skin of the trunk and limbs is treated with oil-soaked hands, and the area of the anus is wiped with cotton wool. The powder should not be applied in a thick layer. Girls, when using powders, it is necessary to close the genitals, since the powder can get into the genital slit and cause an inflammatory process. It is not allowed to use oil (or cream) and powder at the same time, as this will form a lump-and, which, accumulating in the folds of the skin, cause irritation, wetness, abrasions. You can use creams produced by the industry ("Children's", "Spermaceti", "Lanolin", etc.).

When erosions appear on the skin, ointment bindings are used (with iruxol, Vishnevsky ointment, syntomycin emulsion, etc.), when powdering with combined means. Therapeutic ointments and powder are applied to the wound surface in a thin layer through a sterile moistened gauze bandage, which is fixed with a band-aid; the procedure is repeated 2-3 times a day and changed until complete healing. Fungal diaper rash is treated with a 1 % clotrimazole, miconazole.

Figure 31. Diaper rash

Treatment with, etc. A good effect of the affected areas of the feet in the treatment of skin diaper rash with the help of an ultraviolet ray of a high-precision aerosol, the treatment of the affected areas with subsequent aeration.

Scabies is a parasitic skin disease that causes my scabies mite. The male lives on the surface of the skin, and the female makes a furrow under the skin, in which she lays eggs. Scabies is characterized by severe itching, especially at night and in the heat, mainly on the palms, wrists, under the arms, in the navel area, on the abdomen on the genitals. This is a contagious disease that is easily transmitted through household contacts. The diagnosis of scabies is confirmed by the detection of a tick in a laboratory study, although it is necessary to treat it with anti-scabies in all cases of suspicion of this disease. The treatment consists of rubbing it into the skin, rather than in the affected areas (except for the skin of the head, face, and neck) 20% water-soap suspension of benzilbenzoate twice for 10 minutes with a 10-minute break. Children under 3 years of age use a 10 % suspension. The procedure is repeated the next day. After the end of the rubbing, puts on clean underwear and a decontaminated upper clothes. Bed linen should also be changed. Before treatment, the child thoroughly washes his hands with warm water and soap; after treatment, the hands should not be fed for 3 hours. From modern means, an aerosol "Spragal" is prescribed. Treatment is carried out mainly with others, to leave the drug to act all. The drug is sprayed all over the body, except for the face and the hairy part of the head. Copiously spray the most exposed areas (fig. 31), then put on clean clothes, you can not wash for 12 hours. Newborns and young mothers are sprayed with a saline cloth over their mouths and nose. If there are scratches on the face, they are covered with cotton wool soaked in spray. For changing diapers in infants, you should additionally spray the entire buttock area. After 12 hours, the child is washed with soap, and the skin is well washed with water (preferably with a shower).

To effectively stop scabies, you should:

- treat children complaining of itching with an anti-itching drug;
- treat at the same time all those who live with the child under the same roof;

- disinfect clothing and bedding to avoid re-infection.

In case of fungal lesions, the skin and the mucous layer of the oral cavity are treated with a 1 % aqueous solution of Viride nitens or batrafen, Lamisil.

For herpetic skin lesions characterized by the appearance of itchy blisters and erosions of the skin and mucous membrane, antiherpetic agents are used: antiherpes, "Gevizosh" ointment, "Zovirax" ointment, etc. If you use these tools immediately the appearance of the harbingers of the disease — itching, burning, tingling, then rashes can be avoided.

QUESTIONS

1. What are the rules of baby skincare?
2. What is the skincare of a child with diaper rash?
3. How are lotions used?
4. How are chatterboxes used?
5. How to prepare a bath with potassium permanganate?
6. How to prepare a starch bath?
7. How to prepare a bath with grass or chamomile?
8. How are pustular elements treated on the skin?
9. How to apply a hypertensive bandage?
10. How are fungal skin diaper rash treated?
11. What is the treatment of scabies in children?
12. How are herpetic elements treated on the baby's skin?

CHAPTER 12

CHILD CARE AND SUPERVISION WITH RESPIRATORY DISEASES

Respiratory diseases occupy the first place among all diseases that occur in childhood. Most often, children suffer from acute respiratory viral infections, pneumonia, bronchitis, and somewhat less often allergic diseases (respiratory allergic infections, bronchial asthma, etc.).

Upon admission to the hospital, children with respiratory diseases are placed in bright, spacious, and well-ventilated wards. Infants, especially newborns, are hospitalized in boxes or semi-boxes for 1-2 beds. The air temperature in these rooms should be 18-20 " C, without sharp fluctuations. Drafts are not allowed. Ventilate the wards and boxes at least 5-6 times a day in winter, and other times of the year are much more common. Beds should be clean and comfortable, and if necessary, separated from each other by portable screens. Wet cleaning wards and boxes are held daily. To facilitate breathing, lift the head end of the bed or put a pillow (a rolled-up blanket) under the child's back. Infants are taken in their arms, often changing their position in bed. Pay attention to the clothes, which should be warm, comfortable and not make it difficult to breathe. It is necessary to carefully care for the skin and mucous membranes, as well as daily care for the nasal passages, auricles, oral cavity, and hair.

The food should be easily digestible, suitable for culinary processing. As a rule, in sick children, the appetite is reduced, so the volume of food should not be large, and the amount of liquid, on the contrary, is increased. Give the liquid mainly in the form of fruit drinks, fruit juices, compotes, sweetened water.

Of great importance in the treatment and care of children with respiratory diseases are strict and regular implementation of medical appointments, as well as the provision of patient care, including emergency care. During the recovery period, the child is allowed to prepare lessons, non-burdensome classes, and games.

In case of a runny nose, a nasal toilet is performed before feeding, cleaning the nasal passages with a cotton flagellum moistened with vaseline or other oil. In some

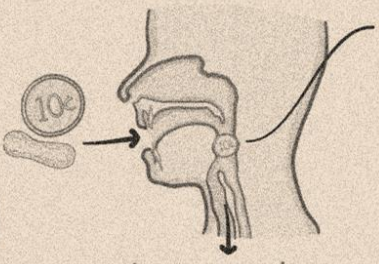
cases, mainly in young children, mucus from the nasal passages and oral cavity is removed using an electric suction device or device. If the child has a runny nose, then after cleaning the nasal passages, if necessary, prescribe the medication prescribed by the doctor.

In the case of laryngospasm, the child should be given immediate help. Laryngospasm occurs due to the extraordinary closure of the glottis. The child stops breathing, the skin turns blue, then cyanosis is replaced by pallor, and drops of sweat appear on the face. The attack ends with the relaxation of the laryngeal muscles, the rebbe Nok takes a deep breath, accompanied by a " hiccup", gradually, breathing is restored. With laryngeal spasm, it is necessary to spray the face with cold water, make a pat on the cheeks. If the breath is not restored, then the tongue is pressed down and pulled out. Urgently call a doctor and begin artificial lung ventilation (ventilator).

With hiccups, an involuntary breath occurs, which is accompanied by a peculiar sound caused by a sudden contraction of the diaphragm. Short-term hiccups can occur in healthy children due to the use of dry food; it is more often observed in diseases digestive and other systems (cardiovascular, central, nervous). If hiccups occur, give the child water or ask him to take a few deep breaths. Persistent cases of hiccups require the use of medications (tranquilizers) and mandatory medical advice.

FOREIGN BODY ASPIRATION

most common in YOUNG TODDLERS



lower respiratory tract

SYMPTOMS are MORE SEVERE

~ PARTIAL OBSTRUCTION
- * COUGHING
- * GAGGING
- * CHOKING
- * DROOLING
- * AUSCULTATION → INSPIRATORY STRIDOR

~ COMPLETE OBSTRUCTION
- * UNABLE to COUGH or SPEAK
- * PASS OUT

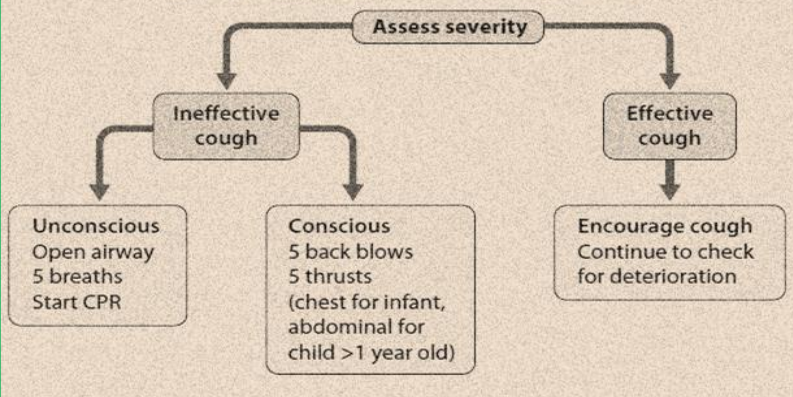
BASIC LIFE SAVING MANEUVERS

INFANTS < 1 yr

5 BACK BLOWS → 5 CHEST TII

Airway obstruction from foreign body

Management of a foreign body.



Abdominal thrusts using the Heimlich manoeuvre in older children to expel an inhaled foreign body. One hand is formed into a fist and placed against the child's abdomen above the umbilicus and below the xiphisternum. The other hand is placed over the fist. Both hands are thrust into the abdomen. This is repeated several times. The child can be standing, kneeling, sitting or supine.

In infants, back blows and chest thrusts are recommended to expel an inhaled foreign body. Abdominal thrusts are best avoided in infants as they may cause intra-abdominal injury.

Figure 32. Removal of a foreign body from the respiratory tract, a - in infants; b - in older children.

If a foreign body enters the nasal passage and the respiratory tract, medical personnel should quickly provide qualified assistance, as the slightest delay can lead to complete blockage and development of asphyxia (suffocation).

If a foreign body has got into the nasal passages, then you should help the child. To do this, one nostril is closed, the child is asked, having strained hard, to blow his nose. If a foreign body remains, then the doctor removes it from the nasal cavity.

If a foreign body enters the respiratory tract of an infant, turn it upside down (Fig. 32, a). An older child, if a foreign object cannot be removed when coughing, is placed by the nurse with her stomach on a bent knee, lowers the child's head, and lightly taps her hand on the back (Fig. 32, b). In any case, you must call the doctor on duty. If there is no effect, the child is taken to the intensive care unit for bronchoscopy.

Middle ear inflammation — (otitis media) is a complication of respiratory diseases, especially in young children. In catarrhal otitis media, a dry or semi-alcoholic compress is usually applied to the ear area, and "ear" drops are instilled that have analgesic and anti-microbial effects (otipax, etc.). In the case of purulent discharge from the ear canal, an appropriate toilet should be performed. To do this, the purulent contents are removed with a dry flagellum or a flagellum soaked in furacilin.

Children with respiratory diseases usually complain of shortness of breath, cough, and sometimes chest pain. In case of shortness of breath, which is difficult breathing with a violation of the rhythm and strength of the respiratory movements, the help is that the child is given an elevated position in bed. Under the back, put 2-3 pillows, free from heavy blankets and restrictive clothing. A constant supply of fresh air is necessary, according to the indications, inhalation, and oxygen therapy are carried out. When coughing, which can be both dry and wet with sputum separation, measures are taken to facilitate the discharge of sputum. Children with a dry cough are given a warm drink, such as milk with sodium bicarbonate

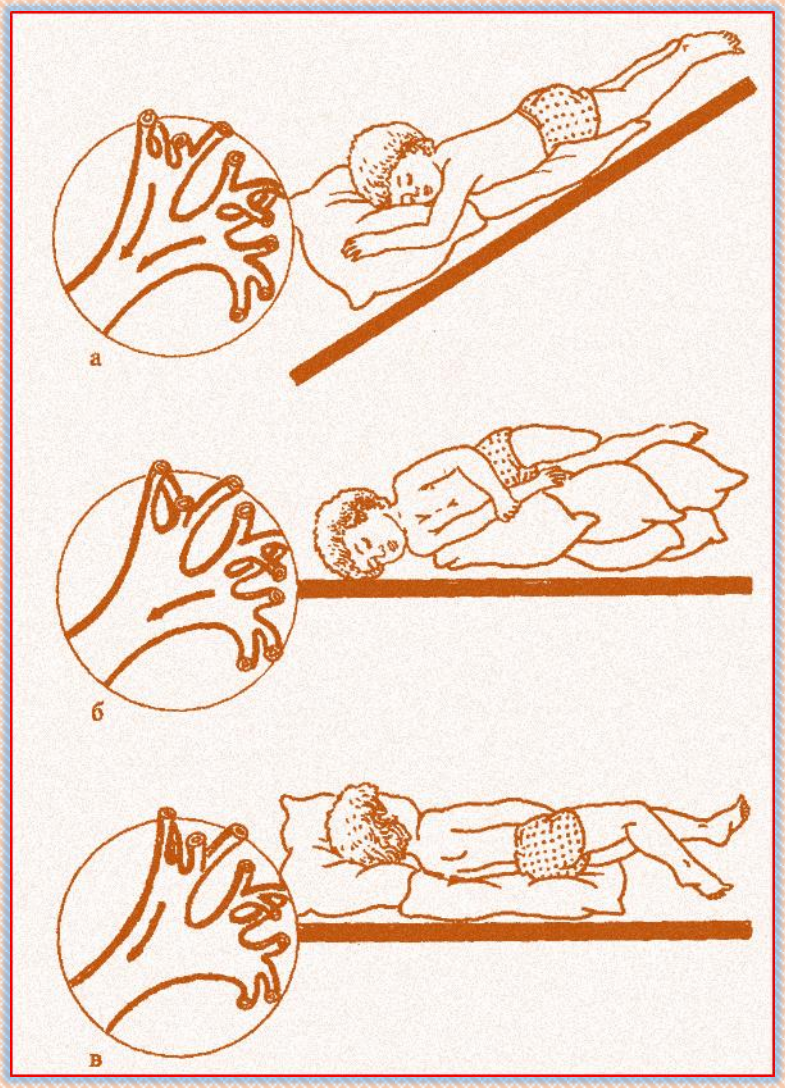
(drinking soda is added to a glass of warm milk on the tip of a knife). Also shown are inhalations of St. John's wort infusion (1 tablespoon of the herb is infused for 30 minutes in 1 cup of boiling water, then filtered and inhaled with a hand inhaler), gargling on a stand of eucalyptus. If a child has a wet cough, for better expectoration, give N-acetylcysteine(fluid-mucilaginosa), hexapneumin, infusions from the root of elecampane, Thermopsis herbs, mother-and-stepmother herbs, or Borjomi mineral water with warm milk. To reduce inflammatory changes in the upper respiratory tract, it is necessary to use mustard plasters, cans. Medicines aimed at suppressing the cough reflex (blue-code, stoptussin) are used only as prescribed by a doctor.

When sputum appears, the nurse should pay attention to the amount of discharge, consistency, smell, and color. The presence of fresh blood or its veins indicates pulmonary bleeding or hemoptysis. This information must be provided immediately with tell the doctor. For better sputum discharge, the so-called postural drainage is used: the patient is forced to position the body. In a unilateral process, for example, in the upper lobe of the lung, the patient is placed on a healthy side, in the lower lobe - on the stomach with the head end lowered (Fig. 33). In the drainage position. but do a chest massage by stroking, rubbing, kneading, and lightly pounding the back muscles. Postural drainage is carried out 2-3 times a day for 20-30 minutes. In toddlers, the stimulation of active coughing is achieved by irritating the root of the tongue with a spatula.

To improve breathing, prevent congestion in the lungs, the appearance of atelectasis, and other complications, children with diseases of the upper and lower respiratory tract, even in the acute period, are shown physical exercises. Starting position (I. P.) - vertically on the hands of the mass instructor. Rhythmic pressure on the child's back at the end of the exhalation with the movement of the palm from the neck to the lower back (4 times-Fig. 34, a).

I. P.-lying on the back. Rhythmic pressure on the chest at the end of the exhalation, its anterior and lateral surfaces, bypassing the sternum (Fig. 34,b).

I. P.-lying on his side. Rhythmic pressure on the chest, its side, and back surfaces, alternately on the left and right sides at the end of the exhalation (Fig. 34, c). The child should lie in a comfortable sleeping position.



In the case of influenza (acute respiratory virus the child is provided with rest, a bed rest, hot milk, and an alkaline drink (Borjomi). At high body temperature, cold is prescribed on the head, apply antipyretics. In the case of distracting procedures, mustard plasters are placed on the front surface of the chest, hand and foot baths are used.

Fig. 33. Postural drainage, a-both main bronchi; b-the left main bronchus; c-the right the main bronchus.

In the first hours of the disease, the patient's child, as well as children who were in contact with the patient, is instilled with interferon 2-3 drops in each nostril every 2 hours. In the case of uncomplicated flu, the child stays at home.

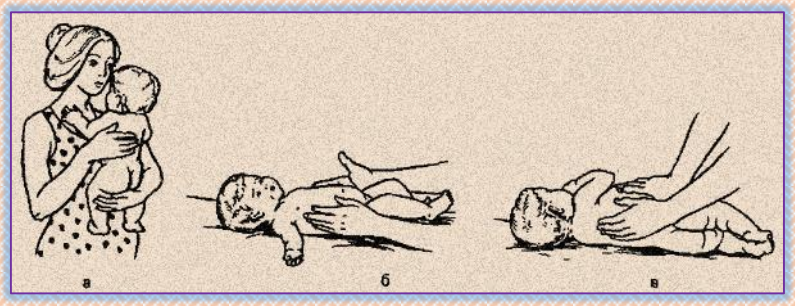


Figure 34. The position of the hands when pressing on the back (a), side (b), and back surfaces of the chest (c).

In the case of croup, assistance to the child is provided immediately. Being a formidable complication of ARVI, false croup is an acute stenosing laryngotracheitis and is most often observed in preschool children. Croup is indicated by the appearance, as a rule, in the evening or at night, of a paroxysmal barking cough shortness of breath. With the development of croup, you should not slowly call a doctor, provide emergency assistance: create a calm environment, provide fresh air, give a warm alkaline drink, conduct distraction local procedures (foot baths, mustard plasters on the upper chest). Inhalation of warm, moist air is effective. After emergency care is provided, urgent hospitalization is indicated. If suffocation develops, a ventilator is immediately performed. In acute respiratory failure, help for the key is to conduct oxygen therapy, respiratory and inhalation therapy, and ventilator therapy.

Oxygen therapy is the most effective way to eliminate or reduce arterial hypoxemia (low oxygen content in the blood). Various methods of oxygen therapy are used, which is carried out for a long time from several hours to several days continuously with a constant concentration of oxygen in the inhaled air, equal to 24-44 %.

Figure 35. Devices for oxygen therapy.a- humidifier and oxygen dispenser; b- automatic oxygen regulator in the inhaled air.

The most important condition for oxygen therapy is compliance with the rules of asepsis. When using nasal catheters (stearic), it is better to use double-curved cannulas made of soft plastic with two short extensions, which are inserted into the nasal passages and fixed with a band-aid. The supplied oxygen must necessarily be moistened, for which it is passed through stearic water. In addition, face masks are used that create a certain concentration of oxygen. Oxygen wards are not suitable for controlled oxygen therapy. Plastic stake packs and awnings for the head are more common. They can be equipped with an oxygen dispenser (suction device), which provides a certain concentration of oxygen (Fig. 35). Respiratory and inhalation therapy involves performing assisted artificial ventilation (AAV) in combination with inhalation therapy.

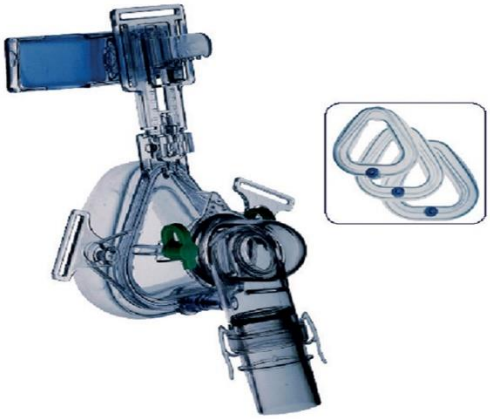
A

Full face mask

B

Total face mask

C



Nasal mask

D

Mouthpiece

E

Nasal pillows

F

Helmet

a

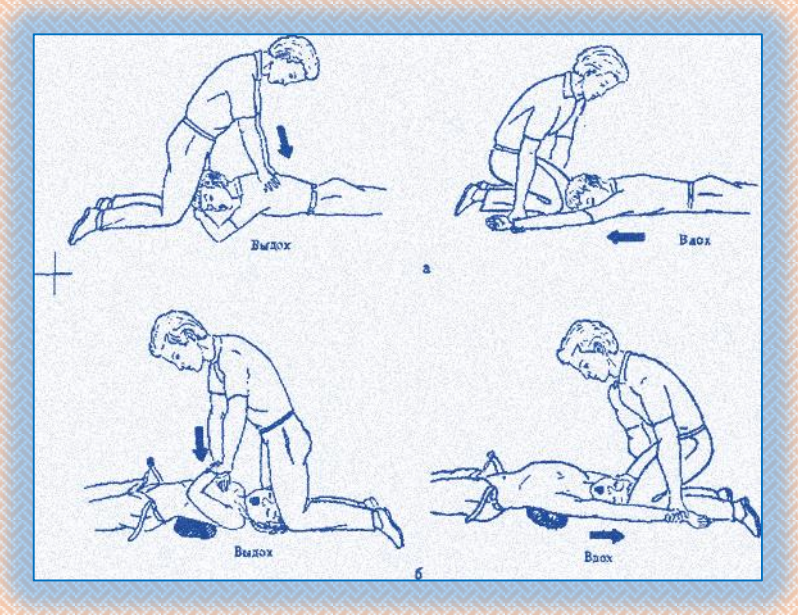
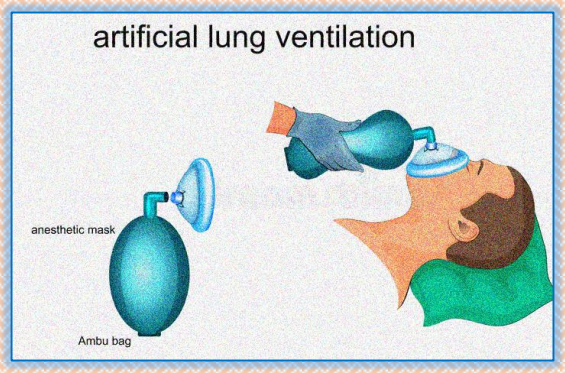


Figure 36. Artificial lung ventilation technique and devices.

Respiratory-inhalation therapy is of particular importance in the prevention and treatment of postoperative pulmonary complications. Artificial lung ventilation is used to maintain gas exchange in the body. To perform this procedure, the child must be laid on his back with his head thrown back to improve the airway; unbutton the clothes that constrain the chest. If there is vomit or mucus in the oropharyngeal cavity, then they are removed using electric pump. The contents of the oral cavity can also be removed with a finger, a napkin, etc.



Types of Artificial respiration

- 1) Prone – **Schafer's method** (Prone pressure Method)
- 2) **Holger Neilson's method** (Arm lift back pressure method)
- 3) **Sylvester's method** (Arm lift chest pressure method)
- 4) **Mouth to mouth** respiration

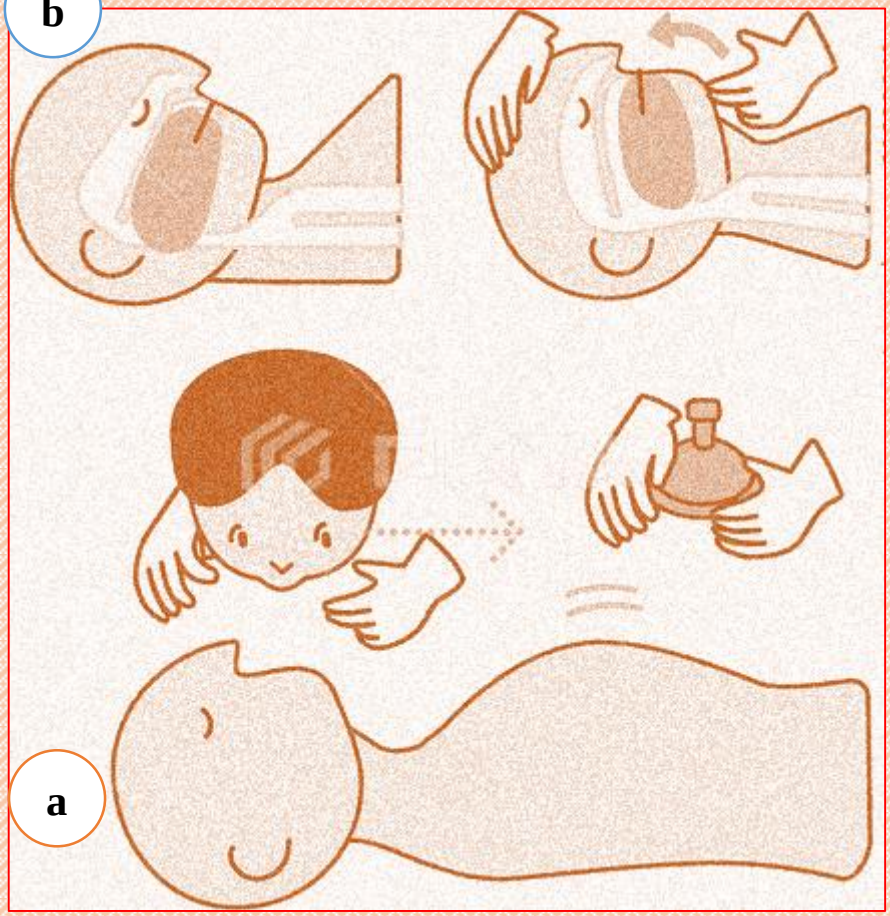
Figure 37. Manual methods of artificial respiration, a-the Holger-Nielsen method; b-the Sylvester method.

To ensure the free patency of the respiratory tract, the patient's head is thrown back as much as possible, if necessary, the tongue is fixed (Fig. 36, a, b). One hand is placed under the neck, the other is placed on the forehead and perform a ventilator in the "mouth-to-mouth" way (Fig. 36, c) or "mouth-to-nose" (Fig.36, d). With a

ventilator, the first method of conducting the manipulation takes a deep breath, presses his mouth tightly to the child's mouth, and blows air, while the nose is clamped with I and II fingers. Exhalation occurs passively due to the elastic structure of the baby's chest. In the "mouth-to-nose" method, the air is inhaled through the nasal passages. With both methods, inhale through the mouth and nose through a handkerchief or gauze. The frequency of ventilation should be at least 40 injections per minute in newborns and 20 in older children. If the affected child is unconscious and if he has a smashed face or is ill with polio, rabies, AIDS, tetanus, then a ventilator is performed with using the Hol Gera — Nielsen method (Fig. 37, a) or Sylvester (Fig. 37,b). The frequency of pressure on the shoulder blades (sternum) in school-age children 16-20 per minute, and in preschool children 20-30 per minute until the appearance of an independent breathing.

Figure 38. Ventilate with the help of breathing bag or by the arrival of a doctor with a mask.

In hospital setting to maintain the art for breathing, a breathing bag with a mas is used (type of Ambu). The bag is equipped with a valve, which, when pressed on the bag, automatically closes, and all the air enters the patient through the mask. The mask should cover the patient's nose and mouth tightly (Fig. 38b). Ventilation is performed by



rhythmic pressure on the bag with an interval of about 2 seconds for passive exhalation.

The criteria for the effectiveness of the ventilator are the movements (excursions)of the chest during inspiration, the "breathing" noise during exhalation, the disappearance of cyanosis, and the marbling of the skin. The question of whether it is advisable to carry out a manual ventilator or connect the patient to an artificial respiration device is decided by the doctor.

QUESTIONS

1. What are the features of care and compliance of sanitary and hygienic regimes in patients with respiratory diseases?
2. How is the nose toilet performed?
3. What is the help in case of ingestion of a foreign body in nasal passages and airways?
4. What is the help for shortness of breath, cough?
5. How is postural drainage performed?
6. What is the care of a child with pleural pain?
7. What should be the first-aid treatment for croup?
8. What is the care of a child with the flu?
9. How to perform oxygen therapy for a child with respiratory failure?

CHAPTER 13

CHILD CARE AND SUPERVISION WITH DISEASES OF THE CARDIOVASCULAR SYSTEM

The main elements of care for children with diseases of the cardiovascular system are the following: the creation of physical rest, compliance with the regime, proper nutrition, a water diet, as well as the use of medicines.

The regime for children with cardiovascular disorders is prescribed by a doctor depending on the severity of the disease and the degree of cardiovascular insufficiency: strict bed (1a), bed (1b), semi-bed (2).

With strict bed rest, the child should not get out of bed, care for him is carried out only in bed. It is better to put the child on a functional bed, so that, if necessary, it is possible to create comfortable positions for him. This is usually a half-sitting position. Measures for personal hygiene, feeding the child are carried out in bed. Physiological departures are carried out with the help of lining vessels and urinals (ducks).

The patient, who is assigned bed rest, can sit in bed, take food at the bedside table. Physiological departures are carried out sitting on a potty near the bed.

Semi-bed mode expands the engine the child's daily routine. First, it is allowed to eat at the table in the ward, and then in the dining room; physiological functions are carried out in the toilet. Walking with restricted movement is allowed.

The room where the patient is located should be spacious, bright, and well ventilated. The indoor air temperature should not exceed 18-20 °C. Some patients, especially those with congenital heart defects, periodically need oxygen therapy. Such patients should be placed inwards with a centralized oxygen supply.

With prolonged bed rest, the development of bedsores is possible, so careful care of the skin is necessary.

Every day, the skin is wiped with a solution of alcohol with warm water, or camphor alcohol. The bed should be comfortable, soft, it must often be re-laid, eliminating creases, removing crumbs from the sheet. Bathing the patient in the bath is possible only with the permission of the doctor. If the child is in a serious condition, the body is wiped with warm water in bed. Clothing should be light, do not squeeze the chest.

It is necessary to strictly observe the medical and protective regime, complete silence should be ensured in the ward and adjacent rooms. Nurses should monitor the observance of bed rest, transport children to procedures and examinations, monitor the general condition of children, their pulse, and respiratory rate.

The diet should be complete, with a high content of vitamins C and B, and salt restriction. Be sure to register the amount of liquid consumed diuresis. In the diet (diet No. 10), proteins and fats are somewhat limited. Food is taken 4-5 times a day, the last meal-no later than 3 hours before bedtime. If a child takes glucocorticoid hormones as a treatment, then he should additionally receive foods rich in potassium salts: raisins, dried apricots, black plums, potatoes, cabbage, etc.

Pulse and blood pressure measurement

The pulse is examined with two fingers on the radial, temporal or carotid arteries (Fig. 39). In children under 1 year of age, the pulse is usually determined on the temporal artery, and in children over 1.5 years of age, preference is given to the study of the pulse on the left artery. The pulse is determined at rest (it is possible during sleep), and the beats should be counted within a minute. If the pulse shocks follow one after another at the same time intervals, then such a pulse is called rhythmic. With unequal intervals of time between beats, they talk about an incorrect rhythm or arrhythmia. If an arrhythmia is detected, it is necessary to inform the doctor about it. The pulse data is displayed in the temperature sheet.

Blood pressure is measured using the amount of urine excreted from the body in a certain period.

Figure 39. Pulse detection, a - on the radial artery; b - on the temporal artery;

devices with spring pressure gauges-tonometers and mercury sphygmomanometers of Riva-Rocci (Fig. 40). There is a difference between systolic (maximum) and diastolic (minimum) blood pressure, i.e. the blood pressure on the vessel walls during systole and diastole. Normal values of blood pressure vary depending on the age of children, time of day, state of the nervous system, etc.

For an approximate calculation of blood pressure (in millimeters of mercury) in children older than 1 year, you can use the following formulas:

Systolic = 90+2n

Diastolic = 60+n, where « n » is the age in years.

You can measure blood pressure in the patient's sitting or lying position after 5-10 minutes of rest. On the bare shoulder above the elbow bend, a cuff is tightly applied. Above the place of pulsation of the ulnar artery the area of the elbow, the bend is applied with a phonendoscope. Gradually, the air is pumped into the cuff with a balloon, fixing the moment when the sound of blood pulsation disappears in the the vessel.

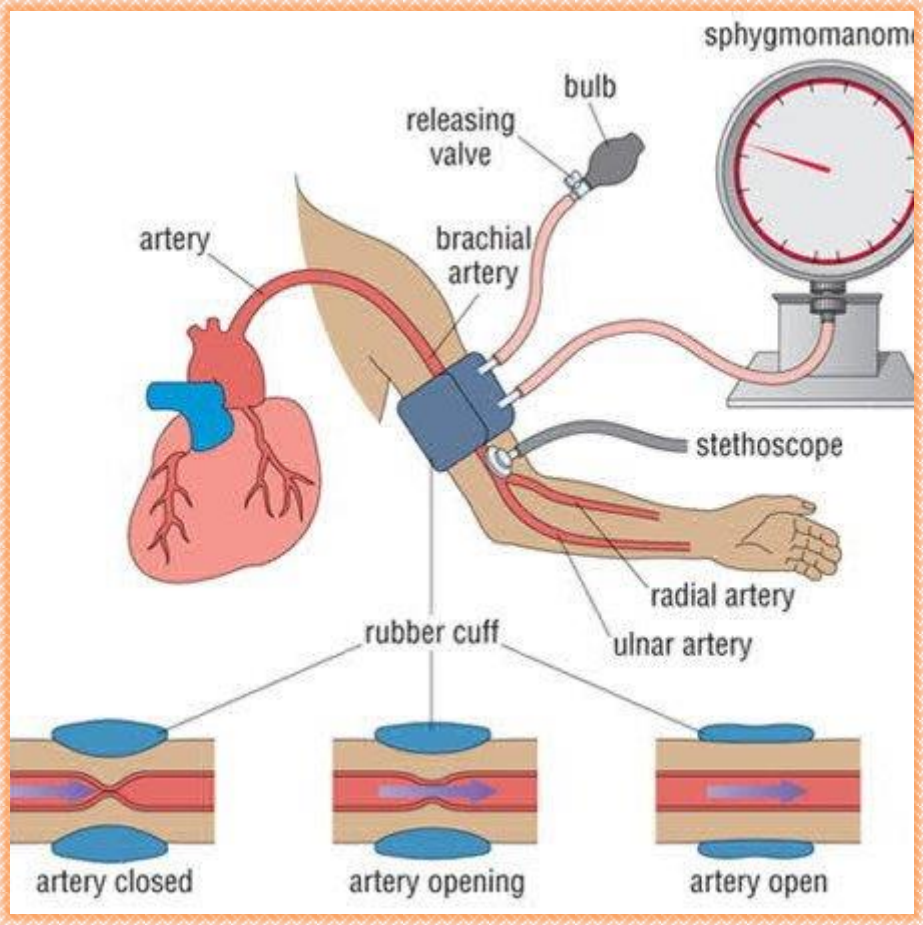


Figure 40. Blood pressure measurement, blood pressure monitor; mercury sphygmomanometer; correct application of the cuff.

After that, make a few more injection movements. Then you should gradually reduce the pressure in the cuff, opening the valve of the cylinder At the time of the appearance of sound shocks, the indicator of the pressure gauge is recorded. The first short, but a rather loud sound stroke corresponds to the value of the systolic pressure. With a further decrease in the pressure in the cuff, the tones gradually weaken. The moment of disappearance of the sound waves, which characterizes the diastolic pressure, is also recorded.

Providing emergency care. In diseases of the circulatory system, children can quickly develop heart failure with the appearance of venous congestion. The patient has palpitations, shortness of breath, which require assistance. For shortness of breath, the patient is helped to take a comfortable sitting position, which makes it easier to breathe. To do this, several pillows are placed under the back of the head part of the functional bed is raised. A child with shortness of breath is provided with the maximum flow of Fresh air or given oxygen, while at the same time they free him from embarrassing clothes, heavy blankets.

The appearance of acute cardiovascular disorders requires emergency care.

Fainting acutely occurring the resulting insufficiency of blood supply to the brain is expressed by a sudden short-term loss of consciousness. Before the arrival of the doctor, the baby is laid horizontally or with a slightly lowered head end. They provide free-breathing: they unbutton the collar, belt, and relax the clothes. Windows and doors are opened wide for fresh air. The face and chest are sprayed with cold water. Allow inhaling ammonia, for which the moistened cotton wool is brought to the external nasal passages. The body is vigorously rubbed, then warmed with hot water bottles, the lower half of the trunk and lower limbs are wrapped in warm clothing. In the absence of an effect, drugs are administered (subcutaneously, caffeine, cordiamine). If these events are if they are ineffective, they begin ventilating.

In case of collapse, developing as a result of acute vascular insufficiency and accompanied by a sharp drop in blood pressure with a violation of blood supply primarily to the brain and heart, the patient's condition suddenly worsens, there is weakness, pallor, cold extremities, chills, threadlike pulse, loss of consciousness. Without emergency medical care, the patient may die. Before the arrival of the doctor, the child is placed in a horizontal position, lifting the lower end of the body, wrapped warmly, warmed with hot water bottles. It is important to inject caffeine subcutaneously every 30-60 minutes, so an injection kit and an intravenous infusion system are urgently being prepared (in addition to caffeine, other medications may also need to be administered).

Pain in the heart area is rarely observed in children. It may be a manifestation of insufficient blood supply to the myocardium. Given that the genesis of pain in the heart region plays a significant role in mental overstrain and disorders of the nervous system.-

The main activities are aimed at creating comfort conditions. For the same purpose, use an infusion of valerian, motherwort, drops of valocordin or valoserdin (the number of drops corresponds to the years of life), etc.

Spasm of the coronary arteries as a cause of pain in the heart in children is extremely rare. To eliminate this pathology, the child is given nitroglycerin under the tongue. Mustard plasters are placed on the heart area, at the feet hot water bottles are applied to the hands. Since the appearance of complaints of pain in the heart area, a doctor is urgently invited.

Paroxysmal tachycardia — an arrhythmia in the form of suddenly beginning and just as suddenly ending attacks of tachycardia. Emergency care is indicated in connection with a sudden disorder of the function of the myocardium: the child feels strong and frequent heart tremors, experiences fear, compression in the chest, pain in the epigastric region. The heart rate is 2-3 times higher than normal and can reach 180-200 per minute. To relieve the attack, use techniques that irritate the vagus nerve: pressure on the eyeballs, on the carotid artery area, or on the abdominal aorta, cause artificial vomiting. Urgently inform the doctor and prepare everything necessary for the intravenous administration of medicines.

Cardiac arrest is possible with a non-stopping attack of paroxysmal tachycardia. In this case, the patient is immediately connects to artifitial lung ventilator, and a closed heart massage is started. At the same time, equipment and medications (epinephrine) are being prepared to restore and stimulate cardiac activity.

The technique of indirect (external) massage with hand. The child is placed on a table or bed with a wooden shield. The doctor or nurse stands at the side of the child and puts one hand with the palm on the lower third of the sternum, pressing the palm surface of the other hand on the sternum with such force that it bends in the direction of the spine by 3-4 cm (Fig. 41). The heart is squeezed between the sternum and the vertebral column, while blood flows from the heart to the vessels — the aorta and the pulmonary artery. In older children, the frequency of pressure on the chest should be at least 70 per minute, in newborns-100-200.

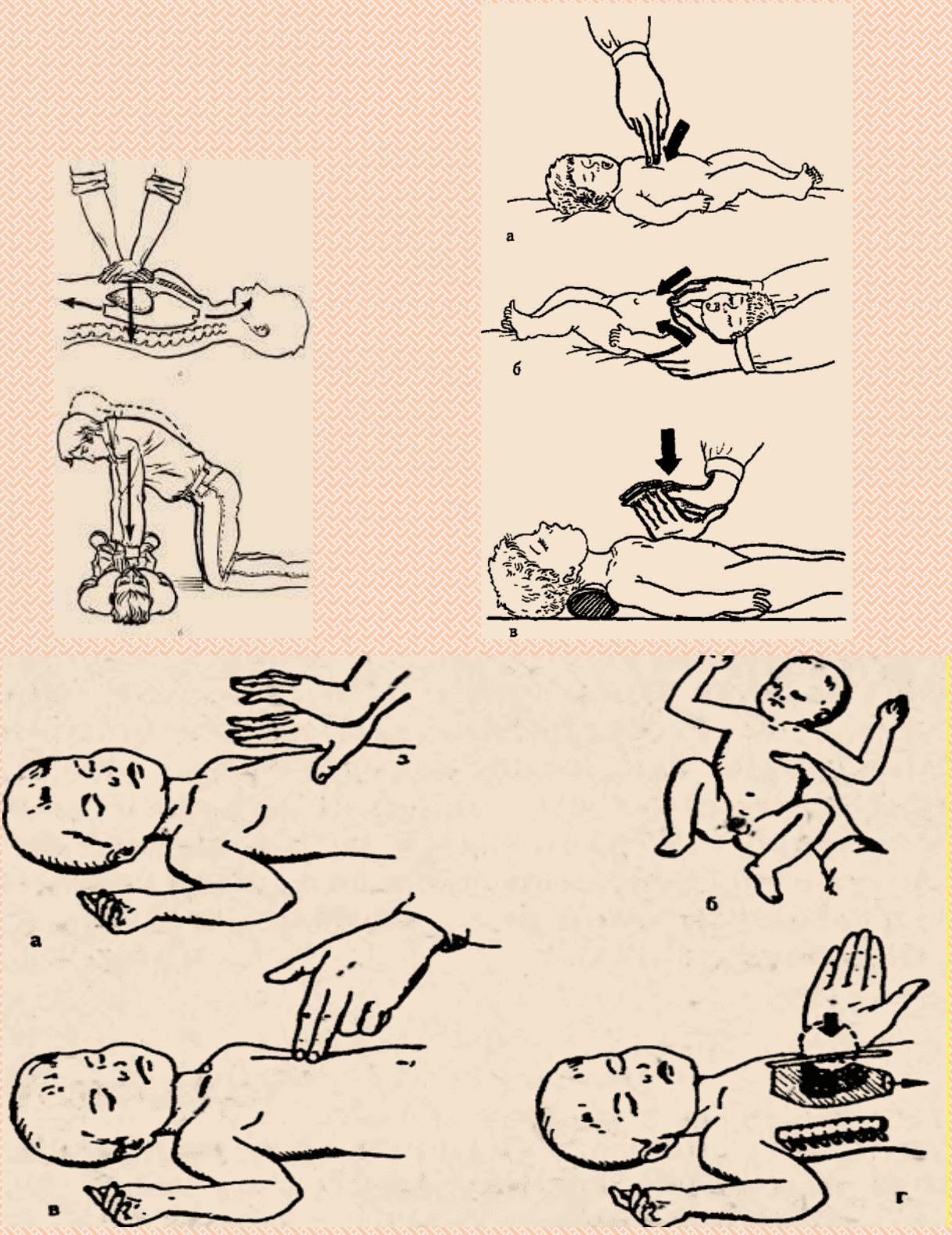


Figure 41.Indirect heart massage for a newborn and an older child .

In newborns, heart massage is performed in two ways:- with the fingers of both hands, or with one hand, when the pressure is applied with the index and middle fingers. Rhythmic compression of the chest in newborns and infants should lead to a displacement of the sternum by at least 1-2 cm.

The effectiveness of indirect heart massage is evidenced by the appearance of a pulse on the carotid, femoral and radial arteries, an increase in blood pressure, the restoration of independent breathing, the appearance of the pink color of the skin, and visible mucous membranes. At the same time, a ventilation is performed.

QUESTIONS

1. What are the rules of the sanitary and hygienic regime of children with diseases of the cardiovascular system.
2. What therapeutic and protective regimes are prescribed for children with cardiovascular diseases?
3. What to do for a child with shortness of breath and palpitations?
4. What is the help for a patient in a state of fainting rock?
5. What activities help to bring the child out of the collapse?
6. What is the first-aid treatment for a child with heart pain?
7. What kind of emergency pre-medical care is provided for paroxysmal tachycardia?
8. What measures should be taken in case of cardiac arrest?
9. What is the technique of indirect heart massage?

CHAPTER 14

CHILD CARE AND SUPERVISION WITH DISEASES OF THE GASTROINTESTINAL TRACT

The primary task of caring for children with diseases of the gastrointestinal tract is, along with the observance of the therapeutic and protective regime, the organization of therapeutic nutrition and water ration. Serious attention is paid to the careful care of the oral cavity and the functioning of the intestines.

Seriously ill patients are on strict bed rest. These patients are fed in a lying position with a slightly elevated head end with a spoon, in small portions. The neck and chest are covered with either a napkin or a diaper. Liquid food is given from a drinking bowl.

Children who are on semi-bed rest, take food in the dining room. The food should be deliciously prepared, warm; the table is carefully served with the necessary items and appliances. After the end of the meal, the nurse makes sure that each patient rinses his mouth. If the child can not perform this procedure independently, then the nurse wraps the child's oral cavity with a disinfectant solution. When signs of gum inflammation (bleeding, swelling) appear, anti-inflammatory anti-gingivitis agents are used: aloe gel, calgel, etc.

Special attention is paid to the symptoms that indicate a lesion of the gastrointestinal tract. The main symptoms are dyspeptic disorders (nausea, vomiting, belching, diarrhea, etc.) and abdominal pain.

Nausea is an unpleasant sensation in the epigastric region, often accompanied by paleness, salivation. Nausea often precedes vomiting. With nausea, the patient is calmed, given to drink half a glass of water with 2-3 drops of ammonia.

Vomiting in children occurs frequently, especially at an early age. It is a sign of many diseases of the gastrointestinal tract, infectious diseases, pathology of the central nervous system, etc. In children of the first months of life, vomiting is

caused by excessive feeding or ingestion of air (aerophagia). Sometimes there is gum (rumination), when the child regurgitates, chews, and re-swallows food. Vomiting is a complex reflex act, when when the emetic center is excited, vomit is released through the esophagus, pharynx, mouth, and sometimes nasal passages. From vomiting, it is necessary to distinguish with regurgitation, which is characterized by the release of food from the esophagus or stomach without straining the abdominal muscles. If vomiting occurs, it is necessary to maximally relieve the child's condition and help him. The patient is comfortably seated, covered with a towel, cloth or oilcloth, a clean tray is brought to his mouth, or a basin or bucket is placed on the floor at his feet. Weakened patients who are in a supine position should turn their head to the side so that it is lower than the trunk, bring the tray. Under the head of such a child, a folded towel is placed four times to avoid contamination of the bed linen. After vomiting, it is necessary to rinse your mouth with warm water, carefully wipe your lips and mouth corners, remove any particles of vomit from the skin of the body.

The weakened patients are wiped with a cloth or cotton wool moistened with warm water or disinfected a solution of the same type, such as a 2% solution of sodium bicarbonate. To stop vomiting, it is advisable to give the child a drink of cold water, swallow pieces of ice, take a few mint drops or 2-3 ml of 1% novocaine solution. The vomit is left until the doctor arrives, and if necessary, it is sent to the laboratory in a clean bowl with a wide throat, indicating information about the patient and the purpose of the follow-up. Vomiting of "coffee grounds" indicates gastrointestinal bleeding. In these cases, appropriate pre-medical care is provided and a doctor is urgently called. In the future, the nurse (junior nurse) remains to observe and care for the child, periodically informs the doctor about the patient's condition.

Belching air is sometimes caused by swallowing it during meals (aerophagy), especially in young children. Most often, belching indicates increased pressure in the stomach. Children with belching should eat slowly, in small portions, carefully chewing the food, which avoids overfilling the stomach.

Heartburn — a burning sensation along the esophagus, caused by throwing acidic stomach contents into the latter. To relieve the patient's condition, it is necessary to give the child antacids in suspension (Maalox, Almagel, etc.), or alkaline water, but not tea. After eating, the child should be in the vertical position for 20-30 minutes. It is necessary to exclude from the diet those foods that can contribute to heartburn, such as black bread, jelly, jam, spicy, fried dishes, spices.

Hiccups are an unpleasant and rather debilitating phenomenon. In young children, hiccups can be caused by overcooling (wet diapers), overeating, and therefore requires paying attention to the observance of the elements of care and the rules of feeding infants. In older children, hiccups can occur when startled, swallowing solid food, which leads to spastic contractions of the diaphragm and esophagus. To stop the hiccups, the left hand is firmly clamped over the nose, while holding it in the right hand a glass of water.

Figure 42. Insertion of the gas outlet tube.

The child drinks water in small sips, continuously, without inhaling air. When it becomes completely unbearable, you can allow yourself to inhale. By all rights, the hiccups should go away after that. If this does not happen, the procedure is

repeated, but with a longer exposure. When hiccups of central origin are prescribed by a doctor, medicines are used — haloperidol, seduxen.

Flatulence — bloating that occurs due to increased gas formation and slow movement of gases through the intestines. Sometimes it is observed with increased ingestion of air and excessive consumption of black bread, milk, potatoes, legumes, and sauerkraut. Reduce or completely remove flatulence by taking activated charcoal 0.5-1 tablet 2 times a day, smekta, espumizane, enemas with chamomile infusion. Young children and bedridden patients are injected with a gas outlet tube (Fig. 42).

Constipation, when stool for 2 days (48 h) following a delayed bowel movement. There are atonic and spastic constipation. The first occurred with the weakening of intestinal muscles and peristalsis, the second with an increase in muscle tone in certain areas of the colon. To help children with atonic constipation, easy-to-digest foods are excluded (sour cream, porridge, etc.) and prescribe a diet containing a large amount of vegetable fiber (cabbage, beets, prunes, black bread made from coarse flour). Such children are contraindicated in a sedentary lifestyle. They develop a daily reflex to empty the intestines, use abdominal massage and give medicines (enzyme preparations, choleretics). In some cases, laxatives are recommended, mainly of plant origin (re ven, buckthorn bark), less often salt (20 % solution of magnesium sulfate, 1 teaspoon on an empty stomach). It should be remembered that it is necessary to select an individual dose of laxatives for children. Coarse foods rich in fiber are excluded from the diet of children suffering from spastic constipation. It is recommended to move more, to get used to emptying the intestines at a certain time. Prescribe medications that calm the nervous system (Valeriana, bromides). With persistent constipation, purifying enemas are put.

Diarrhea (diarrhea) — most often occurs with an intestinal infection and is associated with the action of pathogenic microorganisms and increased intestinal peristalsis. Less often observed in intestinal dysbiosis, pancreatic insufficiency, chronic enteritis. The presence in the feces of a large amount of mucus, blood, as a rule, indicates a lesion of the colon.

A separate pot is allocated for the child to defecate, which is left until the medical examination in a cold place. Fecal matter is sent to the laboratory for research. If the intestinal infection is confirmed, the patient is transferred to the infectious department or placed in a separate box. Perform the current disinfection. Pots, lining vessels are disinfected.

After the onset of diarrhea, it is necessary to give the child an additional amount of fluid to avoid dehydration (dehydration). Treatment of children who show signs of dehydration includes the use of a solution prepared from salts for oral rehydration (SPR). SP R often comes in packets. Ingredients contained in the package (rehydrate etc.), dissolve in 1 liter of drinking water.

The solution for oral rehydration can be prepared from salts and sugars directly at home or in the department. For 1 liter of boiled water, you need 3.5 g of sodium chloride (ordinary salt), 20 g of anhydrous glucose or 22 g of glucose monohydrate or 40 g of sucrose (ordinary sugar), 2.5 g of sodium bicarbonate (baking soda), 1.5 g of potassium chloride. Sugar and salt should be completely dissolved. In the absence of bi-sodium carbonate and potassium chloride, you can do without them. A fresh solution of ORS is prepared daily in a clean bowl. Dishes with the solution should be kept closed. The remains of the solution prepared the day before should be poured out. It is necessary to give after each liquid stool 50-100 ml of SPR solution to a child under the age of 2 years, 100-200 g-to children older than 2 years.

With diarrhea of non-infectious origin, an easily digestible diet with a large amount of protein, vitamin C, and group B, and liquid is prescribed. Do not recommend milk and dairy products, fat, fried, vegetable fiber. Children should be washed after each urination, smeared with vaseline or baby cream on the skin around the anal opening, and intake zincum as form of tablets.

The appearance of tarry stools or blood in the stool indicates gastrointestinal bleeding. Even if the child is in good health, they urgently put him in a bed, call a doctor.

Abdominal pain is the most frequent and most characteristic sign of acute or exacerbation of chronic gastrointestinal disease in children. If pain occurs, a doctor's consultation is necessary, before the arrival of which the child should be put to bed. Pay attention to the child's behavior during an attack of pain, the position in bed: it can be forced (knee-elbow, on the side, with bent legs, etc.). The use of hot water bottles or medicines that relieve a pain attack is contraindicated, as this can make it difficult to correctly diagnose, lead to an error. It is also forbidden to give laxatives and enemas before the arrival of the doctor.

Coprostasis (constipation)— accumulation of fecal masses in the distal (lower) parts of the small intestine or colon. Coprostasis is accompanied by cramping pains in the abdomen. Emergency care is to prescribe a siphon- enemas and medicines (noshpa, papaverine).

Help for a child with acute gastritis. The disease occurs in children of any age and occurs as a result of alimentary errors (overeating, poor-quality food, eating disorders), toxic infections, taking certain medications (bromides). The child is prescribed strict bed rest, the stomach is washed with 0.5-1 % sodium bicarbonate solution, isotonic sodium chloride solution, mineral, or warm water. Make a siphon enema or give laxatives (magnesium sulfate at the rate of per 1 year of life in 50-100 ml of water). A hot water bottle is placed on the epigastric region, and warming compresses are placed on the abdomen. Prescribe copious drinking, diet, adsorbing agents (activated carbon), antibacterial and antispasmodic agents.

Help with abdominal wall injuries. The causes of abdominal injuries in children are diverse — sports, domestic, falls, car accidents. The injury is manifested by abdominal pain of varying severity. With severe pain, there may be fainting. Emergency care consists of the appointment of cold on the abdominal area. You should call a doctor.

QUESTIONS

1. What are the main symptoms of diseases of the gastrointestinal tract?
2. What are the features of the nutrition of children with diseases of the gastrointestinal tract?
3. How should a seriously ill person with a lesion of the digestive organs be fed?
4. What is the care of a patient with vomiting?
5. How to help children with nausea, belching?
6. What should be done for heartburn, hiccups in a child with a disease of the gastrointestinal tract?
7. What are the measures to combat flatulence?
8. How to help patients suffering from constipation?
9. How to help a child with diarrhea?
10. What kind of help should be provided to a child with abdominal pain?
11. How to prepare a solution for oral rehydration?
12. What is the help for a child with acute gastritis?

CHAPTER 15

CHILD CARE AND SUPERVISION WITH DISEASES OF KIDNEYS AND URINARY TRACT

Kidney and urinary tract diseases are common in children. The main contingent of the neurological division — patients with urinary system infection (pyelonephritis, cystitis); children suffering from glomerulonephritis, interstitial nephritis, disorders of water-salt metabolism.

An important part of the treatment of kidney diseases the urinary tract is a diet, water, and salt regime.

In the first days of the acute period, salt is completely excluded from the patient's food (a salt-free diet), and sodium-rich foods are restricted. Meat is excluded (diets # 7, 7a or BZ, B2). This diet is prescribed for a period of 1-1. 5 months and is expanded cautiously as the child's condition improves. Children do not adapt well to salt-free food, so it is necessary to remember that the persistent desire to force the child to eat can only exacerbate the negative attitude to food. The nurse should explain to the children, and sometimes to the parents, the necessity of following the diet prescribed by the doctor. In the medical care of the inpatient patient, the permissible volume of liquid and the permissible amount of table salt that can be given to the sick child during the day is indicated.

In diseases of the urinary tract, on the contrary, a plentiful drink is indicated, including juices, weakly mineralized alkaline mineral waters. Exclude spicy, smoked, fried dishes. In common nephropathies, depending on the nature of the metabolic disorders, certain products are limited (diets No. 6 and 14).

If necessary, diuresis is determined in a sick child. The measurement of daily diuresis, taking into account the liquid consumed during the day, allows us to judge the body's water balance. Urine is collected per day in a special glass container, then poured into a graduated glass cylinder and its amount is measured. Information

about the amount of liquid consumed and urine excreted is recorded daily in a special notebook (or directly in the medical record of an inpatient patient), indicating the time, the amount of liquid consumed and excreted, the amount of food, feces. In addition to measuring diuresis, patients with the edematous syndrome should be weighed daily.

During diseases of the urinary tract, carefully monitor the cleanliness of the perineum, for which the hedgehog is carried out daily washing. Girls use bidets for this purpose, and bedridden patients are washed at least 2 times a day. To do this, an oilcloth is placed under the patient, the vessel is brought in and offered to bend the knees and spread the legs. From an Esmarch mug fitted with a rubber tube with a tip (or from a jug), direct a stream of water or a solution of furacillinum to the flow. At the same time, with a sterile cotton ball, behind a compressed kornzang or a long tweezer, several movements are made in the direction from the genitals to the anus. Another cotton ball is used to dry the skin of the perineum, leading the ball in the same direction.

It should be remembered that older children need only to monitor the implementation of their hygiene procedures, and younger children need direct assistance from a nurse when washing.

Along with the protective regime and diet, drug therapy is used. In the treatment of patients with pathologies of the urinary system, not many drugs are used simultaneously, so it is important to ensure their proper time and proper intake. The nurse should know which group of drugs the most frequently used drugs belong to, whether they have side effects, and how these actions manifest themselves. This is especially important when taking hormonal drugs, cytostatics, diuretics, etc. The child must take the medication in the presence of a nurse.

The specifics of caring for children with kidney and urinary tract diseases are determined by the nature of a particular disease.

In patients with nephritis, it is necessary to monitor the pulse, measure blood pressure, check vision. If the child complains of a headache or deterioration of

vision or there are changes in the child's behavior, then it is necessary to inform the physician, the head of the department, or, in their absence, the doctor on duty.

In case of kidney failure, if the child is on bed rest, it is necessary to carefully monitor the condition of his skin and take measures to prevent bedsores: change the sheets, treat the skin with disinfectant solutions. Prescribe mouthwash with a 2 % solution of sodium bicarbonate and at least 2-3 times a week conduct a hygienic bath.

The patient must empty the bladder and intestines on time. It is necessary to monitor the restrictions in the mode.

Special attention is paid to the child's clothing. In patients with nephritis, clothing should be made of natural fabrics, woolen underwear or a woolen belt should be worn on the lower back. Serious attention is paid to the prevention of colds — you should avoid the draft, communication with patients with flu, angina.

In case of incontinence and urination (enuresis), if the child is in bed, then a rubber vessel is placed under it or a urinal (glass or enameled) is given. For walking patients, there are special receivers made of elastic material.

Most children suffering from enuresis are acutely aware of their condition, try to hide their illness from others, and need special attention and sensitivity. The comments made aloud about the wet bed, the expression of disgust on the face of the staff, the laughter caused anger in the child and contribute to the development of an inferiority complex.

Urinals should be washed daily with hot water and soap and to eliminate the smell of urine, rinse with a weak solution of hydrochloric acid or potassium permanganate.

If the child does not control urination, use diapers, clean diapers, or special urinators. At least twice a day, wash the skin of the genitals and anus with warm water with soap or a weak (slightly pinkish) solution of fracillinum and dry with a gauze swab.

In case of nocturnal urinary incontinence(enuresis), an oilcloth is placed under the sheet, and the child must be approached several times during the night.

Acute urinary retention is a condition when, with an overflowing bladder, a child cannot urinate independently, despite frequent painful calls. In children, acute urinary retention sometimes occurs as a result of spasm of the sphincter of the bladder or with various diseases of the genitourinary system (with vulvovaginite1, balanoposthite2, phimose3, urethral trauma, etc.).

Some children can not urinate in unusual conditions: in a horizontal position, in the presence of other people. Urinary retention may occur due to the fear of pain when urinating (after cystography, cystoscopy).

With acute urinary retention, put a warm hot water bottle on the pubic area or put the child in a warm bath. Sometimes the urination reflex is triggered by the sound of water coming out of the tap. If these measures are ineffective, then catheterization of the bladder should be performed.

Urinary retention must be differentiated from anemia; in the latter, there is no urge to urinate there is no urine in the bladder. Assistance to such patients is carried out under the supervision of a doctor. Kidney colic develops when there is a sudden obstacle to the outflow of urine from the renal pelvis. The causes of renal colic are diverse: kidney stones, the passage of conglomerate of dense crystals through the ureter, inflection of the ureter, etc. Pre-medical care consists of conducting thermal procedures (hot compresses and hot water bottles on the lower back, general hot baths) in the absence of contraindications. Be sure to call a doctor.

Vulvovaginitis — is from the Latin vulva-the external genitalia of a woman, and the vagina; vulvovaginitis-inflammation of the female sexual organs and vagina.

Balanopostit is from the Greek. balanos — head of the penis, posthitis-foreskin; balanoposthitis-inflammation of the skin of the head of the penis and the inner sheet of the foreskin.

From the Greek phimosis-closure, closure of the hole — a pathological narrowing of the opening of the foreskin, which does not allow exposing the head of the penis.

QUESTIONS

1. What are the features of children's nutrition in diseases of the kidneys and urinary tract?
2. What water-salt regime is indicated for children with kidney diseases?
3. How is diuresis monitored?
4. What clinical indicators are monitored by a nurse for kidney and urinary tract diseases?
5. What is the care of a sick child with urinary incontinence?
6. How to provide first aid to a patient with acute urinary retention?
7. How to help a child with kidney colic?
8. What is the care of a child with vulvitis?
9. How is the help provided to a child with kidney failure?

CHAPTER 16

CARING AND SUPERVISION OF CHILDREN WITH INCREASED BLEEDING AND BLOOD DISEASES

In childhood, there are often diseases that occur with increased bleeding, as well as diseases of the hematopoietic organs. Regardless of the degree of bleeding, sick children should be on strict bed rest and under the constant supervision of a nurse. Children are fed only in the ward. Free movement of patients in the department or independent access to the toilet is allowed only with the permission of the doctor. Transportation of children for examination, for example, to the office of functional diagnostics, is carried out only with the help of a gurney.

Children should not be able to reach sharp, cutting, or stabbing objects. When cleaning the wards and corridors, the floor should not only be thoroughly washed but also wiped dry, so that none of the patients will slip, since falling can

additionally lead to hemorrhage in the joints or internal organs, for example, the large brain.

However, the prevention of injuries should be constantly carried out. If a child has bleeding of any localization, the nurse should call a doctor and provide first aid.

Help with nosebleeds. The causes of nosebleeds are diverse: injuries (stroke, damage to the mucous membrane, etc.), various diseases of both non-infectious (thrombocytopenic purpura, hemorrhagic vasculitis, hemophilia, leukemia, hypovitaminosis C, K, etc.) and infectious (measles, whooping cough, influenza, sepsis, respiratory viral infections, etc.).) character, local diseases of the nasopharynx (polyps, adenoids, foreign bodies, etc.), increased blood pressure.

Nasal bleeding can be insignificant (in the form of blood impurities to the mucous secretions) or profuse (when blood enters not only outside, but also inside — in the pharynx and oral cavity). The child has a cough, vomiting. In such cases, pulmonary and gastric bleeding should be excluded.

The child is calmed down, seated in a semi-sitting position with his head thrown back. On the bridge of the nose, put ice or gauze soaked in cold water. In most cases, nasal bleeding is stopped by self-help or with the help of so-called home remedies (rest, the introduction of cotton wool soaked in hydrogen peroxide). Continuing nosebleeds can be stopped by forcefully pressing the wings of the nose against the nasal septum for 2-3 minutes or more. The breath passes through the mouth. The child should spit out the blood that gets into the mouth.

In the absence of the effect of the measures taken with continuing nosebleeds, a nasal tamponade is performed — anterior or posterior. Anterior tamponade (Fig. 43) is performed most often since nasal bleeding in more than 90% of cases is associated with damage to the vessels of the anterior part of the nasal septum. Insert gauze turunds about 50 cm long, soaked in a 3 % solution of hydrogen peroxide, the vessel with new oil or hemostatic agents (a solution of thrombin, hemofibrin). For tamponade, 2-3 turunds are required. Instead of gauze turundum, you can insert pour dry thrombin, hemostatic sponge, fibrin film into the nasal cavity. Ice is placed on the back of the head. At the same time, a 5% solution of aminocaproic acid,

dicinone, vitamins C, K. The tampon can be in the nose for no more than 36-48 hours. Before removing the tampon, it must be thoroughly soaked with hydrogen peroxide. After removing the tampon, oil is instilled in the nose (peach, olive). If the blood flow after performing an anterior nasal tamponade continues, then a posterior tamponade should be performed.

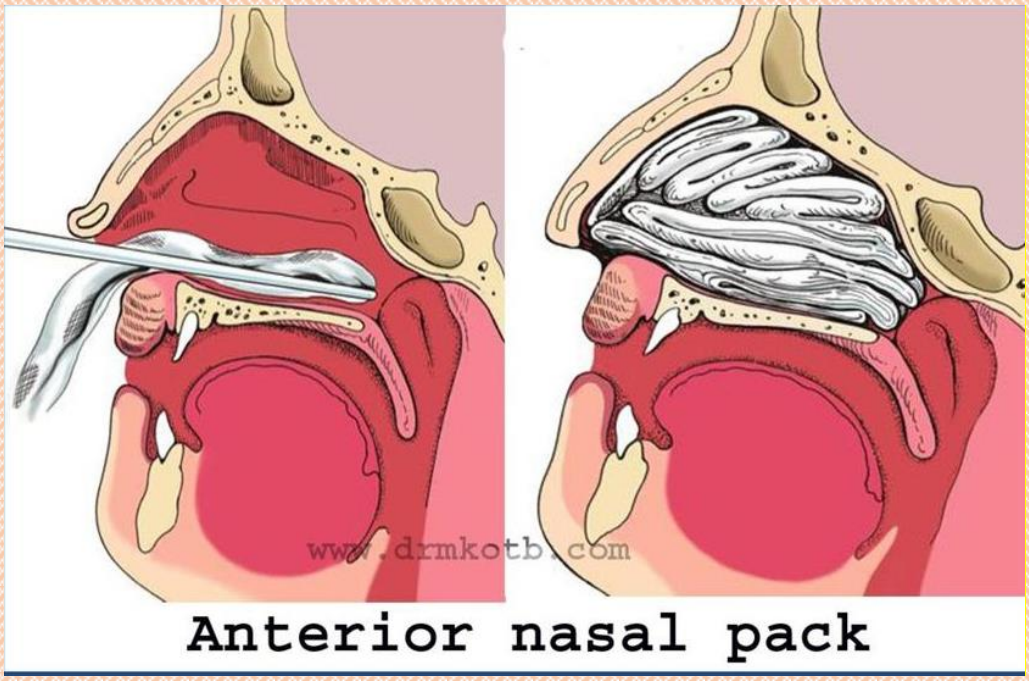


Figure 43. Stopping nosebleeds by anterior tamponade(packing).

Help with bleeding from the oral cavity. Bleeding from the oral cavity can occur after tooth extraction, mechanical damage, or inflammatory mucosal pain, etc. With massive bleeding, for example, due to damage to the arteries or large veins, the bleeding becomes profuse. Such bleeding is dangerous due to complications — asphyxia, massive blood loss. The patient should be placed face down or on his side. The oral cavity is cleared of blood or blood clots and carefully examined. When bleeding from the alveolus (well) of the removed tooth, it is applied to it a tampon and ask the patient to press it tightly with his teeth. For tamponade of the well of the removed tooth, use gauze turunds moistened with a 3 % solution of

hydrogen peroxide, or hemostatic sponges. Before feeding, the tampon is removed, the child receives food in a cold, semi-liquid, and wiped form.

Help with bleeding from the ear canal. Gauze, folded in the form of a cone or funnel, enter the ear. A non-woven gauze bandage is applied to the ear.

Help with pulmonary bleeding. The causes of blood flow in children can be infectious diseases (ARVI, influenza, measles, whooping cough), foreign bodies of the respiratory tract, chest trauma, taking medications (acetylsalicylic acid, iodine preparations), ascariasis, bronchopulmonary diseases, etc. If there is an impurity of blood in the sputum (hemoptysis), the child should be calmed, freed from clothing that restricts breathing. He is given a semi-sitting position, forbidden to move, talk, strain. It is necessary to ensure the flow of fresh air, for which the windows are widely opened. The release of a significant amount of pure blood from the respiratory tract indicates pulmonary bleeding and requires special attention from others, especially medical personnel. Bypassing the ice, medicines are shown, I reduce it for those who have a cough. Treatment of the main disease should be carried out.

When the chest is injured, when the lung tissue and blood vessels are damaged, chest pain, cough with the release of bloody sputum appear. The patient is recommended to swallow small pieces of ice, drink cold water in small portions. Urgent admission to a specialized department is indicated.

Help with gastrointestinal bleeding. By signs of bleeding are vomiting and stools with an admixture of blood. Bloody vomiting is a symptom of bleeding from the esophagus, stomach, and duodenum. Sometimes the vomit may contain blood ingested by a child with unrecognized nasal or pulmonary bleeding. With massive bleeding, the vomit masses are dominated by scarlet and unchanged blood. With mild bleeding, the blood remains in the stomach for a long time, being exposed to hydrochloric acid (hydrochloric) acid gets a dark color. In this case, vomiting of "coffee grounds" occurs.

Bloody stools appear when bleeding from both the upper and lower parts of the gastrointestinal tract. The presence of fresh or scarlet blood suggests that the source

of bleeding is located near the anus — in the lower parts of the colon. When bleeding from the blind, ascending, and transverse colon, the stool becomes dark maroon or reddish-brown. When bleeding from the stomach and small intestine, in particular the duodenum, the stool is black, tar — shaped-melena. At the same time, there may be vomiting of "coffe-graunds".

In all cases of bleeding from the gastrointestinal tract, the child should be put to bed, since even small bleeding can turn into a profuse one. Absolute rest should be provided, the child is not allowed to get out of bed. The patient should lie on his back. On the upper half of the abdomen, put a bubble with ice. Call a doctor.

The first hours after bleeding should be refrained from eating, sometimes the child is allowed to swallow small pieces of clean ice. In the future, the patient takes food in cold and liquid form: milk, sour cream, cream, egg whites, butter, carefully mashed vegetable puree with chopped meat or fish. After 2-3 days, the diet is expanded — diet No. 1a is prescribed. Strict individual care is provided. The medical nurse makes sure that the urinal and the lining vessel are only served to the child in bed.

Help with uterine bleeding. With uterine diseases in cases of bleeding, strict adherence to the bed regime is necessary. With heavy bleeding, one or two ice bubbles are placed on the lower half of the abdomen. The nurse monitors the condition of the gaskets, replacing them if they are wetted profusely. To establish the volume of blood loss, several pads are used during the day times weighed to determine the difference between dry wet padding. The girl should be washed away 2—3 times a day.

Help with kidney bleeding. About the bleeding indicates hematuria- the release of blood in the urine. Hematuria can be visible to the naked eye (macrohematuria) or discernible only by microscopy (microhematuria). The causes of renal bleeding are inflammatory diseases (nephritis, cystitis), injuries of the urinary system, kidney stones, etc. They provide strict bed rest. The child urinates in the urinal. The nurse monitors the color of the urine (red urine or the color of "meat slops"), notes the presence of clots or fresh blood.

Help with hematomas and hemorrhages in the joints. Patients with hematomas should strictly follow bed rest. Transportation of the patient is carried out only on a gurney. If necessary, immobilization is performed — the creation of immobility of the damaged joint or limb (plaster cast, splint).

Care for children with anemia. Take into account the age of the patient and the severity of anemia. If there is a lack of iron in the blood, patients should spend a lot of time in the fresh air, get a full diet rich in trace elements: fresh fruits, vegetables, meat, liver, etc. Enter iron preparations.

In acute anemia that occurs as a result of bleeding, mechanical methods are used — applying a tourniquet, pressing bandages, pressing bleeding vessels, tamponade of the nose, etc. A hemostatic sponge or fibrin film is applied to the site of bleeding.

QUESTIONS

1. What are the features of care and monitoring of children with increased bleeding?
2. How to stop nosebleeds?
3. What is the technique of tamponade of the nasal passages?
4. What should I do when bleeding from the alveolus of a removed tooth?
5. What is the help for bleeding from the auditory canal?
6. What is the help and care for patients with pulmonary hemorrhage?
7. What should be done when bleeding from the gastrointestinal tract?
8. What is the care of girls with uterine bleeding?
9. What should a nurse monitor for kidney bleeding in a child?
10. What is the help for a child with a hemorrhage in the joint?

CHAPTER 17

CARE FOR CHILDREN WITH ACUTE INTESTINAL INFECTIONS

Acute intestinal infections are a group of diseases of the gastrointestinal tract, the causative agents of which are pathogenic enterobacteria (shigella, salmonella, escherichia) and intestinal viruses (rotaviruses, enteroviruses). Intestinal infections are spread by food (through contaminated food and water), as well as by contact, through contaminated objects of the environment — toys, dishes, towels, etc.

Early diagnosis and timely isolation of the patient is of great importance in the organization of assistance to children with acute intestinal infections. In the main, two forms of isolation of patients are used: hospitalization and isolation at home. During state hospitalization, a sick child is transported to an infectious hospital by special transport, which is then disinfected.

An infectious diseases hospital, unlike a somatic hospital, has several features. The structure and principles of operation of this institution are subordinated, in particular, to the task of preventing the spread of infections, primarily intra-hospital infections. To separate the sick children, they are placed in the boxes of the Melzer system. The patient's belongings are put in bags and sent for disinfection. In the future, they are stored in a warehouse until the patient is discharged.

An important step in the care of a patient with intestinal infection is strict compliance with the sanitary regime, aimed at preventing nosocomial reinfection (stratification of infection caused by another agent). Thoroughly wet cleaning of the room is carried out 2-3 times a day with the use of the water-soap solution. Care items, bed linen, diapers are treated with 0.5 % chloramine solution for 30 minutes. Children who have suffered acute intestinal infections are discharged from the hospital after the disappearance of all clinical symptoms and a mandatory one-time control bacteriological examination, conducted no earlier than two days after the

end of treatment. Sanitary treatment of the area is carried out using the principles of terminal disinfection.

Acute intestinal infection is characterized by the appearance of symptoms of intoxication (weakness, lethargy, decreased appetite, fever) and signs of damage to the gastrointestinal tract: paroxysmal abdominal pain, repeated vomiting, frequent loose stools. With a pre-property lesion of the colon, pathological impurities in the stool are noted in the form of greens, cloudy mucus, with dysentery blood. Involvement in the pathological process of the small intestine is characterized by watery diarrhea, which often leads to the loss of a large amount of fluid and the development of dehydration (exicosis). The skin and mucous membranes of the child become dry, the eyes sink, thirst appears. The tongue is dry, covered with a thick white coating. The child does not urinate enough (diuresis is changed). Dehydration is especially dangerous for infants, as water-electrolyte disorders develop very quickly and lead to irreversible consequences. Severe forms of intestinal infections, heart failure, convulsions, and loss of consciousness can be noted, which are particularly dangerous for the life of the child.

The main elements of care for children with intestinal infections are rational nutrition, the fight against dehydration, and the timely administration of anti-inflammatory (antibiotics, bacteriophages) and pathogenetic (enterosorbents, biologics) therapy.

Diet therapy for acute intestinal infections (rota-viral infection, Escherichia coli) can quickly lead to normalization of the stool, as the basis of these diseases is a violation of the processes of digestion of food and the absorption of its ingredients. Breastfeeding of infants in the acute period of the disease is carried out carefully, without violence. In case of severe course of the disease, it is recommended to be dosed-healthy nutrition, when the age-related volume of breast milk is reduced by half. In the absence of breast milk, mixtures — substitutes for female milk are also prescribed in a reduced single (daily) dose: 30-50-70 ml of the mixture after 2 hours. In the following days, the volume of nutrition and the intervals between meals are increased: 60-70 ml after 2 Y2 hours, 80-90 ml after 3 hours, 100-120 ml

after 3 Y2 hours. Preference is given to fermented milk products — kefir, acidophilic "Baby", low-lactose and soy infant mixtures ("Enfamil", "NAN", "Similac", etc.).

You need to feed the baby from a bottle, small amounts of food are better given with a spoon. If the child vomits or refuses to eat, you can feed the children with a pipette with a blunt end. The mixture should be pipetted to the root of the tongue to facilitate its passage. In severe intestinal infections, a nasogastric tube is used to feed children. After feeding, the child should not be left alone, it is necessary to ensure that regurgitation vomiting did not lead to aspiration (ingestion of food clots in the larynx and bronchi). Infants should be held vertically in their arms for 10-15 minutes after feeding, and then put on their side in bed.

In older children on the first day of the disease, the amount of food is reduced by 25 %, a mechanically and chemically sparing diet is prescribed, mainly sour milk products, cereals, mucus soups, cottage cheese. By the 4th-5th day, the age-related nutrition of children is restored.

Help with dehydration. Against the background of diet therapy, oral rehydration is performed to combat dehydration and restore water-electrolyte disorders. For rehydration, a glucose-salt solution "Rehydrone Bio" is used at the rate of 50-80 ml per 1 hour during the first 6 hours of treatment and 80-100 ml/kg of the child's body weight with persistent fluid losses during the day. The volume of fluid injected should be equal to the volume of fluid that the child loses with stool (with watery diarrhea), vomiting, and fever (loss of perspiration). The child should be given water from a pipette or a spoon, fractional-5-10 ml of glucose-salt solution every 5-10 minutes. For drinking, you can use a weak, slightly sweetened tea, carrot broth, 5 % glucose solution. Continued vomiting is not a contraindication to rehydration.

In the absence of the effect of rehydration therapy, an increase in the symptoms of exicosis against the background of continued fluid loss with stool and vomiting, infusion therapy is performed: intravenously, 10% glucose solution, Ringer's solution, reopoliglukin, 10% albumin solution, and hemodesis are administered. It

is mandatory to introduce potassium in the form of a 7.5 % solution of potassium chloride. Calculations of the volume of fluid and the necessary electrolytes are made by a doctor. Infusion therapy should be performed in the manipulations room or the intensive care unit. Use disposable dropper systems. A careful attitude of the medical staff to the patient is required, as various complications may develop: increased body temperature, chills, shortness of breath, increased heart rate (tachycardia), allergic reactions, neurological disorders, etc. When they appear inside the venous fluid injection should be stopped.

Help with vomiting is carried out according to the method indicated above. In addition, in infectious diseases of the gastrointestinal tract, the administration of enterosorbents, which also have an antiemetic effect, is effective. Enterosorbents such as smectite, polyphepan, etc. are used. These drugs have enveloping, adsorbing, and antisecretory properties, which leads to the elimination of microbes, toxins, various metabolites from the body and contributes to the normalization of stool. Smectite is prescribed inside, 1 bag should be weighed in 1/2 glasses of boiled water. Children under 1 year — 1 sachet per day; from 1 year to 2 years — 2 sachets per day, older than 2 years-2-3 sachets.

Etiotropic therapy includes the administration of chemotherapy or antibiotics, as well as specific bacteriophages (dysentery, salmonellosis) in mild forms of the disease. Apply inside nifuroxazida, poly-mixin, tetraciclin and, less often levomycetin. The course of treatment is 5-7 days. With the improvement of the patient's standing against the background of normalization of temperature, reduction of stool, and the disappearance of pathological impurities. On the 3rd-4th day of the disease, the diet is expanded, both in quantity and in quality, by adding fermentative drugs (festal, mezim-forte, panzinorm, Creon) and infusions of herbs: St. John's wort, chamomile, oak bark, bird cherry. To prepare the infusion, take one teaspoon of medicinal herbs, pour it with a glass of boiling water, insist for 30-40 minutes, then filter and, child is given one teaspoon 4 times a day.

Nurses working in the infectious diseases department with children suffering from acute intestinal infections must strictly observe the sanitary and hygienic regime,

which provides for timely disinfection of the patient's secretions, disinfection of his underwear, dishes, toys; personal hygiene; the ability to take biological material for analysis. When confirming the diagnosis of acute intestinal disease, disinfection measures are necessarily carried out in the focus according to local sanitary rules.

Often, children with intestinal infections have diaper rash, so the child needs to be washed often, followed by smearing the skin folds with a child's cream or special cream, and zincum medicl powder per os. To prevent weather conditions, it is necessary to turn the child over frequently. To prevent stomatitis after each meal, children should rinse their mouth with warm water and brush their teeth at least 2 times a day.

Help for patients with viral hepatitis. Viral hepatitis is a group of acute and chronic liver diseases caused by hepatitis A, B, C, D, and E. Most often, children have viral hepatitis A, which occurs cyclically. The source of infection is a sick person and virus carriers. The disease is transmitted through food, water (contact-household way). Hepatitis B and C are transmitted through the blood, by injection (transfusion). In the first days of the disease (pre-jaundice period), weakness, malaise, decreased appetite, nausea, vomiting, abdominal pain are characteristic, less often there is an increase in temperature to subfebrile numbers-37.2— 37.5 " C, runny nose, cough. In the jaundice period, starting from 7-10 days, there is a jaundice color of the skin and sclera.

Abdominal pain is localized in the right hypochondrium. Depending on the severity of the disease, the intensity, and duration of jaundice is different (on average, 2 weeks). The recovery period lasts up to 6 months.

Children under 1 year of age are subject to hospitalization, regardless of the form and severity of the disease. Older patients with mild and non-gelatinous forms can be treated at home, provided that they can be isolated and the necessary sanitary and epidemiological regime is created.

Care for a patient with viral hepatitis consists of following a rational diet therapy (diet No. 5, used in the focus of acute intestinal diseases, vitamin therapy, and if necessary, your recommendations for detoxification therapy. It is very important to

provide bed rest during the acute period.The nurse is obliged to monitor the observance of strict bed rest during the entire period of jaundice.

A child with viral hepatitis is entitled to 6 meals a day. Most of the daily protein intake in the acute period of the disease is introduced with dairy and vegetable products. Children under 3 years of age are additionally prescribed up to 100 g of cottage cheese daily, older — up to 300 g. Fat, spicy, salty dishes are excluded from the diet. Ban canned food, marinades, smoked meats, spices. Chocolate, cakes, and nuts are not allowed. Recommended cereals, vegetable and fruit dishes, cottage cheese, boiled meat, fish, egg. An adequate drinking regime is very important: compotes, juices, tea, mineral waters of Borjomi, Essentuki No. 4 and No. 17. Mineral water at room temperature without gases is consumed in U2-1 glass 3 times a day for 30 minutes before meals.

For parenteral administration of drugs, only disposable syringes are used, since the repeated use of sterilized glass syringes in patients with viral hepatitis always retains the threat of transmission of infection.

Specific therapy for viral hepatitis is not required. In addition, the child receives a complex of vitamins, including ascorbic acid, with severe jaundice — choleretic drugs (chooses, kholenzim, etc.).

The patient should have individual care items, dishes, towels, etc. Patients are most dangerous as sources of infection in the pre-jaundice and jaundice periods. After isolation of the patient, contact children are quarantined for 35 days, during which they are monitored by a doctor and medical staff. Special attention is paid to the identification of the first signs of pre-jaundice and jaundice periods: the temperature is measured, the skin and mucous membranes are examined, the color of urine and feces is assessed. The urine of a patient with viral hepatitis due to the presence of pigment becomes dark, foamy (such as "beer"), the stool, on the contrary, loses color, discolors, becomes white, clay consistency. New children are not included in the quarantine group.

As a preventive measure, contact children are given passive immunization with normal human immunoglobulin: from 1 year to 10 years, 1 ml is administered,

over 10 years-1, 5 ml once intramuscularly no later than 5-6 days after the occurrence of the first case of the disease.

The focus of viral hepatitis is carried out current, and at the end of the quarantine — the final disinfection. Blankets, mattresses, things of patients are treated in a dezkamera.

QUESTIONS

1. What are the features of caring for children with acute intestinal infections?
2. How should an infant be fed with signs of acute intestinal infection?
3. How is oral rehydration performed in a child with frequent loose stools and vomiting?
4. In what cases is infusion therapy performed in children with acute intestinal infection?
5. How is smekta prescribed for children under 1 year, older than 1 year?
6. What measures are taken to prevent the spread of infection when a sick child is admitted to the box of an infectious hospital?
7. What are the features of caring for children with viral hepatitis?
8. What are the regime restrictions that a child with viral hepatitis should follow?
9. What is the quarantine for children who have been in contact with patients with viral hepatitis?

CHAPTER 19

FIRST AID BEFORE MEDICAL TREATMENT IN CASE OF ACCIDENTS AND POISONING

The outcome of accidents and poisonings, especially serious and dangerous ones, is often decided within a few minutes after the incident and depends primarily on the timeliness and quality of first aid provided to the affected child. Therefore, a medical professional who is at or near the site of the accident must know the techniques of fast and effective first aid. When providing first aid, always be careful and remember, you can't hurt the one you want to help.

First aid is just the beginning of treatment. It is very important, but it will never replace the qualified actions of a specialist doctor. This chapter sets out the principles of first aid in case of accidents poisoning, except for those situations that are described in other chapters (external heart massage, artificial respiration methods, help with bleeding) or are included in the program of care for sick children with injuries (injuries, concussions, and bruises of the brain, bone fractures, dislocated joints, traumatic shock).

Help to the oesophageal burnings (thermal, chemical). The severity of the lesion depends on the depth of the burn and its extent. Severe burns of the II-IV degree (with the formation of blisters and tissue necrosis), which occupy more than 10% of the child's body surface, and 3-5% in infants (the child's palm makes up 1% of the body surface) are considered severe. The disintegration of tissues and the resulting intoxication can cause burn shock. The first initial crying, anxiety, excitement are replaced by lethargy, drowsiness. The child reacts badly to the environment, the skin becomes cold, pale, the pulse is rapid, there is a headache, nausea, vomiting.

It is necessary to stop the impact of the thermal factor: extinguish the clothes, remove the hot water bottle, and so on. After that, immediately remove the clothes from the damaged area of the body (cut with scissors, without touching the wound surface). For shallow burns, the burned areas are placed under a stream of cold water for 10-15 minutes, and a basin with cold water is used. The affected area of the body is tightly bandaged with a sterile bandage, with large lesions — with a sheet ironed with a hot iron and moistened with ethyl alcohol (menthol alcohol, rivanol). Such dressings reduce pain. Ointments, powders, and oil solutions are contraindicated. After applying the bandage, the child is placed in bed, covered with a warm blanket, and an ice bubble is placed on the bandage. The patient is shown copious drinking. In case of severe burns, immediate hospitalization is required. In chemical burns with alkali, burn wounds are washed 2 % a solution of table vinegar. If the damaging agent was a strong acid, a weak solution of sodium bicarbonate (1 teaspoon of baking soda per 200 ml of water) is used to neutralize it. Help with carbon monoxide poisoning (carbon monoxide). The victim feels a headache, he has nausea, tinnitus, frequent over-the-top breathing, chest pain. Later, there is muscle weakness, vomiting. Severe poisoning is accompanied by loss of consciousness, the development of coma, convulsions; death may occur from paralysis of the respiratory center.

Provide an influx of fresh air. They are given to sniff a cotton swab moistened with ammonia, inhale oxygen. In the case of respiratory disorders, artificial respiration is used. Further treatment is carried out on the instructions of a pediatrician or an emergency doctor.

Help with petrol vapor poisoning - Gasoline, kerosene poisoning: Children complain of headaches, dizziness, weakness, nausea, vomiting. There is a smell of gasoline or kerosene from the mouth. Shortness of breath may appear, and the body temperature rises. If swallowed, there is a burn of the mucous membrane of the mouth, esophagus, sharp abdominal pain. Severe poisoning leads to loss of consciousness, convulsions.

The victim is taken out into the air, periodically allowed to inhale oxygen. If gasoline or kerosene gets inside, the stomach is washed through a probe and 50-100 ml of vaseline oil and 10-15 g of activated carbon are injected. They give you a cotton swab soaked in ammonia to sniff. As prescribed by a doctor, medications are administered parenterally.

Help with poisoning with alcohol- Poisoning in children occurs when taking even small doses of alcohol-containing liquids. Symptoms will develop into intoxication quickly. There is a sharp weakness, immobility, the pulse becomes frequent, blood pressure decreases. Short-term excitement at the beginning of poisoning is replaced by sharp depression, loss of consciousness with involuntary urination and defecation, convulsions and a comatose state occur. A characteristic diagnostic sign is the presence of alcohol smell from the mouth. Wash the stomach through a probe with water or 2-3 % sodium bicarbonate solution. Saline solution is injected inside- (100ml for 1 year of life).Oxygen therapy. In severe cases, artificial respiration forced diuresis (intravenous fluids) is used.

Help with toxic mushroom poisoning. In children, especially at an early age, poisoning with edible mushrooms is also possible. In addition to salivation, nausea, vomiting, colic-like abdominal pain, thirst, inactivity (adynamia), headache, hallucinations, loss of consciousness, convulsions. In the future, after a temporary improvement, the clinical picture of hepatic and renal failure develops. Visual disturbances are characteristic. If mushroom poisoning is suspected, the stomach and intestines are washed with a suspension of activated carbon, carb with a probe, or artificially induced vomiting. Give a saline laxative, put repeated cleansing enemas. After these procedures, the child must be warmly covered and covered with hot water bottles, given to drink hot tea and coffee. The victim is delivered as quickly as possible medical institution. Such children need early parenteral administration of fluids, the appointment of cardiac drugs. In neurological disorders (fly agaric poisoning), a 0.1% solution of atropine sulfate of 0.1—0.3 ml

is administered subcutaneously. In case of poisoning with a pale toadstool, hemosorption and replacement blood transfusion are indicated.

Help with paracetamol overdose, Analgin. A drop in blood pressure and a drop in body temperature to subnormal numbers. Decreased heart rate, cyanosis of the skin (cyanosis). Nausea, sometimes vomiting, abdominal pain.

It is necessary to wash the stomach with warm water. Re benk is given a saline laxative, which provides peace, warmth. In case of ineffectiveness, measures of intensive therapy in the hospital are taken. Help with an overdose of sleeping pills (barbiturates, etc.). With a small dose, the child develops a deep sleep that lasts 2-3 days. Breathing is shallow or normal. At a high dose, the child gradually loses consciousness, blood pressure decreases, and cyanosis of the skin and mucous membranes occurs. Delirium develops, sometimes convulsions; pupils are narrowed. The stomach is washed with a suspension of activated carbon. I need oxygen therapy. The child is urgently hospitalized for intensive care: intravenous fluids, cardiac drugs, etc.

Help in case of electric shock. Involuntary convulsive muscle contraction, which does not allow the child to break away from the current source. Electric burn (see help with burns). Loss of consciousness, respiratory and cardiac disorders.

The child is released from the effects of electric current. The victim should be laid down, covered with a warm blanket, freed from embarrassing clothing, and given a warm drink if possible. A sterile dressing moistened with a semi-alcoholic solution is applied to the burned area of the body. If the child has lost consciousness, he is given smelling ammonia and splashed in the face with cold water. In the absence of breathing and cardiac arrest, resuscitation measures are necessary. Further treatment tactics are determined by the doctor.

Help with the bite of a snake (viper). When you bite, there is burning pain. There are four pinpoint wounds on the skin. There is swelling in the bite area. The area of pain and swelling expands. When the poison is absorbed, general symptoms develop weakness, drowsiness, headache, nausea, vomiting; in more severe cases, convulsions and loss of sleep.

To protect the affected limb, a splint is applied to it. The child is provided with complete rest, given a plentiful drink (water, tea, milk), carried out on his hands, and transported to the nearest hospital. Do not bind the affected limb above the bite site, suck out the venom, cut or burn the skin at the bite site, etc.

Help with insect bites (bees, wasps, etc.). At the site of the bite, a pronounced skin allergic reaction may occur swelling, redness, itching, and puffiness. Common symptoms are less common: common edema, anaphylactic shock, asthma attack (in patients with bronchial asthma).

First of all, remove the sting, preferably with tweezers. At the site of the bite, you need to apply a compress with a semi-alcoholic solution or diluted ammonia (1:5), treat it with fenystil gel. Drug therapy is carried out as prescribed by a doctor.

QUESTIONS

1. What is the first aid for burns?
2. What kind of help is provided to a child with carbon monoxide poisoning?
3. How to help a child with alcohol poisoning?
4. What is the help for poisoning with poisonous mushrooms?
5. How to help a child with an overdose of sleeping pills?

MEDICAL MANIPULATION TECHNIQUES

Medical manipulations are an integral part of the care of a sick child. Some manipulations, such as cleansing enemas, are used and a healthy child. The performance of simple manipulations, such as thermometry, patient transportation, etc., can be entrusted to a junior medical person. Other manipulations, despite their varying degrees of complexity, should be performed by the most qualified personnel — a nurse, and, if necessary, a doctor. It should be borne in mind that certain manipulations and procedures (setting cans, injections, etc.) can have a psychogenic effect on the child, which makes it necessary to quickly and painlessly perform them. Special attention should be paid to the appearance of the nurse, which should always have a calming effect on the sick child.

CHAPTER 20

DAILY MANDATORY (SIMPLE) MANIPULATIONS

In the process of child care, the medical staff of children's departments constantly have to perform thermometry, determine body weight, measure height, and bathe children. Knowledge of the technique of performing these manipulations is mandatory. They are performed by a nurse (junior nurse) daily and form the basis of a therapeutic and protective regime.

Thermometry. In a healthy child, the body temperature depends on the processes of heat production and heat transfer and is a constant value. It is believed that it does not exceed 37 °C, in the evening the temperature is several degrees three degrees higher than in the morning. In the rectum, the temperature is 1 °C higher than the skin temperature in the axillary and inguinal areas.

The main places for measuring body temperature are the submachine cavity, inguinal fold, and rectum. For children over 1-year-old, the thermometer is placed in the armpit, in infants, it is preferable to measure the temperature in the inguinal fold. The measurement is carried out with medical mercury (maximum) thermometer. Before the procedure, the thermometer should be shaken so that the mercury column falls below the 35 °C marks. Moisture cools the mercury, so before measuring the temperature, it is necessary to wipe the submachine cavity with a towel. The thermometer is installed so that the mercury reservoir is in contact with the body on all sides at the depth of the armpit. In young children, the thermometer must be maintained so that it does not shift.

Rules of body temperature measurement in the clinic: 1) body temperature is measured daily at the same time (6.00-8.00 and 16.00—18.00); 2) on an empty stomach;

at rest, but not earlier than 30-40 minutes after waking up; 4) in the same place, on the same side of the body; 5) the measurement is carried out for at least 10 minutes.

The thermometry data is recorded in the medical records of the inpatient patient, entered in the temperature sheet, and transmitted daily to the reference table.

Medical thermometers should be stored in a glass container, at the bottom of which a layer of cotton wool is placed and a disinfectant solution (0.5% chloramine solution) is poured. After thermometry, the used thermal meter is lowered into a dish with a disinfectant solution, then wiped dry, after which it can be used again.

Seriously ill patients are measured more often, every 2 or 3 hours. If the body temperature is controlled using skin thermometers, then their readings should be checked with the rectal temperature, since in shock and other conditions associated with vasoconstriction, the body temperature and skin can differ significantly from each other.

Electronic thermometers with fast information output and digital display are more efficient than conventional mercury thermometers. For rapid diagnosis of hyperthermia liquid crystal thermometers (test-fever) can be used.

Figure 45. Measurement of body temperature by a liquid crystal thermometer.

With their help, you can not determine the exact temperature, they record the very fact of its increase (over 37 °C). A special plate is applied to the forehead area for at least 15 seconds (Fig. 45). The letters N and F characterize the body temperature: if the letter N is displayed, then the body temperature is normal if both letters (N and F) are elevated.

Weighing and measuring body length. The weight of the child and the measurement of growth is carried out to assess physical development, the correct dosage of drugs. The weighing of children up to 2 years old is carried out on a lo exact scale (Fig. 46, a). They consist of a body, a tray, a movable rocker arm with two scales of divisions: the lower one in kilograms (kg), the upper one in grams (g). On the left side of the rocker arm, there is a counterweight, on the right side there is a steroid process. You can use an electronic scale.

The scales are balanced before each child is weighed. This is achieved by rotating the counterweight until the swept arm of the rocker arm is at the same level as the similar arm, which is fixed to the balance body. At the same time, the weights are on the zero divisions of the scales.

The scale should be placed near the changing table on a stationary bedside table. On the tray, put a clean diaper folded several times (the diaper is changed after - height meter-a device for measuring the body length of children over 2 years old for each weigh-in).

Figure 46. Anthropometry— determination of the body weight and body length of a child under 2 years old;

The scale is usually balanced together with the diaper.

The child is placed on a tray of scales (on a diaper) so that the head is located at the wide end of the tray, and the legs - at the narrow end. For the scale to work reliably and for a long time, the shutter must be constantly closed, they should not be moved often and shaken. Before work and after finishing, the lot part of the scales is wiped with 0.5 % mina chlorine solution.

Weighing of children older than 2 years is performed on a lever medical scale (Fig. 46, b). Regardless of the age of the children, they are weighed in the morning on an empty stomach, preferably after urination and defecation. The height of infants is measured using a special horizontal height meter (Fig. 46, b), which is a

rectangular board with a length of 80 cm and a width of 40 cm. Before starting the measurement, the height meter is wiped with a 0.5 % solution of chlorine, and a diaper is placed on it. The child, dressed in a vest, is placed on the height meter so that the head is firmly attached to the crown of the head to the fixed transverse bar of the height meter, the legs are straightened at the knees and the movable transverse bar of the height meter is pressed to the soles. The distance between the fixed and movable bars (the height of the child) is determined by the sidebar with a scale.

The height of older children is measured by a height meter in the standing position. The latter is a wooden board with a length of 2 m 10 cm, a width of 8-10 cm, and a thickness of 5-7 cm, installed vertically on a wooden platform measuring 75x50 cm (Fig. 46, d). On the vertical board there are two scales of divisions in centimeters: on the right —to measure the height in the standing position, on the left-to measure the height in the sitting position. A 20 cm long plank slides across the board. At the level of 40 cm from the floor, a folding bench is attached to the vertical board to measure the height in the sitting position.

Measurement procedure: the child stands on the height meter platform with his back to the vertical stand, in a natural straightened position, touching the vertical stand with his heels, buttocks, back and back of the head, hands lowered along the body, heels together, socks apart. The head is placed in a position where the lower corner of the eye socket and the upper edge of the tragus of the ear are located in one horizontal plane. The movable bar is applied to the head without pressure.

The height of children from 1 to 3 years is measured using the same height meter, only instead of the lower platform, they use a folding bench and count on the scale on the left. The head and body position is the same as when measuring the height of older children.

Rinsing of the mouth, throat, and throat. Rinsing the oral cavity in sick young children requires an assistant who fixes the child in a sitting position. Nurse (doctor), after typing boiled rubber cylinder 1 % sodium solution bicarbonate or a

weak solution (1:10 LLC) of potassium permanganate, holding a spatula in the left hand, opens the child's mouth directs a light jet to the hard sky. During the procedure, the child's head is tilted down first on one side, and then on the other side. At the same time, water from the oral cavity flows into the substituted tray or basin.

Gargle the throat and throat can only be used for children after 3-4 years. For rinsing, use solutions of furacilin (1:5000), rivanol (1:2000), potassium permanganate (1:500), as well as a solution of sodium bicarbonate, infusions of chamomile, sage, calendula, eucalyptus, etc. It is important to teach the child to hold the liquid while rinsing so that it partially falls on the back wall of the pharynx. With angina, it is advisable to gargle 5-6 times a day, with pharyngitis, acute respiratory disease-3-4 times.

Hygienic baths. One of the most important hygiene measures is bathing. Hygienic baths for children older than a year in the hospital are carried out every 7-10 days, and children of the 1st year of life are bathed daily (if there are no contraindications).

The bathroom should be spacious, bright, clean, and warm (25 °C). While taking a bath, do not forget to it is forbidden to arrange drafts, open windows. Each bath should have a wooden deck, over which a diaper is placed; the diaper is changed after each patient.

Before bathing, the bath is thoroughly washed with a brush and soap and wiped with a rag moistened with a 1 % solution of calcium hypochlorite or 1 % solution of chloramine, then the bath is rinsed with water. The bath is filled with water not mediocre before bathing. In order not to form water vapor, hot and cold water is poured alternately. The bath is filled with water at 1/2 or 2/z", focusing on the fact that the water when the child is immersed should reach the middle third of the chest and not cover the heart area. The water temperature is measured with a special thermometer. The thermometer readings are taken without taking it out of the water.

Wash the child with a flannel glove or an individual sponge. First, wash the head, and then the trunk and legs, especially carefully wash the folds on the neck, in the axillary and inguinal areas.

The duration of bathing for children of the 2nd year of life is 8—10 min, older than 2 years — 10-20 min. Soap is used only for "Children". After bathing, the child is doused with warm water from the shower or jug (water temperature 36.5 °C), wrapped in a sheet. The skin after bathing, especially for children of the first years of life, is thoroughly soaked. If necessary, the skin folds are lubricated with baby cream. The hair is dried and tied on the head with a braid.Patients who are in a serious condition, if they do not need a hygienic bath, are washed in the bath, dipping and taking them out of the bath on a sheet. After bathing, the child is changed into clean clothes. A day of bathing is usually spent and bed linen is changed. In the medical record of the inpatient patient, a note is made about the conduct of a hygienic bath.

Contraindications to hygienic baths are hyperthermia, some skin diseases, severe general condition, decompensation phenomena on the part of individual organs and systems of the body.

CHAPTER 21

TECHNIQUE OF PERFORMING PROCEDURES, EFFECTING ON BLOOD CIRCULATION

In pediatric practice, procedures aimed at changing the general and local blood circulation are widely used. Thermal treatments: baths, warming up dry compresses, patches, poultices, etc. - cause a vasodilating effect in general, although it is necessary to think that hot water can give a short-term vasoconstrictive effect, and then leads to a persistent expansion of the capillaries. Cold, on the contrary, has a relaxing effect on the vessels. Prescribe procedures that affect blood circulation, according to strictly defined indications. Their

implementation is usually aimed at achieving not only a local effect but also a reflex reaction on the part of other organs and systems, i.e. on the body as a whole.

Therapeutic (general) bath. Prescribes a therapeutic bath doctor. Depending on the water temperature, the following baths are distinguished: hot — water temperature 40 °C, but not more than 42 °C; warm-water temperature 38 °C (1 °C above the body temperature); indifferent — water temperature 37 °C (equal to body temperature); cool-water temperature 30-33 °C; cold — the water temperature is below 20 °C. Therapeutic baths can be filled with medicinal substances and herbs. Children have prescribed the following baths: for diseases of the respiratory system-hot and mustard: 100 g of mustard per 10 liters of water. Duration 3-7 min. Start with a temperature of 36 °C, then increase the water temperature. A cold lump is placed on the head.; for eczema-starch: 100 g of starch per 10 liters of water, temperature 37 °C. It has an antipruritic and tonic effect; with potassium permanganate, temperature 37 °C (add a 5 % solution of potassium permanganate to the pale pink color of the water). It has a disinfecting and drying effect; for rickets, hypotrophy-sea: 50-200 g of sea salt per bucket of water. Assign 2-3 times a week. The course is 15-20 baths, the temperature of the first bath is 36-36. 5 °C. Duration 3-10 min. After every 2-3 baths, the duration of the procedures is increased by 1 min. After the sea bath, the children are washed with warm water, the temperature of which is 1 °C lower than the initial one; in functional disorders of the nervous system we — coniferous baths: 2-3 ml of coniferous extract per bucket of water; temperature 36-37 °C. Duration 7-10 min. During the bath, the nurse should monitor the pulse, breathing, and color of the skin cuts. If the child turns pale, complains of dizziness, then he is urgently removed from the bath, put on the couch, lifting the end of the leg, and give a sniff of cotton wool, moistened-ammonia, tinder whiskey. In such cases, you should immediately call a doctor.

Hand bath. For the procedure, a baby bath, a basin, and so on are suitable. One or both of the child's hands are immersed in water up to the elbow . To enhance the irritating effect, you can add a little dry mustard to the water. The water temperature

is gradually increased by rise from 37 to 40 °C; bath duration 10—15 min. Hand baths are usually used for patients with lung diseases.

Footbath. In an enameled bucket or tank pour water at a temperature not lower than 36-37 °C. Lower the child's legs and consistently pour hot water, bringing the water temperature to 40 °C. The duration of the procedure is 10-15 minutes, after which the feet are wiped dry, put on cotton stockings, and woolen socks on top of them. The patient is put to bed, giving a semi-sitting position, and warmly covered. For mustard foot baths, a filtered mustard solution is used at the rate of 100 g of mustard per 10 liters of water. Foot baths are indicated for colds, hypo - and hypertonic conditions, and local joint damage.

A warming compress. It is indicated for inflammation of the middle ear. During this procedure, there is a prolonged expansion of the superficial and deep blood vessels, which causes blood flow to this area, resorption of the infiltrate, and, as a result, a decrease in pain.

The warming compress consists of three layers: inner, middle, and outer. The inner layer (wet) is a piece of clean, dense, but soft cloth (gauze napkin made of 6-8 layers, linen cloth, etc.), moistened with cologne or alcohol, diluted with water (in the ratio of 1:2), camphor oil or water at room temperature and well wrung out.

Figure 48. The warming compress, general indications for compress.

Medium (insulating)the layer is usually made of waxed paper, plastic film, thin oilcloth. As an external (warming) layer, cotton wool (layer thickness 2-3 cm) is used, and in the absence of a woolen scarf, scarf, flannel. Each subsequent layer should be wider and longer than the previous one by 2 cm. For convenience, the layers of the compress are placed on the table. A compress is applied to the ear area and tightly bandaged .

Children are given a compress for 4-8 hours, then take a break for 1-2 hours and repeat the procedure. When a rash appears on the skin, this area is sprinkled with talcum powder.

Cold compress. A cold compress is prescribed at elevated body temperature, most often for children of early age. A cold compress is applied as follows: a terry towel or blanket is placed across the crib, then a diaper folded in half, previously soaked in cold water, and squeezed out. The naked child is placed on his back on a wet diaper and, lifting his hands, wraps the free ends of the diaper around his chest. The second one, also soaked in cold water and pressed, is applied to the baby's chest (Fig. 49). Then the baby should be wrapped in a dry towel, blanket, or flannel diaper. They give him warm tea or aspirin, cover him up to the neck with a blanket, and leave him to sweat for half an hour. Then it is washed, dried with a dry towel, and put on dry underwear. If a child falls asleep with a compress, then it is not necessary to wake him up, but wait until he wakes up himself. It is more pleasant for him to sweat in his sleep.For the compress to have the desired effect, it is necessary to carefully wrap the child, leaving it open just his face.

Figure 49 - **Applying a cold compress.**

Restless children sometimes need to be wrapped tightly in a blanket with their hands pressed to their torso, and the blanket should be fastened with safety pins to help the childfree his hands and remove the compress. But most children endure this procedure patiently.

Mustard plasters. Standard factory-made mustard plasters on a paper base with a size of 12x18 cm or 3x4 cm, on which dry mustard is applied, are prescribed for children with respiratory diseases, accompanied by coughing, difficult-to-remove sputum. The mustard plaster is lowered into a tray with warm water, moistened (Fig. 50, a) apply in the desired place, for example, on the back (Fig. 50,6). Then

the mustard plasters are covered with a towel (Fig. 50, b). For infants and young children, mustard plasters are placed through a diaper. The child is covered with a blanket, but every 2-3 minutes the skin of the area where the mustard plaster is located is examined. With the appearance of persistent redness, the mustard plaster is removed from the skin. The reddened area of the skin is washed with warm water and lubricated with vaseline oil or boiled vegetable oil.

In the absence of ready-made mustard plasters, they can be prepared independently. To do this, a tablespoon of mustard is mixed with the same amount of wheat flour and, stirring, add hot water (45-50 °C). The resulting mush-like mass is left for 30 minutes to form essential oils, which have a stimulating effect on the skin and expand the skin's blood vessels. The prepared mass with a thickness of 0.5 cm is applied to a clean diaper or cloth and, covering with the other side of the cloth, is applied to a certain place. Such mustard plasters, unlike factory ones, provide the more pronounced effect, so they should be removed in time to avoid burns.

Mustard wraps. A distracting heat treatment that has a calming and diaphoretic effect. There are general and local mustard wraps (for example, for a pile cage). To perform the procedure, 100 g of dry mustard is poured with 2 liters of hot water (the temperature is not lower than 80 °C) and thoroughly mixed. The mixture is settled for 3-4 minutes, and then the liquid part is poured into another bowl.

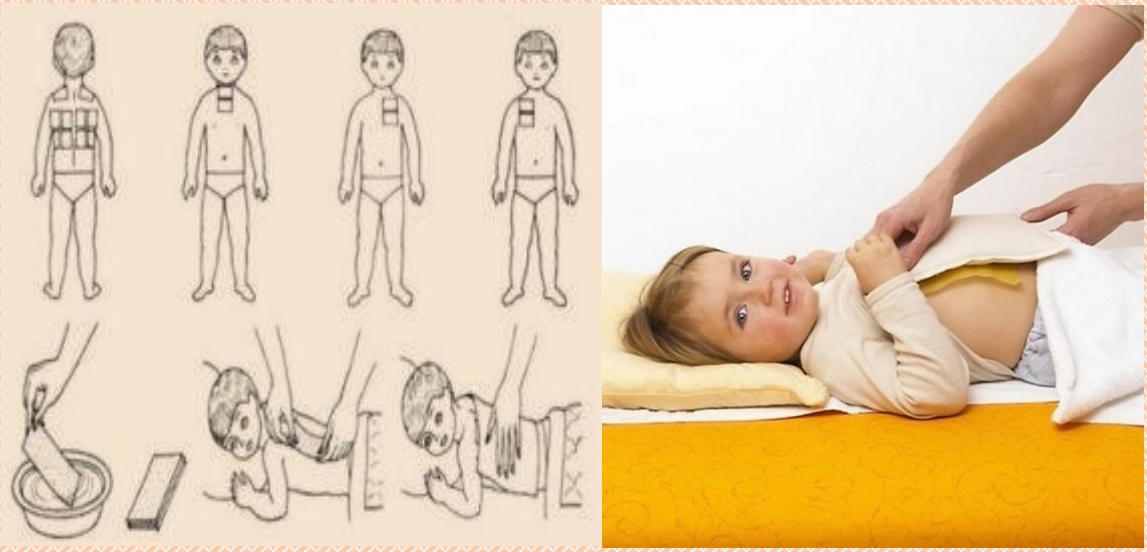
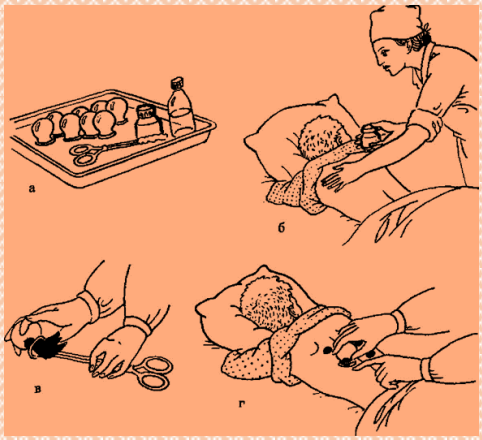


Figure 50. Setting mustard plasters.

A cotton diaper or sheet is wetted, wrung out, and wrapped around the baby's chest from the collarbone to the navel. The top is covered with a flannel diaper and a wool blanket. In this wrapped form, the child stays for 20-30 minutes. After the procedure, the diapers are removed, the child is doused with warm water (34-36 °C), thoroughly wiped, and, warmly dressed, placed in a pre-prepared warmed bed. The procedure can be repeated every other day, only 3-4 times during the disease.

Cans. Banks are placed mainly for children over 7 years old, less often for children of preschool age. Setting up cans is technically difficult in newborns in infants (small surface of the back). It should also be taken into account that banks in young children can cause massive hemorrhages in the skin and subcutaneous fat, persistent disorders of microcirculation, and, as a result, a decrease in respiratory and other skin functions.



Banks are contraindicated in diseases of the skin (especially pustular), blood, general exhaustion, and arousal of patients. Before setting the cans, check the integrity of their edges, thoroughly wash with hot water and wipe. On a tray, collect all the tools necessary for manipulation (Fig. 51, a). The patient is placed on the chest in a comfortable position, the back is exposed and the places where the cans are smeared with baby cream or vaseline (Fig. 51, b). On a metal probe with a length of 15 cm, cotton wool is wrapped, moistened with alcohol, well wrung out, and set on fire. With the left hand, take 1-2 cans, with the right-a rod with burning cotton wool and insert it into the jar for 2-3 seconds (Fig. 51, c), and then quickly and tightly apply the jar to the body. After the air is thinned, when the alcohol is burned inside the jar, it sticks to the skin. There is a retraction of the skin with the underlying subcutaneous fat in the jar to a height of 1-2 cm. Although the procedure is technically simple, skill and experience are required. If the air is not sufficiently thin, the jar is poorly sucked and then falls off on its own. Excessive heating of the jar leads to skin burns. Banks can not be placed on the spine, the heart area, in

girls— on the area of the mammary glands. The number of installed cans is determined by the age of the child (the surface of the chest), they are placed in the inter-scapular and sub-scapular areas, capturing the axillary area, placing them on symmetrical areas. After setting the cans, the child is covered with a blanket. If the manipulation is performed correctly, the skin under the medical banks first becomes bright red, and then purple - a bruise appears. During the procedure, the child is calmed down, the nurse monitors his behavior. Remove the jars after 7-10 minutes, for which the jar is tilted to the side with one hand, and the other is pressed on the skin from the opposite side. After the air penetrates the jar, it is easily separated (Fig. 51, d). The skin where the cans were standing is wiped with a dry or alcohol-soaked swab to remove the cream (vaseline).

The child must be warmly dressed and covered with a crowbar for 30-40 minutes.

Poultices(compress). One of the types of heat treatment that can be used at home. Poultices are recommended for local inflammatory processes for faster resorption. Apply flaxseed, oats, bran, or sand. Plant seeds are poured into the bag is made of thick fabric, sewn up and lowered into boiling water for 15-20 minutes, after which it is removed, wrung out, wrapped in a clean cloth or cloth and applied to the sore spot. The sand is heated up, placed in a clay bag and applied to the skin. They cover it from above a woolen handkerchief or flan lew.

A band-aid. Applying the patch (pepper, etc.) is carried out as prescribed by a doctor.

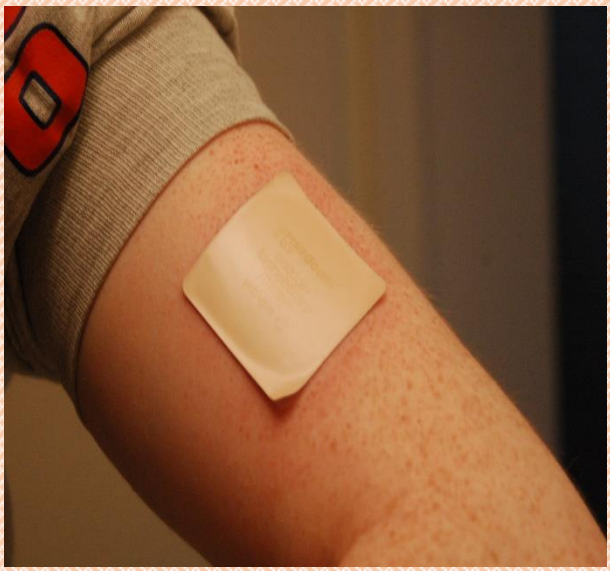


Figure 52. Applying the patch to the skin

Before applying the patch, the skin is degreased with alcohol, ether and wiped dry. The protective film protecting the adhesive side is removed from the placemark.

Before applying well, put it on the skin and press it lightly. The place of application of the patch is determined by medical indications. For example, an Emplastrum epilini for the treatment of fungal diseases is applied to the bare part of the scalp (the hair is shaved), and a patch as an antitussive agent is applied to the lower part of the sternum . The duration of the application depends on the sensitivity of the skin, but it does not last more than a day.

Hot water bottle(heater). It is used as a local thermal procedure for resorption of inflammatory processes, for warming up, and as an analgesic. Heating of superficial tissues can be achieved using hot packs, wax baths, towels, sunlight, saunas, heat wraps, steam baths/rooms. We can also get the heat in the deeper tissues through electrotherapy (ultrasound, shockwave and infrared radiation).The hot water bottle is contraindicated in acute inflammatory processes in the abdominal cavity (appendicitis, cholecystocholangitis), suspected tumor, and bleeding. There are rubber and electric hot water bottles, but the latter is used in children's practice only with constant supervision by adults.

The rubber heating pad is a rubber reservoir with a capacity of 1.0-1.5 liters with a tightly screwed stopper. The hot water bottle is filled with hot water (60-70 °C) by half or by 3 /4 volumes. The air from the hot water bottle is released by pressing the hand, tightly closed with a cork, tipped over with the neck down to make sure that it is tight.

The hot water bottle is wiped dry, to avoid burns, wrapped in a dry and clean towel, and applied to the affected area of the body. It should be remembered that in seriously ill patients, due to a decrease in skin sensitivity, burns can easily occur. Newborns are particularly sensitive to warm water.

In the absence of a rubber heating pad, you can sometimes use a bottle, which after filling with water is carefully closed and necessarily wrapped with a towel.

Instead of a rubber (water) heating pad for older children, sometimes an electric one is used, the degree of heating of which must be adjusted with the help of a rheostat.

	Cold	Heat
Pain	⬇	⬇
Spasm	⬇	⬇
Metabolism	⬇	⬆
Blood Flow	⬇	⬆
Inflammation	⬇	⬆
Edema	⬇	⬆
Extensibility	⬇	⬆

Pathophysiologic effects of topical modalities are shown below:

An ice pack. To influence the local blood circulation, the ice pack is used. It is indicated for bleeding, bruising, and the initial stages of the acute inflammatory process. The pack is a special-shaped plastic bag with a wide flat base and a hole that is screwed with a large stopper (Fig. 53). Ice and cold packs can relieve pain, swelling, and inflammation from injuries and other conditions, such as arthritis.

Types of ice and cold packs:

-Ice towel. Wet a towel with cold water and squeeze it until it is just damp. Fold the towel, place it in a plastic bag, and freeze it for 15 minutes. Remove the towel from the bag and place it on the injured or sore area.

-Ice pack. Put about 1 lb (0.5 kg) of ice in a plastic bag or ice pack you buy at the store. Add enough water to barely cover the ice. Squeeze the air out of the bag and seal it. Wrap the bag in a wet towel and apply to the affected area.

-Cold packs.

Bags of frozen peas or corn are , last 10 to 20 minutes, and mold well to your body. Mix 3 cups (710 mL) water and 1 cup (235 mL) rubbing alcohol in a freezer bag. Seal the bag and place it in the freezer until slush forms. Refreeze the bag when the slush melts.

Some of them are designed to wrap around an injured area, such as an arm or knee.

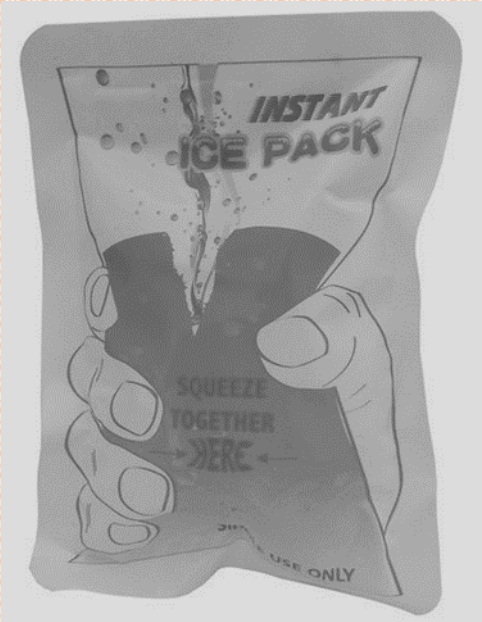
Using an ice or cold pack:

Apply an ice or cold pack to the injured or sore area at least 3 times a day for as long as you have pain, swelling, and inflammation. For the first 72 hours, ice for 10 minutes, once an hour. After that, use ice for 15 to 20 minutes, 3 times a day: in the morning, in the late afternoon after work or school, and about one-half hour before bedtime. Also, ice after any prolonged activity or vigorous exercise.

Always keep a cloth between your skin and the ice pack, and press firmly against all the curves of the affected area. Do not apply ice for longer than 15 to 20 minutes at a time, and do not fall asleep with the ice on your skin.

In the pack up to half impose small pieces of ice with a size of 1-2 cm, displace the air they close it with a cork. To prevent excessive hypothermia of the skin and underlying tissues, the pack is placed on a towel (or cloth) folded several times.

Paraffin. It is widely used for local thermal procedures in acute and chronic diseases. Paraffin wax is a white or colorless soft, solid wax. It's made from saturated hydrocarbons. **Figure 53**. Ice pack



It's often used in skin-softening salon and spa treatments on the hands, cuticles, and feet because it's colorless, tasteless, and odorless. It can also be used to provide pain relief to sore joints and muscles. It's often used as lubrication, electrical insulation, and to make candles and crayons. Fin vapor is a mixture of high-molecular-weight carbon hydrogens produced by the distillation of oil. It has a high heat capacity and low thermal conductivity at a melting point of 52-55 " C. To melt the paraffin, take two pans —one large, in which they put a wooden grate and pour water, the other smaller, so that it is placed in the first pot. In a small saucepan, lower the paraffin. First, it is sterilized at a temperature of NO-120 °C, then cooled to 60-70 °C. To avoid burns, the child's skin should be clean and dry before paraffin application.

Paraffin wax may be used to help relieve pain in the hands of people with:

Osteoarthritis, rheumatoid arthritis, fibromyalgia, other joint mobility issues

It acts like a form of heat therapy and can help increase blood flow, relax muscles, and decrease joint stiffness. Paraffin wax can also minimize muscle spasms and inflammation as well as treat sprains.

Do not lubricate the skin with vaseline or other oils!

The melted solidifying paraffin is collected in a black pack and applied with a wide flat brush to the area of the body to be treated. At the same time, it quickly forms on the body It is a thin paraffin film that protects the skin from the action of hotter paraffin applied in layers to this film. The temperature of the skin under the paraffin increases to 40-45 °C and is kept within these limits throughout the procedure.

The place of application is covered with oilcloth, cotton wool, and the patient is wrapped in a blanket. The duration of the first procedure is 20 minutes, the subsequent ones in young children up to 30 minutes, preschoolers and schoolchildren-up to 40 minutes. After removing the paraffin, the patient should sleep, so it is better to perform the procedure an hour before bedtime.

Ozokerite. It is found in its natural form in places of oil production (mountain wax). Ozokerite has a high heat capacity, low thermal conductivity, and its heat-retaining capacity is significantly higher than that of fina vapor. It is used, like paraffin, for subacute and chronic inflammatory processes. Application of ozokerite

Montan wax is used in industry, in particular, it is extracted from paraffin, ceresin, but is used and solid ozokerite slaking process and purified.

From ancient times, almost everywhere in the places of production of the substance practice ozocerite treatment. In some states it is so effective, that has not lost its relevance today. For medical use ozokerite further purified and sterilized prior to use.

Ozocerite treatment

Ozokerite widely used in physiotherapy as warming compresses for diseases of the musculoskeletal system, as well as in chronic inflammatory diseases, pathogenesis of which play an important role the peripheral blood circulation. The therapeutic action of mineral wax his unique low thermal conductivity at high heat capacity, so that the substance is rapidly accumulates the heat and slowly it gives. Also, due to the chemical composition of the medical ozokerite in direct contact with the skin it has a surface-irritant effect, causing a rush of blood. It stimulates the blood circulation in the subcutaneous capillaries and improves metabolism in the affected

area. Reviews Ozokerite by pharmacists and physiotherapists indicate its resolving, analgesic, anti-inflammatory and antiseptic action.

As the therapeutic agent is used not only medical ozokerite, and preparations made from it: ozokeramin, ozoparafin, ozokerafin and ready ozokerafinovye napkins.

Indications for treatment, ozocerite

Ozokeritotherapy is usually carried out in a complex spa treatment, or as rehabilitation in outpatient conditions.

Indications for treatment, ozocerite following:

Arthritis; Contracture of inflammatory and traumatic origin;

Myositis; Sciatica; Neuritis; Leg sores; Bedsores;

Common chronic diseases in remission (pyelonephritis, prostatitis, urethritis, cystitis, cholecystitis, gastritis, gastro, pleurisy, etc.) As part of a comprehensive rehabilitation;

Male and female infertility, as part of the course of balneotherapy; Post-traumatic rehabilitation.

Instructions for use ozokerite

According to the instructions ozokerite applied as compresses or by application cuvette, or so-called pellets. And compresses and cakes superimposed on clean, dry skin, if there is abundant vegetation, it is necessary to shave before the procedure. Patients are advised to carry out the procedure ozokeritotherapy in the supine position.

Packs of ozokerite. Gauze or a bandage folded in 8 layers by making a so-called spacer. Ozokerite melted in a water bath or in a special apparatus. Attention! It is strictly prohibited direct contact with ozokerite heat source due to its easy flammability! The liquid gasket dip ozokerite, drained, cooled to a temperature of 45-50 ° C and then applied to the affected area. Prepared in the same manner a second gasket, except that the temperature should be above the first. Permissible temperature second spacer 70-80 ° C. The second pad is placed over the first, without touching the patient's skin. Heat-fit waxed paper or oil cloth top - padded jacket.

Ozokerite cakes (cuvette-applique method). Liquid hot mineral wax is poured into ditches, previously lined with waxed paper. The size of the cell depends upon the desired application of the impact area. Means allowed to cool to a temperature 45-50 ° C, after which is recovered from the cell with the help of waxed paper. The resulting cake is applied to the affected area of the paper up over it laid jacket or cotton-gauze bandage.

The difference between the two methods mainly consists in operating temperature of the means - if cuvette-application method is the lower.

According to the instructions mineral wax is applied for up to one hour, but an average of 30-40 minutes, after which it is removed, and the place is covered with a blanket exposure or scarf wrapped for 40 minutes. The procedure is repeated every day or every other day, a course of treatment, ozocerite consists of 15-20 procedures.

Ozokerite is heated in a pan in a water bath to a temperature above 100 °C, continuously stirring with a wooden spatula until the formation of foam stops. In the treatment of ozokerite, the cuvette-applicative method or the method of gaskets is used.

In the cuvette-application method, an oilcloth is placed on the bottom of the enameled bath, on which molten ozokerite is poured in a layer of 1-1. 5 cm. After a few minutes, it cools down to a temperature of 55-60 °C, turning into a thick jelly. Then the oilcloth together with the ozone-kerite cake is removed from the bath, applied to the affected area of the body, a diaper is applied over the oilcloth, wrapped in cotton wool, and bandaged.

With the method of gauze pads, two pads are prepared from 10-15 layers of gauze or thin tights. The gaskets are impregnated with the straightened ozokerite and squeezed out evenly. A carefully straightened pad is placed on a plastic film or wadded paper and applied to the affected area of the body. On top of the first gasket, put the second one. The temperature of the gasket adjacent to the skin is 38-45 " C, second- 45 -60 °C. The pad is fixed with folded diapers in several layers. The

duration of the procedure is 40-60 minutes, depending on the size of the pads, the age, and the condition of the patient.

CHAPTER 22

TECHNIQUE OF TAKING THE MATERIAL FOR LABORATORY TESTING RESULTS

Taking smears from the nasal mucosa and pharynx (Nasopharyngeal swab). Smears take with the help of special tampons, wound on a wire or wooden stick. The prepared tampons are sterilized in an autoclave and placed in a tray.

A nasopharyngeal swab is a method for collecting a clinical test sample of nasal secretions from the back of the nose and throat. The sample is then analyzed for the presence of organisms or other clinical markers for disease.

A young child is placed on his lap by the assistant of the medical nurse, and the patient's legs are covered by his legs. The left-hand fixes the child's hands, and the right holds the forehead (Fig. 54). The nurse removes the swab stick from the test tube, lifts the tip of the child's nose slightly with one hand, and removes the mucus of the nasal passages with a swab with the other. The nasal mucosa should not be swabbed. The swab is then inserted into a sterile test tube. A new swab is taken from the pharynx and tonsils. With a spatula, press the root of the tongue and carefully remove the plaque from the tonsils or mucus from the back wall of the pharynx. The tampon is placed back a test tube containing the child's last name, first name, and age, the date the material was taken, and the place from which it was taken. This information can be indicated in the accompanying direction, which is attached to the outer end of the tampon.

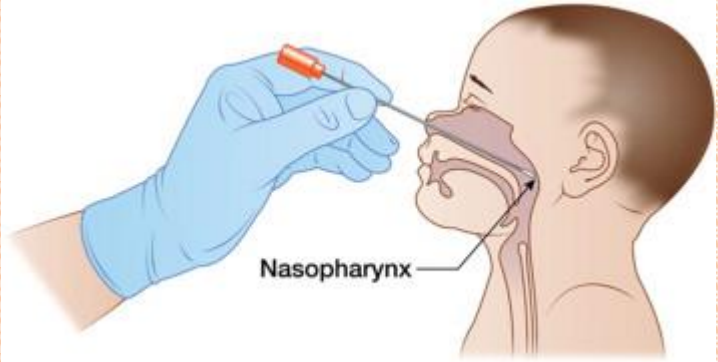


Figure 54. The position of the child in the study of the oral cavity and pharynx.

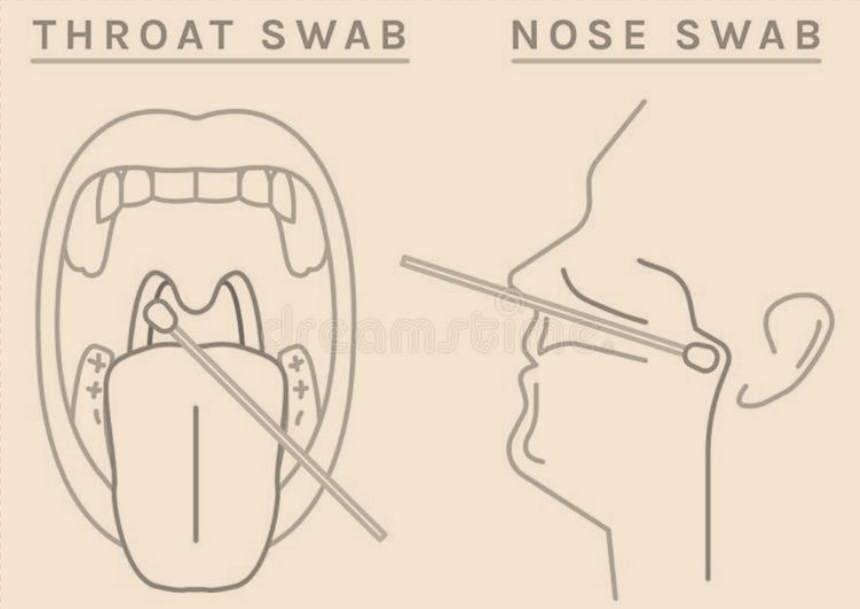
In older children, the material for IP-the blood from the nose and throat is taken without helpers. The procedure is carried out on an empty stomach, before taking medications, and after flossing the mouth and throat with any disinfectants.

The sequence of actions when taking a smear from the nose: prepare a sterile tube with a swab, sit the patient (the head should be slightly tilted back). Take a test tube in the left hand and pull a tampon out of it with the right hand, lift the tip of the patient's nose with the left hand, and with the right — gently rotate the tampon into the lower nasal passage, first on one side, then on the other, without touching the outer surface of it (Fig. 55, a).

Fill in the referral to the bacteriological laboratory (last name, first name, age of the patient, "nasal smear", date, name of the medical institution), the test tube with the referral is sent to the laboratory.

The sequence of actions when taking swab from throat: prepare a sterile test tube with a tampon, the patient sits facing the light source, take a spatula and a test tube in the left hand, press the spatula on the root of the tongue, remove the sterile swab with the right hand for the cork, hold the swab over the arches and palatine tonsils-left and right (Fig. 55, b), the test tube with the direction is sent to the laboratory.

To diagnose acute viral respiratory infections in the first days of the disease, a smear and a smear-print of the nasal mucosa are used. For the study, it is necessary to prepare a clean, ether-free slide. Then a small cotton tampon, fixed on a wooden stick, is moistened with an isotonic solution of sodium chloride and injected into the nose. The tampon is pressed against the lower nasal conch and several



rotational movements are made.

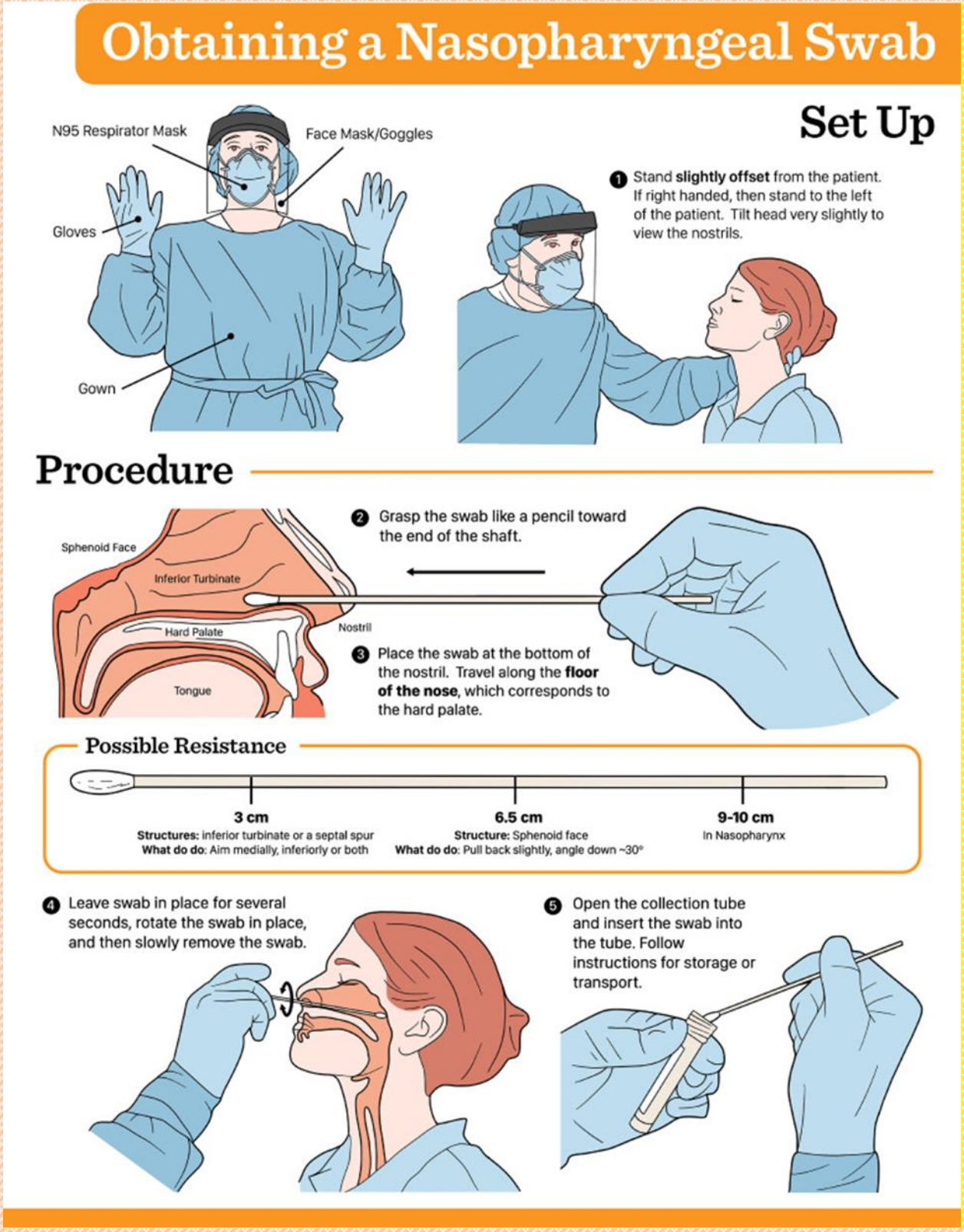


Figure 55. Taking a smear from the nose (a) and throat (6).

After that, the swab is removed and prints are made on the slide. To obtain smears-prints, a plexiglass plate with rounded and rounded edges is used. The plate is also degreased with ether, inserted into the nose, pressed against the lower shell, and several longitudinal movements are made.

Sputum collection. The easiest way to take phlegm during a cough: phlegm is collected immediately on the nutrient medium in Petri dishes. For better discharge of viscous sputum, infusions of Thermopsis are prescribed, mustard pots or cans are placed, and a glass of warm milk with baking soda is given to drink. When collecting material from young children, it is necessary to press on the root of the tongue to cause a cough. You can collect sputum during the bronchoscopy. If it is impossible to get sputum, the following- in other ways, they do gastric lavage, since the child does not know how to expectorate sputum and swallows it.

Gastric lavage is performed on an empty stomach, the microbial flora of the washing waters is similar to that in the bronchi.

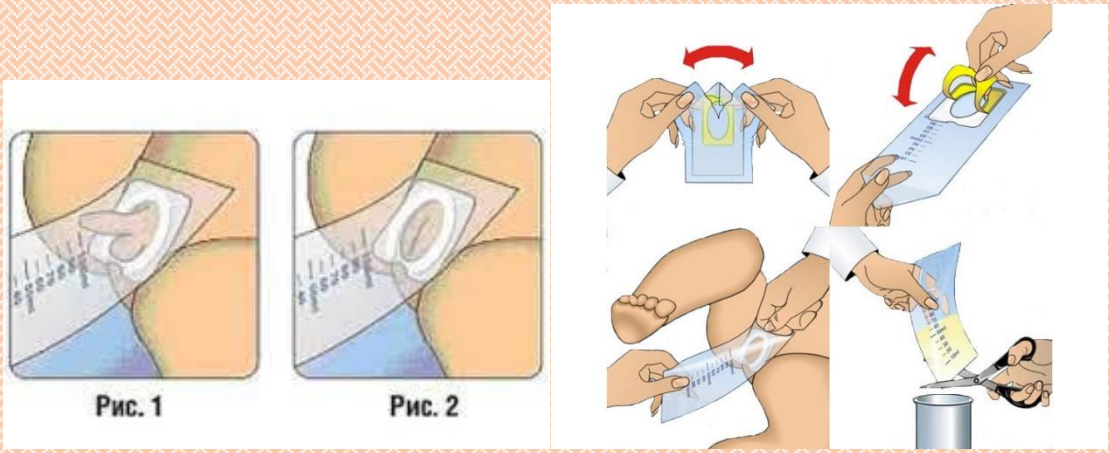


Figura 56. Collection of urine in infants, a- for boys ; b- for girls.

Taking urine. To collect a urine sample from an infant: Thoroughly wash the area around the urethra (the hole where urine flows out). Use the soap, or cleansing wipes that your provider gave you.You will be given a special bag to collect the

urine. It will be a plastic bag with a sticky strip on one end, made to fit over your baby's genital area. Open this bag and place it on the infant.For males, place the entire penis in the bag and attach the adhesive to the skin. For females, place the bag over the two folds of skin on either side of the vagina (labia).

Put a diaper on the baby (over the bag).

Check the infant often, and change the bag after the infant has urinated. (An active infant can cause the bag to move, so it may take more than one try to collect the sample.)Empty the urine from the bag into the container provided by your provider. Do not touch the inside of the cup or lid. If at home, place the container in a plastic bag in the refrigerator until you return it to your provider. When finished, label the container and return it as instructed.

Thoroughly wash the area around the urethra. Clean from the front to the back on a female infant, and from the tip of the penis down on a male infant.

Sometimes, it may be necessary to obtain a sterile urine sample. This is done to check for a urinary tract infection. A health care provider will take this sample using a catheter. The area around the urethra is cleaned with an antiseptic. A small catheter is inserted into the baby's bladder to collect the urine. It is removed after the procedure.

The urine is collected during free urination (amount of the average portion of urine) or with the help of a catheter. In young children, especially infants, the collection of urine is difficult. To stimulate the urine emission, the infant is stroked with a hand on the abdomen, lightly pressing on the suprapubic region. Under a stream of urine substitute a clean tray or dishes with a wide throat. If it is not possible to get urine, then a test tube, a cone, a plastic bag, etc., is attached to the genitals with a band-aid (Fig. 56).

For the long-term collection of daily urine, special pads with a hole are often used. A raft pad is used to cover the child's genitals and a bandage is fixed in the lumbar region. A rubber tube is attached to the pad, the second end of which is lowered into a clean vessel. Even more perfect is the collection of urine through a special urinal with an alarm.

Before taking urine, it is necessary to conduct a thorough toilet of the external genitals in both girls and boys. In some cases, it is necessary to use disinfecting solutions, for example, furaciline (1:5000).

Urine for the general analysis and the analysis according to Nechiporenko is taken in the morning, after sleep from the average portion of the jet. Prepare clean, dry dishes in advance. Each bottle should have a label with the name of the child, date, department, and purpose of the study.

For a general urinalysis, there should be at least 50-100 ml, for the analysis of urine according to Nechiporenko —at least 10 ml. The urine should be delivered to the laboratory within 1 hour, it can be stored in a glass container in a cool place, preferably on a tiled floor.

For the analysis of urine according to Kakovsky — Addis, urine is collected during the day in a separate clean bag. Its volume is measured and sent to the laboratory 100-200 ml. Given the difficulties of long-term collection of urine in children, sometimes a modification of the method is used: the urine collected in 12 hours is examined.

For analysis for bacteriuria, urine is collected after washing the external genitals with a disinfectant solution (furacilin). In a sterile dish, take 15-25 ml of urine and immediately close it. In case of doubtful results, the urine is taken with a sterile catheter.

Zimnitsky test consists of the dynamic determination of the amount and relative density of urine released every 3 hours during the day. To do this, on the eve of the study, the nurse prepares all seven clean bottles(cans), labels them, putting down the number and surname of the child (Fig. 57). The patient urinates at 6 a.m., and this urine is taken for general analysis. Starting 9 hours the child urinates every 3 hours in a separate bottle. At night, the patients are woken up. At 6 o'clock the next morning, the last portion is collected and all 8 portions are sent to the laboratory, where the relative density of each portion of urine is determined, the night and day diuresis is measured, if necessary — the amount of protein in each portion. The condition for conducting the Zimnitsky test, which allows us to correctly assess the

functional ability of the kidneys, in compliance with the usual water regime. In addition, the amount of liquid consumed during the day is recorded.

To determine the excretions of salts, glucose in the daily urine, the latter is collected in one container. The first portion of urine at 6 a.m. is not taken into account, but the urine is collected for the period from 9 a.m. to 6 a.m. the next day.

EIGHT CANS FOR EVERY THREE HOURS

URINE PORTION №	TIME, HOURS	AMOUNT OF URINE	SPECIFIC GRAVITY OF URINE	DIURESIS
1	9.00	100	1030	DIURESIS 1 st part of DAY DD= 700ml
2	12.00	150	1020	
3	15.00	200	1016	
4	18.00	250	1020	
5	21.00	150	1018	NIGHT DIURESIS ND=500ml
6	24.00	100	1016	
7	3.00	70	1020	
8	6.00	180	1028	
Zimnitsky test				DAILY DIURESIS DD= 1200ml

Figure 57. Collecting material for the Zimnitsky sample.

The amount of urine excreted per day is measured, and 80-100 ml of the total volume is sent to the laboratory, indicating the daily diuresis.

Use of diagnostic test strips for rapid urine analysis. Test strips (Self-Stik) made of cellulose with solid-phase reaction zones applied to them are designed to quickly

obtain a biochemical analysis of urine. They are designed for almost instantaneous results on the principle of "dip and read" based on a visual assessment of the color display. The test strips allow conducting urine tests on 11 parameters: protein (5(10)-100 mg/dl), glucose (from 100 mg/dl), specific gravity (1000-1030), pH (5-9), ketone bodies (5 mg/dl), bilirubin (0.5-3.0 mg/dl), urobilinogen (0.1—1.0 mg/dl), nitrites (qualitatively), hidden blood (5-10 red blood cells per 1 µl), leukocyturia (15 white blood cells in the field of vision), ascorbic acid (5 mg/dl). The analysis is recommended as follows (Figure 58).

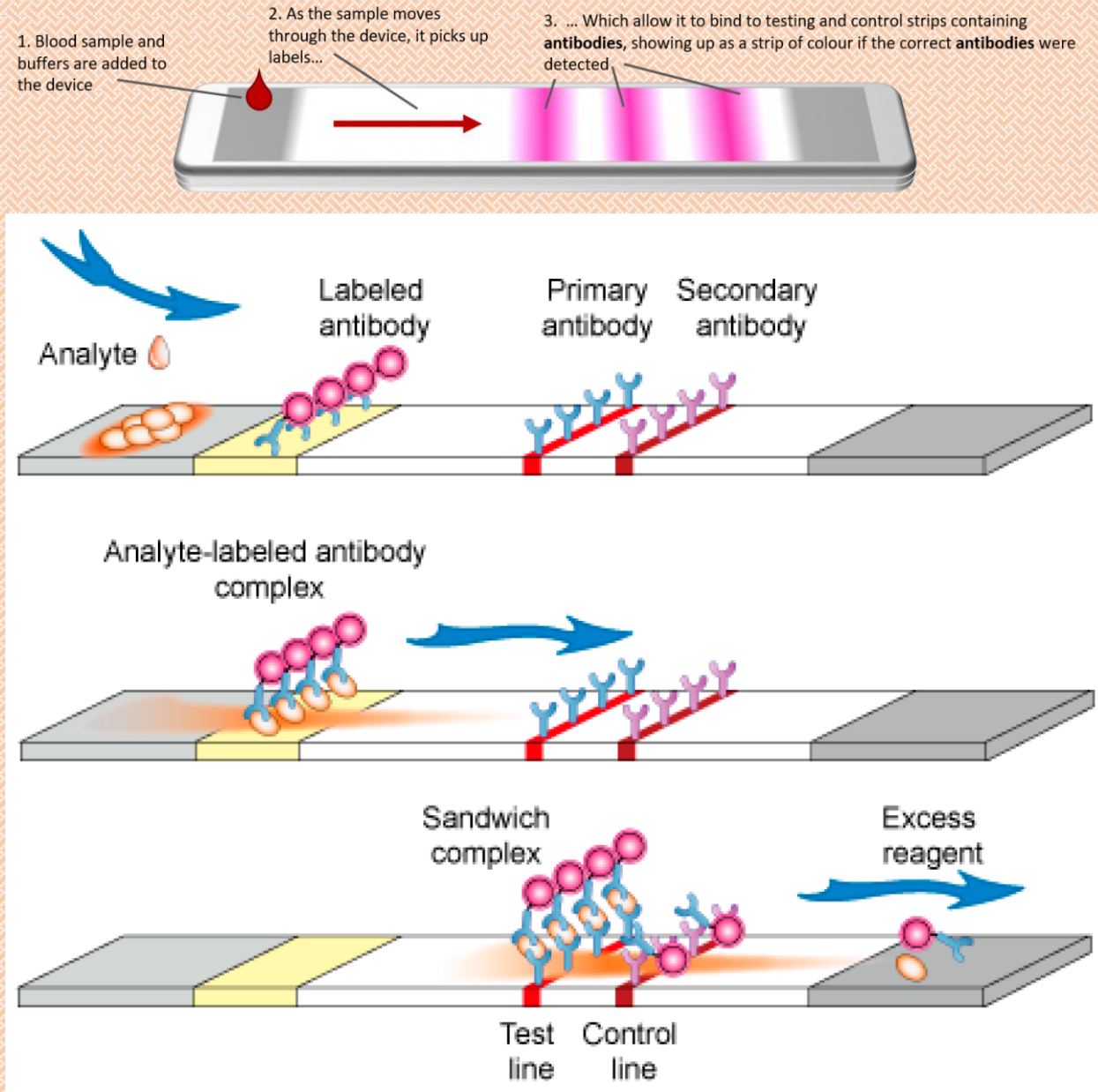


Figure 58. Changing the diagnostic test strips.

Use any clean, dry, previously unused dishes to collect a urine sample. The Self-Stik test strip is removed from the pencil case. The pencil case is closed immediately after removing the strip. The test strip is immersed in fresh, well-mixed urine for clarity (no longer) (Fig. 58, a). Excess urine on the test strip can lead to distortion of the results, so run the end of the strip along the edge of the dish so as not to touch the reaction zones. The excess urine will drain (Fig. 58, b). The excess urine can be removed by blotting the edges of the strip with filter paper.

Visually compare the color of the reaction zones of the test strip with the color map of the interpretation of the results, located on the pencil case (Fig. 58, c), preferably in good light.

The time of recording the result of 30-60 seconds is critical for the correct interpretation of the results. When reading the results, hold the strip horizontally to avoid possible runoff of chemicals to neighboring reaction zones along with excess urine. Color changes that affect only the edges of the reaction zones or occur after more than 2 minutes have no diagnostic value. The results are taken into account by direct visual comparison of the color of the reaction zones of the test strip with the color interpretation map on the pencil case. No additional calculations and equipment are required.

Taking feces. For coprological research and I feces obtained by self-defecation are placed in a clean, dry, non-permeable dish and delivered to the laboratory immediately or after 8-1 2 hours under storage conditions during this time.-

neither in the refrigerator at a temperature of 3-4 °C. You can not examine the feces after an enema, the use of rectal candles, taking laxatives or coloring substances, as well as iron, bismuth, pilocarpine, and some others. Feces should not contain foreign impurities, such as urine, disinfectants. Coprological research includes macroscopic, chemical, and microscopic studies of the material. Bacteriological (examination for dysbacteriosis) and biochemical studies are performed according to special indications.

In the study of feces on the eggs of worms and giardia, the child is planted on a pot pre-treated with ki heel. Feces for analysis are taken from different portions with a wooden or glass stick and placed in a jar. The material is delivered to the laboratory within 30 minutes from the moment of taking the analysis. If enterobiasis is suspected, scrape the folds around the anus with a wooden spatula. The scraping is transferred to the slide in a drop of 50 % glycerol solution or isotonic sodium chloride solution. Feces for the detection of the intestinal group and dysentery carrier are taken with a Zymann tube after the act of defecation from a diaper or pot. The tube is lowered into a sterile tube with a nutrient medium, closed with a sterile gauze plug, and sent to the laboratory.

When preparing a sick child for the treatment of feces for latent bleeding, meat, fish, all types of green vegetables, preparations, eggs of spring laying, as well as medicines containing iron, copper, and other heavy metals are excluded from the diet for 2-3 days, since these food and drug substances are catalysts for reactions used for blood detection.

CHAPTER 23

TECHNIQUE OF PERFORMING THERAPEUTIC EXERCISES MANIPULATIONS

In the practice of children's medical institutions, great importance is attached to the implementation of such therapeutic procedures as enemas, gas drainage, and proms-242 gastric lavage, bladder catheterization, duodenal probing, etc. Their implementation requires careful preparation, knowledge of the features of each specific manipulation in children of different ages.

Enema setting. With the help of an enema, various fluids can be injected into the colon for therapeutic or diagnostic purposes. Some enemas are purifying, medicinal, and nutritious.

Cleansing enemas are prescribed to cleanse the intestines of feces and gases. They are used for constipation, food poisoning, for preparing the patient for endoscopic examination methods (rectoscope, colonofibroscopy), X-ray examination of the stomach, intestines, kidneys, for performing an ultrasound examination of the abdominal organs, before operations, before the introduction of drugs. Contraindications are inflammatory changes in the lower part of the colon, hemorrhoids, prolapse of the rectal mucosa, suspected appendicitis, intestinal bleeding.

For a cleansing enema, water is used. at a certain temperature, it is introduced using a balloon with a soft tip. For enemas, children of the first 2-3 months of life using a pear-shaped balloon No. 2 (capacity about 50 ml), a child of 6 months — No. 3 or 4 (75-100 ml), a one—year—old - No. 5 (150 ml), children of 2-5 years - No. 5-6 (180-200 ml), 6-12 years-No. 6 (200-250 ml). For cleansing enemas for older children, use the Esmarch mug.

Before use, the pear-shaped balloon is sterilized by boiling. Fill it with liquid (water or medicinal solutions), remove the air, slightly squeezing the cylinder until the liquid appears from the upward-facing tip. The tip is lubricated with vaseline. Infants are usually placed on their backs with their legs raised, and older children are placed on their left side with their lower limbs pulled up to the abdomen. The tip of the balloon is inserted carefully. In the position of the patient on the back, the tip is directed forward somewhat anteriorly, then, having overcome without effort the external and internal sphincters of the anal opening, not much posteriorly. The tip is inserted to a depth of 3-5 cm for young children, 6-8 cm for older children, and up to-gravely compress the balloon. After emptying the cylinder, without opening it, carefully remove the tip. To hold the injected fluid in the intestine, the child's buttocks are squeezed for a few minutes, after which defecation (emptying) occurs. The amount of liquid for a cleansing enema depends on the age of the child and the indications for its implementation.The permissible one-time volume of the injected fluid when setting an enema in children

Age	Liquid volume, ml
1-5month	30-60ml
6-12month	120-180ml
1-2years	Up to 200ml
3-5years	Up to 300ml
6-11years	Up to 400ml
12-14years	500ml and more

For the introduction of more liquid, especially for older children, use the Esmarch mug. The procedure is performed in the position of the child on the left side with the legs bent and pulled up to the stomach. Under the buttocks, an oilcloth is placed, the free edge of which is lowered into the pelvis in case the child can not hold the liquid. The Esmarch mug is filled with water at room temperature up to 1 liter and suspended on a tripod to a height of 50-75 cm. Opening the tap, they release air and a small amount of water from the rubber tube. The Resi new tip is lubricated with

vaseline and, spreading the buttocks of the child, is inserted into the anal opening. The first 2-3 cm of the tip is advanced anteriorly towards the navel, then posteriorly parallel to the coccyx at a depth of 5-8 cm.

The speed of liquid injection is regulated by a tap on a rubber tube. If the flow of liquid is difficult, for example, if the feces are solid, the tube is removed by 1-2 cm and the Esmarch cup is raised by 20-30 cm. They also change the direction of the tip, ask the child to bend his legs with it, bring them to the abdomen, which leads to relaxation of the anterior abdominal wall. If in the process of setting a cleansing enema there is a feeling of bursting due to accumulated gases, then the cup should be lower it below the level of the bed; after the gases have drained away, the cup is gradually raised. After the procedure is completed, the tip is carefully removed. The patient is in a lying position for 8-10 minutes until the intestinal peristalsis increases and the urge to defecate appears.

To enhance intestinal peristalsis, various substances are added to the liquid: sodium chloride (table salt, 1-2 tablespoons per 1 liter of water), glycerin or vegetable oil (1-2 tablespoons), an infusion or decoction of chamomile (1 cup). With atonic constipation, the laxative effect occurs at a liquid temperature of 18-20 °C, with spastic constipation-37-38 °C.

At the end of the procedure, the pear-shaped cylinders and rubber tips are washed with hot water and boiled. Esmarch's mug is washed, wiped dry, and covered with gauze. cleansing enemas include oil, hypertonic, and siphon enemas.

Oily enema is used for mild intestinal cleansing, as well as for persistent constipation. Vegetable oils (sunflower, linseed, olive, hemp, provencal) and vaseline are used, which are preheated to a temperature of 37-38 °C. A rubber tip is placed on the pear-shaped balloon, carefully inserted to a depth of 10-12 cm into the rectum. You can use a syringe with a rubber band on it with a catheter. For the procedure, use from 20 to 80 ml of oil, depending on the age of the child. After the introduction of the oil, it is necessary to lay the child on his stomach for 10-15 minutes, so that the oil does not leak out. Since the cleansing effect occurs after 8-10 hours, the procedure is recommended to be done in the evening.

Hypertonic enemas are used to stimulate intestinal peristalsis more. Atonic constipation is an indication of a hypertonic enema, and inflammatory and ulcerative processes in the lower part of the colon are a contraindication. For enemas, we use hypertonic solutions: 5-10 % sodium chloride solution (1 tablespoon per glass of water), 20-30% magnesium sulfate solution. Using a rubber pear with a tip, 50-70 ml of the solution is injected into the rectum at a temperature of 25-30 °C, depending on the child's age. The laxative effect usually occurs after 20-30 minutes, during which time the patient should lie down.

Siphon enemas are mainly given to older children. Indications are the need to remove all feces or toxic products that have fallen into the intestines as a result of poisoning with chemical or plant poisons. Such enemas are recommended if the usual cleansing enemas are ineffective, as well as if the intestinal obstruction is suspected. Siphon enemas are contraindicated in appendicitis, peritonitis, gastrointestinal bleeding, diseases of the rectum, in the first days after surgery on the abdominal organs.

Through a rubber tube with a diameter of 0.8-1.0 mm and a length of up to 1.5 m (one end of the tube ends with a funnel, the other with a tip), in several steps,

enter in the rectum from 5 to 10 liters of clean water, heated to 37-38 °C, or a disinfectant liquid (a weak solution of potassium permanganate, a solution of sodium bicarbonate). The end of the tube lubricated with vaseline is inserted through the anal opening into the intestine to a depth of 20-30 cm. The funnel is filled with water from a jug and raised to a height of 50-60 cm above the bed, and then lowered to the level of the child's pelvis, without removing the rubber tube from the rectum. According to the law of communicating vessels, the water with the contained fecal masses is returned to the funnel and the contents are poured into the basin (Fig. 59). The procedure is repeated several times in a row until clean water appears. Then the rubber tube is carefully removed, the entire system is washed and boiled.

It is necessary to carefully observe all the technical rules, and when setting "high" enemas, remember about such a terrible complication as fecal intoxication. The

latter occurs in patients with intestinal obstruction and with the untimely evacuation of the injected fluid. The setting of a siphon enema refers to therapeutic procedures. Medicinal enemas are indicated when it is not possible to administer drugs through the mouth. They are divided into local and general enemas. In the first case, medicinal enemas are used for inflammatory processes in the colon and the second for the absorption of drugs of the rectal mucosa and their entry into the blood.

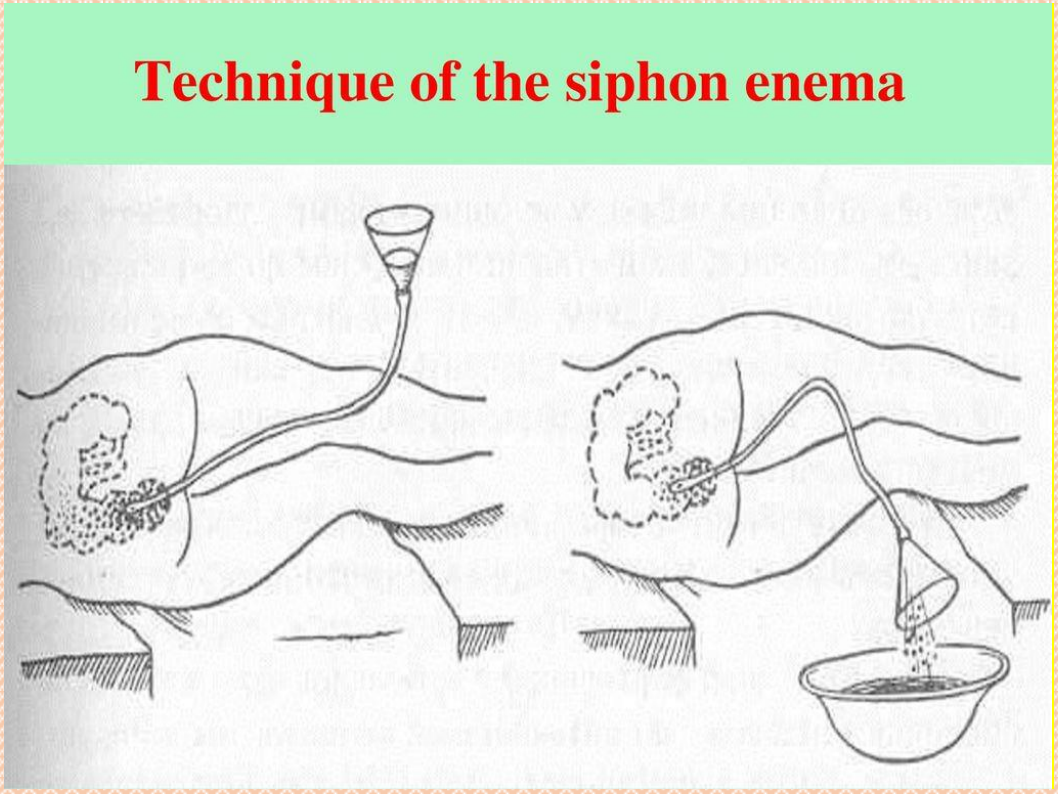


Figure 59. Setting up a siphon enema.

Medicinal enemas are administered 10-15 minutes after cleansing enemas, less often after spontaneous bowel cleansing. Since all medicinal enemas they are micronemes, using a conventional 20-gram syringe or a rubber balloon "pear" with a capacity of 50 to 100 ml. The administered drug should have a temperature of 40-41 °C since at a lower temperature there is an urge to defecate and the drug is not absorbed. The volume of medicinal enemas depends on the age of children: patients

with the first 5 years of life are administered 20-25 ml, from 5 to 10 years — up to 50 ml, old children-up to 75 ml.

The composition of medicinal enemas may include various medications, including sedatives, sleeping pills, etc. The most commonly used are the following dry enemas: starch (1 teaspoon per 100 ml of water); from chamomile (15 g of chamomile is boiled for 2 minutes in 250 ml of water, cooled to 40-41 °C, filtered); from sea buckthorn oil, rosehip. For convulsions and severe agitation, chloral hydrate enemas are indicated — a 2% solution of chloral hydrate is used.

Nutritional enemas are rarely used, since only water, an isotonic solution of sodium chloride (0.85 %), glucose (5 %), and a very limited amount of proteins and amino acids are absorbed in the colon. Perform nutritional enemas after cleansing with a dropper (in young children) or Esmarch mugs (in older children). The rate of fluid administration is regulated by a screw clip: children of the first months of life are injected with 3-5 drops per minute, from 3 months to

years — 5-10, older-10-30. This method, called a drip enema, improves the absorption of fluid through the mucous membrane of the rectum, does not increase intestinal peristalsis, does not overflow it, does not cause pain. Thus, 200 ml of liquid or more can be injected into the child's body.

Gas disposal. Most often, gas disposal is carried out for young children, newborns, and infants. However, the removal of gases is also indicated for older children with intestinal diseases, accompanied by flatulence or delayed elimination of gases. Before the procedure, put a cleansing enema. The gas drain tube with a diameter of 3-5 mm and a length of 30-50 sm is pre-lubricated with vaseline oil and rotated into the rectum as high as possible so that the outer end of the tube protrudes from the back passage to the 10 — 15 sm. The tube is left for 20-30 minutes, less often for a longer time. The procedure can be repeated after 3-4 hours. The exhaust pipe is thoroughly washed with warm water and soap, wiped, and sterilized with boiling water.

Gastric lavage. It is used for therapeutic or diagnostic purposes, as well as for the removal of poor-quality food from the stomach, toxic chemicals, medicines, and

toxins of bacterial and plant origin that have entered the body of children. The procedure requires a gastric tube with two holes on the sidewalls and a funnel (previously sterilized by boiling), as well as a pelvis. For gastric lavage in older children, a thick probe with a length of 70-100 cm and a diameter of 3-5 mm can be used. For reference determination of the length of the probe inserted into the stomach, the child is measured from the bridge of the nose to the navel. To more accurately determine the length of the probe, equal to the distance from the teeth to the entrance to the stomach, use the form lu: 20+p, where p is the age of the child.

The situation of children during gastric lavage depends on the age, and in some cases, the severity of the patient's condition. Young children (infants) are most often laid on their sides with their faces slightly turned down. A pre-school child is picked up by a nurse or her assistant, wrapped in a sheet (a blanket), and the yogi holds the child tightly between his legs, pressing his head to his shoulder. Another nurse asks the child to open his mouth or opens it with a spatula
with a quick movement, he inserts the probe behind the root of the tongue. The child is asked to make several swallowing movements, during which the nurse, without violent movements, moves the probe along the esophagus to the previously made mark. Confirmation that the probe is in the stomach is the cessation of vomiting. Older children for gastric lavage are seated on a chair, the chest is covered with an oilcloth apron or a sheet (diaper). After the probe is inserted into the chute, a glass funnel with a capacity of about 500 ml is attached to the outer end and filled with a liquid prepared for washing; water, 2% sodium bicarbonate solution, or a light pink potassium permanganate solution at room temperature.

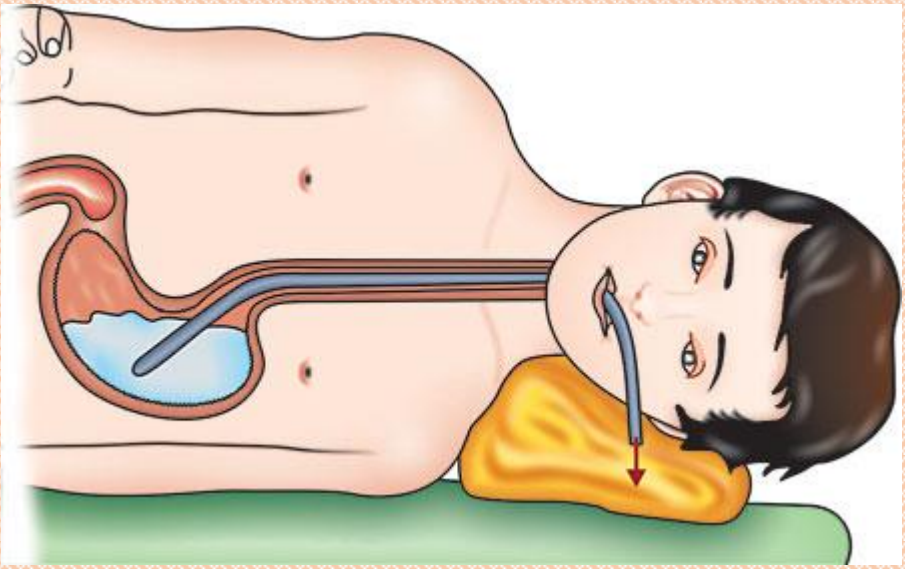
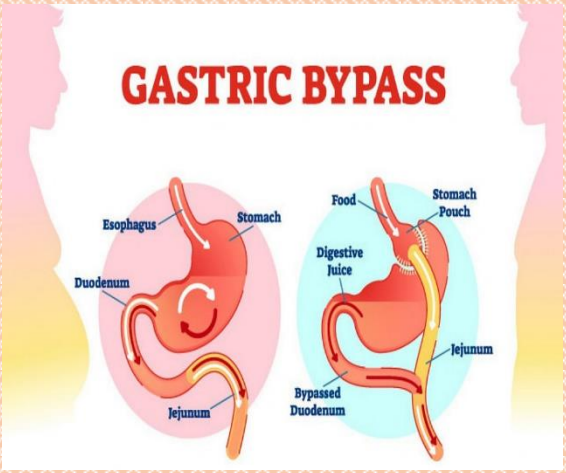


Figure 60. Gastric lavage.

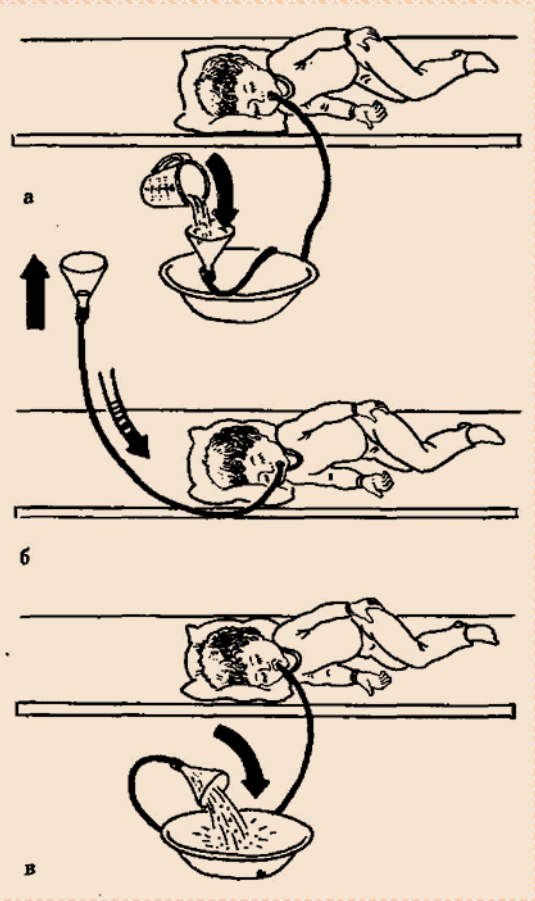


Using the siphon principle, the funnel is lifted and the liquid is introduced into the stomach (Fig. 60, a). When the liquid reaches the throat of the funnel, the latter is lowered below the level of the stomach and wait until the gastric contents are poured out of the probe through the funnel into the pelvis (Fig. 60, b). The funnel is again filled with clean water and the procedure is repeated until clean washing water is released from the stomach (Fig.60, c). For young children, gastric lavage can be performed with a 20-gram syringe.

After the procedure is completed, with a sharp movement, the probe is removed.

Figure 61. Taking gastric juice,- the inventory a tripod with test tubes, a syringe, a thin probe; b-the position of the child during the manipulation.

The funnel and the probe are washed with a strong jet of hot water and then boiled for 15-20 minutes. If necessary, the collected washing water is drained into a clean, boiled dish and sent for laboratory testing. Often, gastric lavage, especially in cases of poisoning, is combined with intestinal lavage, i.e., a siphon enema is performed.



Gastric probing (fig. 61). For probing, thin probes No. 10-15 with a diameter of 3-5 mm and a length of 1.0—1.5 m are used. They end blindly and have two holes on the side. The technique of introducing a thin probe is similar to the introduction of a thick probe during gastric lavage. On the free end of the probe, put on a 20-gram use a syringe to suck out the stomach contents. The procedure is performed in the morning on an empty stomach. To stimulate gastric secretion, various trial breakfasts are used: meat broth, 7 % cabbage broth, coffee breakfast.

The most commonly used histamine test is subcutaneous administration of 0.1 % histamine solution at the rate of 0.008 mg per 1 kg of body weight. Other physiological stimuli are also used: pentagastrin, histoglobulin.

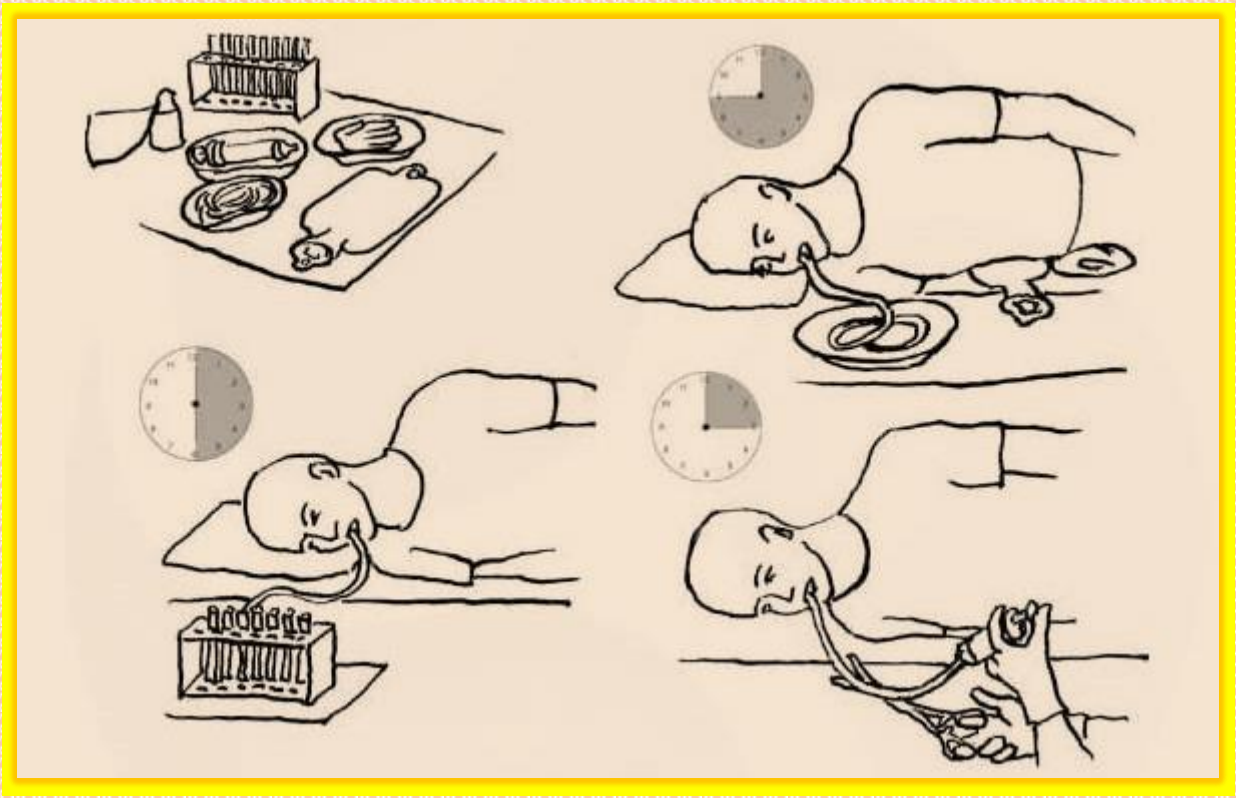


Figure 62. Duodenal probing, - inventory: tripod with test tubes, 25 % magnesium sulfate solution, duodenal probe, syringe; b-position of the child during the manipu lation.

Duodenal probing (fig. 62). For probing, a thin probe with a metal olive at the end is used multiple holes. The study is carried out in the morning on an empty stomach in the treatment room. In the patient's standing position, the distance from the incisors to the navel is measured with a probe. A mark is made on the probe. They sit the child on a hard cot, take a metal olive tree under the third finger of the right hand and insert it behind the root of the tongue, while the patient makes several swallowing movements and breathes deeply through the nose. When the urge to vomit appears, the child should squeeze the probe with his lips and breathe deeply through the nose. After passing through the pharynx, the olive and the probe move independently due to the peristalsis of the esophagus.After the probe enters the stomach, the patient is placed on the right side, on a roller. On top of the roller, you need to put a hot water bottle wrapped in a towel. The patient's legs are bent at the knees. The location of the probe is judged by the received content. When the probe is located in the stomach, a clear or slightly cloudy juice is released. To obtain bile,

the patient slowly and gradually swallows the probe up to the mark. After 30-60 minutes, bile appears, as evidenced by a change in the color of the secreted contents. There are several portions obtained by duodenal probing. Portion 1 (A) is the contents of the duodenum, light yellow, transparent, has an alkaline reaction. Portion II (B) appears after the introduction of an irritant (20-50 ml of a 25% solution of magnesium sulfate or xylitol) to relax the sphincter of the common bile passage; the liquid from the gallbladder is transparent, dark-brown in color. The portion W (C) appears after the complete emptying of the gallbladder, is light bile coming from the bile ducts; it is light lemon-colored, transparent, without impurities. Duodenal probing lasts on average 2-2 V2 hours - After receiving all three portions, the probe is carefully removed.

Therapeutic tubage is a treatment with mineral water in combination with a thermal effect on the liver area. It reduces the viscosity of bile and improves its outflow, stabilizes the synthesis of bile acids, disrupts the formation of gallstones.The procedure requires mineral water and a hot water bottle. Mineral water of medium mineralization-Borjomi, Essentuki-4, Smirnovskaya, Slavyanovskaya in the stack of glass (not plastic!) bottles. In advance, from the evening, the bu rear is opened to remove the gas. Before the procedure, the water is heated in a water bath to a temperature of 35-45 °C. For children under 7 years old, half a glass (but not less than 50 ml of water) is enough, for the older children-a whole glass.The heating pad can be water and electric. The main thing is that the heat is smooth and pleasant. The hot water bottle is wrapped with a towel.Tubage is performed in the morning on an

empty stomach when the child has already woken up but has not got out of bed.

Water	Country	Dissolved compounds	Fresh-salt	Hardness
Dutch tapwater *1	Netherlands	low	fresh	hard
Ciseau	Netherlands	low	very oligohaline	very hard
Oerwater	Netherlands	low	oligohaline	moderately hard
Prise d'Eau	Netherlands	low	oligohaline	hard
Sourcy	Netherlands	low	oligohaline	hard
Hébron	Netherlands	low	oligohaline	very hard
Bar le Duc	Netherlands	low	oligohaline	very hard
Aqua Viva	Netherlands	low	oligohaline	very soft
Léberg	Netherlands	low	fresh	very hard
Spa Blauw	Belgium	very low	very oligohaline	very soft
Spa Rood	Belgium	very low	oligohaline	very soft
Bru	Belgium	low	very oligohaline	hard
Valvert	Belgium	low	very oligohaline	hard
Spontin	Belgium	low	oligohaline	hard
Presby	Belgium	low	oligohaline	very hard
Val d'Aisne	Belgium	low	oligohaline	very hard
Val	Belgium	low	fresh	very soft
Chaudfontaine	Belgium	low	fresh	very hard
Ordal	Belgium	low	fresh	very hard
Reina	Belgium	low	fresh	very hard
Sty	Belgium	low	fresh	very hard
TOP Souveraine	Belgium	intermediate	fresh	very soft
Mont Roucous	France	very low	very oligohaline	very soft
San Pellegrino	Italy	low	very oligohaline	hard
Evian	France	low	very oligohaline	very hard
Volvic	France	low	oligalien	moderately hard
Ty Nant	England	low	oligalien	hard
Perrier	France	low	fresh	very hard
Contrex	France	intermediate	oligalien	extremely hard
Badoit	France	intermediate	fresh	extremely hard
Christinen	Germany	intermediate	brak	moderately hard
Rogaska Donat	Slovenia	high	fresh	extremely hard
Vichy	France	high	fresh-brackisch	very hard

Figure 63. Therapeutic tubage.

He must drink warm mineral water and lie on his right side (fig. 63). The legs are either bent at the knees or are in a higher position (a blanket is placed under them). On the soul under the head is flat. The heating pad is placed in the area of the right hypochondrium for 40-60 minutes.

Sometimes, on the recommendation of a doctor, honey, various salts, magnesia sulfuric acid, sorbitol, xylitol is added to mineral water.

Catheterization of the urine bladder. The introduction of a catheter into the bladder is performed to remove urine from it in the absence of independent urination, washing, and administration of drugs, obtaining urine directly from the urinary tract.

Catheterization is performed with a soft catheter, which is a tube with a length of 25-30 sm and a diameter of up to 10 mm. Depending on the size, the catheters are divided by numbers (from # 1 to 30). The upper end of the catheter is rounded, with an oval opening on the lateral surface. The outer end of the catheter is obliquely cut off or widened obliquely to insert the tip of the syringe for the administration of medicinal solutions and the urinary bladder.

Before use, the catheters are boiled for 10 minutes.—15 min. After use, they are thoroughly washed with soap and water, wiped with a soft cloth. Store the catheters

in the enameled or glass dishes with a lid, usually filled with a 2 % solution of carbolic acid.

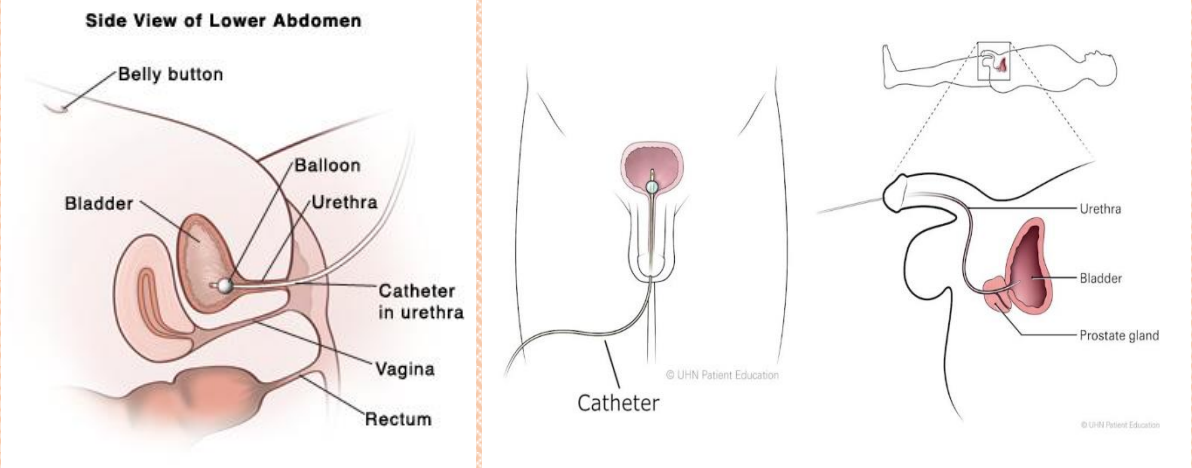


Figure 64. Catheterization of the urine bladder in a girl (a) and a boy (6).

Before the procedure, the nurse washes her hands with soap, wipes the nail phalanges with alcohol and iodine.

Girls are pre-washed. To perform the bladder catheterization, the nurse stands slightly to the right of the child. The child is placed on the changing table. With the left hand, the nurse moves the labia once, and with the right hand, from top to bottom, wipes the external genitals and the opening of the urethra with cotton wool moistened with a disinfectant solution (furacilin). The catheter is taken with tweezers, the upper end is doused with sterile vaseline oil, and the catheter is inserted into the external opening of the urethra to slowly move forward (fig. 64, a). The appearance of urine from the catheter indicates its presence in the urinary tract

The outer end of the catheter is located below the level of the bladder, so, according to the law of the connecting vessels, the urine flows freely out; when the urine ceases to be released independently, the catheter is slowly withdrawn.

The introduction of a catheter to boys is technically more difficult since the urethra is longer and forms two physiological constrictions. During catheterization, the patient lies on his back with his legs slightly bent at the knees, and a urinal is placed between the feet. The nurse takes the penis in her left hand, the head of which she carefully wipes with cotton wool soaked in furaciline. With his right hand, he takes a catheter filled with sterile vaseline oil or glycerin and slowly, with a little effort, inserts it into the urethra (Fig. 64, b).

Bladder catheterization can be done for diagnosis and/or treatment.

The main reason to insert a bladder catheter in female children is to:

Collect a sterile urine sample for testing in very young children who cannot void on command; relief of acute or chronic urinary retention (obstructive uropathy); intermittent catheterization of a neurogenic bladder; instillation of contrast agent for cystourethrography; bladder irrigation; instillation of a drug; monitoring of urine output in certain hospitalized patients (indwelling catheter; not discussed here)

CHAPTER 24
TECHNIQUE OF DRUG ADMINISTRATION

The most important method in children's practice is the enteral method, which includes oral and rectal. In addition, without violating the integrity of the skin, drugs can be introduced into the body by inhalation, electrophoresis, by applying to the skin and mucous membranes.

Administration of medicines by mouth. Children receive medicines by mouth in the form of tablets, powders, capsules, solutions, emulsions, etc. The difficulties of taking medicines by mouth consist in the possible allergic reaction of the child, the presence of medicines with an unpleasant smell or taste, a large size of tablets or pills. Best of all, children take medicines by mouth in a solution or suspension;

when taking drugs in dry form, they have to be crushed and diluted with milk or syrup.

Do not mix several medicinal preparations in one spoon.

For infants, the entire prescribed dose of the liquid drug should not be administered immediately, but in parts, in several spoons, taking care not to spill it.

The dose of the administered drug is determined by the doctor. There are different doses prescribed for a single dose — one — time, during the day — daily, for a course of treatment-course. The drug is prescribed based on the calculation of 1 kg of body weight or 1 m2 of the body surface, on the year of the child's life.

Oral Medication Forms

Capsules are gelatin containers that hold powder or liquid medicine. Timed-release or sustained-release capsules contain granules that dissolve at different rates, providing slow and constant release of medications. Capsules are available in a variety of sizes and shapes. They provide an easy way to administer medications that have an unpleasant taste or odor. Capsules must not be opened, crushed, or chewed because irritation and excessive or lessened drug activity may be produced.	
Elixirs are liquids made up of drugs dissolved in alcohol and water that may have coloring and flavoring agents added. The alcohol makes the drug more dissolvable than water alone.	
Emulsions are solutions that have small droplets of water and medication dispersed in oil, or oil and medication dispersed in water. These preparations help disguise the bitter taste of a drug or increase its solubility.	

Lozenges are medicine mixed with a hard sugar base to produce small, hard preparations of various sizes or shapes. Medication is released slowly when the lozenge is sucked.	
Suspensions are liquids with solid, insoluble drug particles dispersed throughout. These solid particles tend to settle out in layers, so the medication must be shaken before pouring.	
yrups are liquids with a high sugar content designed to disguise the bitter taste of a drug. These are often used for pediatric patients.	
ablets are dried, powdered drugs compressed into small shapes. These shapes are small enough so that they may be swallowed whole. Tablets usually contain trademarks, designs, or words for product identification and may have a line through the middle so the tablet may be divided (this is known as a scored tablet). Tablets may also contain coatings of various types to increase solubility or absorption.	

Procedure for Administering Oral Medications

The basic procedure in administration of medication is the same, regardless of type or route of administration. General principles that underlie all procedures include accuracy, taking responsibility, and **asepsis** (preventing of infection). The legal policies and rules, along with the nursing process and knowledge about the drug, are all part of giving medications. The steps in giving medications by the various routes are generally followed as outlined in the following sections. There are wide differences in the specific process and equipment used in administering medications and institutional procedures may require some changes in the recommended procedure. Table above shows the basic procedure for administering oral medications that may be used when there is no sophisticated equipment available for the process. Following these steps each time reduces the chance of medication error. This is a clean procedure and begins with cleanly washed hands.

Rectal administration of suppositories. The technique of introducing candles into the rectum in children is not fundamentally different from that in adults. The candle with the drug is taken into the rectum usually in the morning (after self-emptying of the intestine or after a cleansing enema) or at night. Before using the candle, it is recommended to moisten it with water at room temperature, which will facilitate the introduction and further resorption. After the candle is lit, the child should lie on his side for 20 minutes.

Preparing: Gently squeeze the suppository to check if it is firm enough to insert. If it's not, let it harden by holding it under cold water while it is still in the wrapper. You can also place it in the refrigerator for a few minutes. If possible, go to the bathroom and empty your bowels. Wash your hands with soap and water. If soap and water aren't available, you can use hand sanitizer instead. Dry your hands with a clean towel or a paper towel. Remove your clothing to expose your buttocks.

Remove any wrapping from the suppository. If you need to cut the suppository, carefully cut it lengthwise with a clean, single-edge razor blade.

To moisten the tip of the suppository, apply a lubricating jelly. If you don't have lubricating jelly, apply a small amount of water to your rectal area.

Inserting the suppository: Get into position. You can stand with one foot up on a chair. You can also lie down on your side with your top leg slightly bent toward your stomach and with your bottom leg straight. If you're giving the suppository to someone else, you may want to place them in this second position. Relax your buttocks to make it easier to insert the suppository.

Insert the suppository into the rectum, narrow end first. Gently but firmly, push the suppository past the sphincter. The sphincter is the muscular opening of the rectum. For adults, push it in one inch. For children, depending on their size, push it in a half inch to one inch. And for infants, push it in about a half inch.

Finishing up: Sit or lie with your legs closed for 15 minutes. If you're giving the suppository to a child, you may need to gently hold their buttocks closed during this time.Throw away all used material in a trash can. Wash your hands right away with soap and warm water.

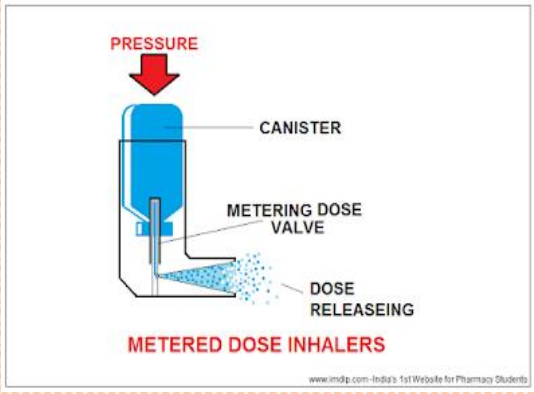
Inhalation. In pediatric practice, treatment with inhalation of liquid [solid] drugs sprayed in the air is widely used. There are inhalations of oil, aerosols of medicinal products. Inhalations primarily cause local effects on the mucous membranes of the respiratory tract, and their effect is largely determined by the degree of dispersion (pulverization) of aerosols.

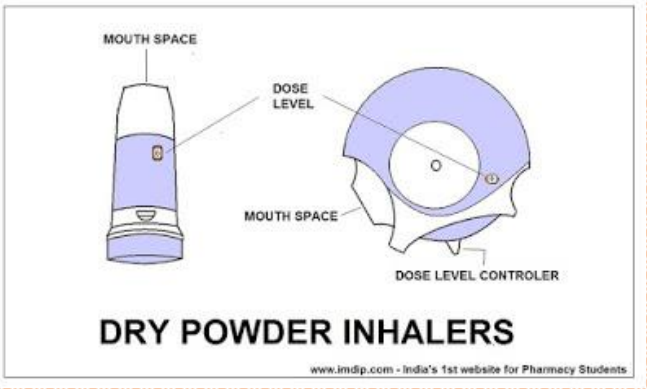
Inhalations are carried out with aerosol inhalers.

Types of inhalers:

Basically, there are two types of inhalers available: Metered-Dose Inhalers (MDIs) and Dry Powder Inhalers (DPIs)

The MDI device contains a canister (the cylinder)and an actuator (operator of the device), and sometimes a spacer. The canister is connected with a metering dose valve with the actuator. The formulation of the drug present in the canister a liquefied gas propellant. Actuation of the device releases a single metered dose of liquid propellant that contains the drug formation. The microparticles/microdroplets delivered into the lungs.





Dry Powder Inhalers (DPIs).

This is an alternate device of the MDIs. This types of inhalers are used to deliver a very fine dry powder particle of medicine to the lungs. The medicinal contents are released by taking a deep and fast breath in through the mouth space of the inhaler.

There are several kinds of inhalators : steam inhalers, universal inhalers designed for carrying out warm inhalations with solutions of liquid and powdered

substances, ultrasonic aerosol devices, electroaerosol devices. With the help of aerosol inhalers, you can inhale medicines: medicines, alkaline solutions, oils, herbal infusions.

The vapor inhaler is equipped with a heat regulator for heating the aerosols to body temperature. In ultrasonic inhalers, the drug is pulverized. It is controlled by ultrasonic vibrations, the airflow (from 2 to 20 l/min), the aerosol temperature (from 33 to 38 °C) are regulated. The choice of the drug for inhalation is determined by the medical indications, and the inhalations themselves are carried out in a specially equipped room.

Figure 65. Steam inhaler, Ultrasonic inhalation

The inhaler system is adjusted, the sick child is wrapped in a blanket and held on his knees, holding the mouthpiece of the nebulizer to the mouth and nose area. The cry of the child is not a hindrance to the procedure, on the contrary, during the cry, the child inhales the aerosol deeper. Older children wrap their lips around the mouthpiece of the spray and inhale the drug mixture. The method of ultrasonic inhalation is shown in Fig. 65. The duration of inhalation is 5-10 minutes. After inhalation, the mouthpiece is washed and sterilized. It is better to use single-sentence mouthpieces.

The use of aerosols is also carried out with the help of portable inhalers, which allow the introduction of respiratory tract bronchodilators such as "Atrovent", "Berodual", "Berotek", "Ditek", "Ventolin". For young children with asthma, an

inhaler can be made using an ordinary plastic cup. When carrying out inhalations, the mouth and nose are closed with a bell, the bottle with the medicinal substance is placed strictly perpendicular, with the bottom-up (Fig. 66).

It can be difficult for children to properly follow all the recommendations for using an inhaler. As a result, times- the drug does not enter deep into the respiratory tract, and the expected improvement in breathing does not occur.

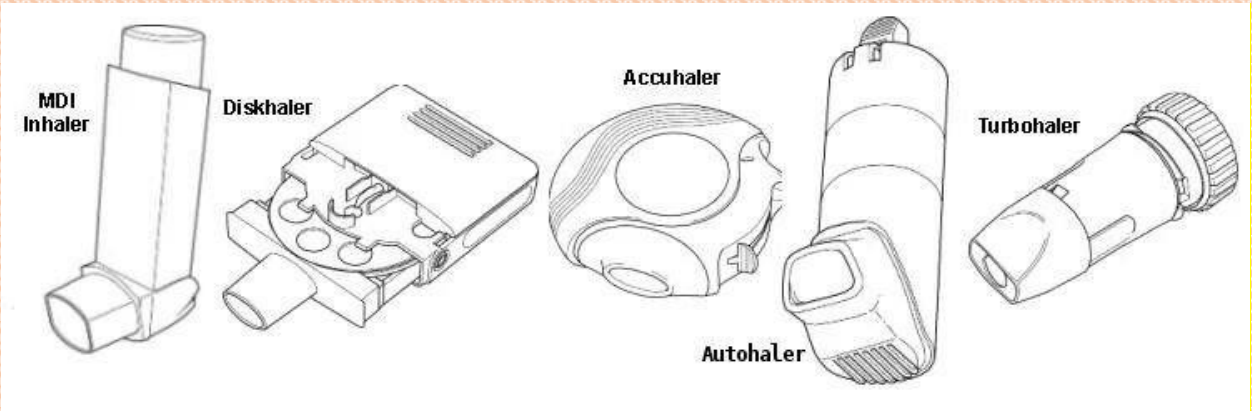


Figure 66. Using a portable inhaler,

- general view of the inhaler: 1-flap; 2 — inhaler; 3-tank;
- the inhaler is in action.

Various drugs have been developed to facilitate the delivery of drugs to the respiratory tract. In particular, a plastic tube with an inhaler nozzle and a mouthpiece (spacer) is used. The drug is injected into the spacer from an inhaler, and then gradually inhaled by the child. The spacer must be used for the administration of bronchodilators (salbutamol), as well as for the inhalation of corticosteroids (Fig.67).

The advantages of using a spacer are as follows:

- no irritating effect on the respiratory tract;
- the technique of inhalation is simplified since there is no need to synchronize the inhalation with the moment of administration of the drug, which is especially difficult for children to perform;- less medication lingers in the oral cavity and pharynx; - the drug penetrates much deeper into the respiratory tract than without the use of a spacer.

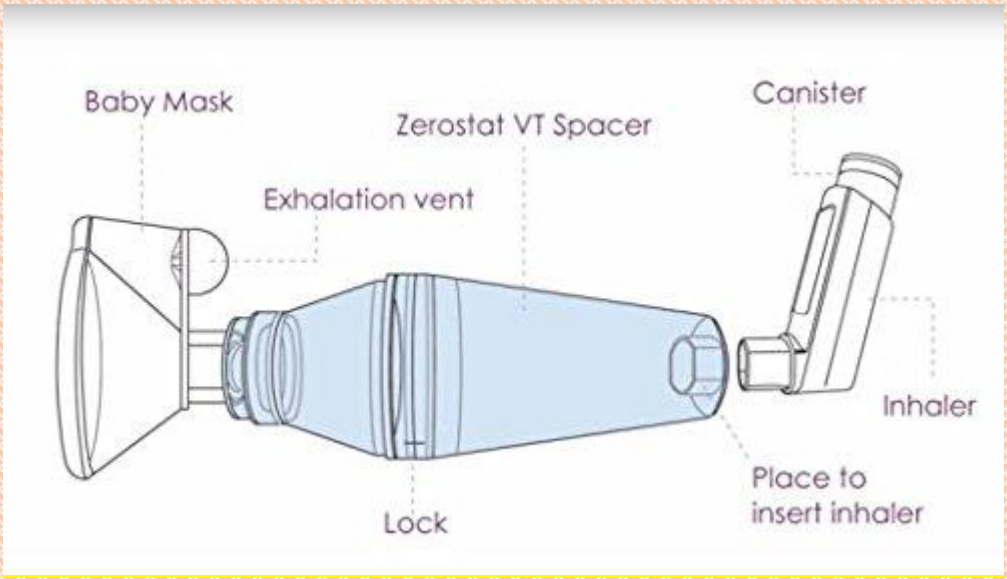


Figure 67. The sequence of using the spacer.

There are inhalers for powder forms of medicines. Their use has several advantages since there are no carrier substances (propellant gases, freon) that can irritate the mucous membranes; in this way, large amounts of medication can be administered; strict control of the number of doses of the drug taken is possible, thereby

preventing overdose. The most widely used inhalers were three types: "Diskhaler" (Fig. 68), "Inhaler" (Fig. 69), and "Spinhaler".

For "Diskhaler" use medicines placed in the disks (Ventolin, Flixotide), for" Inhaler " — caps . The sprayer of the "Spinhaler" type"

it is intended for inhaling Intal (chromoline-sodium), produced in capsules. The capsule containing the powder is inserted into the propeller, yellow end down. The inhalation technique is very important.

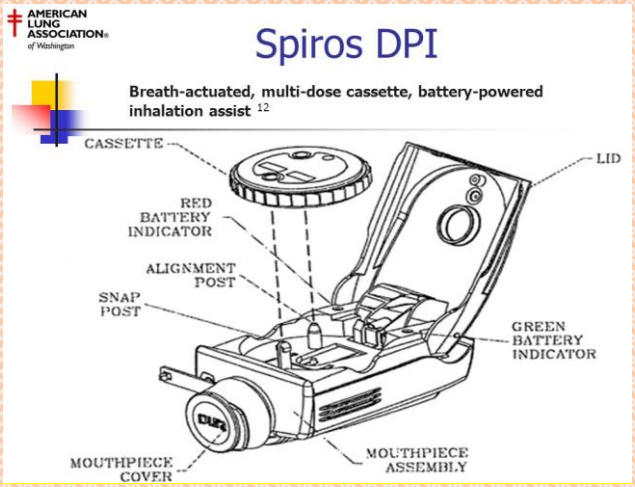


Figure 68. "Diskhaler".

It requires the child to active forced inhale through the "Stshnhaler" and a short delay of air before exhaling. The requirement is to inhale with the head thrown back since otherwise, up to 90 % of the drug remains in the pharynx.

The rules for using the "Spinhaler" are as follows:

Take a deep breath. Tilt your head back slightly.

Tightly wrap your lips around the mouthpiece of the inhaler and take a deep, sharp breath. Hold your breath for 10 seconds. For the capsule to be completely emptied, you need to inhale, as described in points 1-4, up to 4 times.

After inhalation, it is necessary to examine the oral cavity of the child. If a lot of powder has settled on the tongue and the mucous membrane of the mouth, it means that there were errors during inhalation (weak inhalation, the head is not thrown back, the "Spinhaler" is clogged with powder and requires cleaning).

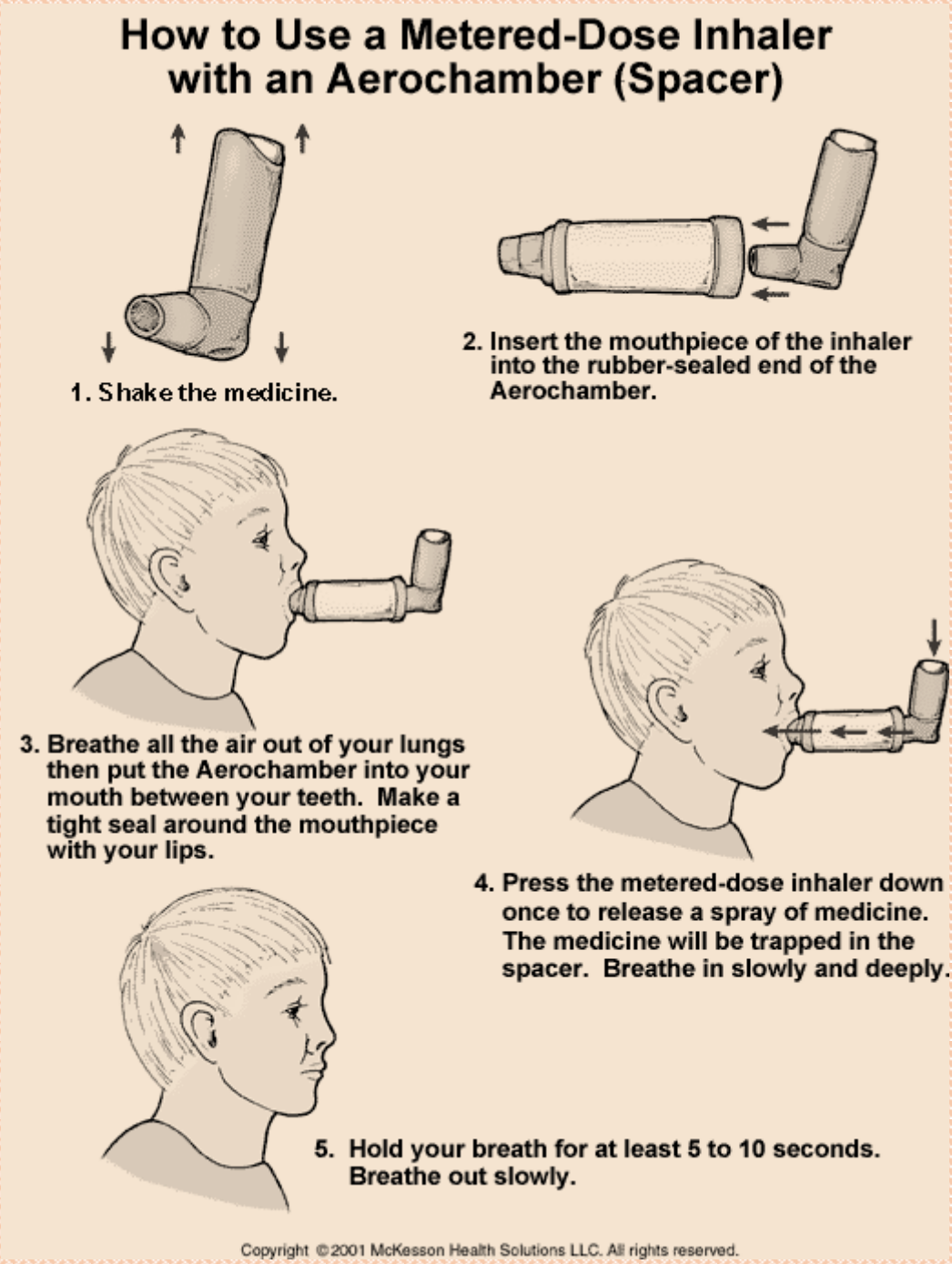


Figure 69. The use of "Inhaler".

The effect of intal as an anti-allergic agent appears only if all the rules of inhaling the drug are observed.

Medicinal electrophoresis. The method involves the introduction of a drug using a constant electric current of low strength. Applications for electroplating of the "Flow" type are used. The doctor determines the method of drug electrophoresis (location of the electrodes, name, and concentration of the drug). The nurse performs the procedure (moistens the pads with a medicinal solution, applies the electrodes, monitors the correct polarity of the electrodes, the current strength), and monitors the child's behavior during the procedure. The duration of the procedure is 10-20 minutes, depending on the age. After the end of the procedure, there should be a uniform continuous slight redness of the skin at the location of the electrodes. The child needs a 30-minute rest after the procedure.

Administration of drugs through the skin and mucous membranes

shells. Various methods are used: rubbing, smearing, ointment dressings, wet-drying dressings, administration of drugs into the nose, ear, and conjunctival sac.

The rubbing of medicinal products is usually performed on healthy skin, but with skin diseases such as scabies, alopecia nesting (alopecia). Other, rubbing is possible in the affected areas of the skin. When the drug is rubbed into the hair area of the upper part of the head, the hair is pre-shaved.

The technique of rubbing is as follows: before the procedure, thoroughly wash your hands with soap, a small amount of the drug is applied to the skin, evenly distributed over the surface, then with circular and longitudinal movements of the fingers, the substance is rubbed until the dry surface of the skin feels.

Application of ointment, paste, talker to the affected areas of the skin. The ointment is applied to the skin with a spatula or a gauze swab and gently distributed evenly. The paste is also applied to the skin. When applying the paste to the hairy part of the skin, the hair is pre-shaved. Before greasing, the chatterbox must be shaken.

Medicinal products

The suspension is applied to the affected areas of the skin with a cotton or gauze swab.

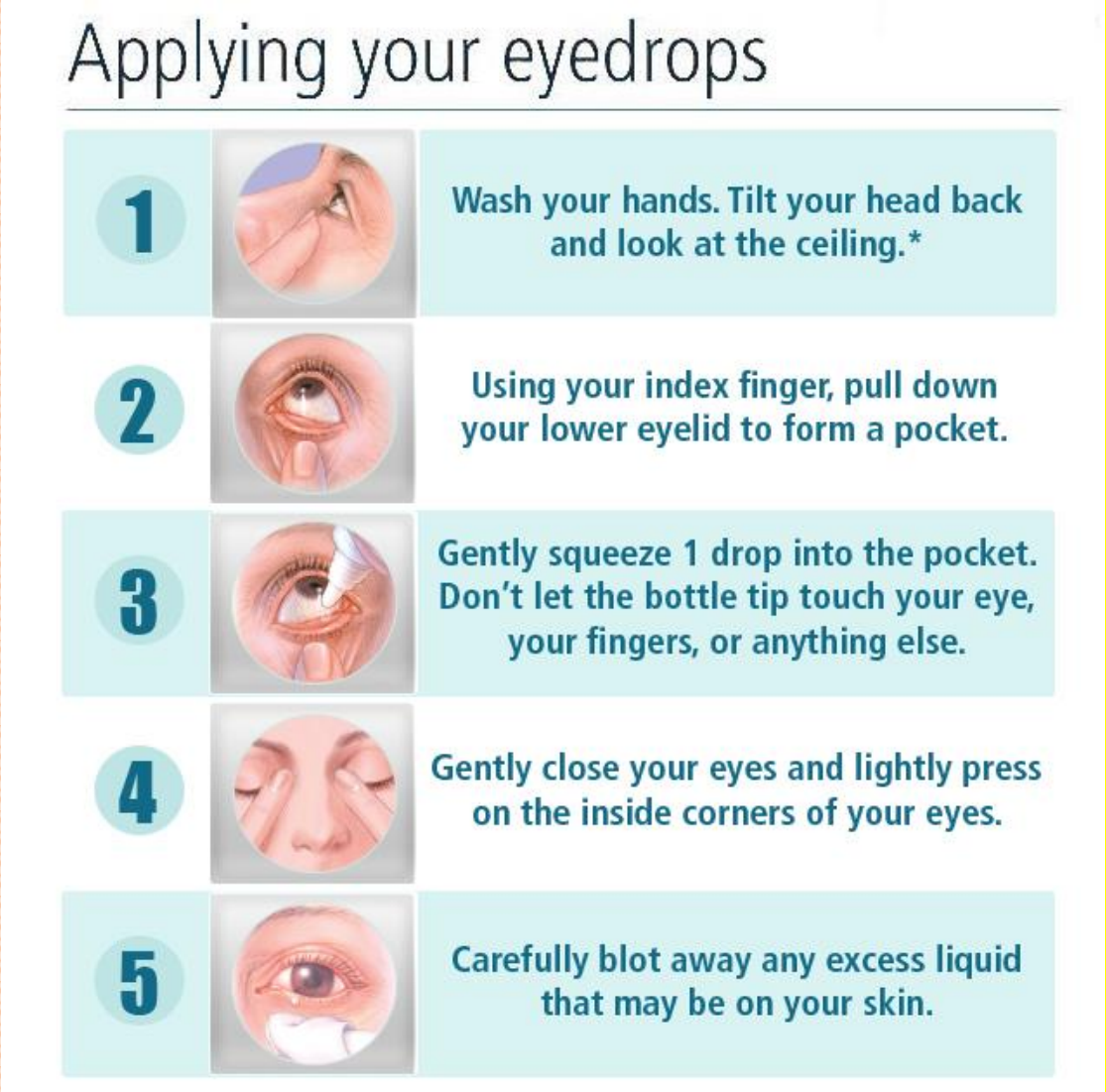
Lubrication and apply if necessary long-term exposure to the drug. A small amount of ointment is applied to a gauze napkin on the affected area or directly on the affected area, the gauze napkin is covered with a compress paper, then with cotton wool. Then the bandage is tightly fixed with a bandage.

Wet-drying dressings are used in children with anti-inflammatory skin diseases, accompanied by wetness (eczema, etc.). Sterile gauze napkins, folded in 8-10 layers, are moistened with a medicinal solution, squeezed out, and applied to the inflamed area of the skin, covered with a compress paper, and bandaged. Cotton wool is usually not lined to slow down the drying rate. If the dressing has dried out and does not move away on its own from the damaged skin, then it must be soaked with the same medicinal solution that was used for the dressing.

On the nasal mucosa, the drug is applied in drops with a pi pipette. Before the introduction of drops, the child's nose is cleaned of mucus and crusts: for young children with a cotton "wick", and older children blow their nose, releasing the right and left nasal passages in turn.

It is more convenient to instill drops for a child with the participation of an assistant. The assistant (mother) holds the child in a reclining position, fixing the arms, and if necessary, the legs of the child. For older children, nasal drops can be administered in a lying or sitting position with the head thrown back. The drug is dialed into a pipette or an individual dropper bottle is used (for example, "Pinosol"), the tip of the child's nose is fixed or slightly raised, the head is tilted to the side: when the drug is inserted into the right nasal passage, it is tilted to the left and vice versa. Trying not to touch the nasal mucosa with the pipette, 2-3 drops of the drug are administered. Leave the child's head in the same position for 1-2 minutes to evenly distribute the drug over the mucous membrane. Then, in the same sequence, the drops are injected into another nasal passage.

Less often, the drug is injected into the nose with an insufflator (powder blower). At the moment of injection the child must delay breathing as much as possibl



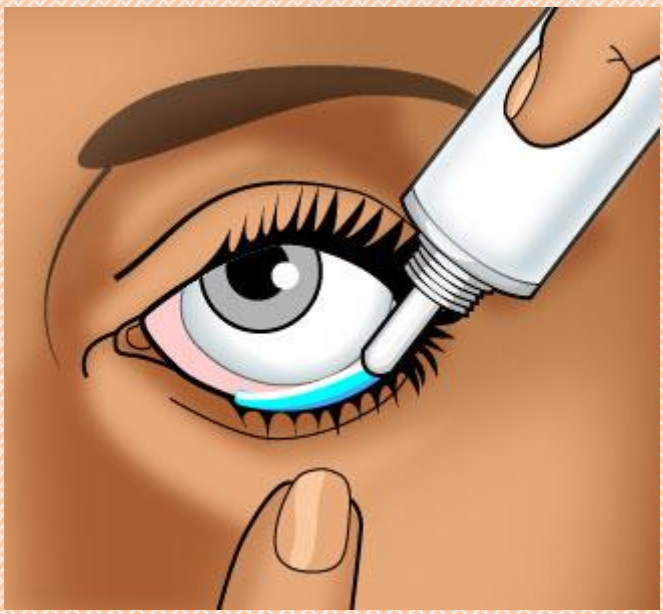


Figure 70. Applying eyedrops drops in the eye (a) and placing the ointment behind the eyelid (6).

Before the introduction of drops into the external auditory canal, the drug solution is preheated to body temperature. With a cotton swab, the

external auditory canal is cleaned, the child is placed on his side with the sick ear up. The drops are instilled after the external auditory canal is healed, for which the ear is pulled slightly downwards with the left hand in young children, and downwards and to the side in older children. Usually, 5-6 drops of medicinal solution are administered. After installation, the patient's position should be maintained for 10-20 minutes.

Drops in the conjunctival sac of the eye are more often prescribed to newborns and infants. The pipette must be washed and sterilized by boiling before use. It is necessary to make sure that the medicinal solution collected in the glass end of the pipette does not get into the rubber canister. The pipette should be kept strictly vertical when filling. With the left hand, the nurse pulls back the lower eyelid or, if the child reflexively squeezed the eyelids, pushes them apart. With the right hand, pressing on the rubber canister, 1-2 drops of the drug solution are injected into the conjunctival sac (Fig. 70, a). Often, you can drop drops into the eyes only with the participation of an assistant who holds the head of the child in the required position, fixes the arms and legs.

In inflammatory diseases of the conjunctiva, it is necessary to put ointment in the conjunctiva. The ointment can be injected directly from the tube or with a special glass tube, one end of which is flattened in the form of a spatula (Fig. 70, b). Before use, the glass rod is sterilized by boiling. An assistant helps to fix a young child. With a glass stick, take a small amount (about the size of a small pea) of eye ointment and inject it into the outer corner of the conjunctival sac, and in case of diseases of the eyelids, apply it to the affected area. After that, the child's eyes are closed and lightly massaged the eyelids.

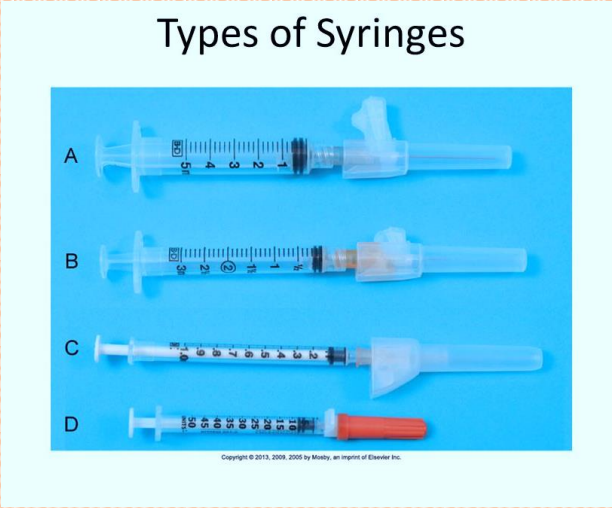
CHAPTER 25

TECHNIQUE OF PARENTERAL ADMINISTRATION OF DRUGS

Parenteral administration of drugs is carried out by injection, for which syringes and hollow needles are used (Fig. 71). The syringe consists of a cylinder and a piston, the latter should fit snugly the inner surface of the cylinder, providing hermeticity, but at the same time completely free to slide on the surface.

In recent years, medical practice has used syringes for single-use, made from a layer of mass; each such syringe is accompanied by 1-2 needles. They are in a special package, sterile and ready to use. The use of disposable syringes is an effective way to prevent infection with viral serum hepatitis and HIV infection

In the practice of children's medical and preventive institutions, disposable syringes are mainly used, but in some cases, it is necessary to use reusable syringes. Use a syringe "Record", in which the cylinder is stacked with metal tips, the piston is metallic. The combined syringe has a metal tip only on one side. The insulin syringe is designed for the introduction of small doses, for the same purpose, the syringe handle is intended.



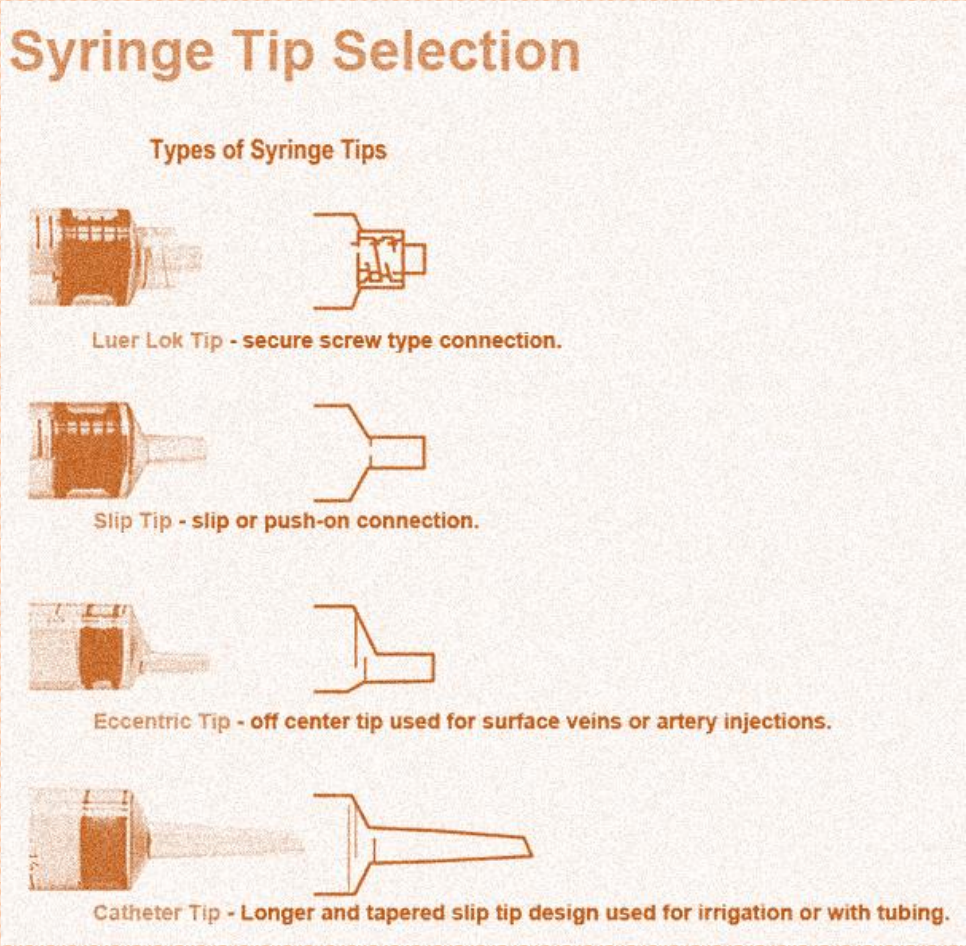


Figure 72. Syringe types

The syringe Jane with a capacity of up to 150 ml is intended for the introduction of the high doses of medicinal substances.

Repeated use of single-use and non - sterilized reusable containers are not allowed. Hollow needles, depending on the diameter, are 10 calibers. Choosing the length of the needle depends on the intended character of the types of syringes depend on injections. Diameter of the smallest for a set of needles to syringes.

For example, for intravenous injections, needles of a larger diameter are usually used meters; the intermediate position is occupied by needles for subcutaneous and intramuscular injection. In addition, the choice of needle gauge depends on the consistency of the drug to be injected. For the injection of oil solutions, needles of a larger diameter are used than for the introduction of water solutions, etc.

Remember: what kind of medicine and how much to collect, the syringe, at what interval, and what injections (under the skin, intramuscular or intravenous) are prescribed by the attending physician.

For injection is selected so as not to injure the vessels, nerves, and periosteum. Injections are not performed in the areas of skin lesions with pustular lesions, scar lesions, hemangiomas, and nevi. Before the injection, the skin is disinfected with alcohol or a 5 % iodine tincture. In children, a more concentrated tincture of iodine can not be used, as it can cause skin burns. Before assembling the sterile instruments, the nurse should treat her hands: wash them thoroughly with soap, and if there are scratches, burrs, "sores", disinfect them with alcohol. The presence of rings and bracelets on the hands is unacceptable; the sleeves of the robe are preferably rolled up to the middle of the forearms.

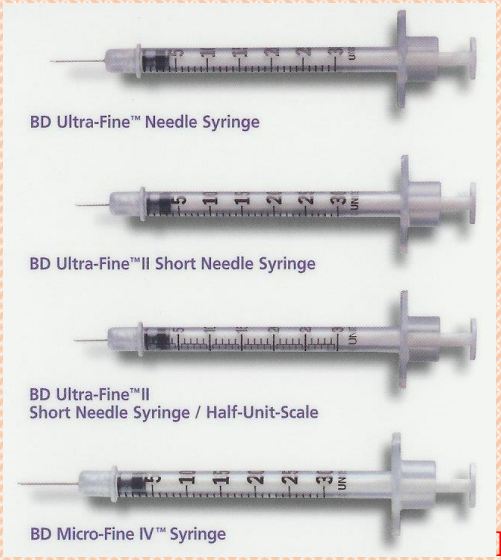


Figure 72. Insulin syringes: disposable (a), pen syringe (b).

Before you get an injection:

- make sure that the medicine in the ampoule is the one that is needed;
- see if the shelf-life has not expired, whether the package is intact, pay attention to the dose and concentration, expressed as a percentage;

- before use, wipe the lid of the bottle or ampoule with ethyl alcohol, and treat your hands with soap and water.

The needles used to fill the syringe with the contents of the ampoule, to puncture the rubber stopper of the bottle, can not be used for injection. For injections, use a different needle. When recruiting a drug the syringe is carefully examined each time before the label, so as not to make any mistakes.

Before the injection, the who spirit must be removed from the syringe. To do this, turn the syringe with the needle up, and the air is collected over the liquid in the output of the cylinder, from where it is forced out through the needle by the movement of the piston. Usually, a certain amount of the drug is also squeezed out. Therefore, it is recommended to take a slightly larger amount of the drug into the syringe than is necessary for the injection.

When washing syringes and needles, use solutions containing hydrogen peroxide in combination with detergents, taken in a ratio of 1:1. For the preparation of the cleaning solution, take 20 ml of 30-33% perhydrol (or 40 ml of 1% hydrogen peroxide solution), 975 ml of water (in the second case, 950 ml), 5 g of detergent (in the second case, 10 g). After disassembly, the syringes and needles are washed and rinsed in running water, then soaked for 15 minutes in a hot (50-60 °C) detergent solution, completely submerging them to fill the cavities. After soaking, the syringes and other tools are washed in the same solution with ruffs or gauze swabs each separately. The solution is used once. The washed syringes and needles are rinsed again in running water, then in distilled water. Syringes and needles in different forms are stored in a dry place. Most hospitals operate centralized sterilization facilities for instruments, including syringes and needles.

Cleaning Injection Equipment: If you must share needles and syringes because new, unused ones are not available, you can lower the risk of getting HIV or HCV by always cleaning the needles and syringes with bleach and water immediately after use and just before using them again. Keep in mind that cleaning with bleach does not make re-using the equipment risk-free. However, it is an important tool to

reduce the risk of infection. To be effective, you must carefully follow the cleaning procedures listed below every time.

First step: Pour clean water into a cup, cap or something that only you will use.

Fill the syringe by drawing the water up through the needle to the top of the syringe.

Shake it around and tap it to loosen the blood.

Squirt out the water and repeat at least three times (do not reuse water).

Second step:

Pour some undiluted (full-strength, no water added) bleach into a cup, cap or something that only you will use.

Fill the syringe by drawing the bleach up through the needle to the top of the syringe.

Shake it around and tap it. Leave the bleach in the syringe for at least 30 seconds.

Squirt out the bleach and repeat at least three times (do not reuse bleach).

Third step:

Pour new clean water into a cup, cap or something that only you will use. Don't use the water from part one.

Fill the syringe with water, to rinse out the bleach. Fill the syringe by drawing the water up through the needle to the top of the syringe.

Shake it around and tap it for at least 30 seconds.

Squirt out the water and repeat three times (do not reuse water).

Some tips:

You can make the cleaning work better by taking the syringe apart, removing the plunger from the barrel and soaking the parts in bleach for at least 30 seconds.

Never shoot or drink the bleach

If the cooker (spoon) must be reused, soak it in bleach for at least 30 seconds and then rinse it with clean water

Since bleach gets weaker when it is exposed to light, store all bleach for cleaning needles and works in a container that does not let light pass through.

Children gradually get used to injections. However, when carrying out the first injection, you should be especially attentive and sensitive and not cause unnecessary feelings in the child. It is impossible to deceive a child in any case. He should know that he will be given an injection and that it hurts, but not as much as he imagines it. Painful is not only the puncture of the skin, but also the moment of administration of the drug, especially if it is administered quickly. You can not delay the procedure and at the same time, the injection itself should be done without much haste. In children's practice, needle-free injectors that do not cause painful sensations can be used. They are used mainly for vaccination when it is necessary to vaccinate a large number of children in short period key terms. The restriction of the introduction of needle-free injectors into general practice is due to the difficulties of ensuring safety when using them, the inability to introduce a variety of medicines, and so on. In addition, when using high-purity insulin, the injection of insulin is carried out using a fountain pen with a sterile microneedle and a dispenser.

Intradermal injections. In an intradermal injection, the drug is injected into the thickness of the skin itself, usually on the flexor surface of the forearm or the outer surface of the shoulder. More often, an intradermal injection is made for immunodiagnostics and to determine the hydrophilicity of tissues (McClure-Aldrich test). For its implementation, 0.2 ml of 0.85% sodium chloride solution (isotonic solution) is administered intradermally and the time of papule resorption is monitored (normally, in children under 1 year, the blister resolves in 15-20 minutes, in children 1-5 years — in 20-25 minutes, in older children — in 40 minutes).

For intradermal injection, choose the thinnest needles, a syringe with a volume of 1 cm3. The place of the intended injection is disinfected with alcohol (children should use 70 % ethyl alcohol). The needle concerning the skin is set with a slice up and inserted at an acute angle into the skin so that the needle hole disappears in the stratum corneum. When properly injected, the injected substance forms a whitish elevation in the skin, the so-called lemon crust. At the end of the injection of the solution, the needle is removed, the puncture site is wiped with alcohol.

Insulin injection. Daily repeated subcutaneous injections of insulin are an integral part of the life of children suffering from insulin-dependent diabetes. The most convenient and practical plastic insulin syringes are packed with a needle. A thin, sharp needle does not practically injure the skin. Insulin syringes are of two types, designed for-per drug containing 40 or 100 units of insulin in 1 ml of the solution. Accordingly, divisions are applied.

Remember: conventional disposable syringes are not suitable for injecting insulin. Only special insulin syringes allow you to dial a given amount of medication. And with insulin-dependent diabetes, the exact dose is one of the conditions for successful treatment.

The technique of subcutaneous injection of insulin: when the needle is injected, it should get into the subcutaneous fat. If the injection is made superficially, a "bruise" may form, a slight swelling, the drug will be absorbed longer. If you insert

the needle too deeply, the insulin will fall into the muscle. It's not scary, but it can be painful. In addition, the drug is absorbed faster from the muscle tissue. Pay special attention to teenagers with well-developed muscles when the injection is made in the arm or thigh.

For the first time for patients with diabetes mellitus, a pen syringe was developed, which greatly facilitates the administration of insulin. This tool looks like an ordinary ballpoint pen, but instead of a " pen ", it has a needle —a thin, silicone-coated needle that does not injure the tissue and allows you to make injections practically without pain. Such a pen is charged with a special container-a cartridge filled with a solution of human insulin of short or prolonged action (which is necessary for the patient). This amount is enough for 4-5 days, and in the new generation of pens-even for 10-12 days. Moreover, the cartridges are color-coded, which allows you to instantly determine the type of insulin that they are filled with. The insulin pen is extremely easy to handle: you just need to set the dose and press the button. Such pens are stored under normal conditions at room temperature since the insulin solution used to charge the containers is thermally stable.

Using such syringe pens, equipped with using a sterile needle simplifies the introduction of large doses of insulin into the body. Combinations of short-acting insulin with medium-acting and long-acting insulins the basic bolus mode allows you to maintain the state of compensation of carbohydrate metabolism for a long time and reduce the amount of during insulin injections in tech end of the day.

Subcutaneous injections. For subcutaneous injections, use , using syringes with a volume of 1 to use for subcutaneous 10 cm3 and needles of various types of injection (shaded libra. The most convenient months).

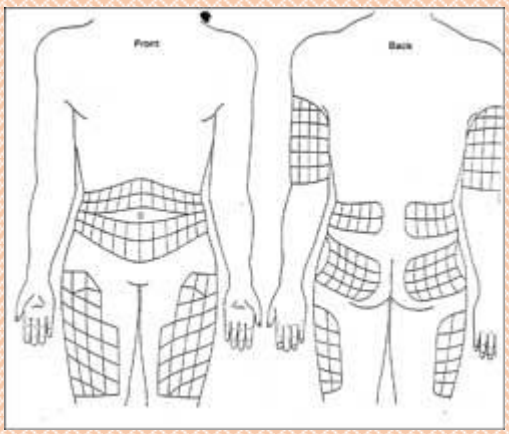


Figure 73. Areas of the body for subcutaneous injections are external posterior to the upper arm, scapular region, subcutaneous fat of the abdomen or thighs (Fig. 73).

The skin is pre-lubricated with alcohol. Hold the syringe with the thumb and middle finger of the right hand, the index, and the thumb of the left hand grasp the skin with the subcutaneous fat cell in the fold, pull it up and towards the tip of the needle. Then, with a short, rapid movement, the needle is inserted into the skin, pushing the subcutaneous fat cell to a depth of 1-2 cm. After that, having intercepted the syringe with the left hand, the right one slightly pulls back the plunger to check whether blood has appeared (if the needle is located in the vessel, the injection is not performed). In the absence of blood, the drug solution is injected under the skin. At the end of the injection, the syringe is removed by holding the needle with a finger, the injection site is re-treated with a spray.

Intramuscular injections. With intramuscular injections, drugs are absorbed faster than with subcutaneous injections, due to the abundance of lymphatic and blood vessels in the muscles.

For intramuscular injections, usually choose about- the upper quadrant of the buttock or the anterior femoral region (Fig. 74).

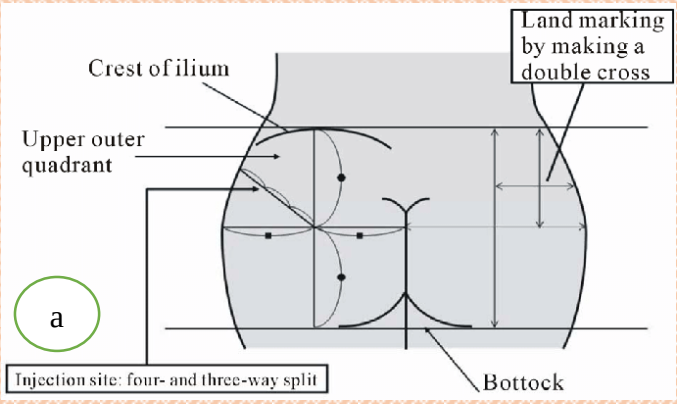


Figure 74. Intramuscular injections into the upper-external quadrant of the buttock (a) and the antero-external region of the thigh (b).

Intramuscular injection is performed according to certain rules. Use a nail file or an emery cutter to file the narrow part of the ampoule break it off. Prick the bottle cap with a needle. Dial the medicin b y, pulling the plunger back. The amount of the solution is determined by the divisions applied to the walls of the cylinder (Fig. 75, a). Remove the needle with which the medicine was collected and put it on the needle for injection. Place the syringe vertically with the needle up, and carefully remove the air from it until a few drops appear at the end of the needle (Fig. 75, b). Mentally divide the buttock into four equal parts. The middle of the topmost square will be the area where the drug is administered. Treat it with cotton wool with alcohol and ask the sick child to relax the muscles (Fig. 75, c). Hold the syringe in your right hand (like a pen) with the needle down, perpendicular to the surface of the body. With your left hand, gather the skin and muscles into a wide fold insert the needle vigorously (fig. 75, d). For intramuscular injections, the needle (its length is 60 mm, diameter 0.8-1 mm) is inserted to a depth of 3-4 cm. To prevent it from entering the vessel, slightly tighten the plunger and then inject the drug (Fig. 75, d). Remove the needle- quickly, in one motion, press the injection site lightly with the cotton wool that was used to treat the skin before injection (Fig. 75, e). You can't clap on the injection site or massage it.

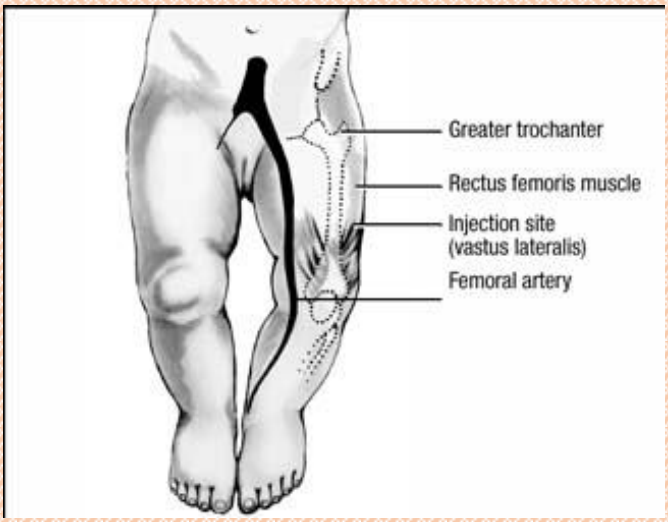


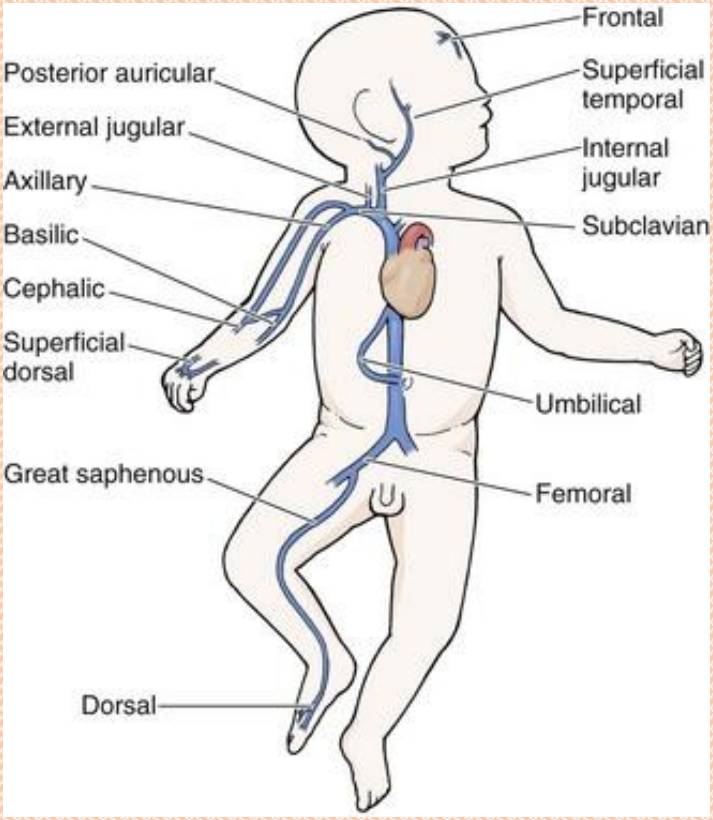
Figure 75. Rules for performing the intramuscular injection.

Intramuscular injection is best done when the patient is lying down. Sometimes it happens that the hand will tremble, the needle will enter a tense muscle or damage a vessel, do not panic! You should remove the needle, calm down, change the needle to a sterile one and repeat the procedure, inserting the needle next to it, in another place. Repeated injections, as a rule, in the same place do not do.

With intramuscular injections, the following are possible: the most frequent complications :

a) the formation of infiltrates, which is associated with non-compliance with the rules of asepsis. In this regard, it is necessary to periodically palpate the injection sites and, if an infiltrate is detected, treatment methods such as distracting procedures should be used without delay. The simplest measures are applying an "iodide" mesh to the skin in the area of the infiltrate, applying a semi-alcoholic compress, from physiotherapy measures — ozocerite applications, an UVT. All these measures are aimed at preventing the development of an abscess, which can only be treated surgically;

b) the needle may break, the end of which remains in the fabric. Removal of the needle is performed surgically; c)



damage to the nerve trunks as a result of incorrect choice of the injection site.

Intravenous injections and intravenous drip infusions (Fig. 76, a, b).

When administered intravenously, the drugs immediately enter the general bloodstream and have a rapid effect on the body.

For intravenous infusions, syringes of large capacity (10 and 20 cm3), needles of larger diameter are used, a short cut. Infusions are made into the peripheral veins. Children of the first year of life are given intravenous injections into the subcutaneous veins of the head, older children-more often in the ulnar veins, less often in the veins of the hand or foot. In the veins of the neck and subclavian veins, intravenous infusions are made in extreme and exceptional cases, in some cases, with extreme caution.

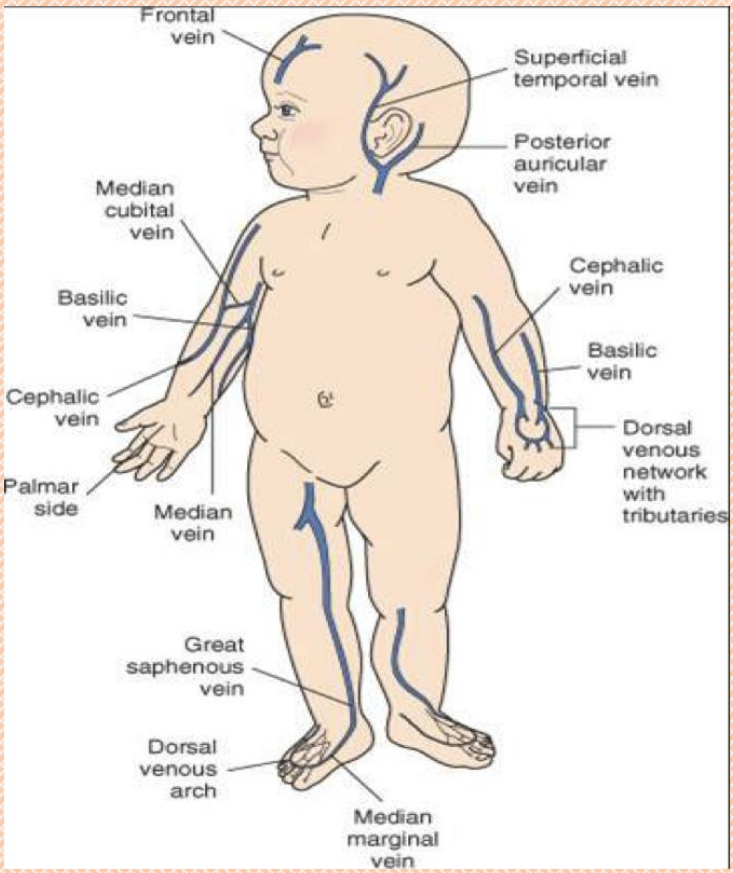


Figure 76. Puncture of peripheral veins.

the most convenient places for venous puncture; head vein puncture places

You should perform fixation of the needle and fixation of the limb during venipuncture.

This is because the pressure in the cervical veins is lower than the atmospheric pressure, there is a possibility of air suction, air bubbles entering the bloodstream (air embolism).

Before intravenous infusion, wash your hands thoroughly; the position of the child is usually lying on his back. Skin design- fix it with alcohol. For better filling of the vein, it is recommended to squeeze it above the intended injection site. This can be done with a finger (for better filling of the head vein in young children) or by applying a tourniquet (on the limbs).

The puncture of the vein is done with a needle without a syringe (except for the cervical veins) or with a needle worn on the syringe. The direction of the needle is along with the blood flow, at an acute angle to the surface of the skin. The puncture of the skin is made by a quick movement to a small depth. Then, with a short forward movement of the needle, the vein is pierced, trying not to pass through its opposite wall. Then move the needle along the vein. When it enters a vein, dark venous blood appears at the outer end of the needle. The lack of blood is usually because the needle has passed the vein. In premature infants and seriously ill infants, due to changes in blood viscosity, the latter does not always flow out of the needle, even when the needle is in the vein. To clarify the location of the needle tip, a ball of sterile cotton wool rolled into the flagellum is inserted into the cannula. Bleeding of the flagellum indicates that the needle has entered the vein. If the needle does not get into the vein, then it is returned, without removing it from under the skin, and again attempt to get into the lumen of the vein. With a successful puncture, blood is drawn from the vein for laboratory testing or an intravenous drug solution is administered.

The introduction of drugs into the vein (infusion) is slow, given the rapid action of the injected substance. Carefully monitor that the injected substance enters only the

vein. If the plunger of the syringe does not move forward well or there is a swelling at the site of the infusion, then the needle has left the vein and the substance enters the tissues surrounding the vein. In this case, the infusion should be stopped and the vein puncture should be repeated somewhere else. After the procedure, the needle is quickly removed from the vein parallel to the skin surface, so as not to damage the vein wall. The puncture site is re-treated with alcohol and a sterile pressure bandage is applied. With a properly performed injection, there should be no bleeding. Intravenous injections are made by a doctor, and a medical nurse helps him.

When performing venipuncture, the following complications are possible:

a) a hematoma that forms when the wall is punctured veins; may be moderately painful, but quickly resolves when applying a pressure bandage;

b) bleeding from the site of a vein puncture is observed in blood clotting disorders; bleeding usually stops quickly when applying a pressure bandage, less often it is necessary to use special methods to stop bleeding;

c) tissue inflammation and the formation of infiltrates at the injection site, which is observed in cases where the drug solution enters the surrounding tissues. The rapid resorption of infiltrates is facilitated by the application of warming compresses.

Placement of vascular access in an awake child can be challenging. Reducing anxiety as well as pain is the goal. Parental presence and breastfeeding reduces anxiety. Distraction techniques should be tailor-made depending on the age of the child. It can range from music, toys, balloons, puppets, bubbles, and books to cartoons, movies, video games, and electronic smart toys. Smartphones have shown to be useful distraction gadgets in 3–7 years age group. Similarly, non-nutritive sucking, swaddling, and rocking have been found useful in neonates and infants. Local anaesthesia creams containing a mixture of lignocaine with prilocaine or tetracaine - like Prilox® (Neon Laboratories Ltd. Mumbai, India) and Tetralid® (Ajanta Pharma Ltd. Mumbai, India) applied in occlusive dressings an hour prior can help reduce the pain of vascular access. Not more than 1 gm for

infants <5 kg and 2 gm for 5–10 kg is recommended. Oral sucrose has been shown to reduce procedural pain in neonates. Sedation or general anaesthesia is required for central venous access. Vascular access should be taken over clean and healthy skin. Skin cleaning with 2% chlorhexidine in 70% alcohol is recommended for antisepsis. In preterm neonates and infants less than 2 months, 2% chlorhexidine is not approved for use by FDA due to skin absorption and irritation. However, 10% povidone-iodine or 0.5% chlorhexidine can be used in this age group. Donning clean gloves for self-protection should be done for peripheral venous cannulation, whereas arterial, central, and long-term venous cannulations should be done under aseptic precautions. Use of transparent non-occlusive dressings over vascular cannulation allows monitoring for complications. Chlorhexidine impregnated dressings are preferred to reduce infective complications when longer dwell times are anticipated. Antibiotic prophylaxis is not needed for vascular access except in implantable port placements, immunocompromised, and high-risk neonates.

Aids and devices for vascular access placement

The difficulty of venous access in children can be predicted using difficult intravenous access (DIVA) score and appropriate aids or devices may be used for cannulation in such patients. Simple techniques such as tourniquet, tapping over the vein, and local warming of the area can improve the success of peripheral venous access by local vasodilation. Local vasodilation can also be achieved by epidermal nitroglycerin, which is especially helpful after vasoconstricting effects of local anaesthetic cream.

Transillumination technique facilitates the placement of peripheral venous cannula by highlighting the veins as light passes through the thin connective tissues in children <2 years. Light-emitting diodes are preferred over the regular light as they have greater transillumination power and lesser risk of burns. Near-infrared devices help to identify the superficial veins that cannot be visualised or palpated. The haemoglobin in the blood absorbs the infrared light thus delineating veins. Multiple devices are available in the market with no significant benefit of one over the other. A systematic review and meta-analysis performed of near-infrared light devices

demonstrate their utility mainly in difficult vascular access situations. Figure 2 impresses the effect of infrared and transillumination techniques in a patient with difficult venous access.

The role of ultrasound in all types of vascular access - peripheral, central, and arterial - is well established. However, ultrasound is expensive, requires training and competency. The availability and licensing requirements for ultrasound in our country limit its widespread use. International evidence-based recommendations on ultrasound-guided vascular access suggest using ultrasound not only to guide catheter placement but also to select the appropriate size of catheter, verify catheter tip placement, and rule out catheter-related complications. Rapid central venous assessment approach is a standardised approach recommended before central venous catheterisation. High frequency (5–18 Hz) linear array hockey-stick ultrasound probe with a small footprint of 25 mm is preferred. Echogenic needles have been tried to improve real time visualisation during placement with variable success. The oblique-axis view for vascular cannulation is superior over long-axis and short-axis views, which have a lower success rate and higher mechanical complication rate, respectively.

Radiological confirmation is desirable for all central venous accesses for verifying the direction of catheter and tip position. Fluoroscopy is recommended for long-term venous access such as PICC, tunneled catheters, and implantable ports.

Peripheral venous access is the most common vascular access, and veins in the dorsal venous plexus of the hand are preferred. One should be well-versed with venous anatomy and common sites for cannulation in children . Veins on the leg should be avoided as they promote the immobilisation of the child. Care should be taken while accessing antecubital fossa veins to avoid inadvertent arterial cannulation. The external jugular vein is available as additional wide bore access in case of unexpected intraoperative haemorrhage. Collapsed vein, loose skin, and shallow angle of penetration add to the challenges of cannulating this vein. Scalp veins can be accessed in the neonatal or infant age group when adequate peripheral access is not available. DIVA score is useful in predicting difficult peripheral

vascular access using four variables – vein visibility, palpability, age, and prior neonatal intensive care stay but requires adequate external validation. It is recommended to use the smallest size of the peripheral cannula that is required to serve the purpose, except in the emergency and unstable patients, where a larger cannula can be selected. Stabilizing the vein and stretching the skin help to prevent rolling of the vein. The catheter is entered at an angle of 10–25° till give-way feel and backflow is visible, after which the angle of insertion can be further dropped till the catheter can be threaded in the vein. Once placed, the cannula and the limb need to be supported with a splint to avoid dislodgement during child's activity. Care must be taken to avoid ischaemia and pressure injuries.

Midline access is peripheral venous access useful in prolonged antibiotic treatments. The midline catheter - Seldipur Smartmidline® (Vygon, Ecouen, France) - about 6 to 12 cm long, is inserted in deep veins of the arm under ultrasound guidance. Alternatively, a long peripheral cannula can be placed in mid-arm veins. Although currently underutilised, this seems promising access for children undergoing surgery, where a single venous cannula can suffice the duration of care.

Peripherally inserted central catheter (PICC) access is an intermediate-term vascular access inserted in one of the deep arm veins – basilic, brachial, or cephalic - with the tip lying in the junction of superior vena cava and right atrium. In older children, ultrasound-guided Seldinger technique using sheath over dilator is used for placement e.g., POLY PER-Q-CATH® (Bard Access systems Inc., UT 84116, USA). In neonates, cubital or saphenous veins are cannulated using sheath over needle apparatus e.g., Polyurethane Epicutaneous-Cave catheter® (Vygon, Ecouen, France). It is a central line and can be used for blood sampling if catheter size more than 3 Fr. Valved PICCs e.g., GROSHONG® (Bard Access systems Inc., UT 84116, USA) have the same incidence of catheter occlusions as compared to open-ended PICCs but have the advantage of avoiding heparin for flushing. Power-injectable PICCs like POWERPICC® (Bard Access systems Inc., UT 84116, USA)

are designed to withstand the higher pressures of computed tomography contrast infusion and are preferred in oncological patients who may require frequent scans. The common indications for central venous access are vasopressors use, parenteral nutrition, chemotherapy, and poor peripheral venous access. It is contraindicated in local infections, severe coagulation, or platelet abnormalities without correction.

Principles of cannulation:

Seldinger technique is the safest method of central venous cannulation. Use of ultrasound is highly recommended to increase the success rate as well as decrease the complications. The ideal tip location of the central venous catheter is near the superior vena cava and right atrium junction. Any other position has a higher chance of vessel injury, thrombosis, or arrhythmias. Various techniques to confirm tip location include electrocardiographic, ultrasound–guided, and radiological assistance. Electrocardiographic needs special equipment, ultrasound-guided needs additional personnel, and radiological is associated with radiation hazard. Hence, the choice may be personal according to the setup. Measuring the distance between entry point to the sternal angle is a reliable landmark guided technique. The internal jugular vein is preferred for low complications and ease of ultrasound guidance. The subclavian vein is alternatively preferred being a non-collapsible vein with fixed landmarks, more comfort, and low infection rates. Femoral vein is less preferred owing to a higher risk of infections. The overall catheter-related infection rates for neonatal central lines are significantly higher than adult central lines.

Internal jugular vein cannulation technique: Ultrasound guided cannulation is the standard of care. The landmark guided internal jugular vein (IJV) cannulation is described using an anterior, central, or posterior approach. In children, the higher anterior approach is preferred by many to reduce the chances of pneumothorax. The needle enters from the medial edge of sternocleidomastoid at the level of the thyroid cartilage and is directed toward the ipsilateral nipple. Simulated Valsalva in a ventilated patient, pressure on liver, and Trendelenburg position help to increase IJV size during cannulation. Head should be turned slightly to the contralateral side. Excessive head rotation in children can collapse the IJV and also

bring it too close to the carotid artery. Owing to low-pressure compressible IJV, there is a possibility of a counter puncture in children and aspiration should be done while withdrawing the needle. There is a higher risk of vertebral artery puncture in younger children, owing to its proximity.

Subclavian vein cannulation technique: The technique of placement is similar to adults, with puncture point at the junction of medial two-third and lateral one-third of the clavicle, and the needle pointing toward the sternal notch, just below the clavicle. The chances of malposition are higher with subclavian than that of the internal jugular vein. Ultrasound guidance for the subclavian vein is difficult because of the clavicle overlapping the vein. Instead, the brachiocephalic vein is well accessible for ultrasound-guided cannulation and can be considered in neonates and infants.

Femoral vein cannulation technique: Femoral vein cannulation is similar to that in adults, with the puncture point medial to the palpable femoral artery, and 1–2 cm below the inguinal ligament. Ultrasound-guided cannulation is considered the best practice.

Hickman and Broviac are tunneled catheters that are used when large bore access is required for longer duration treatments such as chemotherapy, plasmapheresis, and bone marrow transplantation. The catheters have a Dacron cuff that helps sealing of the subcutaneous tract from the exit point to the vessel puncture, thus reducing infections. Special care and precautions required for handling the catheter should be taught to the patient's family. The right subclavian vein is usually preferred for tunneled catheters due to the ease of placement. However, it can be placed in subclavian or internal jugular of either side. Vessel puncture is done using Seldinger technique, and the catheter is tunneled subcutaneously away from the vessel entry point in inferomedial direction at least 8–10 cm away such that the Dacron cuff lies 3–4 cm inside the newer exit point. Details regarding the placement technique can be read elsewhere.

Implantable ports are preferred when vascular access is required intermittently for longer duration treatments, such as chemotherapy, enzyme replacement therapy,

and long-term parenteral nutrition. Port is placed under the skin and is accessed with Huber tip needles. It has a port body with silicone diaphragm that can withstand more than 1000 punctures, connected to a silicone or polyurethane catheter, which is placed in the central vein. The IJV or subclavian access of the central vein is taken and port pocket is created on the anterior part of the chest, under the clavicle. The catheter is then railroaded into the port pocket. The wound is closed in two layers after achieving haemostasis. Details regarding the placement technique can be read elsewhere. Ports preserve body image and allow a shower or swim, unlike tunneled catheters.

Intraosseous access is emergency access that all anaesthesiologists should learn. In peri-arrest situations, if the peripheral access cannot be secured in 1 min, intraosseous needle should be placed. EZ-IO® (Teleflex Incorporated, USA) 15 G (15 mm and 25 mm) needles are available with powered gun to aid the placement. In case of non-availability of those, a wide bore needle with a trocar or bone marrow needle may be used. Intraosseous access is temporary access and should not be maintained for longer than 24 h. The most preferred site is proximal or distal tibia. If the selected bone is fractured or has a prior failed intraosseous attempt, it should not be used for intraosseous access. The needle is screwed perpendicularly down, away from the growth plate, till loss of resistance is felt and the needle grips to the bone. Inability to aspirate marrow does not refute correct placement, but saline flush should not cause local swelling. The needle support device is available with EZ-IO® access.

This is indicated for invasive blood pressure monitoring and frequent arterial blood gas analysis. In neonates, the umbilical artery can be used. In children, radial artery, femoral artery, and posterior tibial artery are commonly used. Role of modified Allen's test before radial artery cannulation is controversial. Ultrasound guidance for radial artery cannulation improves the success rate and reduces complications as compared with palpation or Doppler auditory assistance.

Umbilical venous access is indicated in neonatal resuscitation, exchange transfusion, central venous pressure monitoring, fluid, and medication infusion

when peripheral venous access is unavailable. Both umbilical venous and arterial access cannot be used in omphalitis, peritonitis, and necrotizing enterocolitis. Under aseptic precautions, thin-walled single umbilical vein at 12'oclock position in the umbilical cord stump is identified. An umbilical tape is applied around the base of the umbilical cord; umbilical vein is dilated with artery forceps and catheterised with gentle caudal stretch up to 4–5 cm. Free backflow of blood is verified and catheter secured to the umbilical cord with tapes. If central venous monitoring is desirable, it is pushed 10–12 cm deep and the position of the tip confirmed radiologically. Two-third of the distance from shoulder to umbilicus correlates with correct placement of tip of the catheter in inferior vena cava just below the right atrium.

Umbilical arterial access is performed for arterial blood pressure monitoring, blood gases sampling, and exchange transfusions in neonates. Placement technique is similar to umbilical vein except that one of two thick-walled umbilical arteries is selected. The catheter is flushed with heparinised saline to avoid inadvertent air bubbles. The umbilical artery is opened with the tip of the curved artery forceps with steady pressure and catheterised without undue pressure. Lignocaine 2% may be trickled to break the arterial spasm. The high position of umbilical artery catheter - between thoracic vertebrae T6 and T9 - is preferred over the low position - between lumbar vertebrae L3 and L4. The formula used to calculate the insertion depth in centimeters is 9+ (3 × weight in Kg). The radiological position of tip of the catheter should be between the 6th and 9th thoracic vertebrae on chest X-ray.

To prevent complications, special attention should be paid to the sterilization of instruments, the treatment of the hands of the medical worker and the skin of the patient, also, the sterility of the injected solutions.

No more than 50-300 ml of liquid can be injected simultaneously, depending on the weight and age of the child. With the jet injection of a large amount of bone fluid, heart failure can develop as a result of an overload of the right parts of the heart.

If it is necessary to introduce a significant amount of bone fluid, then use the drip infusion method. Vein puncture is performed in the usual way. Connect the needle The device is equipped with a special dropper that allows you to adjust the rate of drops falling in the dropper socket.

In recent years, butterfly needles and special catheters for intravenous infusions have also been used for drip infusions, especially those designed for a long time (see Fig. 75, b).

The tubes for the drip infusion system are plastic. In a single-use system, a special tap or clamp allows you to adjust the infusion rate (according to the number of falling drops per minute). The cylinder with the medicinal solution is suspended on a special tripod. Pressure control is achieved by raising or lowering the tripod. It is necessary to create a so-called stagnant lake of liquid in the carousel. Before connecting the system to the needle, a liquid is passed through the entire system, then a tube is clamped around the cap, which creates a "stagnant lake". Before connecting the system to the spacecraft-after the injection to the needle or catheter, check to see if there is any air left in the system.

To temporarily interrupt the drip infusion, you can insert a sterile mandrel into the needle or simply squeeze the catheter. To save the vein for further infusions, a cannula inserted into the catheter is widely used (in the absence of special catheters).

To preserve the patency of the needle or catheter (preventing blood clotting), a so-called heparin lock is made. Mix 1 ml of heparin and 9 ml of isotonic sodium chloride solution, then 1 ml of the mixture is injected through a cannula or needle and a catheter is squeezed or a mandrel is inserted into the needle.

For drip administration of drugs, time is required, and therefore it is necessary to fix the limb and ensure its long rest. The needle

is fixed in the vein as follows: a sterile cotton swab is placed under the needle, and it is attached to the skin with a band-aid on top. The immobility of the limb is given by immobilizing it in a splint or splint, and sometimes the hand is fixed to the bed .

When performing intravenous drip infusions, the following complications are possible :

a) air embolism occurs when air enters the vein from a syringe or dropper, especially at the time of jet injection of liquid. If pyro-genic or allergic reactions occur, which are expressed by

chills, fever, skin rashes, nausea or vomiting, it is necessary to stop further administration of solutions into the vein, inform the doctor about this, since special treatment measures are required;

b) the development of phlebitis, to reduce the possibility of which it is necessary to follow the following rules:

1) the temperature of the intravenous fluid should be equal to the patient's body temperature or at least correspond to room temperature; 2) the droppers should be changed daily; 3) strict sterility should be observed;

Figure 77. Devices for intravenous metered-dose administration liquids.

4) hypertensive solutions are administered through other veins. When the signs of phlebitis appear, a binding with Vishnevsky ointment or heparin ointment is applied to the affected area, and the pellicle is removed;

c) the formation of blood clots, which can also cause an inflammatory process; in the absence of contraindications, small doses of heparin are administered to prevent thrombosis. It is noted that at the rate of drug administration of less than 7-8 drops per 1 min, the vein is rapidly thrombosed.

Drip infusions should be made strictly following the doctor's prescription. It is recommended to use devices for intravenous dosing of fluids (Fig. 77). In their absence, the nurse constantly monitors the rate of fluid injection (by the number of drops per 1 min) and the proper condition of the entire system as a whole.

Long-term drip infusions with parenteral nutrition require the distribution of the dose of the administered substances for 24 hours.

CHAPTER 26

PREPARING THE CHILD FOR THE RADIOLOGICAL AND INTRASCOPIC EXAMINATIONS

When monitoring a child in a hospital, especially in the conditions of specialized departments, the nurse has to pay great attention to preparing children for a variety of instrumental examinations necessary for making an accurate diagnosis and prescribing the right treatment. The most important methods of investigation are currently X-ray, endoscopic, and ultrasound.

X-rays often are used to evaluate digestive problems. Standard x-rays (plain x-rays) do not require any special preparation. These x-rays usually can show a blockage or paralysis of the digestive tract, or abnormal air patterns in the abdominal cavity. Standard x-rays can also show enlargement of the liver, kidneys, and spleen.

Barium x-ray studies of the digestive tract

X-ray studies using barium often provide more information than standard x-rays. X-rays are taken after a person swallows barium in a flavored liquid mixture or as barium-coated food. The barium looks white on x-rays and outlines the digestive tract, showing the contours and lining of the esophagus (the hollow tube that leads from the throat to the stomach), stomach, and small intestine. Barium may collect in abnormal areas, showing ulcers, tumors, blockages, and erosions and enlarged, dilated esophageal veins.

X-rays may be taken at intervals to determine where the barium is. In a continuous x-ray technique called fluoroscopy, the barium is observed as it moves through the digestive tract. With this technique, doctors can see how the esophagus and stomach function, determine whether their contractions are normal, and tell whether food is getting blocked.

X-ray examination of the stomach and thin guts. With a planned X-ray examination of the stomach and small intestine for 2-3 days, products that promote the gas formation and cause gas formation are excluded from the diet. flatulence: black bread, potatoes, legumes, sauerkraut, milk, a large amount of fruit.

On the eve of research, dinner should be no later than 20 hours. In the morning on the day of the study, the child should not drink or eat. In the evening before and in the morning on the day of the study (not later than 2 hours before the start of the study), a purifying enema is administered. In the presence of a large number of gases, the enema is repeated 30 minutes before the study. In extreme cases (suspected intestinal obstruction, bleeding, etc.), preparation for X-ray examination of the upper parts of the digestive tract is not carried out.

X-ray examination of the esophagus. Preparation for the procedure is similar to that carried out before the examination of the stomach and small intestine. To detect the failure of the esophageal-gastric junction, the patient is examined in the Trendelenburg position, in which the pelvis is located above the head.

X-ray examination of the colon.

The test is performed 24 hours after the introduction of the contrast agent through the mouth. This examination of the colon does not require special training. The main introscopic method is contrasting

The following is the case when the large intestine is filled with barium suspension through the rectum.

For 2-3 days, exclude from the diet products that cause gas formation, especially fruits, vegetables, and milk. The food should be boiled and easily digestible. In the presence of persistent flatulence, the child is given 3 times a day an infusion of chamomile, after dinner, they put a gas outlet tube. On the eve of the irrigoscopy, before lunch, the patient takes castor oil (from 5 to 15 g, depending on age), in the evening, with an interval of 1 hour, he is twice given a cleansing enema. In the morning they give a light breakfast twice with a break of 30 minutes, make cleansing enemas. If necessary, a gas outlet tube is inserted 1 hour before the study.

X-ray examination of the bile ducts

Examination of the bile ducts (cholecystography) is carried out by introducing a contrast agent into the body and performing a series of subsequent X-rays. There is a distinction between oral and intravenous cholecystography.

In oral cholecystography, the child receives contrast iodine-containing substances ("Holevid", "Yopagnost", etc.) through the mouth 12 hours before the study.- on the eve of the patient take easily digestible food, 3 times a day-chamomile infusion. In clinical practice, there are two main methods of taking a contrast agent: a single evening dose of the drug and a fractional dose. The latter has advantages. The following method of preparing a sick child for the study is recommended. On the eve of the study, at 16 h and again 18 hours the patient is invited to drink a glass of sweet tea. From 19 h 30 min to 20 h, the child takes one tablet of a contrast agent every 5 minutes, washed down with sweet tea. After taking the entire dose of the drug, one is allowed to drink only water. You can not eat either in the evening or in the morning on the day of the study. The next morning, at 10 o'clock, the nurse will take the child to the X-ray room to perform an X-ray examination. In the X-ray room, the patient is given a choleretic breakfast (2 raw eggs, sour cream) to determine the degree of contraction of the gallbladder, the patency of the bile ducts.

Intravenous cholecystography is performed in the absence of information during oral cholecystography, for this purpose, the radiopaque substance is administered intravenously. On the eve of the study, the patient's sensitivity to the contrast agent is checked. The appearance of itching, rash, chills, headache, increased body temperature, and other symptoms indicate the intolerance of iodine preparations. In this case, cholecystography is not performed. In other respects, the preparation is similar to the preparation for oral cholecystography.

X-ray examination of the urinary system

For X-ray examination of the kidneys and urinary tract, contrast iodine-containing substances are administered intravenously. Sensitivity to these drugs is tested by intravenous administration of 0.5-1.5 ml of the substance on the eve of the study. The nurse should monitor for possible adverse reactions, which include the occurrence of a feeling of heat, dizziness, nausea, vomiting, palpitations, the appearance of urticaria, and report about these to the physician.

To reduce gas formation in the intestine, which may interfere with the study, exclude the product, which contains a large amount of fiber, as well as milk

In the evening and the morning, 2 hours before the study, put cleansing enemas. Before the study, the child should urinate. If a large amount of gas is detected in the intestine when performing a survey image, then it is necessary to repeat the cleansing enema.

Esophagogastroduodenoscopy. The preparation of the child is that in the morning on the day of the study, you can not eat food and drink the liquid. In emergency cases, for example, with gastrointestinal bleeding or ingestion of a foreign body, esophagogastroduodenoscopy is performed without taking into account the intake of food by the child. After the end of the procedure, food intake is allowed after 1-1 Y2 hours.

Colonofibroscopy. With a planned study, cooking begins in 2-3 days, while the food is excluded from the food that contributes to gas formation. Prescribe an antigliadin diet consisting of meat, fish, protein omelet, rice, buckwheat. On the eve of the study, castor oil is given in the afternoon, and twice in the evening at intervals of 1-1 Y2 4, put a cleansing enema. Dinner is allowed for young children suffering from diabetes and severe forms of impaired intestinal absorption. In the morning, 2-2 U2 hours before colonofibroscopy, a cleansing enema is performed, after which children with flatulence are put on a gas outlet tube for 10 to 15 minutes. If necessary for emergency indications in the case of gastrointestinal bleeding, colonofibroscopy is performed without preparation.

Rectoromanoscopy. The preparation of the child consists of applying a cleansing enema in the evening and the morning before the examination. In the case of persistent constipation, saline laxatives are given for several days (15 % magnesium sulfate solution of 0.5-1.0 tablespoons 3 times a day), enemas are given daily.

Laparoscopy. The preparation of the child for laparoscopy involves conducting a preliminary X-ray examination of the gastrointestinal tract, determining blood clotting, and the prothrombin index time of bleeding. On the eve of the evening, they put a cleansing enema, in the morning the patient is not fed.

Bronchoscopy. The study is carried out after a light breakfast, after 2-3 hours, or on an empty stomach.

After endoscopic examinations, complications may occur: fainting, undesirable (side) reactions to the administration of anesthetic substances, bleeding. The nurse should carefully monitor the condition of the children and inform the doctor if any adverse symptoms occur.

Ultrasound examination of the abdominal organs.

Abdominal ultrasonography (also called abdominal ultrasound imaging or abdominal sonography) is a form of medical ultrasonography (medical application of ultrasound technology) to visualise abdominal anatomical structures. It uses transmission and reflection of ultrasound waves to visualise internal organs through the abdominal wall (with the help of gel, which helps transmission of the sound waves). For this reason, the procedure is also called a transabdominal ultrasound, in contrast to endoscopic ultrasound, the latter combining ultrasound with endoscopy through visualize internal structures from within hollow organs.

Abdominal ultrasound examinations are performed by gastroenterologists or other specialists in internal medicine, radiologists, or sonographers trained for this procedure. Abdominal ultrasound can be used to diagnose abnormalities in various internal organs, such as the kidneys, liver, gallbladder, pancreas, spleen and abdominal aorta. If Doppler ultrasonography is added, the blood flow inside blood vessels can be evaluated as well (for example, to look for renal artery stenosis). It is commonly used to examine the uterus and fetus during pregnancy; this is called obstetric ultrasonography.

Abdominal ultrasound is commonly used in the setting of abdominal pain or an acute abdomen (sudden and/or severe abdominal pain syndrome in which surgical intervention might be necessary), in which it can diagnose appendicitis or cholecystitis.

Ultrasound can also be used if there is suspicion of enlargement of one or more organs, such as used in screening for abdominal aortic aneurysm, investigation for splenomegaly or urinary retention.

Ultrasound can be used for additional anatomical information for patients with an abnormal kidney function or pancreatic enzymes (pancreatic amylase and pancreatic lipase).

Standard measurement of the abdominal aorta.

It can be used on the abdominal aorta to detect or exclude abdominal aortic aneurysm. For this purpose, the standard aortic measurement for abdominal aortic aneurysm is between the outer margins of the aortic wall.

In cases of infectious mononucleosis, splenomegaly is a common symptom, and health care providers may consider using abdominal ultrasonography to get insight into a person's condition. However, because spleen size varies greatly, ultrasonography is not a valid technique for assessing spleen enlargement and should not be used in typical circumstances or to make routine decisions about fitness for playing sports.

Detecting stones

Ultrasound imaging is useful for detecting stones, for example kidney stones or gallstones, because they create a clearly visible ultrasound shadow behind the stone.

Ultrasonography can be used to guide procedures such as treatment for kidney stones with Extracorporeal shock wave lithotripsy, needle biopsies or paracentesis (needle drainage of free fluid inside the abdominal cavity).

Liver

Ultrasonography of the liver with some standard measurements.

In patients with deranged liver function tests, ultrasound may show increased liver size (hepatomegaly), increased reflectiveness (which might, for example, indicate cholestasis), gallbladder or bile duct diseases, or a tumor in the liver.

Ultrasonography of liver tumors involves two stages: detection and characterization.[citation needed] Tumor detection is based on the performance of

the method and should include morphometric information (three axes dimensions, volume) and topographic information (number, location specifying liver segment and lobe/lobes). The specification of these data is important for staging liver tumors and prognosis.[citation needed] Tumor characterization is a complex process based on a sum of criteria leading towards tumor nature definition. Often, other diagnostic procedures, especially interventional ones, are no longer necessary. Tumor characterization using the ultrasound method will be based on the following elements: consistency (solid, liquid, mixed), echogenicity, structure appearance (homogeneous or heterogeneous), delineation from adjacent liver parenchyma (capsular, imprecise), elasticity, posterior acoustic enhancement effect, the relation with neighboring organs or structures (displacement, invasion), vasculature (presence and characteristics on Doppler ultrasonography and contrast-enhanced ultrasound (CEUS). Advantages of ultrasound imaging of abdominal structures are that the procedure can be performed quickly, bed-side, involves no exposure to X-rays (which makes it useful in pregnant patients, for example) and is inexpensive compared to other often-used techniques such as computed tomography (CT scan) of the abdomen. Disadvantages are troublesome imaging if a lot of gas is present inside the bowels, if there is a lot of abdominal fat, and that the quality of the imaging depends on the experience of the person performing it.

The imaging occurs real-time and without sedation, so that the influence of movements can be assessed quickly. For example, by pressing the ultrasound probe against the gallbladder, a radiological Murphy's sign can be elicited.

Through the abdominal wall, organs inside the pelvis can be seen, such as the urinary bladder or the ovaries and uterus in women. Because water is an excellent conductor for ultrasound waves, visualizing these structures often requires a well-filled urinary bladder (this means the patients has to drink plenty of water before the examination).

Preparation for the study is carried out to reduce flatulence and includes a two-day diet with a restriction of products containing a significant amount of fiber (black bread, raw vegetables, and fruits, etc.), as well as milk. Prescribe carbolenum (from

3 to 5 tablets per day), polyphepan (2 teaspoons of granules are poured into 4 cups of water), multiferment new drugs. The study is carried out in the morning strictly on an empty stomach. A cleansing enema is prescribed by a doctor, usually directly on the day of the study.

Ultrasound examination of the thoracic organs of the patient.

No special training is required. The study is conducted in the morning, preferably on an empty stomach.

Ultrasound examination of the kidneys and bladder with a combination. The study is performed on an empty stomach. The urinary bladder should be filled at the beginning of the study only before the first urge to urinate appears. A distended bladder disrupts the normal process of urination and distorts the results of ultrasound examination.

Imaging plays an important role in conjunction with clinical data in assessment and management of patients in ICU. X ray and ultrasound are the main imaging modalities which are used in ICU however the use of other imaging techniques as MDCT&MRI is being increased.

In critically ill ICU patients; there is a major problem of transportation so we have to use the bedside imaging modalities in order to diagnose the case as much as we can, however the X-ray provides limited information with exposure to radiation and on the other hand CT may be time consuming mainly in patient transportation Ultrasound examination of the chest is a non- invasive imaging technique which gives information about the lungs, pleura and mediastinum as well as the chest wall without exposure to radiation and can be used safely in follow up.

Classic appearance of the normal lung by ultrasound can be detected by lung sliding in association with horizontal A-lines and vertical B-lines. A-lines are repetition lines parallel to the pleural line while B-lines are one or more vertical lines originate at the pleural interface. B-lines effacing the A lines and move with the pleural line The pleural line (white arrow) is a roughly horizontal hyperechoic line 0.5 cm below the upper and lower ribs identified by acoustic shadow (R). A single vertical artifact arising from the pleural line and spreading up to the edge of the screen

(comet-tails, indicated by asterisk) can be seen in dependent regions in normally aerated lungs .

Radioisotope research methods. Held in specialized departments. Radiography techniques dynamic scintigraphy usually does not require special training of the patient. Examination of the lungs, heart, liver, kidneys, and other organs are usually performed in the morning on an empty stomach. However, when using radiopharmaceuticals containing a certain amount of free 13J 1, for example, gishturan, it is recommended to block the thyroid gland before the examination with 3-5 drops of Lugol solution 3 times a day for 3 days.

Appendix 1

CLINICAL CASE STUDY

1. After completing the examination of the child in the emergency department, the doctor instructs the nurse to register the patient. What documents should a nurse fill out?

2. A sick child with chickenpox was identified in the children's department. It is necessary to transfer it to a box located on the same floor. What precautions should be taken?

3. A 3-year-old child was admitted to the hospital with pneumonia.

In the emergency department, his mother asked the nurse: "Where should I transfer the single-use syringes?" The nurse replied sharply that the child did not need syringes, as the hospital had the necessary medicines and tools. What is the ethical and deontological mistake of a medical professional?

4. A five-year-old child, who is in the hospital for the first time, cries without cause, asks to go home. He again had a hiccup, for which he was treated by a speech therapist a year ago. What should medical professionals do in this case?

5. In the department, there is a mother who takes care of a three-year-old child. Trying to draw attention to her child and herself, she shows rudeness and tactlessness. How should medical workers behave?

6. The mother of a sick child turned to a nurse with a request to evaluate the results of the child's laboratory tests. The nurse said that the tests were bad

and there was no improvement. The next day, during a visit to the attending doctor, the mother made claims to him about the poor treatment of the child. What mistake did the nurse make?

7. A 12-year-old child has acute leukemia. Currently he's got an exacerbation, but he's not feeling too bad. One day, while distributing medicines, the post nurse, in the presence of the child, said to the second nurse: "Take this to the child with leukemia." Since then, the child asks, what is leukemia?
   What was the ethical and deontological error of the medical nurse?

8. The head of the department, in the presence of parents who are with sick children, reprimands the post medicine

9. The child suffered a nose injury during the game. Blood is released from both halves of the nose infrequent drops. Give urgent help to a child with nosebleeds.

10. A child suffering from hemophilia has a tooth removed. Within an hour, the bleeding from the tooth socket does not stop. What measures are necessary to stop bleeding from the tooth socket?

11. A child aged 10 years old hit his chest while playing. Complaints of chest pain, with a cough, bloody sputum is released. What should be the pre-medical care for such a child?

12. An one year old child, playing with small objects, put a little ball in the left ear .The child is restless, crying, from the left ear canal appeared bloody discharge. Provide first aid.

13. The child, going down the stairs, fell and hit his right knee. Complains of pain in the knee, does not stand on the leg. The right knee joint is enlarged in volume, the skin above it is reddened. What is the pre-medical care for such a child?

Appendix 2

CONVENTION ON THE RIGHTS OF THE CHILD

Adopted and opened for signature, ratification and accession by General Assembly resolution 44/25 of 20 November 1989

entry into force 2 September 1990, in accordance with article 49

Preamble

The States Parties to the present Convention,

Considering that, in accordance with the principles proclaimed in the Charter of the United Nations, recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world,

Bearing in mind that the peoples of the United Nations have, in the Charter, reaffirmed their faith in fundamental human rights and in the dignity and worth of the human person, and have determined to promote social progress and better standards of life in larger freedom,

Recognizing that the United Nations has, in the Universal Declaration of Human Rights and in the International Covenants on Human Rights, proclaimed and agreed that everyone is entitled to all the rights and freedoms set forth therein, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status,

Recalling that, in the Universal Declaration of Human Rights, the United Nations has proclaimed that childhood is entitled to special care and assistance,

Convinced that the family, as the fundamental group of society and the natural environment for the growth and well-being of all its members and particularly children, should be afforded the necessary protection and assistance so that it can fully assume its responsibilities within the community,

Recognizing that the child, for the full and harmonious development of his or her personality, should grow up in a family environment, in an atmosphere of happiness, love and understanding,

Considering that the child should be fully prepared to live an individual life in society, and brought up in the spirit of the ideals proclaimed in the Charter of the United Nations, and in particular in the spirit of peace, dignity, tolerance, freedom, equality and solidarity,

Bearing in mind that the need to extend particular care to the child has been stated in the Geneva Declaration of the Rights of the Child of 1924 and in the Declaration of the Rights of the Child adopted by the General Assembly on 20 November 1959 and recognized in the Universal Declaration of Human Rights, in the International Covenant on Civil and Political Rights (in particular in articles 23 and 24), in the International Covenant on Economic, Social and Cultural Rights (in particular in article 10) and in the statutes and relevant instruments of specialized agencies and international organizations concerned with the welfare of children,

Bearing in mind that, as indicated in the Declaration of the Rights of the Child, "the child, by reason of his physical and mental immaturity, needs special safeguards and care, including appropriate legal protection, before as well as after birth",

Recalling the provisions of the Declaration on Social and Legal Principles relating to the Protection and Welfare of Children, with Special Reference to Foster Placement and Adoption Nationally and Internationally; the United Nations Standard Minimum Rules for the Administration of Juvenile Justice (The Beijing Rules); and the Declaration on the Protection of Women and Children in Emergency and Armed Conflict, Recognizing that, in all countries in the world, there are children living in exceptionally difficult conditions, and that such children need special consideration,

Taking due account of the importance of the traditions and cultural values of each people for the protection and harmonious development of the child, Recognizing the importance of international co-operation for improving the living conditions of children in every country, in particular in the developing countries,

Have agreed as follows:

PART I

Article 1

For the purposes of the present Convention, a child means every human being below the age of eighteen years unless under the law applicable to the child, majority is attained earlier.

Article 2

1. States Parties shall respect and ensure the rights set forth in the present Convention to each child within their jurisdiction without discrimination of any kind, irrespective of the child's or his or her parent's or legal guardian's race, colour, sex, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status.
2. States Parties shall take all appropriate measures to ensure that the child is protected against all forms of discrimination or punishment on the basis of the status, activities, expressed opinions, or beliefs of the child's parents, legal guardians, or family members.

Article 3

1. In all actions concerning children, whether undertaken by public or private social welfare institutions, courts of law, administrative authorities or legislative bodies, the best interests of the child shall be a primary consideration.
2. States Parties undertake to ensure the child such protection and care as is necessary for his or her well-being, taking into account the rights and duties of his or her parents, legal guardians, or other individuals legally responsible for him or her, and, to this end, shall take all appropriate legislative and administrative measures.
3. States Parties shall ensure that the institutions, services and facilities responsible for the care or protection of children shall conform with the standards established by competent authorities, particularly in the areas of safety, health, in the number and suitability of their staff, as well as competent supervision.

Article 4

States Parties shall undertake all appropriate legislative, administrative, and other measures for the implementation of the rights recognized in the present Convention. With regard to economic, social and cultural rights, States Parties shall undertake such measures to the maximum extent of their available resources and, where needed, within the framework of international co-operation.

Article 5

States Parties shall respect the responsibilities, rights and duties of parents or, where applicable, the members of the extended family or community as provided for by local custom, legal guardians or other persons legally responsible for the child, to provide, in a manner consistent with the evolving capacities of the child, appropriate direction and guidance in the exercise by the child of the rights recognized in the present Convention.

Article 6

1. States Parties recognize that every child has the inherent right to life.

2. States Parties shall ensure to the maximum extent possible the survival and development of the child.

Article 7

1. The child shall be registered immediately after birth and shall have the right from birth to a name, the right to acquire a nationality and. as far as possible, the right to know and be cared for by his or her parents.

2. States Parties shall ensure the implementation of these rights in accordance with their national law and their obligations under the relevant international instruments in this field, in particular where the child would otherwise be stateless.

Article 8

1. States Parties undertake to respect the right of the child to preserve his or her identity, including nationality, name and family relations as recognized by law without unlawful interference.

2. Where a child is illegally deprived of some or all of the elements of his or her identity, States Parties shall provide appropriate assistance and protection, with a view to re-establishing speedily his or her identity.

Article 9

1. States Parties shall ensure that a child shall not be separated from his or her parents against their will, except when competent authorities subject to judicial review determine, in accordance with applicable law and procedures, that such separation is necessary for the best interests of the child. Such determination may be necessary in a particular case such as one involving abuse or neglect of the child by the parents, or one where the parents are living separately and a decision must be made as to the child's place of residence.

2. In any proceedings pursuant to paragraph 1 of the present article, all interested parties shall be given an opportunity to participate in the proceedings and make their views known.

3. States Parties shall respect the right of the child who is separated from one or both parents to maintain personal relations and direct contact with both parents on a regular basis, except if it is contrary to the child's best interests.

4. Where such separation results from any action initiated by a State Party, such as the detention, imprisonment, exile, deportation or death (including death arising from any cause while the person is in the custody of the State) of one or both parents or of the child, that State Party shall, upon request, provide the parents, the child or, if appropriate, another member of the family with the essential information concerning the whereabouts of the absent member(s) of the family unless the provision of the information would be detrimental to the well-being of the child. States Parties shall further ensure that the submission of such a request shall of itself entail no adverse consequences for the person(s) concerned.

Article 10

1. In accordance with the obligation of States Parties under article 9, paragraph 1, applications by a child or his or her parents to enter or leave a State Party for the purpose of family reunification shall be dealt with by States Parties in a positive,

humane and expeditious manner. States Parties shall further ensure that the submission of such a request shall entail no adverse consequences for the applicants and for the members of their family.

2. A child whose parents reside in different States shall have the right to maintain on a regular basis, save in exceptional circumstances personal relations and direct contacts with both parents. Towards that end and in accordance with the obligation of States Parties under article 9, paragraph 1, States Parties shall respect the right of the child and his or her parents to leave any country, including their own, and to enter their own country. The right to leave any country shall be subject only to such restrictions as are prescribed by law and which are necessary to protect the national security, public order (ordre public), public health or morals or the rights and freedoms of others and are consistent with the other rights recognized in the present Convention.

Article 11

1. States Parties shall take measures to combat the illicit transfer and non-return of children abroad.

2. To this end, States Parties shall promote the conclusion of bilateral or multilateral agreements or accession to existing agreements.

Article 12

1. States Parties shall assure to the child who is capable of forming his or her own views the right to express those views freely in all matters affecting the child, the views of the child being given due weight in accordance with the age and maturity of the child.

2. For this purpose, the child shall in particular be provided the opportunity to be heard in any judicial and administrative proceedings affecting the child, either directly, or through a representative or an appropriate body, in a manner consistent with the procedural rules of national law.

Article 13

1. The child shall have the right to freedom of expression; this right shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of the child's choice.

2. The exercise of this right may be subject to certain restrictions, but these shall only be such as are provided by law and are necessary:

(a) For respect of the rights or reputations of others; or

(b) For the protection of national security or of public order (ordre public), or of public health or morals.

Article 14

1. States Parties shall respect the right of the child to freedom of thought, conscience and religion.

2. States Parties shall respect the rights and duties of the parents and, when applicable, legal guardians, to provide direction to the child in the exercise of his or her right in a manner consistent with the evolving capacities of the child.

3. Freedom to manifest one's religion or beliefs may be subject only to such limitations as are prescribed by law and are necessary to protect public safety, order, health or morals, or the fundamental rights and freedoms of others.

Article 15

1. States Parties recognize the rights of the child to freedom of association and to freedom of peaceful assembly.

2. No restrictions may be placed on the exercise of these rights other than those imposed in conformity with the law and which are necessary in a democratic society in the interests of national security or public safety, public order (ordre public), the protection of public health or morals or the protection of the rights and freedoms of others.

Article 16

1. No child shall be subjected to arbitrary or unlawful interference with his or her privacy, family, home or correspondence, nor to unlawful attacks on his or her honour and reputation.

2. The child has the right to the protection of the law against such interference or attacks.

Article 17

States Parties recognize the important function performed by the mass media and shall ensure that the child has access to information and material from a diversity of national and international sources, especially those aimed at the promotion of his or her social, spiritual and moral well-being and physical and mental health.

To this end, States Parties shall:

(a) Encourage the mass media to disseminate information and material of social and cultural benefit to the child and in accordance with the spirit of article 29;

(b) Encourage international co-operation in the production, exchange and dissemination of such information and material from a diversity of cultural, national and international sources;

(c) Encourage the production and dissemination of children's books;

(d) Encourage the mass media to have particular regard to the linguistic needs of the child who belongs to a minority group or who is indigenous;

(e) Encourage the development of appropriate guidelines for the protection of the child from information and material injurious to his or her well-being, bearing in mind the provisions of articles 13 and 18.

Article 18

1. States Parties shall use their best efforts to ensure recognition of the principle that both parents have common responsibilities for the upbringing and development of the child. Parents or, as the case may be, legal guardians, have the primary responsibility for the upbringing and development of the child. The best interests of the child will be their basic concern.

2. For the purpose of guaranteeing and promoting the rights set forth in the present Convention, States Parties shall render appropriate assistance to parents and legal guardians in the performance of their child-rearing responsibilities and shall ensure the development of institutions, facilities and services for the care of children.

3. States Parties shall take all appropriate measures to ensure that children of working parents have the right to benefit from child-care services and facilities for which they are eligible.

Article 19

1. States Parties shall take all appropriate legislative, administrative, social and educational measures to protect the child from all forms of physical or mental violence, injury or abuse, neglect or negligent treatment, maltreatment or exploitation, including sexual abuse, while in the care of parent(s), legal guardian(s) or any other person who has the care of the child.

2. Such protective measures should, as appropriate, include effective procedures for the establishment of social programmes to provide necessary support for the child and for those who have the care of the child, as well as for other forms of prevention and for identification, reporting, referral, investigation, treatment and follow-up of instances of child maltreatment described heretofore, and, as appropriate, for judicial involvement.

Article 20

1. A child temporarily or permanently deprived of his or her family environment, or in whose own best interests cannot be allowed to remain in that environment, shall be entitled to special protection and assistance provided by the State.

2. States Parties shall in accordance with their national laws ensure alternative care for such a child.

3. Such care could include, inter alia, foster placement, kafalah of Islamic law, adoption or if necessary placement in suitable institutions for the care of children. When considering solutions, due regard shall be paid to the desirability of continuity in a child's upbringing and to the child's ethnic, religious, cultural and linguistic background.

Article 21

States Parties that recognize and/or permit the system of adoption shall ensure that the best interests of the child shall be the paramount consideration and they shall:

(a) Ensure that the adoption of a child is authorized only by competent authorities who determine, in accordance with applicable law and procedures and on the basis of all pertinent and reliable information, that the adoption is permissible in view of the child's status concerning parents, relatives and legal guardians and that, if required, the persons concerned have given their informed consent to the adoption on the basis of such counselling as may be necessary;

(b) Recognize that inter-country adoption may be considered as an alternative means of child's care, if the child cannot be placed in a foster or an adoptive family or cannot in any suitable manner be cared for in the child's country of origin;

(c) Ensure that the child concerned by inter-country adoption enjoys safeguards and standards equivalent to those existing in the case of national adoption;

(d) Take all appropriate measures to ensure that, in inter-country adoption, the placement does not result in improper financial gain for those involved in it;

(e) Promote, where appropriate, the objectives of the present article by concluding bilateral or multilateral arrangements or agreements, and endeavour, within this framework, to ensure that the placement of the child in another country is carried out by competent authorities or organs.

Article 22

1. States Parties shall take appropriate measures to ensure that a child who is seeking refugee status or who is considered a refugee in accordance with applicable international or domestic law and procedures shall, whether unaccompanied or accompanied by his or her parents or by any other person, receive appropriate protection and humanitarian assistance in the enjoyment of applicable rights set forth in the present Convention and in other international human rights or humanitarian instruments to which the said States are Parties.

2. For this purpose, States Parties shall provide, as they consider appropriate, co-operation in any efforts by the United Nations and other competent intergovernmental organizations or non-governmental organizations co-operating with the United Nations to protect and assist such a child and to trace the parents or other members of the family of any refugee child in order to obtain information necessary for reunification with his or her family. In cases where no parents or other members of the family can be found, the child shall be accorded the same protection as any other child permanently or temporarily deprived of his or her family environment for any reason , as set forth in the present Convention.

Article 23

1. States Parties recognize that a mentally or physically disabled child should enjoy a full and decent life, in conditions which ensure dignity, promote self-reliance and facilitate the child's active participation in the community.

2. States Parties recognize the right of the disabled child to special care and shall encourage and ensure the extension, subject to available resources, to the eligible child and those responsible for his or her care, of assistance for which application is made and which is appropriate to the child's condition and to the circumstances of the parents or others caring for the child.

3. Recognizing the special needs of a disabled child, assistance extended in accordance with paragraph 2 of the present article shall be provided free of charge, whenever possible, taking into account the financial resources of the parents or others caring for the child, and shall be designed to ensure that the disabled child has effective access to and receives education, training, health care services, rehabilitation services, preparation for employment and recreation opportunities in a manner conducive to the child's achieving the fullest possible social integration and individual development, including his or her cultural and spiritual development

4. States Parties shall promote, in the spirit of international cooperation, the exchange of appropriate information in the field of preventive health care and of medical, psychological and functional treatment of disabled children, including dissemination of and access to information concerning methods of rehabilitation,

education and vocational services, with the aim of enabling States Parties to improve their capabilities and skills and to widen their experience in these areas. In this regard, particular account shall be taken of the needs of developing countries.

Article 24

1. States Parties recognize the right of the child to the enjoyment of the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health. States Parties shall strive to ensure that no child is deprived of his or her right of access to such health care services.

2. States Parties shall pursue full implementation of this right and, in particular, shall take appropriate measures:

(a) To diminish infant and child mortality;

(b) To ensure the provision of necessary medical assistance and health care to all children with emphasis on the development of primary health care;

(c) To combat disease and malnutrition, including within the framework of primary health care, through, inter alia, the application of readily available technology and through the provision of adequate nutritious foods and clean drinking-water, taking into consideration the dangers and risks of environmental pollution;

(d) To ensure appropriate pre-natal and post-natal health care for mothers;

(e) To ensure that all segments of society, in particular parents and children, are informed, have access to education and are supported in the use of basic knowledge of child health and nutrition, the advantages of breastfeeding, hygiene and environmental sanitation and the prevention of accidents;

(f) To develop preventive health care, guidance for parents and family planning education and services.

3. States Parties shall take all effective and appropriate measures with a view to abolishing traditional practices prejudicial to the health of children.

4. States Parties undertake to promote and encourage international co-operation with a view to achieving progressively the full realization of the right recognized

in the present article. In this regard, particular account shall be taken of the needs of developing countries.

Article 25

States Parties recognize the right of a child who has been placed by the competent authorities for the purposes of care, protection or treatment of his or her physical or mental health, to a periodic review of the treatment provided to the child and all other circumstances relevant to his or her placement.

Article 26

1. States Parties shall recognize for every child the right to benefit from social security, including social insurance, and shall take the necessary measures to achieve the full realization of this right in accordance with their national law.
2. The benefits should, where appropriate, be granted, taking into account the resources and the circumstances of the child and persons having responsibility for the maintenance of the child, as well as any other consideration relevant to an application for benefits made by or on behalf of the child.

Article 27

1. States Parties recognize the right of every child to a standard of living adequate for the child's physical, mental, spiritual, moral and social development.
2. The parent(s) or others responsible for the child have the primary responsibility to secure, within their abilities and financial capacities, the conditions of living necessary for the child's development.
3. States Parties, in accordance with national conditions and within their means, shall take appropriate measures to assist parents and others responsible for the child to implement this right and shall in case of need provide material assistance and support programmes, particularly with regard to nutrition, clothing and housing.
4. States Parties shall take all appropriate measures to secure the recovery of maintenance for the child from the parents or other persons having financial responsibility for the child, both within the State Party and from abroad. In particular, where the person having financial responsibility for the child lives in a

State different from that of the child, States Parties shall promote the accession to international agreements or the conclusion of such agreements, as well as the making of other appropriate arrangements.

Article 28

1. States Parties recognize the right of the child to education, and with a view to achieving this right progressively and on the basis of equal opportunity, they shall, in particular:

(a) Make primary education compulsory and available free to all;

(b) Encourage the development of different forms of secondary education, including general and vocational education, make them available and accessible to every child, and take appropriate measures such as the introduction of free education and offering financial assistance in case of need;

(c) Make higher education accessible to all on the basis of capacity by every appropriate means;

(d) Make educational and vocational information and guidance available and accessible to all children;

(e) Take measures to encourage regular attendance at schools and the reduction of drop-out rates.

2. States Parties shall take all appropriate measures to ensure that school discipline is administered in a manner consistent with the child's human dignity and in conformity with the present Convention.

3. States Parties shall promote and encourage international cooperation in matters relating to education, in particular with a view to contributing to the elimination of ignorance and illiteracy throughout the world and facilitating access to scientific and technical knowledge and modern teaching methods. In this regard, particular account shall be taken of the needs of developing countries.

Article 29

1. States Parties agree that the education of the child shall be directed to:

(a) The development of the child's personality, talents and mental and physical abilities to their fullest potential;

(b) The development of respect for human rights and fundamental freedoms, and for the principles enshrined in the Charter of the United Nations;

(c) The development of respect for the child's parents, his or her own cultural identity, language and values, for the national values of the country in which the child is living, the country from which he or she may originate, and for civilizations different from his or her own;

(d) The preparation of the child for responsible life in a free society, in the spirit of understanding, peace, tolerance, equality of sexes, and friendship among all peoples, ethnic, national and religious groups and persons of indigenous origin;

(e) The development of respect for the natural environment.

2. No part of the present article or article 28 shall be construed so as to interfere with the liberty of individuals and bodies to establish and direct educational institutions, subject always to the observance of the principle set forth in paragraph 1 of the present article and to the requirements that the education given in such institutions shall conform to such minimum standards as may be laid down by the State.

Article 30

In those States in which ethnic, religious or linguistic minorities or persons of indigenous origin exist, a child belonging to such a minority or who is indigenous shall not be denied the right, in community with other members of his or her group, to enjoy his or her own culture, to profess and practise his or her own religion, or to use his or her own language.

Article 31

1. States Parties recognize the right of the child to rest and leisure, to engage in play and recreational activities appropriate to the age of the child and to participate freely in cultural life and the arts.

2. States Parties shall respect and promote the right of the child to participate fully in cultural and artistic life and shall encourage the provision of appropriate and equal opportunities for cultural, artistic, recreational and leisure activity.

Article 32

1. States Parties recognize the right of the child to be protected from economic exploitation and from performing any work that is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral or social development.

2. States Parties shall take legislative, administrative, social and educational measures to ensure the implementation of the present article. To this end, and having regard to the relevant provisions of other international instruments, States Parties shall in particular:

(a) Provide for a minimum age or minimum ages for admission to employment;

(b) Provide for appropriate regulation of the hours and conditions of employment;

(c) Provide for appropriate penalties or other sanctions to ensure the effective enforcement of the present article.

Article 33

States Parties shall take all appropriate measures, including legislative, administrative, social and educational measures, to protect children from the illicit use of narcotic drugs and psychotropic substances as defined in the relevant international treaties, and to prevent the use of children in the illicit production and trafficking of such substances.

Article 34

States Parties undertake to protect the child from all forms of sexual exploitation and sexual abuse. For these purposes, States Parties shall in particular take all appropriate national, bilateral and multilateral measures to prevent:

(a) The inducement or coercion of a child to engage in any unlawful sexual activity;

(b) The exploitative use of children in prostitution or other unlawful sexual practices;

(c) The exploitative use of children in pornographic performances and materials.

Article 35

States Parties shall take all appropriate national, bilateral and multilateral measures to prevent the abduction of, the sale of or traffic in children for any purpose or in any form.

Article 36

States Parties shall protect the child against all other forms of exploitation prejudicial to any aspects of the child's welfare.

Article 37

States Parties shall ensure that:

(a) No child shall be subjected to torture or other cruel, inhuman or degrading treatment or punishment. Neither capital punishment nor life imprisonment without possibility of release shall be imposed for offences committed by persons below eighteen years of age;

(b) No child shall be deprived of his or her liberty unlawfully or arbitrarily. The arrest, detention or imprisonment of a child shall be in conformity with the law and shall be used only as a measure of last resort and for the shortest appropriate period of time;

(c) Every child deprived of liberty shall be treated with humanity and respect for the inherent dignity of the human person, and in a manner which takes into account the needs of persons of his or her age. In particular, every child deprived of liberty shall be separated from adults unless it is considered in the child's best interest not to do so and shall have the right to maintain contact with his or her family through correspondence and visits, save in exceptional circumstances;

(d) Every child deprived of his or her liberty shall have the right to prompt access to legal and other appropriate assistance, as well as the right to challenge the legality of the deprivation of his or her liberty before a court or other competent, independent and impartial authority, and to a prompt decision on any such action.

Article 38

1. States Parties undertake to respect and to ensure respect for rules of international humanitarian law applicable to them in armed conflicts which are relevant to the child.

2. States Parties shall take all feasible measures to ensure that persons who have not attained the age of fifteen years do not take a direct part in hostilities.

3. States Parties shall refrain from recruiting any person who has not attained the age of fifteen years into their armed forces. In recruiting among those persons who have attained the age of fifteen years but who have not attained the age of eighteen years, States Parties shall endeavour to give priority to those who are oldest.

4. In accordance with their obligations under international humanitarian law to protect the civilian population in armed conflicts, States Parties shall take all feasible measures to ensure protection and care of children who are affected by an armed conflict.

Article 39

States Parties shall take all appropriate measures to promote physical and psychological recovery and social reintegration of a child victim of: any form of neglect, exploitation, or abuse; torture or any other form of cruel, inhuman or degrading treatment or punishment; or armed conflicts. Such recovery and reintegration shall take place in an environment which fosters the health, self-respect and dignity of the child.

Article 40

1. States Parties recognize the right of every child alleged as, accused of, or recognized as having infringed the penal law to be treated in a manner consistent with the promotion of the child's sense of dignity and worth, which reinforces the child's respect for the human rights and fundamental freedoms of others and which takes into account the child's age and the desirability of promoting the child's reintegration and the child's assuming a constructive role in society.

2. To this end, and having regard to the relevant provisions of international instruments, States Parties shall, in particular, ensure that:

(a) No child shall be alleged as, be accused of, or recognized as having infringed the penal law by reason of acts or omissions that were not prohibited by national or international law at the time they were committed;

(b) Every child alleged as or accused of having infringed the penal law has at least the following guarantees:

(i) To be presumed innocent until proven guilty according to law;

(ii) To be informed promptly and directly of the charges against him or her, and, if appropriate, through his or her parents or legal guardians, and to have legal or other appropriate assistance in the preparation and presentation of his or her defence;

(iii) To have the matter determined without delay by a competent, independent and impartial authority or judicial body in a fair hearing according to law, in the presence of legal or other appropriate assistance and, unless it is considered not to be in the best interest of the child, in particular, taking into account his or her age or situation, his or her parents or legal guardians;

(iv) Not to be compelled to give testimony or to confess guilt; to examine or have examined adverse witnesses and to obtain the participation and examination of witnesses on his or her behalf under conditions of equality;

(v) If considered to have infringed the penal law, to have this decision and any measures imposed in consequence thereof reviewed by a higher competent, independent and impartial authority or judicial body according to law;

(vi) To have the free assistance of an interpreter if the child cannot understand or speak the language used;

(vii) To have his or her privacy fully respected at all stages of the proceedings.

3. States Parties shall seek to promote the establishment of laws, procedures, authorities and institutions specifically applicable to children alleged as, accused of, or recognized as having infringed the penal law, and, in particular:

(a) The establishment of a minimum age below which children shall be presumed not to have the capacity to infringe the penal law;

(b) Whenever appropriate and desirable, measures for dealing with such children without resorting to judicial proceedings, providing that human rights and legal safeguards are fully respected. 4. A variety of dispositions, such as care, guidance and supervision orders; counselling; probation; foster care; education and vocational training programmes and other alternatives to institutional care shall be available to ensure that children are dealt with in a manner appropriate to their well-being and proportionate both to their circumstances and the offence.

Article 41

Nothing in the present Convention shall affect any provisions which are more conducive to the realization of the rights of the child and which may be contained in:

(a) The law of a State party; or

(b) International law in force for that State.

PART II

Article 42

States Parties undertake to make the principles and provisions of the Convention widely known, by appropriate and active means, to adults and children alike.

Article 43

1. For the purpose of examining the progress made by States Parties in achieving the realization of the obligations undertaken in the present Convention, there shall be established a Committee on the Rights of the Child, which shall carry out the functions hereinafter provided.

2. The Committee shall consist of eighteen experts of high moral standing and recognized competence in the field covered by this Convention.1/ The members of the Committee shall be elected by States Parties from among their nationals and shall serve in their personal capacity, consideration being given to equitable geographical distribution, as well as to the principal legal systems.

3. The members of the Committee shall be elected by secret ballot from a list of persons nominated by States Parties. Each State Party may nominate one person from among its own nationals.

4. The initial election to the Committee shall be held no later than six months after the date of the entry into force of the present Convention and thereafter every second year. At least four months before the date of each election, the Secretary-General of the United Nations shall address a letter to States Parties inviting them to submit their nominations within two months. The Secretary-General shall subsequently prepare a list in alphabetical order of all persons thus nominated, indicating States Parties which have nominated them, and shall submit it to the States Parties to the present Convention.

5. The elections shall be held at meetings of States Parties convened by the Secretary-General at United Nations Headquarters. At those meetings, for which two thirds of States Parties shall constitute a quorum, the persons elected to the Committee shall be those who obtain the largest number of votes and an absolute majority of the votes of the representatives of States Parties present and voting.

6. The members of the Committee shall be elected for a term of four years. They shall be eligible for re-election if renominated. The term of five of the members elected at the first election shall expire at the end of two years; immediately after the first election, the names of these five members shall be chosen by lot by the Chairman of the meeting.

7. If a member of the Committee dies or resigns or declares that for any other cause he or she can no longer perform the duties of the Committee, the State Party which nominated the member shall appoint another expert from among its nationals to serve for the remainder of the term, subject to the approval of the Committee

8. The Committee shall establish its own rules of procedure.

9. The Committee shall elect its officers for a period of two years

10. The meetings of the Committee shall normally be held at United Nations Headquarters or at any other convenient place as determined by the Committee. The Committee shall normally meet annually. The duration of the meetings of the

Committee shall be determined, and reviewed, if necessary, by a meeting of the States Parties to the present Convention, subject to the approval of the General Assembly.

11. The Secretary-General of the United Nations shall provide the necessary staff and facilities for the effective performance of the functions of the Committee under the present Convention.

12. With the approval of the General Assembly, the members of the Committee established under the present Convention shall receive emoluments from United Nations resources on such terms and conditions as the Assembly may decide.

Article 44

1. States Parties undertake to submit to the Committee, through the Secretary-General of the United Nations, reports on the measures they have adopted which give effect to the rights recognized herein and on the progress made on the enjoyment of those rights

(a) Within two years of the entry into force of the Convention for the State Party concerned;

(b) Thereafter every five years.

2. Reports made under the present article shall indicate factors and difficulties, if any, affecting the degree of fulfilment of the obligations under the present Convention. Reports shall also contain sufficient information to provide the Committee with a comprehensive understanding of the implementation of the Convention in the country concerned.

3. A State Party which has submitted a comprehensive initial report to the Committee need not, in its subsequent reports submitted in accordance with paragraph 1 (b) of the present article, repeat basic information previously provided.

4. The Committee may request from States Parties further information relevant to the implementation of the Convention.

5. The Committee shall submit to the General Assembly, through the Economic and Social Council, every two years, reports on its activities.

6. States Parties shall make their reports widely available to the public in their own countries.

Article 45

In order to foster the effective implementation of the Convention and to encourage international co-operation in the field covered by the Convention:

(a) The specialized agencies, the United Nations Children's Fund, and other United Nations organs shall be entitled to be represented at the consideration of the implementation of such provisions of the present Convention as fall within the scope of their mandate. The Committee may invite the specialized agencies, the United Nations Children's Fund and other competent bodies as it may consider appropriate to provide expert advice on the implementation of the Convention in areas falling within the scope of their respective mandates. The Committee may invite the specialized agencies, the United Nations Children's Fund, and other United Nations organs to submit reports on the implementation of the Convention in areas falling within the scope of their activities;

(b) The Committee shall transmit, as it may consider appropriate, to the specialized agencies, the United Nations Children's Fund and other competent bodies, any reports from States Parties that contain a request, or indicate a need, for technical advice or assistance, along with the Committee's observations and suggestions, if any, on these requests or indications;

(c) The Committee may recommend to the General Assembly to request the Secretary-General to undertake on its behalf studies on specific issues relating to the rights of the child;

(d) The Committee may make suggestions and general recommendations based on information received pursuant to articles 44 and 45 of the present Convention. Such suggestions and general recommendations shall be transmitted to any State Party concerned and reported to the General Assembly, together with comments, if any, from States Parties.

PART III

Article 46

The present Convention shall be open for signature by all States.

Article 47

The present Convention is subject to ratification. Instruments of ratification shall be deposited with the Secretary-General of the United Nations.

Article 48

The present Convention shall remain open for accession by any State. The instruments of accession shall be deposited with the Secretary-General of the United Nations.

Article 49

1. The present Convention shall enter into force on the thirtieth day following the date of deposit with the Secretary-General of the United Nations of the twentieth instrument of ratification or accession.

2. For each State ratifying or acceding to the Convention after the deposit of the twentieth instrument of ratification or accession, the Convention shall enter into force on the thirtieth day after the deposit by such State of its instrument of ratification or accession.

Article 50

1. Any State Party may propose an amendment and file it with the Secretary-General of the United Nations. The Secretary-General shall thereupon communicate the proposed amendment to States Parties, with a request that they indicate whether they favour a conference of States Parties for the purpose of considering and voting upon the proposals. In the event that, within four months from the date of such communication, at least one third of the States Parties favour such a conference, the Secretary-General shall convene the conference under the auspices of the United Nations. Any amendment adopted by a majority of States Parties present and voting at the conference shall be submitted to the General Assembly for approval.

2. An amendment adopted in accordance with paragraph 1 of the present article shall enter into force when it has been approved by the General Assembly of the United Nations and accepted by a two-thirds majority of States Parties.

3. When an amendment enters into force, it shall be binding on those States Parties which have accepted it, other States Parties still being bound by the provisions of the present Convention and any earlier amendments which they have accepted.

Article 51

1. The Secretary-General of the United Nations shall receive and circulate to all States the text of reservations made by States at the time of ratification or accession.

2. A reservation incompatible with the object and purpose of the present Convention shall not be permitted.

3. Reservations may be withdrawn at any time by notification to that effect addressed to the Secretary-General of the United Nations, who shall then inform all States. Such notification shall take effect on the date on which it is received by the Secretary-General

Article 52

A State Party may denounce the present Convention by written notification to the Secretary-General of the United Nations. Denunciation becomes effective one year after the date of receipt of the notification by the Secretary-General.

Article 53

The Secretary-General of the United Nations is designated as the depositary of the present Convention.

Article 54

The original of the present Convention, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations. In witness thereof the undersigned plenipotentiaries, being duly authorized thereto by their respective Governments, have signed the present Convention.

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