

Breastfeeding

Outline

- Introduction
- Anatomy and Physiology of Lactation
- Composition and Storage of Human Breast Milk
- Achieving Optimal Breastfeeding
- Breastfeeding Techniques and Positions
- Benefits of Breastfeeding to Infants and Mothers
- Barriers to Effective Breastfeeding

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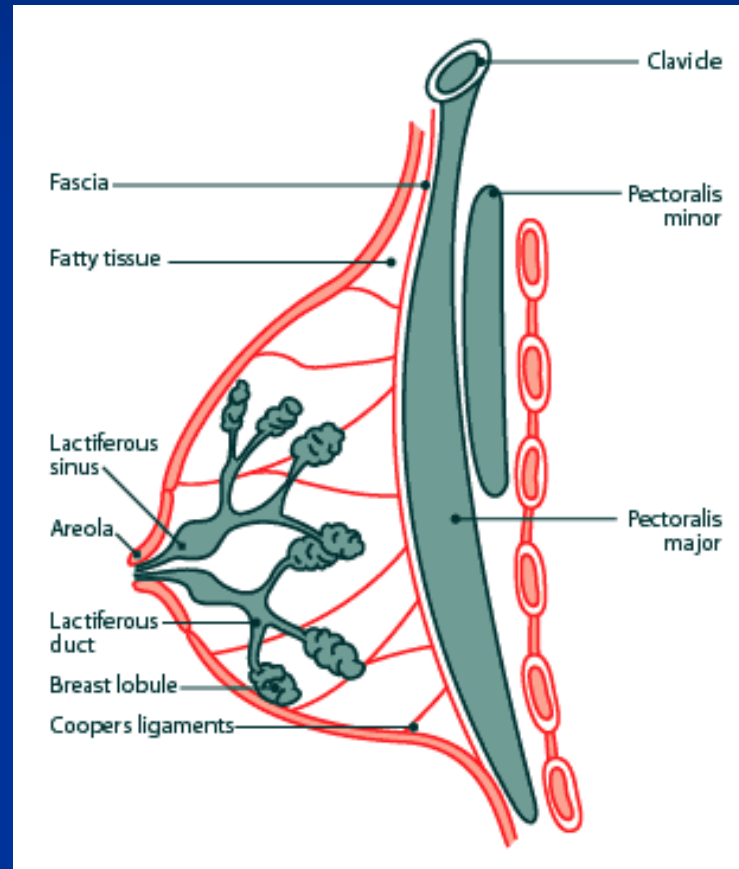
“Breast fed infants, are Healthy Infants.”

Introduction

- Breastfeeding is the optimal source of nutrition. The Human Milk is specie specific and it provides all the essential nutrients necessary for the growth and development of the newborn infant.
- The AAP, AAFP and WHO recommend exclusive breastfeeding for the first six months of life, and continuous breastfeeding for at least 12 months of life.
- The Target of USDHHS “Healthy People 2010” initiative is to achieve breastfeeding at birth of 75%, 50% at 6 month and 25% at 12 months of life.
- 2008 data published by the CDC shows that 77% of mothers in the US initiate breastfeeding at birth. Only about 30% of women continue with breastfeeding of the infant to 6 months of age.

Anatomy and Physiology of Lactation

Structure of the Human Breast



Source: Lactation Education Program Nutrition Policy and Education

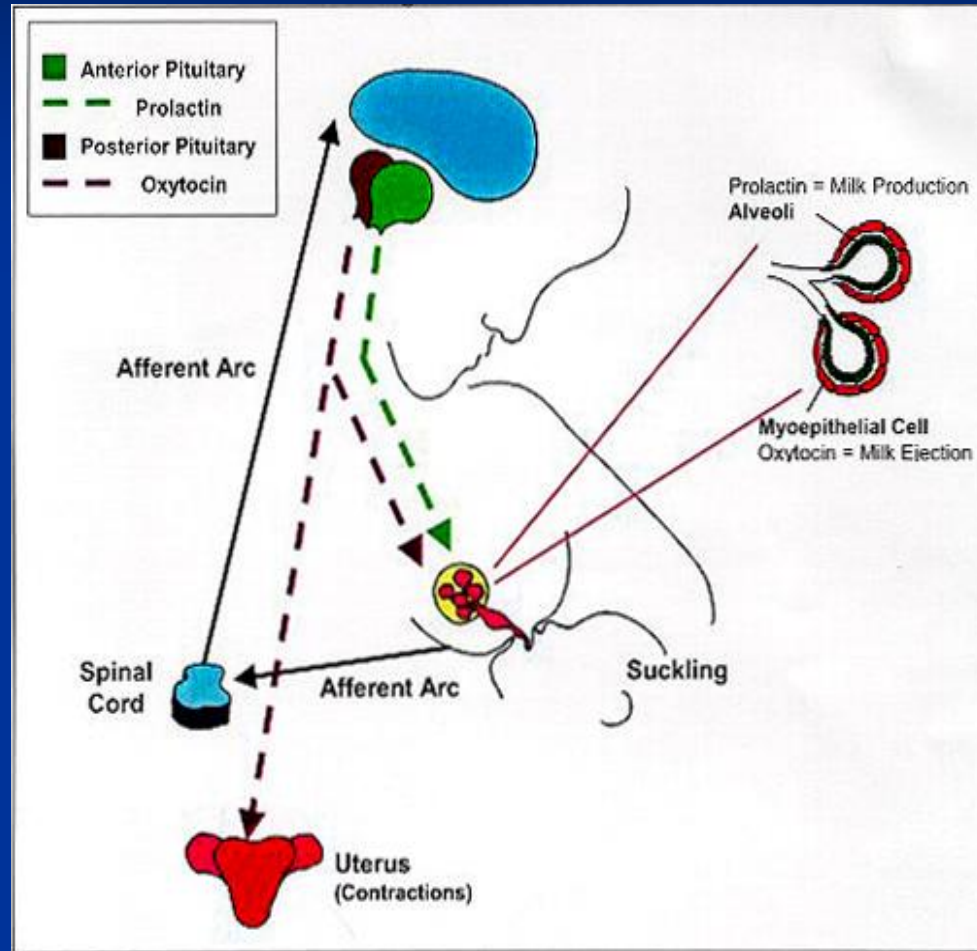
Structure of the Human Breast

- The Human breast are modified sweat glands responsible for lactation (milk production).
- The breast contains adipose tissue and fibrous connective tissue.
- Different hormones are responsible for the development of the breast and changes that occur during pregnancy.
- The major hormones affecting breast development and enlargement are estrogen, progesterone and prolactin.

Structure of the Human Breast (Cont'd)

- Each breast contains about 20 lobes, each lobes contains several lobules which at the end have alveolar in which milk is produced.
- Milk production and secretion are responsive to two major hormones – prolactin and oxytocin; and the sucking reflex.
- After production of milk in the alveolus, the milk moves through the ducts and are stored in the lactiferous sinus. When the infant latches on the breast, milk is expressed from the sinuses.

Suckling Hormonal Reflex Arc



Source: Lactation Education Program Nutrition Policy and Education

Suckling Hormonal Reflex Arc (Cont'd)

- The sucking reflex arc is a hormonal positive feedback mechanism.
- The sucking of the breast by the infant stimulates the nipple; this sends messages to the spinal cord and subsequently to the brain.
- Prolactin is released from the anterior pituitary for milk production and oxytocin from the posterior pituitary for the milk let down.
- Prolactin receptors are established within the first eight days of delivery.
- Suckling at breast increases prolactin levels, so at each feeding, levels rise, hence more milk production.

Types and Composition of Human Breast Milk

- Types of Breast Milk:
 - Colostrum or Early Milk
 - Transitional Milk
 - Mature Milk
- Colostrum or Early Milk is produced in the late stage of pregnancy till 4 days after delivery; and is rich in antibodies.
- Transitional Milk produced from day 4 – 10 is lower in protein in comparison to Colostrum.
- Mature milk is produced from approximately ten days after delivery up until the termination of the breastfeeding.

Types and Composition of Human Breast Milk (Cont'd)

- **Fat** - The main lipids found in human milk are the triglycerides phospholipids and essential fatty acids.
- **Protein** – Whey ; lactoferrin, lysozymes, immunoglobulin , A-lactalbumin, Casein; lower concentration in human milk.
- **Carbohydrate** – Include lactose and oligosaccharides.
- **Leukocytes** - Include neutrophils, macrophages , lymphocytes.
- **Non protein nitrogen** – urea, uric acid
- **Other constituents** : steroid hormones, peptides, insulins, growth factors, minerals, vitamins, lipase.

Storage of Breast Milk

- Human milk can be stored at room temperature for 6-8 hours.
- Expressed milk can be stored in an insulated cooler bag with icepacks for 24 hours.
- Breast milk can be stored in the refrigerator for about 5 days at about 40° F.
- It can also be kept in a freezer compartment of a fridge for up to two weeks at 0 - 5°F
- It can be stored in a deep freezer for about 3-12 months
- Breast milk should be stored in BPA (Bisphenol A) free containers.

Achieving Optimal Breastfeeding

- Activities, attitudes and procedures during the delivery and post partum period have an impact on breastfeeding .
- There is well documented evidence that skin to skin contact between infant and mother helps to maintain the body temperatures, reduce risk of hypoglycemia, enhance oxytocin release and beneficial nutrition with intake of colostrum
- Skin to skin contact should occur for about 1-2 hours after delivery. Procedures after delivery like weighing, administration of vitamin K, eye prophylaxis and other procedures should be delayed

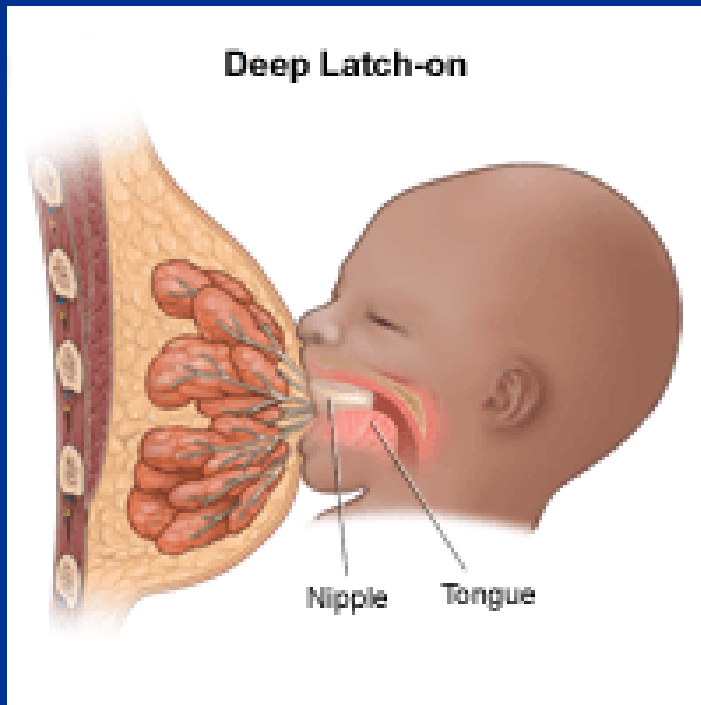
Achieving Optimal Breastfeeding (Cont'd)

- Breastfeeding should be started and fully established before discharge from the hospital
- Physicians and health care professionals should observe at least one feeding and ensure this is done properly and breast milk is produced
- Lactation specialist should also work with parents that are having difficulty with breast feeding.
- Early follow up after leaving the hospital is required.

Good Breastfeeding Techniques

- The baby should be properly positioned to achieve effective latching.
- The mother should wear comfortable apparel, with the breast well exposed for the infant to be able to latch.
- The infant's mouth, chin and umbilicus should be lined up with the head in a neutral position.
- The infant is brought to the breast, with the nose touching or close to the breast.
- The gum line should overlap the areola, and the nipple straight back into the mouth.
- The tongue moves forward beyond the lower gum, cupped and forming a reservoir.
- Milk is removed for the lactiferous sinuses, the jaw moves down creating a negative pressure gradient that helped transfer milk to the pharynx.

Good Breastfeeding Techniques



Breastfeeding Positions

Cradle Hold

- This is the most common position used by mothers.
- Infant's head is supported in the elbow, the back and buttock is supported by the arm and lifted to the breast.



Adapted from AAFP Journal September 2001

Breastfeeding Positions

Football Hold Position

- The infant's is placed under the arm, like holding a football
- Baby's body is supported with the forearm and the head is supported with the hand.
- Many mothers are not comfortable with this position
- Good position after operative procedures



Adapted from AAFP Journal September 2001

Breastfeeding Positions

Side Lying Position

- The mother lies on her side propping up her head and shoulder with pillows.
- The infant is also lying down facing the mother.
- Good position after Caesarean section.
- Allows the new mother some rest.
- Most mothers are scared of crushing the baby.



Adapted from AAFP Journal September 2001

Breastfeeding Positions

Cross Cradle Hold Position

- Ideal for early breastfeeding.
- Mother holds the baby crosswise in the crook of the arm opposite the breast the infant is to be fed.
- The baby's trunk and head are supported with the forearm and palm.
- The other hand is placed beneath the breast in a U-shaped to guide the baby's mouth to your breast.



Adapted from AAFP Journal September 2001

Breastfeeding Positions

Australian Hold Position

- This is also called the saddle hold
- Usually used for older infants
- Not commonly used by mothers.
- Best used in older infants with runny nose, ear infection.



Adapted from AAFP Journal September 2001

Keep well