BREAST FEEDING

SNEHLATA ANAND

Introduction•

- According to the **WHO & AAP Breastfeeding is** the normal way of providing young infants with the nutrients they need for healthy growth and development.
- **Breastfeeding helps defend against infections,** prevent allergies, and protect against a number of chronic conditions.

ANATOMY AND PHYSIOLOGY

- The **breast consists of glandular tissue and supporting** tissue and fat.
- **Milk is secreted by the glands and travels through** tubules which drain into lactiferous sinuses.
- The sinuses which store small quantities of milk, lie below the areola.
- They open out on to the nipple through lactiferous ducts.
- The thin layer of muscle (myo-epithelium) surrounds each gland.
- The contraction of these muscles causes ejection of milk from the glands.

MILK PRODUCTION AND SECRETION

- Milk is produced as a result of the interaction between hormones and reflexes.
- During pregnancy, the glandular tissue is stimulated to produce milk due to various hormonal influences.
- **Two reflexes, mediated by two different hormones, come into play during lactation.**

Prolactin Reflex

- **Prolactin is produced by the anterior pituitary gland** which is responsible for milk secretion by the mammary gland cells.
- When the baby sucks, the nerve endings in the nipple carry message to the anterior pituitary which in turn releases prolactin.
- The earlier the baby is put on the breast, the sooner the reflex is initiated.
- The more the baby sucks at the breast, the greater is the stimulus for milk production.
- The greater is the demand for milk, larger is the volume of milk produced.

Oxytocin reflex

- **Oxytocin is a hormone produced by the posterior** pituitary.
- It is responsible for contraction of the myoepithelium around the glands leading to ejection of the milk from the glands into the lacteal sinuses and the lacteal ducts.
- This hormone is produced in response to stimulation to the nerve endings in the nipple by sucking as well as by the thought, sight or sound of the baby.

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Latch On and sucking



Oxytocin Release



Releases Milk



Infant Empties Breast



Production Increases



Milk Production Occurs

Pituitary releases prolactin & oxytocin.

Stimulation of nerve endings in mother's nipple/areola sends signal to mother's hypothalamus/ pituitary.



Hormones travel via bloodstream to mammary gland to stimulate milk production & milk ejection reflex(let-down).

Infant suckles at the breast.

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.

Kind (In 100 ml)	Protein (g)	Fat (g)	Carbohydrate (g)	Calorie (Kcal)
Colostrum	7.5	2	4-5	150
Transitive	2.5	3.2	5.5-6.6	60-80
Mature	1.1-1.5	3.5-4.5	7	65-70

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- ***Milk which outpoured in one feeding can be classified as:***
- ***Fore milk (Early milk)*** – *At the beginning of the feeding*, got more lactose, proteins and water and satisfies the baby's thirst.
- ***Hind milk (Late milk)***– *comes later towards the end of a* feed and is richer in fat content and provides more energy, and satisfies the baby's hunger.

☐ For optimum growth the baby needs both fore and hind milk.

☐ The baby should therefore be allowed to empty one breast.

☐ The second breast should be offered after emptying the first.

Summary of differences between milks

	HUMAN MILK	ANIMAL MILK	FORMULA
Bacterial contaminants	none	likely	likely when mixed
Anti-infective factors	present	not present	not present
Growth factors	present	not present	not present
Protein	correct amount easy to digest	too much difficult to digest	partly corrected
Fat	enough essential fatty acids lipase to digest	lacks essential fatty acids no lipase	lacks essential fatty acids no lipase
Iron	small amount well absorbed	small amount not well absorbed	extra added not well absorbed
Vitamins	enough	not enough A and C	vitamins added
Water	enough	extra needed	may need extra

Rules of breast feeding

- Exclusive breastfeeding for **about 6 mo and To** continue for at least the second year.
- **Complementary foods rich in iron and other** micronutrients should be introduced at about **6 mo of** age.
- Mother and infant should sleep in proximity to each other to facilitate breastfeeding
- Initiation of breastfeeding should be encouraged as soon as possible after the birth, ideally **within 1 hour.**
- Ensure **8 to 12 feedings every 24 h till 2 – 3 months** then **6 feeding till 6 months then 5 feeding till one** year.

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- At every feeding the infant is placed only on **one breast and then during the next feeding** on the other one, thus alternating them.

- The duration of feeding is about **20-30 minutes. However, it is said that there is no** exact time of every feeding of the infant. Every infant sucks the breast with different frequency and different duration of feedings with a day.

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- The amount of milk that the breasts produce depends partly on how much the baby suckles, and how much milk he removes. More suckling makes more milk.
- Breast milk flow depends partly on the mother's thoughts, feelings and sensations. It is important to keep mothers and babies together day and night, and to help mothers to feel good about breastfeeding.
- Give no supplements (water, glucose water, commercial infant formula, or other fluids) to breastfeeding newborn infants .
- Pacifier should be offered, while placing infant in back-to sleep- position, no earlier than 3 to 4 wk of age and after breastfeeding has been established.

- **□Indicators of good attachment and positioning:**
- mouth wide open
- less areola visible underneath the chin than above the nipple
- chin touching the breast, lower lip rolled down, and nose free
- no pain.

- □ **Indicators of successful feeding in babies:**
- Frequent feedings 8-12 times daily.
- audible and visible swallowing
- sustained rhythmic suck
- relaxed arms and hands, moist mouth
- regular soaked/heavy nappies, about 6-8 wet diapers in a 24 hour.
- Average daily weight gain of 20 -40g.
- Go to sleep and comfort after feeding.
- **Indicators of successful breastfeeding in women:**
- breast softening
- no compression of the nipple at the end of the feed
- woman feels relaxed and sleepy.

Proper position of baby while breastfeeding includes

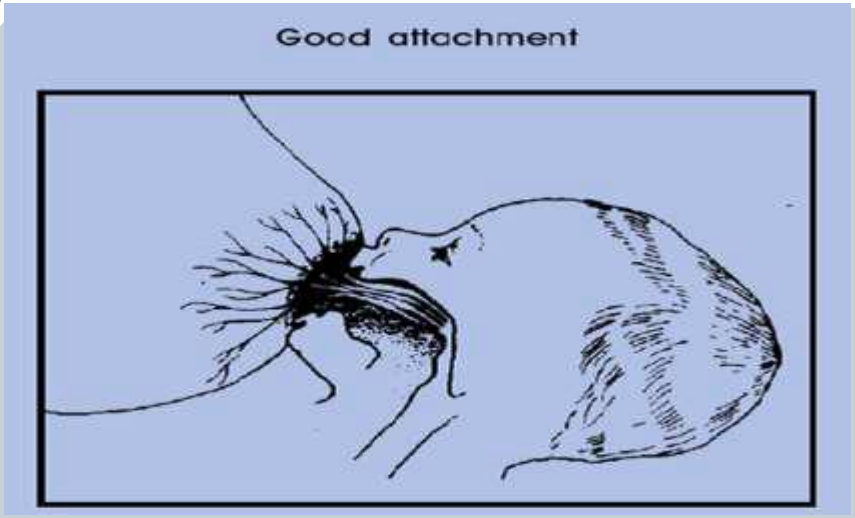
1. Supporting whole of baby's body.
2. Ensure baby's head, neck and back are in same plane.
3. Entire baby's body should face mother.
4. Baby's abdomen touches mother's abdomen.

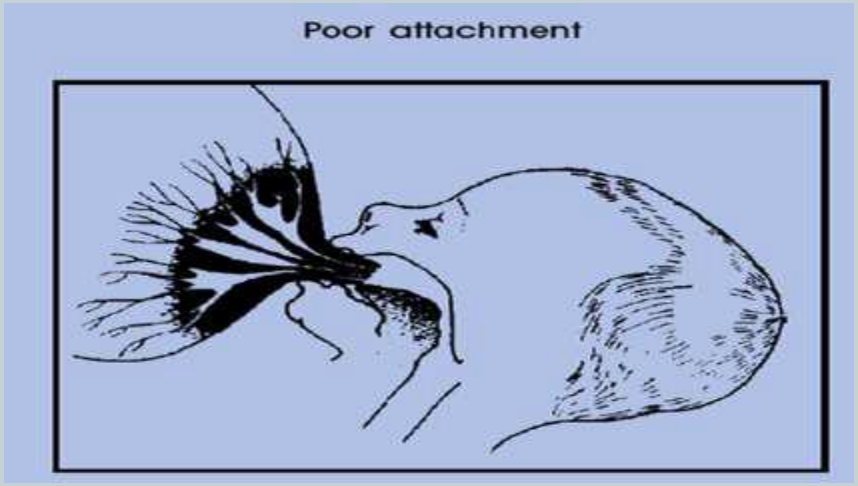
- ***Correct positioning will ensure effective sucking and prevent sore nipples and breast engorgement.***

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- **Four signs of good attachment are:**

1. Baby's mouth wide open.
2. Lower lip turned outwards.
3. Baby's chin touches mother's breast.
4. Majority of areola inside baby's mouth.





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.



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- **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



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- **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.



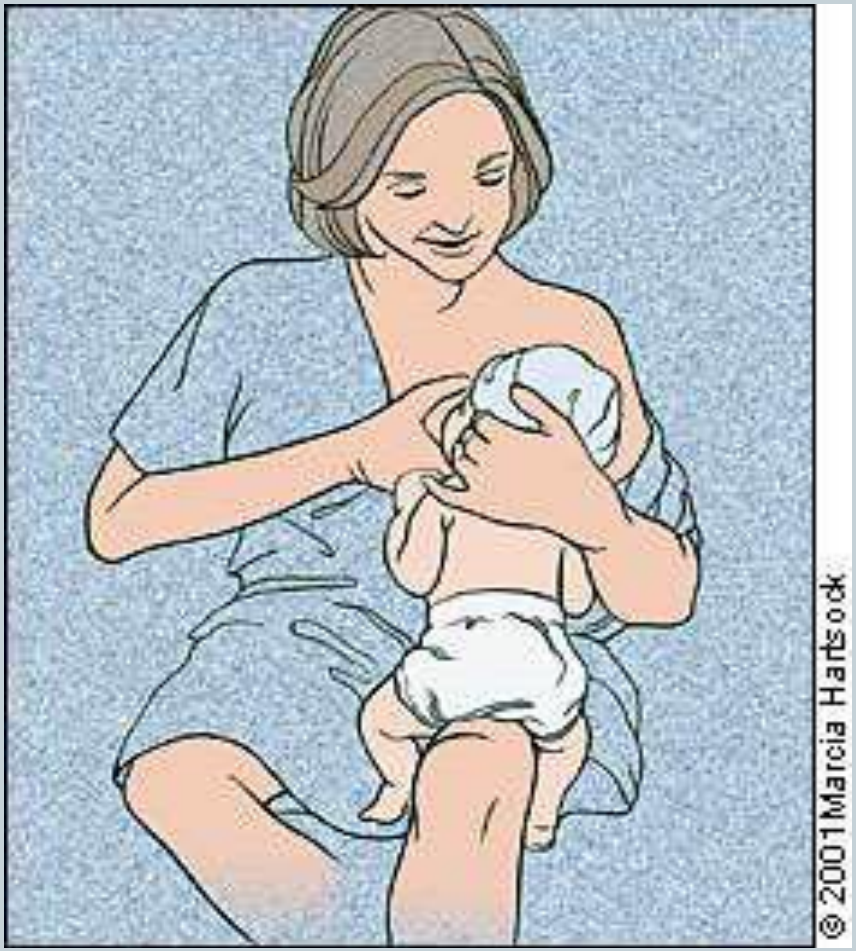
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- **Cross Cradle Hold Position**
- Ideal for early breastfeeding.
- Mother holds the baby crosswise in the crook of the arm opposite the breast the infant is to be fed.
- The baby's trunk and head are supported with the forearm and palm.
- The other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



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- **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.



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.**

Barriers to Breastfeeding

- **Individual:** Inadequate knowledge, embarrassment, social , negative perceptions
- **Interpersonal:** Lack of support from partner and family, perceived threat to father-child bond
- **Institutional:** Return to work or school, lack of workplace facilities, unsupportive health care environments
- **Community:** discomfort about nursing in public
- **Policy:** aggressive marketing by formula companies

Contraindications of breast feeding

- **Infants :** galactosemia, phenylketoneurea
- **Mothers:**
- Mothers infected with HIV ?
- Mothers taking any of the following medications: radioactive isotopes, cancer chemotherapy agents, such as antimetabolites, and illegal drugs.
- Breastfeeding mothers should avoid alcohol. An occasional drink is acceptable, but breastfeeding should be avoided for 2 hours after the drink.

Commonly Mistaken as contraindication are the following

- **Women who have cesarean deliveries: Initiate breastfeeding** immediately, using a semi recumbent position on the side or sitting up.

- **Women received vaccinations or live with vaccinated children:** Neither inactivated nor live vaccines administered to a lactating woman or other family members affect the safety of breastfeeding for the mother or infant.

- **Women who had breast surgery:** breastfeed frequently to maintain milk supply. If the surgical wound is painful, the other breast can be used but monitor infant growth because milk supply could be insufficient.

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- **Women who have hepatitis A:** Initiate breastfeeding after infant receives immune serum globulin, and then vaccinate at 1 year of age.
- **Women who have hepatitis B:** Initiate breastfeeding after infant receives hepatitis B immune globulin and first dose of the 3-dose hepatitis B vaccine series.
- **Women who have hepatitis C:** Hepatitis C is not contraindication for breastfeeding, but reconsider if nipples are cracked or bleeding.