



BREAST FEEDING



BREAST FEEDING

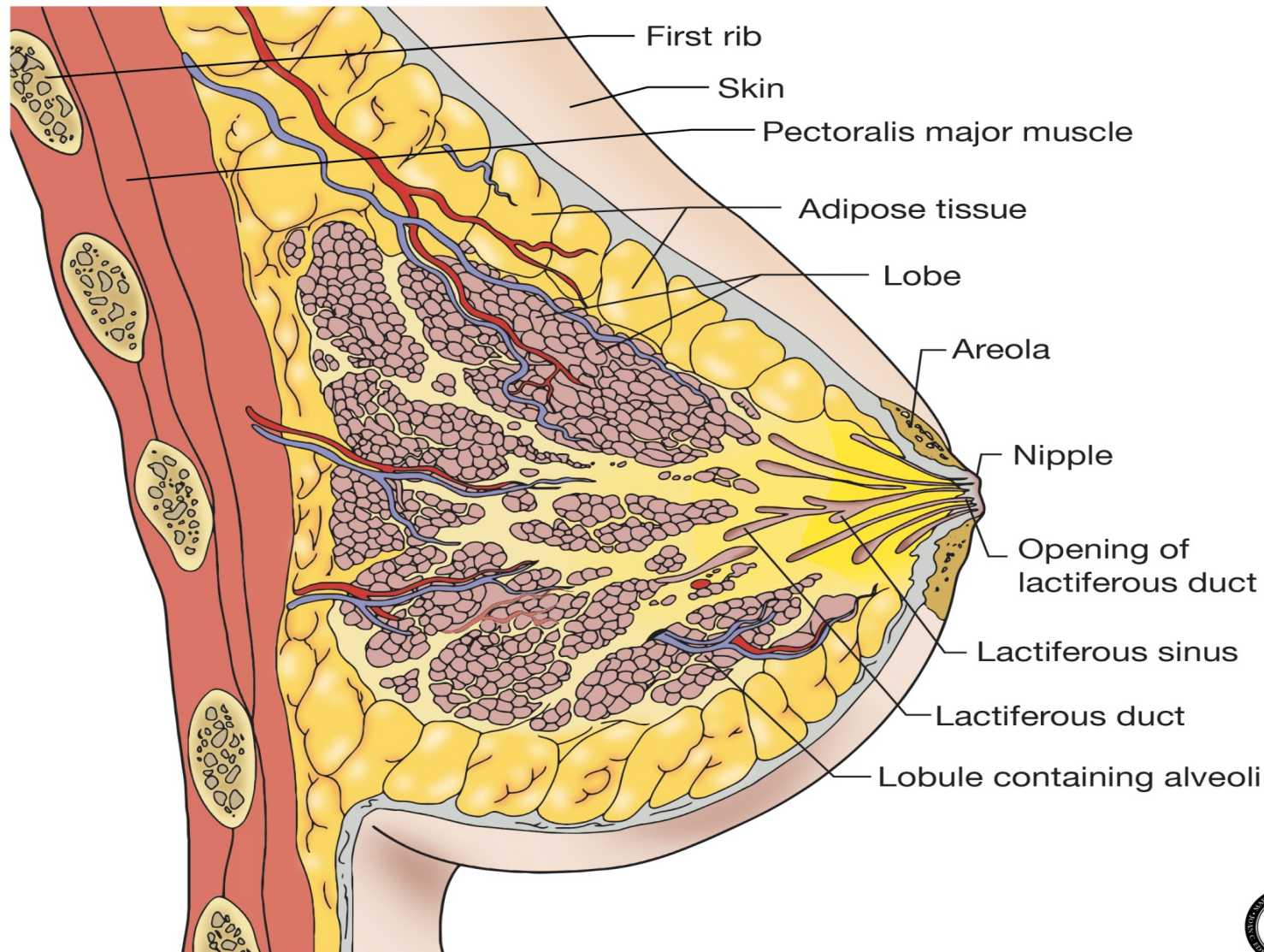
- It is the best gift that mother can give to her baby.
- Breastfeeding fosters a physical & emotional bonding contact between mother & baby.
- It can be a means to protect , promote and support the health of both mother & the baby.
- Exclusive breastfeeding for 6 months has potential to reduce under 5 mortality.



ANATOMY

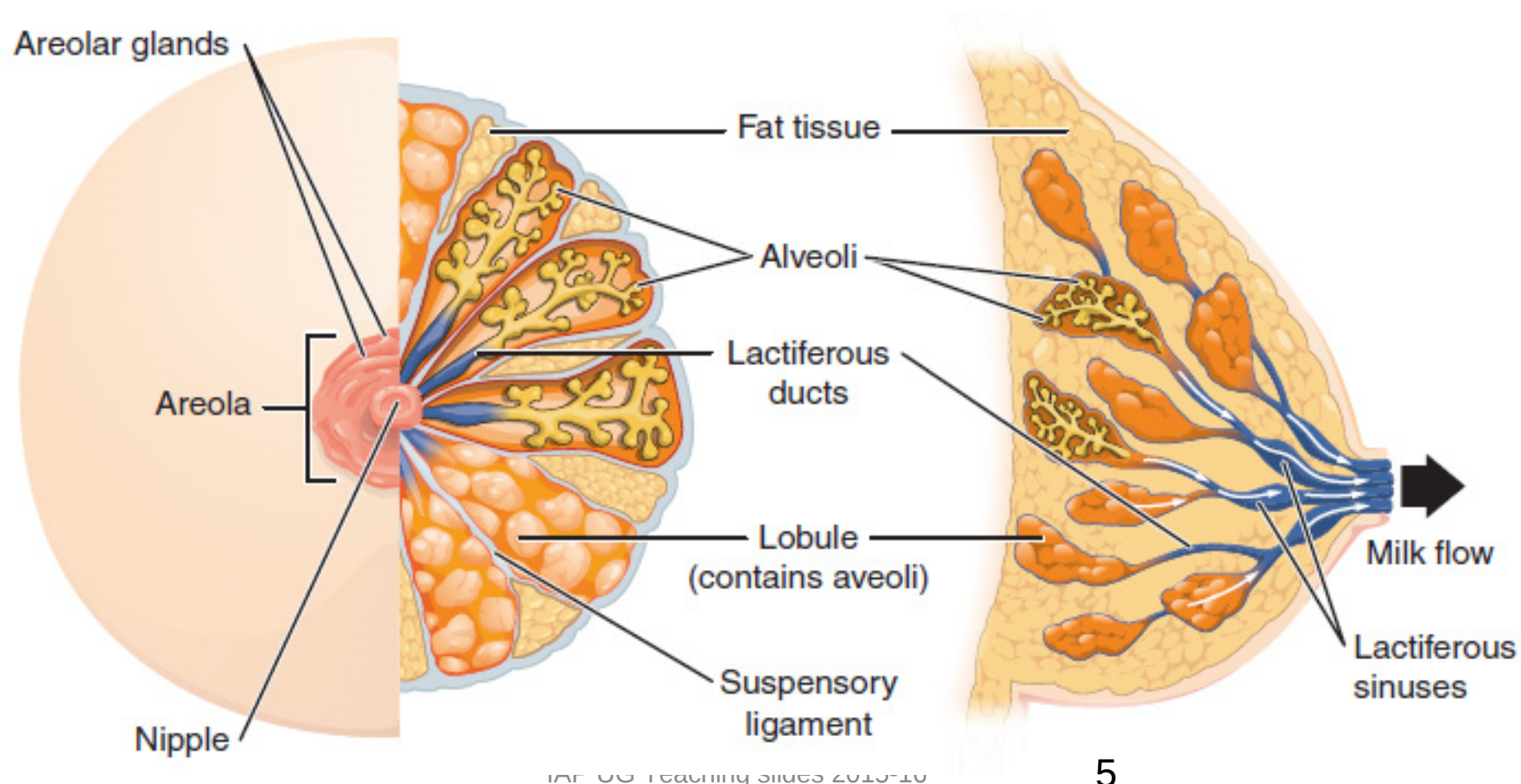
- Each mammary gland forms a lobe of the breast, which consists of a single major branch of alveoli, milk ducts and one lactiferous sinus that narrows to an opening in the nipple(nipple pore).
- Alveoli cells secrete milk. They are surrounded by a network of band like myoepithelial cells which cause alveoli to contract, when stimulated by the oxytocin released during the let down reflex.
- This action expels the milk into the ductules and into the ducts.

ANATOMY OF BREAST



AREOLA

- The darker pigmented area around the nipple.





MYTHS

- Many women do not produce enough milk.
- There is no enough milk during the first 3 or 4 days after birth.
- The baby should be on the breast for 20 minutes on each side.
- Breastfeeding baby needs extra water in hot weather.
- It is easier to bottle feed than breast feed.



- If the baby has diarrhea or vomiting, the mother should stop breastfeeding.
- Mothers who have had undergone breast reduction surgery cannot breastfeed the baby.
- Women with small breast produce less milk compared to large breast.
- Breastfeeding women cannot take a birth control pill.
- Women with inverted nipple cannot breastfeed.

HORMONAL INFLUENCES



- **Estrogen:** stimulates the ductule system to grow.
- **Progesterone:** increases the size of alveoli and lobes.
- **Prolactin:** during pregnancy, it contributes to the accelerated growth of the breast tissue. During lactation, the alveolar cells make milk in response to the release of prolactin when the baby sucks at the breast.
- **Oxytocin:** contraction of the smooth muscle layer of band-like cells surrounding the alveoli to squeeze the newly produced milk into the duct system. It is necessary for milk ejection reflex.



INITIATION OF BREAST FEEDING

- As early as possible breast feeding has to be initiated in both normal and LSCS delivery within one hour of life
- After birth-baby is biologically ready & initiation is easy, Later on baby goes to prolonged sleep and hence its difficult.
- Frequency – 2-3 hourly / demand feeding.
- Duration – exclusive breast feeding for 6 months.
- Time for each feed : 15-20 minutes.

EXCLUSIVE BREAST FEEDING



- Breast feeding for the first six months.
- No pre-lacteal feeds.
- No formal feeds.
- No pacifiers.
- No additional fluids.

REFLEXES IN BREAST FEEDING

REFLEXES IN BABY

- There are three reflexes, namely rooting, suckling & swallowing reflexes which help in breastfeeding .
- ROOTING REFLEX - When the nipple is allowed to touch the cheek of the baby, baby opens the mouth .

SUCKLING REFLEX :

This reflex helps the baby draw out milk from the breast.

It consists of:

- oDrawing in the nipple & areola to form an elongated teat inside the mouth.

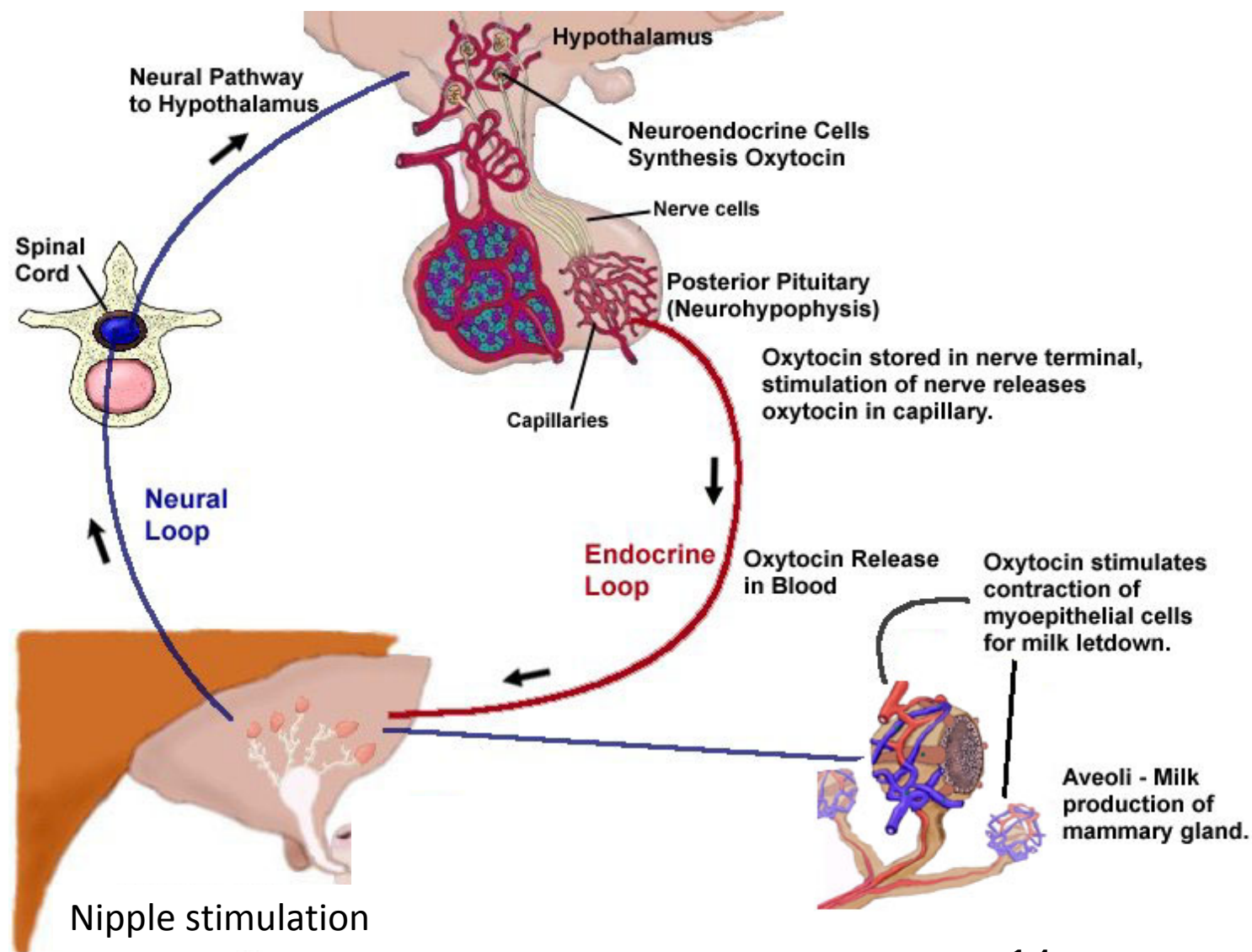
- oPressing the stretched nipple against the palate.

- oDrawing milk by peristaltic movement of the tongue underneath the areola & compressing them against the palate above.

SWALLOWING REFLEX :

- It takes 2-3 suckles to fill the baby's mouth milk.
- When the mouth is filled with milk the baby swallows the milk & then breathes.
- The suckle-swallow-breathe cycle lasts for about a second.

REFLEXES IN BREAST FEEDING



Milk production(prolactin)reflex & milk ejection(oxytocin) reflex initiate & maintain lactation in the mother.



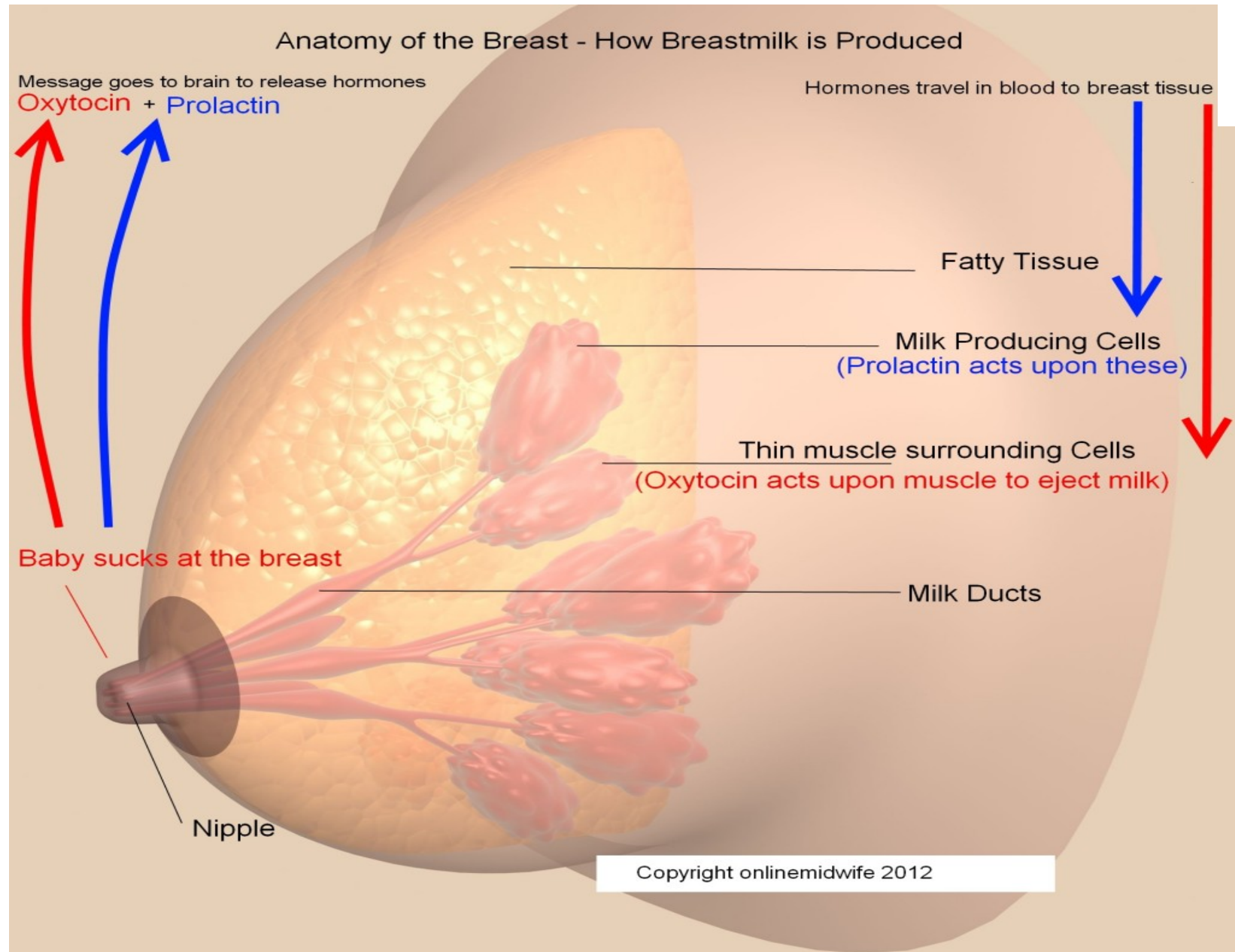
PROLACTIN REFLEX (Milk Secretion Reflex)

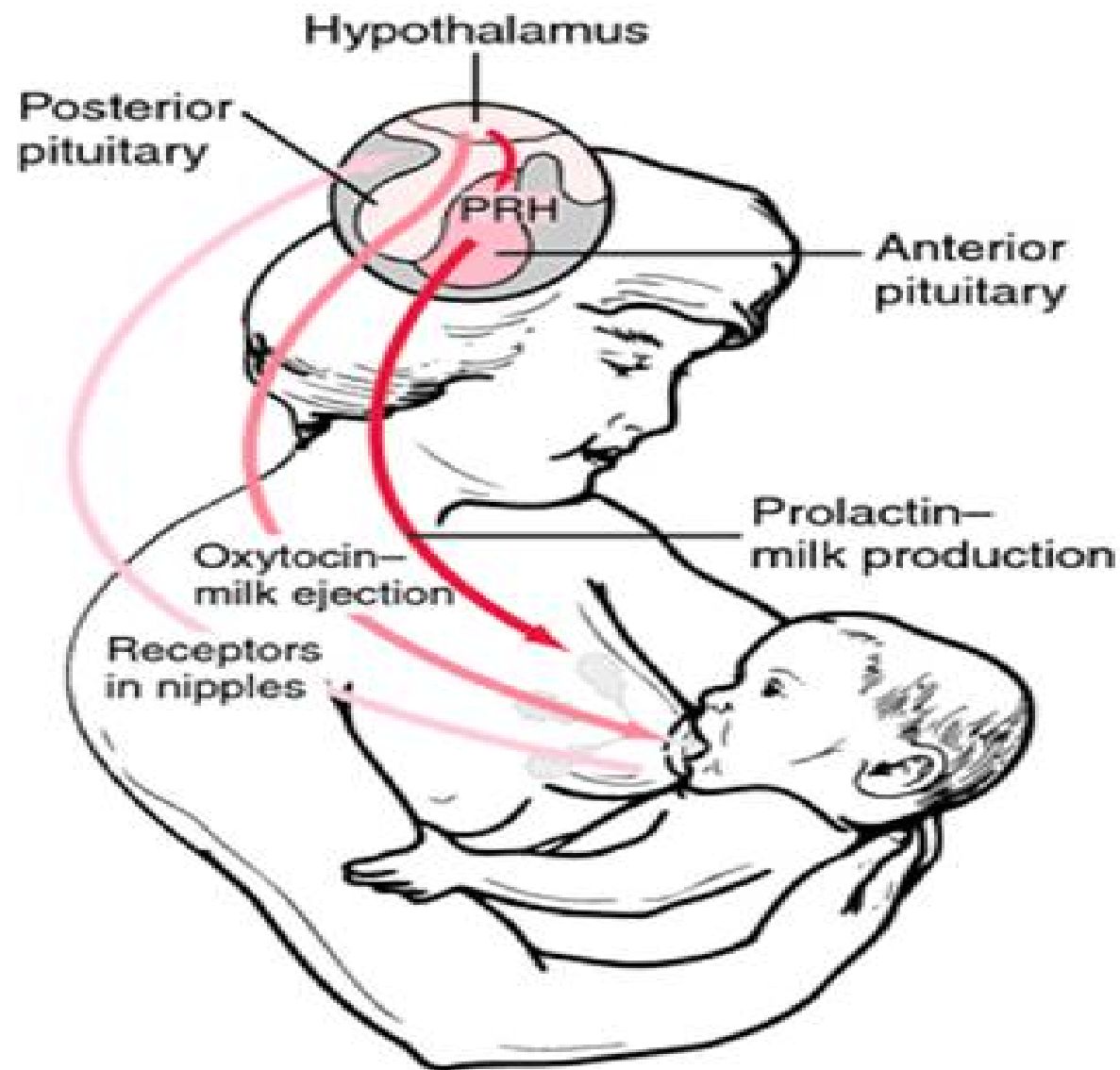
- Sucking acts as the afferent stimulus, where the nerve endings in the nipple carry the impulses to the anterior pituitary which in turn releases prolactin
- The prolactin is then released in the blood stream & induces cells of the alveoli to produce milk & distends it.
- The more the baby sucks the greater the milk production.



MILK EJECTION REFLEX

- Oxytocin is produced by the posterior pituitary gland in response to stimulation to the nerve endings in the nipple by suckling as well as by thought, sight or sound of the baby
- Oxytocin is responsible for contraction of myoepithelial cells.
- Milk is then emptied from the alveoli to the lactiferous ducts.
- Reflex is affected by mothers emotions, relaxed, confident attitude helps the milk ejection reflex.
- On the other hand, tension & stress will hinder the milk flow.





PRH = Prolactin-releasing hormone

IAP UG Teaching slides 2015-16

FACTORS DECREASING MILK PRODUCTION



- Dummies, pacifiers, bottles.
- Giving sugar water, honey, prelacteal feeds.
- Painful breast conditions like sore or cracked nipple & congested breast.
- Lack of night feeding interfering prolactin production.

COMPOSITION OF BREAST MILK

COLOSTRUM:

- Secreted during initial 3-4 days after delivery.
- Small quantity, yellow thick.
- Contains-large amount of proteins & immunoglobulins, vitamin A,D,E,K.

TRANSITIONAL MILK:

- Secreted after 3-4days up to 2weeks.
- Rich in fat & sugar content

MATURE MILK:

- Thinner & watery.
- Contains all essential nutrients.

FORE MILK:

- Secreted in the start of feed.
- Watery, rich in protein, sugar, vitamins, minerals & water.
- Satisfies babies thirst.



COLOSTRUM



FOREMILK



HINDMILK

HIND MILK:

- Richer in fats.
- Comes later towards end of the feeds.
- Provides more energy, gives the sense of satiety.

POSITION OF THE BABY

Make sure the baby is wrapped properly.

- i) Baby's whole body is supported not just the neck or shoulders.
- ii) Baby's head and body are in one line without any twist in the neck.
- iii) Baby's body turned towards the mother.
- iv) Baby's nose is at the level of nipple .

Positions

cradle



cross-cradle



football/clutch



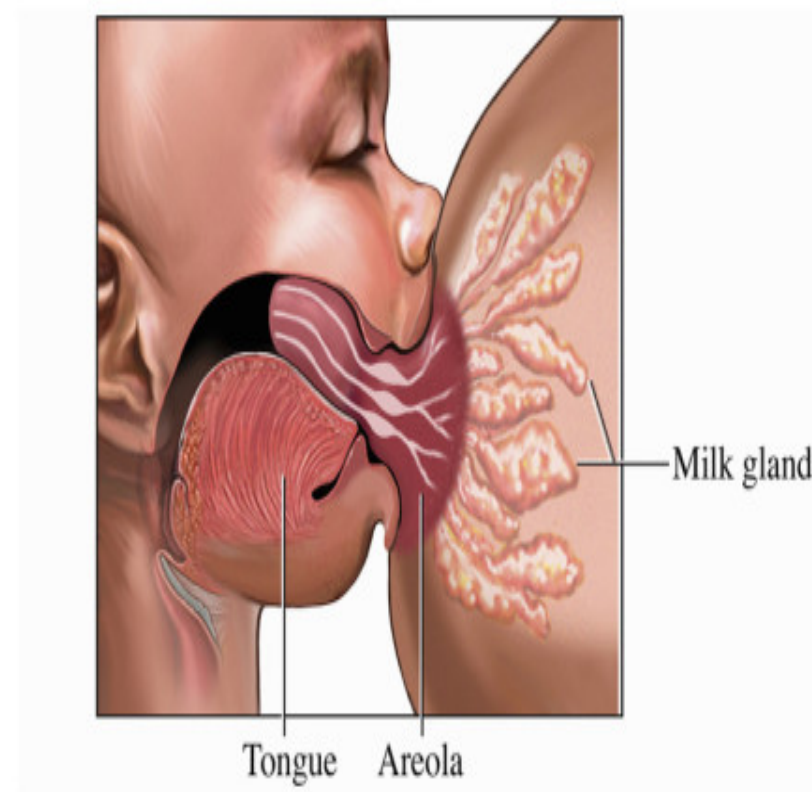
side-lying





SIGNS OF GOOD ATTACHMENT

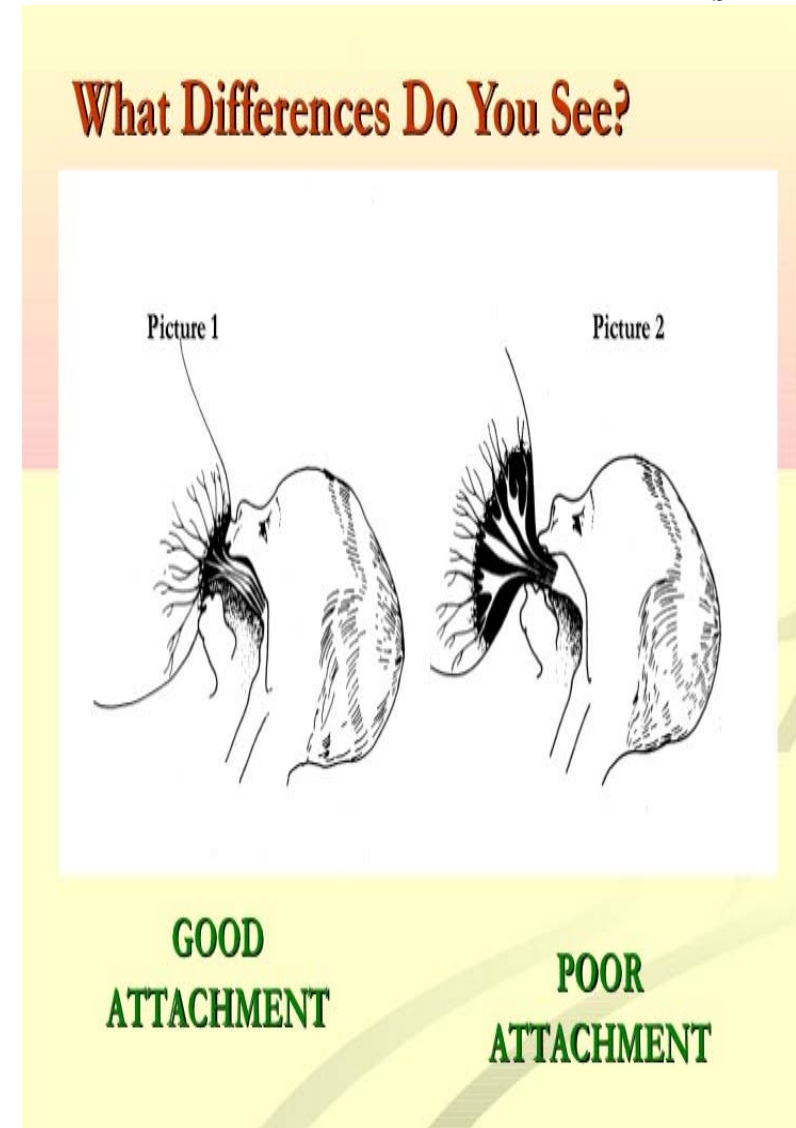
- Baby's chin close to the breast.
- Baby's tongue under lactiferous sinuses & nipple against the palate.
- Mouth wide open, lower lip turned outwards.
- More areola visible above the baby's mouth than below it.



AllPosters

SIGNS OF POOR ATTACHMENT

- Baby sucks only the nipple.
- Mouth is not widely open & much of the areola is outside the mouth.
- Baby's tongue is also inside the mouth & does not cover up the breast tissue.
- Chin is away from the breast.



BENEFITS OF BREAST MILK

- NUTRITIONAL SUPERIORITY : breast milk contains all the nutrients a baby needs for normal growth and development , in an optimum proportion and in a form that easily digested and absorbed

CARBOHYDRATES :

- Lactose is in a high concentration (6-7 g/dl)
- Galactose is necessary for optimal brain development of growing infants.
- Lactose helps in absorption of Calcium
- Lactose enhances the growth of lactobacilli in the intestine

BENEFITS OF BREAST MILK

FATS :

- Rich in polyunsaturated fatty acids necessary for myelination of nervous system.
- Contain omega -3 (long chain fatty acids).
- Docosa hexaenoic acid(DHA),provides the right substances for manufacturing myelin, the fatty sheath that surrounds nerve fibers.
- Lipids present in human milk includes-EPA, prostaglandin precursor, fat-soluble vitamins, steroids & phospholipids.



BENEFITS OF BREAST MILK

Proteins :

- The protein is mostly whey protein(60%) rich in Lactalbumin and Lactoferrin & the rest is casein(40%) which are easily digestible.
- Lactalbumin is rich in tryptophan, the precursor of serotonin that plays an important role as a neurotransmitter.
- Lactoferrin ensures absorption of iron & zinc & it is bacteriostatic as well.

BENEFITS OF BREAST MILK

ENZYMES :

- Peroxidases, lipid lipases, bile salt stimulated lipase(BSSL)kills the microbes by facilitating fat absorption & hydrolyze bacterial lipids.
- The bifidus factor & acidic pH associated with human milk leads to colonization by Lactobacillus.
- Lactobacilli & lactic acid that help in digestion are called probiotic substances

BENEFITS OF BREAST MILK

IMMUNOLOGICALLY :

- It is safe, non-allergic.
- Contains - immunoglobulin's, secretory components & secretory IgA. Also Plasma cells, polymorphs, lysosomes, lacto peroxidase, growth factors, etc.
- Serum IgA provides surface protection to the respiratory & GI tracts
- S IgA resist proteolytic degradation in the neonatal gut, and offers protection.
- Breast milk contains cellular element e.g. macrophages (up to 80%) lymphocytes (T and B) . These are the primary defense against infection.
- Breast milk supplies T & B lymphocytes.

BENEFITS OF BREAST MILK

- Vitamins - human milk is a good source of vitamins except vit K & D.
- Minerals: in breast milk like iron, zinc, etc. are present in small quantities ,but the bioavailability is much better because of carrier proteins.
- Osmolality is low - decreased solute load on neonatal kidney

BENEFITS TO MOTHER

- Accelerates Involution of Uterus.
- Reduces the chances of post partum hemorrhage.
- Burn off extra fat accumulated during Pregnancy.
- Lowers the risk of Ovarian and Breast cancer.
- Helps in delaying next Pregnancy.

ADVANTAGES TO FAMILY AND SOCIETY

- More economical than Artificial feed.
- Promotes Family Planning.
- Reduces the need for Hospitalization of children's.
- Reduces Infant mortality and morbidity.

Advantages of Breastfeeding

Breast milk

- Tailor made
- Species specific
- Perfect nutrients
- Easily digested
- Efficiently used
- Protects against infection
- Helps in premature baby's growth



Breastfeeding

- Costs less than artificial feeding
- Helps bonding and development
- Helps delay a new pregnancy
- Protects mother's health

Exclusively breastfed means no food or drink other than breast milk from birth to six months

Loose stools in exclusively breastfed babies is normal.

No need to give water to exclusively breastfed babies.



BFHI

- After introduction of ' Baby friendly hospital initiative '(BFHI) organized by UNICEF in 1992, Exclusive demand feeding is accepted as the only mode of early feeding .
- BFHI Plus Program incorporates other child survival and safe motherhood components like immunization, antenatal care, ORT.
- World Alliance for Breastfeeding Action (WABA) is the global agency for promotion of breastfeeding.
- Breastfeeding Promotion network of India (BPNI) is the national agency for breastfeeding.
- 'WORLD BREASTFEEDING WEEK' (WBW) is celebrated from 1st to 7th of August



TEN STEPS IN BFHI

1. Have a written breastfeeding policy that is routinely communicated to all healthcare staff.
2. Train all staff in skills to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding as early as possible.
5. To show mothers how to breastfeed and how to maintain lactation even if they should be separated from their infants.



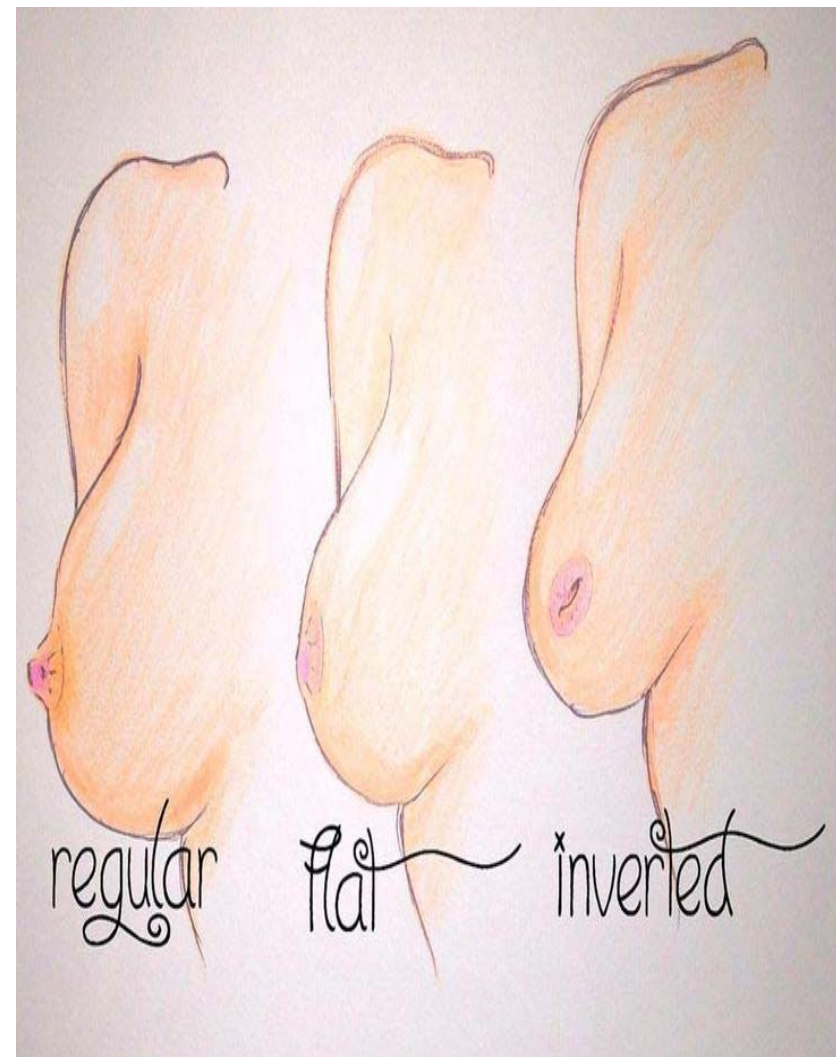
6. Give newborn infants no food or drink other than breast milk ,unless medically indicated.
7. Practice rooming-in & allow mothers & infants to remain together 24hrs a day.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers(also called dummies or soothers) to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups & refer mothers to them on discharge from the hospital.

PROBLEMS OF BREASTFEEDING

- Flat or Inverted nipple
- Breast engorgement
- Sore nipple and Cracked nipple
- Blocked duct
- Mastitis and Breast abscess
- Not enough milk

FLAT OR INVERTED NIPPLE

- Normally it gets corrected when the baby suckles.
- If problem persists following techniques should be tried ,
 - Inverted syringe technique.
 - Double syringe technique



INVERTED SYRINGE AND DOUBLE SYRINGE TECHNIQUE

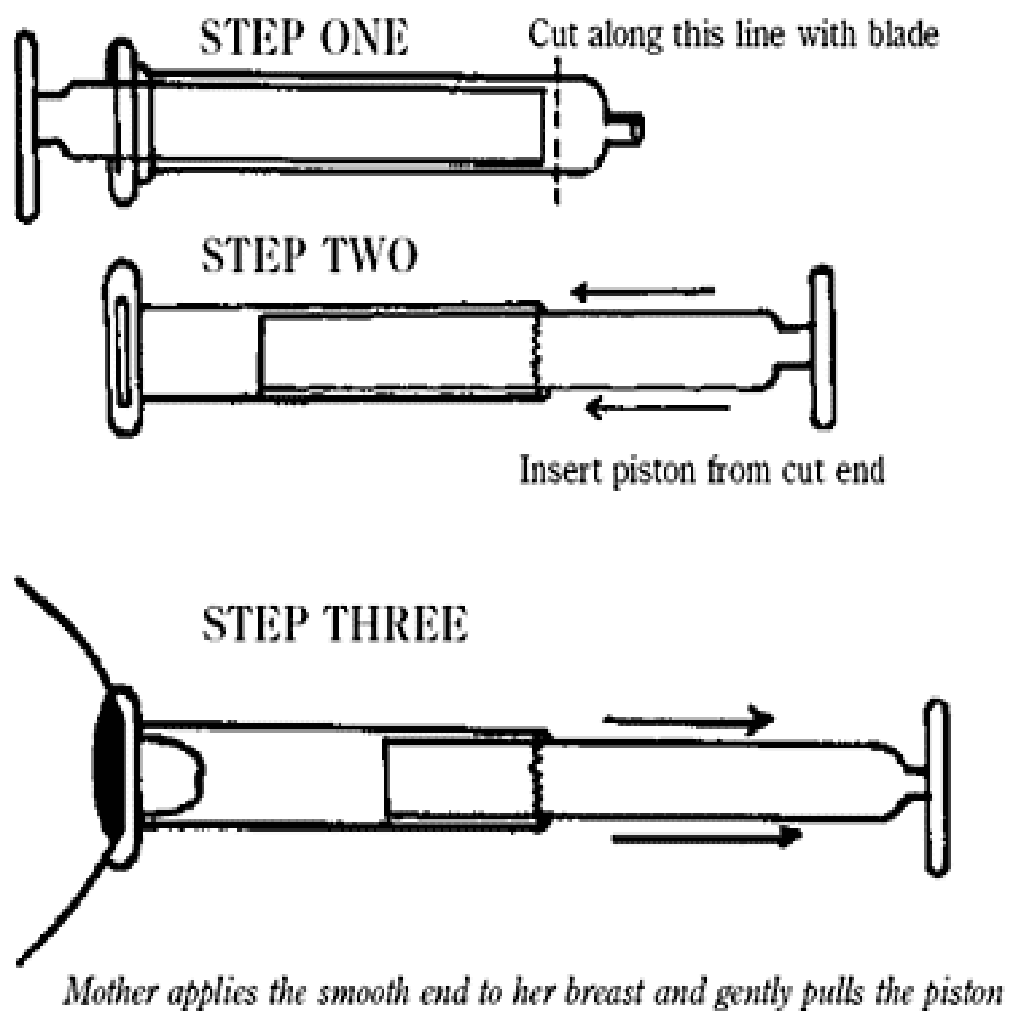


Fig. 5

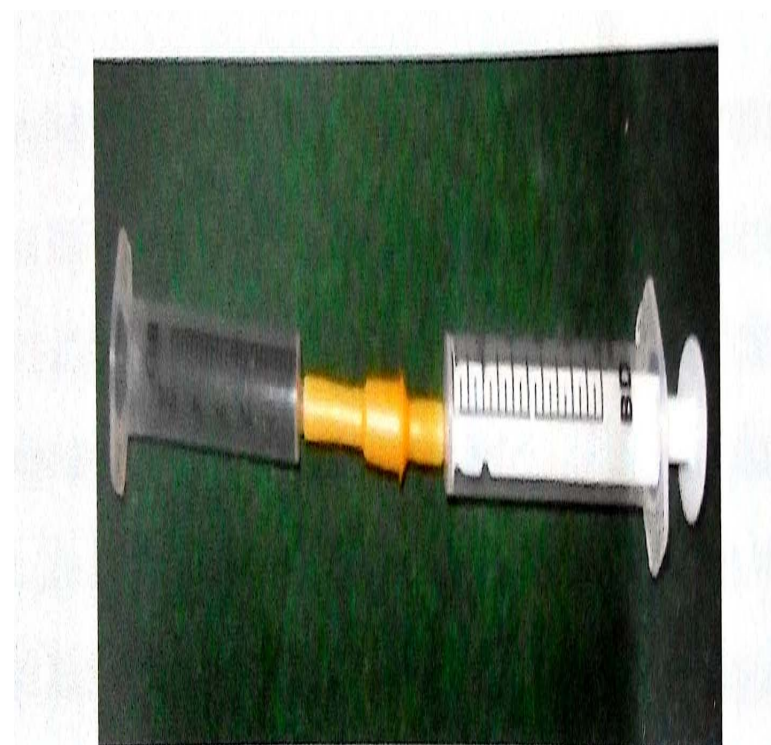


Fig. 1.4b

Double syringe technique (an easier technique than the inverted cut syringe)

BREAST ENGORGEMENT

- Breast milk production increases during 2nd & 3rd day after delivery .
- If feeding delayed/ infrequent/not well positioned , milk accumulates in the alveoli.
- As the milk production increases amount of milk productions exceeds storage capacity leading to engorgement.
- Clinical features
 - Swollen, hard , warm & painful breast



BREAST ENGORGEMENT

Treatment:

1. Moist heat through warm water 3-5 times before feed.
2. Gentle massage stroking the breast towards nipple.
3. Frequent feeds every 2 hours for at least 15-20 min on each side.
4. Feed in a quite and relaxed place.
5. Paracetamol for pain relief.

SORE NIPPLE & CRACKED NIPPLE

Incorrect attachment



Baby doesn't get enough milk



Sucks more vigorously



Sore nipple



If feeding continues



Physical trauma



Cracked nipple, Mastitis, Breast abscess



12/6

Sore
Nipple

UNICEF/WHO Breastfeeding Promotion and Support in a Baby-Friendly Hospital – 20 hour Course

2006

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CRACKED NIPPLE

Other causes :

- Frequent washing with soap & water
- Pulling the baby off the nipple while sucking
- oral thrush in the baby (usually after few weeks)



Treatment of Sore nipple /Cracked nipple

- Correct position & attachment of baby to breast.
- Hind milk has to be applied to nipple after feed.
- Nipple should be air dried to allow healing
- Wash the nipple once daily only with water
- Infant with oral thrush:
 - Apply 1% gentian violet over nipple as well as baby's mouth
- Maternal fungal breast infections:
 - Give Miconazole / Fluconazole 250mg TID for 10 days

BLOCKED DUCT

- Improper suckles over a particular segment
 - > accumulated thick milk blocks lactiferous duct
 - > painful hard swelling over that segment
- Not associated with fever

BLOCKED DUCT

Treatment

- Improved removal of milk from that segment by holding the infant with chin towards affected segment
- Avoid tight clothing.
- If not relieved do gentle massage over that segment towards nipple.

MASTITIS & BREAST ABSCESS

Persistent engorgement/ blocked duct

->supervening of infections

—>Mastitis

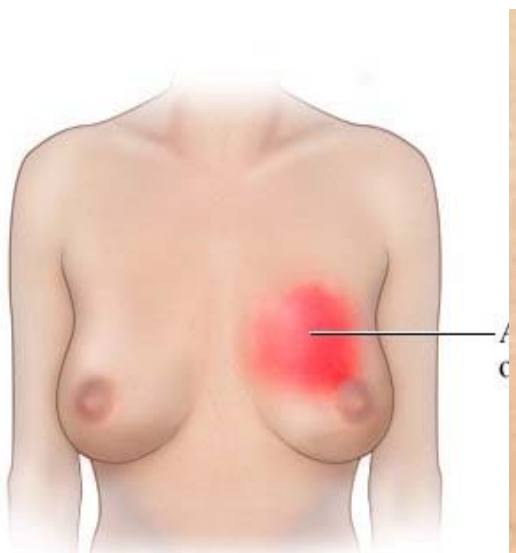
->If not treated -> Breast abscess

Clinical features:

Red, hot, tender, swollen breast

High grade fever in abscess.

Raised blood counts



MASTITIS & BREAST ABSCESS

TREATMENT

- Supportive counseling
 - Reassurance about value of breastfeeding.
 - Safe to continue.
 - Milk from affected breast will not harm baby.
 - Breast will recover both its shape & function.

- Effective milk removal by
 - Proper attachment.
 - Encourage frequent feeding.
 - If necessary express milk by hand or pump.

MASTITIS & BREAST ABSCESS

- Antibiotic therapy if
 - Cell & bacterial colony counts & culture available
 - Severe symptoms from beginning.
 - Visible nipple fissure.
 - No improvement after 12-24 hours of improved milk expression.

Duration of antibiotic therapy is 10-14 days.

- Symptomatic treatment
 - Ibuprofen reduces both pain & inflammation.
 - Paracetamol is optional.

NOT ENOUGH MILK

- Common causes
 - Infrequent feeding.
 - Too short /hurried feeding.
 - Poor suckling position.
 - Poor oxytocin reflex.
 - Breast engorgement or Mastitis.

TREATMENT

- Reassurance .
- Feed more frequently , specially during night.
- Make sure that the attachment is proper.
- Feed in a calm place, in a relaxed position.
- Treat the painful conditions like sore nipple, mastitis.

BREAST FEEDING IN SPECIAL CIRCUMSTANCES

When the baby is ill ?

- Breast milk is the easily digestible food for ill baby.
- Best pacifier.
- Life savior to many babies.
- Satisfies both nutritional & fluid demands.
- It has protective & immunological factors.

So breastfeeding should be continued in most of the illnesses like

- Rhinitis ,Viral fever
- Diarrheal diseases
- Respiratory infections

- Discontinue breastfeeding if there are GI contraindications to oral feeding.
- If the baby sucks with less vigor offer more **frequent feeds**.
- If the baby can't suck offer **Expressed breast milk**.
- Babies with CCF do well with EBM as it contains less sodium .

WHEN THE MOTHER IS ILL ?

- Breast feeding can be continued during most of the maternal illnesses like
 - Viral fever
 - UTI
 - Breast abscess
 - Tuberculosis
 - Hepatitis B

BREASTFEEDING IN TUBERCULOSIS

- Contraindicated until completion of 2 weeks of maternal chemotherapy in western. India – breast feeding is not contraindicated.
- If mother is an open c/o TB
 - Start her on chemotherapy.
 - Baby should be put on chemoprophylaxis with INH & Rifampicin.

- After 3 months ensure mother is sputum negative & do Montoux test to baby.
 - If Montoux test negative – Stop drugs & give BCG.
 - If Montoux test positive – continue chemoprophylaxis for 6-9 months.

BREASTFEEDING IN HEPATITIS B



- Baby should be given
 - Hep B Immunoglobulin followed by
 - Hep B vaccination.
- No delay in the initiation breastfeeding is required.

BREASTFEEDING IN HIV/AIDS

Perinatal transmission of HIV in AIDS is 30% .

Transmission through Breastfeeding is 5 – 10 % .

Recommendations for HIV mother is

1. Delivery by Cesarean Section.
2. Artificial feeding if AFASS
 - affordable ,
 - feasible ,
 - acceptable ,
 - safe ,
 - sustainable for 6 months
3. Drug therapy to mother & baby as per PPTCT guidelines.



- In USA : breastfeeding is contraindicated in HIV.
- In other countries :
 - If Artificial feeding is AFASS Breastfeeding is contraindicated.
 - Otherwise Breastfeeding should be continued.
- Mixed feeding is dangerous as
 - Artificial feeding damages mucosal barrier &
 - Breastfeeding will lead to easy transmission of HIV virus through damaged mucosa.



BREASTFEEDING IN POSTPARTUM PSYCHOSIS

Breast feeding is allowed under supervision.

CONTRAINDICATIONS TO BREASTFEEDING

- Congenital lactose intolerance.
- Galactosemia
- Maternal drug intake of
 - Anticancer drugs.
 - Anti thyroid drugs.
 - Antipsychotics like Lithium.
 - Ergot derivatives.
 - Iodinated radio contrasts.
- HIV if Artificial feeding is AFASS.

OPTIONS TO WORKING MOTHERS





- Continue EBF as long as possible before resuming to work.
- Take the baby to Day Care Centre at work place & feed in between work.
- Change the work place to near House or vice versa.
- Express & keep the EBM when the mother is away.
- Breastfeed before leaving to work ,on returning from work , during nights & holidays.
- Extend maternity leave till 4 – 6 months or avail half pay or loss of pay leave if possible.

EXPRESSION & STORAGE OF MILK

- Expressed breast milk is the mainstay of feeding in
 - Preterm ,LBW babies & sick babies.
 - Several working mothers.
 - Illness/hospitalization of mother/baby that precludes breastfeeding.
 - To relieve breast engorgement.
- Before expressing milk good hand washing & hygiene should be maintained.

EXPRESSION & STORAGE OF MILK

- Electric breast pumps are better tolerated than mechanical pumps or manual expression.
- Collecting kits should be rinsed, cleaned with hot soapy water & air dried after every use.
- Use clean , capped glass or hard polypropylene plastic containers or special freezing bags.

EXPRESSION & STORAGE OF MILK

- Can be stored
 1. In room temperature for 6 hrs.
 2. In refrigerator for 24 – 48 hrs.
 3. In Commercial freezers for 3-6 months.
- Pasteurization doesn't affect FA composition.
- Sterilization causes loss of 13% of Fat.
- Heating & Microwaving are not recommended as it causes loss of Anti-infective factors.
- Thawed milk should be used within 24 hrs.

THANK YOU

