INSTITUTE OF ADVANCED NURSING STUDIES

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Basic Breastfeeding Course

COURSE NOTES

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1. REFOCUSING BREASTFEEDING

- Breastfeeding is a natural and ideal infant feeding method.
- It is most highly effective preventive measures a mother can take to protect the health of her infant and herself.
- It is the right of the baby to receive mother’s breastmilk and the mother’s obligation to provide for her baby.
- Health care professionals should equip with basic knowledge and implement practice to support optimal breastfeeding.
- Health care professionals should provide women with evidence-based information for her to make informed choice.
- Support mothers to breastfeed with confident.
- Making breastfeeding work easy
- Prevent breastfeeding problems
- Promote, support and protect breastfeeding
- Work with community to provide continuous support
- Inadequate breastfeeding is a more serious problem than the perceived inadequate milk supply.
- Baby Friendly Hospital (BFH) also assists mothers who are not breastfeeding to make informed decisions and safe alternate feeding method.

GLOBAL STRATEGY FOR INFANT AND YOUNG CHILD FEEDING

- It is to improve – through optimal feeding – the nutritional status, growth and development, health and thus the survival of infants and young children.
- It supports exclusive breastfeeding for 6 months, followed by timely, adequate, safe and appropriate complementary feeding, while continuing breastfeeding for two years and beyond.
- It also supports maternal nutrition, and social and community support.

Global strategy for Infant and Young Child Feeding

- Early initiation of breastfeeding within 1 hour of birth
- Breastfeeding exclusively for the first 6 month of life,
- Give nutritional adequate and safe complementary (solid) foods at 6 months together with continued breastfeeding up to 2 years of age or beyond.

BABY-FRIENDLY HOSPITAL INITIATIVE (BFHI)

- It is a global initiative of the WHO and UNICEF that aims to give every baby the best start in life by creating a health care environment that supports breastfeeding as a norm.
- The initiative was launched in 1991. It includes a global assessment and accreditation scheme that recognizes the achievements of health facilities whose practices support breastfeeding and encourages health facilities with less than optimal practices to improve
- It provides a framework for enabling mothers to acquire the skills they need to breastfeed exclusively for 6 months and continue breastfeeding with the addition complementary foods for 2 years or beyond
- The BFHI hospital assists mothers who are not breastfeeding to make informed decisions and to care for their babies as well as possible
- The Global Strategy calls for further implementation of BFHI, for breastfeeding in the curriculum for health worker training, and for better data on breastfeeding
- In 2017 and 2018, a revised “Guideline: protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services” & “Implementation guidance: protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services – the revised Baby-friendly Hospital Initiative” are published.

Aim of BFHI

1. ***to implement the “Ten Steps to Successful Breastfeeding”, and***
2. ***to end the distribution of free and low cost supplies of breastmilk substitutes to health facilities.***

TEN STEPS TO SUCCESSFUL BREASTFEEDING

A Joint WHO/UNICEF Statement (since 1989)
(Revised 2018)

Critical management procedures

1. a. Comply fully with the International Code of Marketing of Breast-milk Substitutes and relevant World Health Assembly resolutions.
   b. Have a written infant feeding policy that is routinely communicated to staff and parents.
   c. Establish ongoing monitoring and data-management systems.

2. Ensure that staff have sufficient knowledge, competence and skills to support breastfeeding.

Key clinical practices

3. Discuss the importance and management of breastfeeding with pregnant women and their families.
4. Facilitate immediate and uninterrupted skin-to-skin contact and support mothers to initiate breastfeeding as soon as possible after birth.
5. Support mothers to initiate and maintain breastfeeding and manage common difficulties.
6. Do not provide breastfed newborns any food or fluids other than breast milk, unless medically indicated.
7. Enable mothers and their infants to remain together and to practice rooming-in 24 hours a day.
8. Support mothers to recognize and respond to their infants' cues for feeding.
9. Counsel mothers on the use and risks of feeding bottles, teats and pacifiers.
10. Coordinate discharge so that parents and their infants have timely access to ongoing support and care.

2. LOCAL BREASTFEEDING SITUATION

How much you know about the following:

- How many babies have immediate skin to skin contact?
- How many have other foods or drink before they start to breastfeed?
- How many breastfeed **exclusively** for 6 months?
- How many continue to breastfeed more than
    - 6 months
    - More than 12 months

List out common reason why mother give supplement / stop breastfeeding

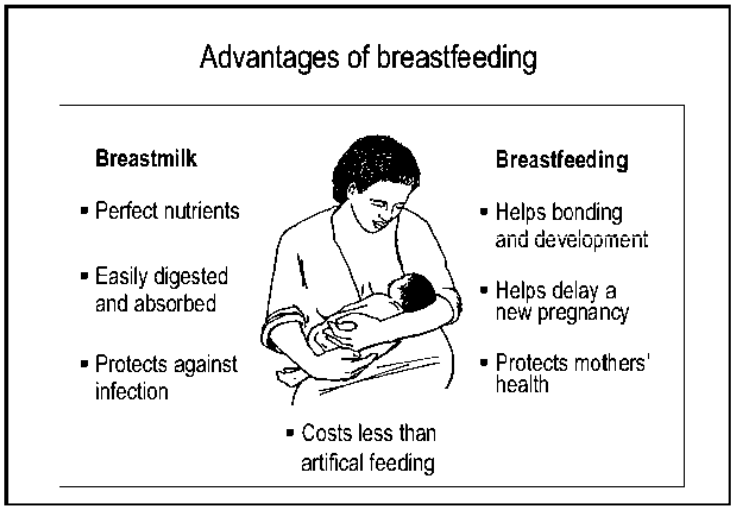
- In the first few days

- Before 6 months

Local Breastfeeding Prevalence

3. IMPORTANCE OF BREASTFEEDING & RISK OF ARTIFICIAL FEEDING

Advantages of Breastfeeding



Breastfeeding includes more than just a baby on breast milk. Breastfeeding is important for the whole family, emotionally and economically, and it protects a mother's health in several ways.

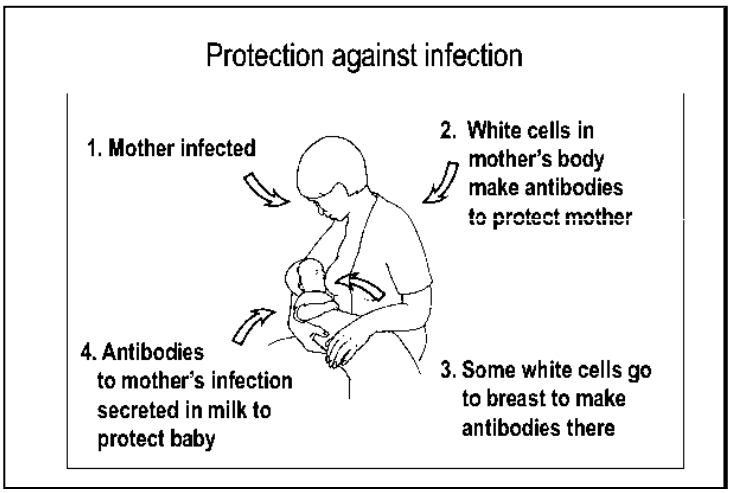
The value of a baby having breast milk:

- It contains exactly the nutrients that a baby needs;
- It is easily digested and efficiently used by the baby's body;
- It protects a baby against infection, which is particularly important for newborns;
- It results in long term health benefits, such as reduced risk of obesity and diabetes, dental malocclusion;
- It helps a baby's cognitive development;

The importance of breastfeeding:

- It helps a mother and baby to bond - that is, to develop a close, loving relationship;
- It helps a baby's emotion, cognitive, physical development;
- It helps to protect the mother's health in several ways:
  - It helps her uterus to return to its previous size. This reduces bleeding, and may help to prevent anaemia;
- It prevents breast cancer and reduces risk of ovarian cancer, and type 2 diabetes
- It can help to delay a new pregnancy;
- Breastfeeding costs less than artificial feeding, including fewer costs for health care;
- It produces no waste materials, so it is better for the environment.

Protection against infection

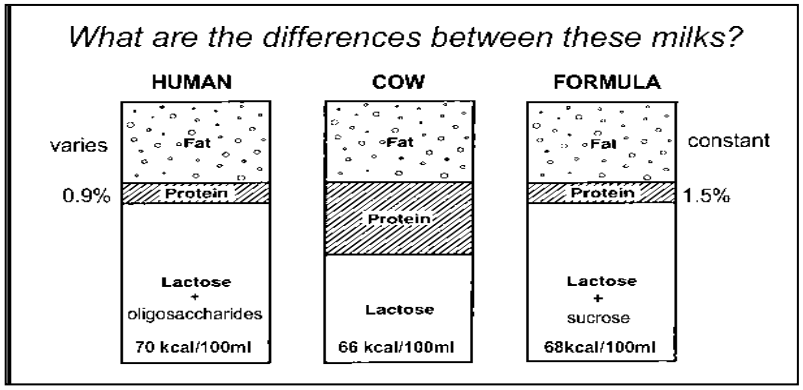


Breast milk contains

- White blood cells and a number of anti-infective factors, such as lactoferrin and lysozyme, which help to protect babies against infection.
- Antibodies against infections which the mother has had in the past, and to the bacteria in the environment. This protection is particularly important immediately after a baby is born, and through the newborn period.
- IgA is the main immunoglobulins in breast milk – often called 'secretory immunoglobulin A (sIgA).It is secreted within the breast into the milk, in response to the mother's infections. This is different from other immunoglobulins (such as IgG) which are found mainly in the blood.

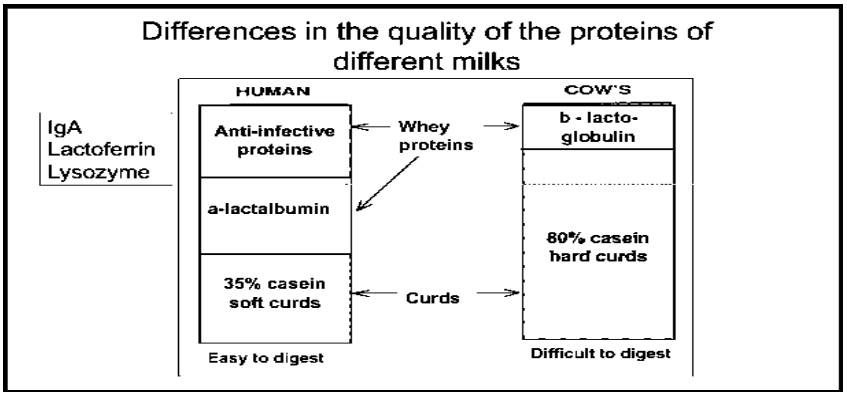
Psychological benefits of breastfeeding

Nutrients in human and animal milks



- All the milks contain fat, which provides about half of the energy that a young human or young animal needs; they contain protein, for growth; and they contain the special milk sugar lactose, which also provides energy.
- Protein is an important nutrient, but more protein might not be better. It is difficult for a baby's immature kidneys to excrete the extra waste from the protein in animal milks. However, cows and other animals grow faster than humans, so they need milk with a higher concentration of protein
- Infant formula
  - It may be made from animal milk, or from soybean and vegetable oils.
  - The quantity of protein in the formula milk is adjusted, so that it is nearer to human milk. But the quality is very different, and is far from perfect for babies.
  - To make formula more like human milk, sugar has to be added. Sometimes other sugars such as sucrose are added instead of lactose. Sucrose is less suitable for a baby and can cause dental caries in the child.
- Breast milk also contains oligosaccharides, which are short chains of sugar molecules. They have important anti-infective properties.

Quality of the proteins in different milks

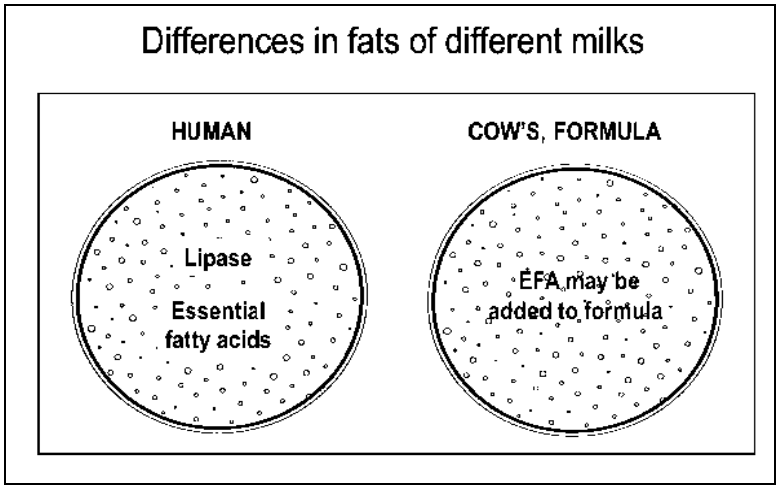


- The protein in different milks varies in quality, as well as quantity.
- Much of the protein in cow's milk is casein, which forms thick, indigestible curds in a baby's stomach.
- Human milk contains a different kind of casein. It forms softer curds which are easier to digest, and there is less of it. Their concentrations change profoundly over the course of lactation: during the first 2 weeks of lactation, concentrations of whey proteins very high, while concentrations of caseins are low, which results in a whey:casein ratio as high as 80:20. The ratio drops to 65:35 by week 2 and stays constant at about 55:45 thereafter. (1,2)

Reference:
1. Lonnerdal, B. Nutritional and physiologic significance of human milk proteins. Am. J. Clin. Nutr. 2003, 77, 1537S–1543S
2. Lönnerdal B, Erdmann P, Thakkar SK, Sauser J, Destaillats F. Longitudinal evolution of true protein, amino acids and bioactive proteins in breast milk: a developmental perspective. J Nutr Biochem 2016;41:1–11.

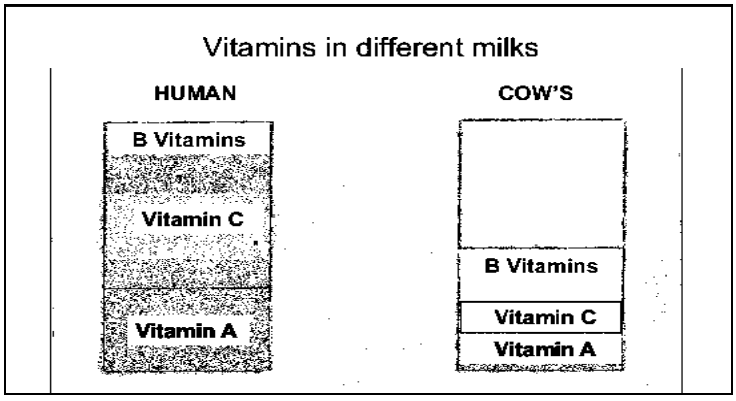
- The soluble or whey proteins are also different. Human milk contains mainly alpha-lactalbumin, and cow's milk contains beta-lactoglobulin. In human milk, much of the whey protein consists of anti-infective proteins, such as immunoglobulin A, or IgA, and lactoferrin, which help to protect a baby against infection. Cow's milk and formula do not contain the anti-infective proteins which protect babies.
- Babies fed artificially on cow's milk or formula may develop intolerance to the proteins in the milk, and may develop diarrhea. They are also more likely than breastfed babies to develop allergies which may cause eczema, and possibly asthma.

Differences in the fats of different milks



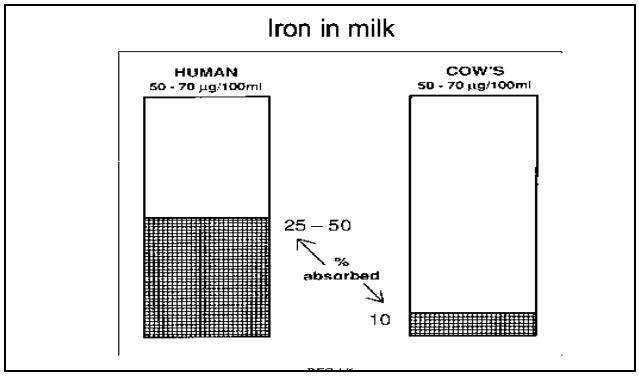
- The amount of fat in cow's milk and human milk is similar
- Human milk contains essential fatty acids (EFAs) and that EFAs may not present in cow's milk. These essential fatty acids are needed for a baby's growing brain and eyes, and for healthy blood vessels. EFAs are sometimes added to formula, but it is not certain if the baby's body uses them in the same way as those in breast milk.
- Human milk also contains an enzyme **lipase** which helps to digest fat. This enzyme is not present in cow's milk or formula. So the fat in breast milk is more completely digested and more efficiently used by a baby's body than in cow's milk or formula.

Vitamins in different milks



- Breast milk contains plenty of vitamin A and C, if the mother has enough in her food. Breast milk can supply much of the vitamin A that a child needs even in the second year of life.
- Cow's milk contains plenty of the B vitamins. But it does not contain as much vitamin A and C as human milk.
- Infant formula has enough vitamins added to it to cover a baby's needs.

Iron in milk



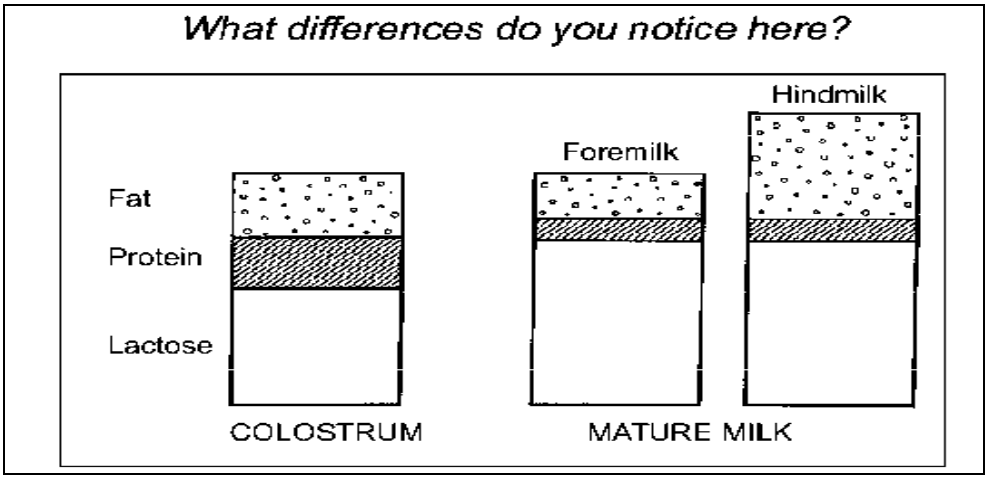
- Both human milk and cow's milk contain very small amounts of iron (50-70 µg/100ml, i.e. 0.5-0.7 mg/l).
- Only about 10% of the iron in cow's milk is absorbed, but about 25-50% of the iron from breast milk is absorbed (high **bio-availability**).
- Exclusively breastfed babies can get enough iron, and they are protected against iron deficiency anaemia until at least 6 months of age, and often longer.
- Too much iron in formula which are not well absorbed and favours the development of pathogenic gut bacteria by saturating lactoferrin.

Summary of differences between milks

Summary of differences between milks

Component	Human milk	Cow's milk	Formula
Protein	Right amount Easy to digest	Too much Difficult to digest	Quantity reduced Quality as cow's
Fats	EFA's present Lipase to digest	No EFAs No lipase	Some EFA added No lipase
Carbohydrate	Lactose - plenty **Oligosaccharides (anti-infective)**	Lactose - less **Oligos not suitable**	Lactose + sucrose **Lacks oligos**
Vitamins and minerals	Adequate if mother enough	Low Vit A and C and iron	Vits/mins added usually enough
Anti-infective factors	IgA, lactoferrin, lysozyme, cells	**None**	**None**
Growth factors	Present	**None**	**None**

Variations in the composition of breast milk



- The composition of breast milk is not always the same. It varies
  - according to the age of the baby,
  - from the beginning to the end of a feed,
  - between feeds, and may be different at different times of the day.

Varies according to the age of the baby

Colostrum

- It is the special breast milk that women produce in the first few days after delivery.
- The amount is small; it is thick and yellowish or clear in colour.
- After 2-3 days, the breast start to secrete milk in larger amounts, and the breasts feel full, hard and heavy. This is called the milk 'coming in'. At first the milk is called **transitional milk**, and after 2 weeks it is called **mature milk**.

Colostrum

- It contains more antibodies and other anti-infective proteins than mature milk
- It contains more white blood cells than mature milk.
- These anti-infective proteins and white blood cells provide a newborn's first immunization against the micro-organisms that surround him when he is born
- It has a mild **purgative** effect, which helps to clear the baby's gut of meconium (the first rather dark stool). This helps to reduce the level of jaundice.
- It contains growth factors, which stimulate a baby's immature intestine to develop after birth. This helps to prevent the baby from infections, and from developing allergies and intolerance to other foods.
- Colostrum is richer than mature milk in some vitamins – especially vitamin A. Vitamin A helps to reduce the severity of any infections the baby might have.

Varies from the beginning to the end of a feed

Breast milk changes from the beginning to the end of a feed. The milk that comes first is called ***foremilk***. The milk that comes later is called ***hindmilk***.

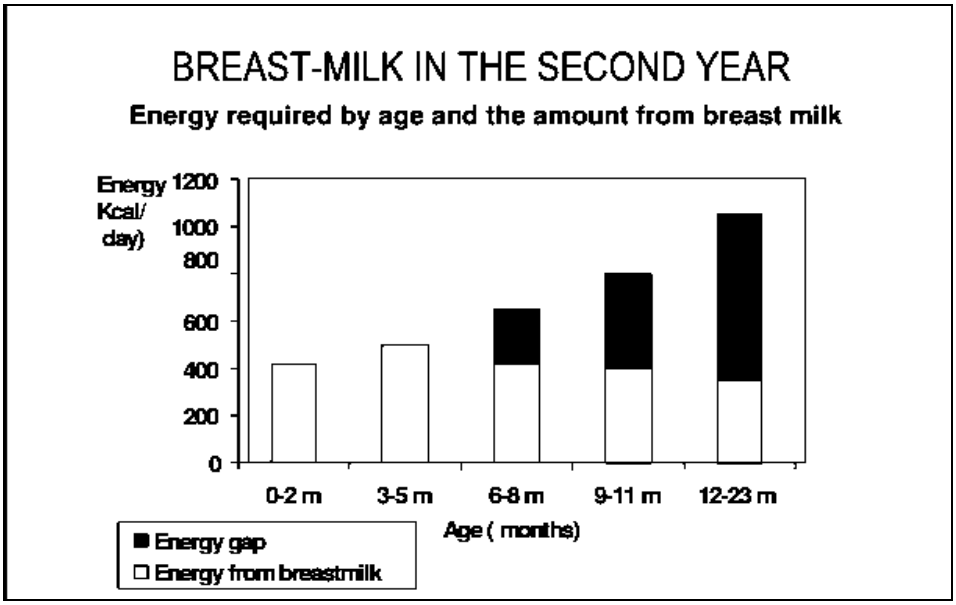
Foremilk

- Produced in larger amounts than hindmilk,
- Provides plenty of protein, lactose, and other nutrients, and a lot of water.
- Babies get large amount of foremilk, they get all the water they needs from it, even in hot climate.

Hindmilk

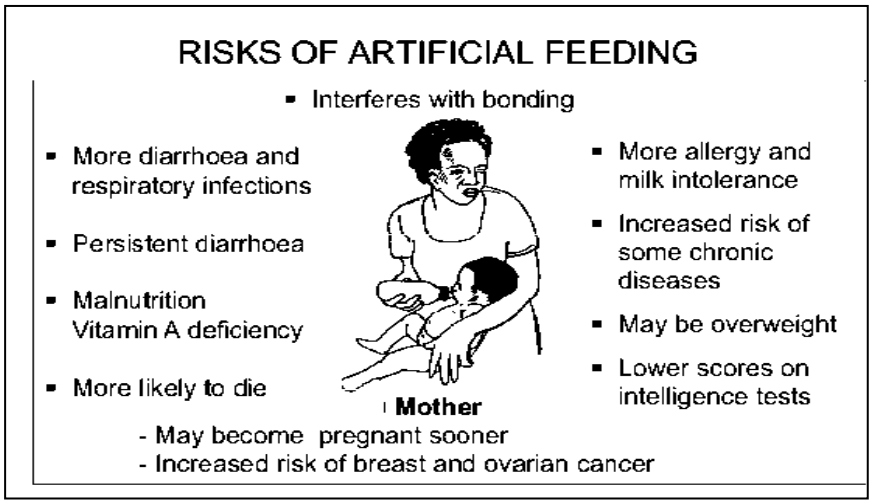
- Produced in smaller amounts,
- Provides much of the energy: hindmilk contains more fat than foremilk. The baby gets more energy towards the end of a feed.
- It is important not to take babies off the breasts too quickly. They should be allowed to continue until they have had all that they want, and they release the breast themselves, so that they get plenty of fat-rich hindmilk.

Breast milk in the second year



- For the first 6 months of life, exclusive breastfeeding can provide all the nutrients and water that a normal full term baby needs.
- From the age of 6 months, breast milk is no longer sufficient by itself. From 6 months, all babies should receive other foods, known as complementary foods, in addition to breast milk.
- The energy needed in addition to breast milk is about 200 kcal per day for infants 6-8 months, 300 kcal per day for infants 9-11 months, and 550 kcal per day for children 12-23 months of age.
- Breast milk continues to be an important source of energy, and can provide one half of a child's needs from 6-12 months, and one third of needs through the second year of life.
- Breast milk also provides high quality protein and vitamins, one third or more of child's needs, through the second year of life, and beyond.

RISK OF ARTIFICAL FEEDING



Artificial feeding may interfere with bonding. The mother and baby may not develop such a close, loving relationship.

An artificial fed baby may be at increased risk of:

- Infections such as diarrhoea and gastrointestinal infections, respiratory, ear and urinary tract infections.
- **Necrotizing enterocolitis**, in preterm infants.
- Developing some chronic diseases, such as juvenile onset insulin dependent diabetes mellitus, high blood pressure and heart disease.
- Obesity
- Developing allergy conditions such as eczema and asthma
- Intolerance to animal milk, causing diarrhoea, rashes and other symptoms
- Lower developmental performance and educational achievement
- Getting too little milk and become malnourished, because he gets too few feeds, or because they are too dilute. He is more likely to suffer from vitamin A deficiency.
- Dying in infancy and early childhood due to infections.

Mothers who do not breast feed may increase the risk of:

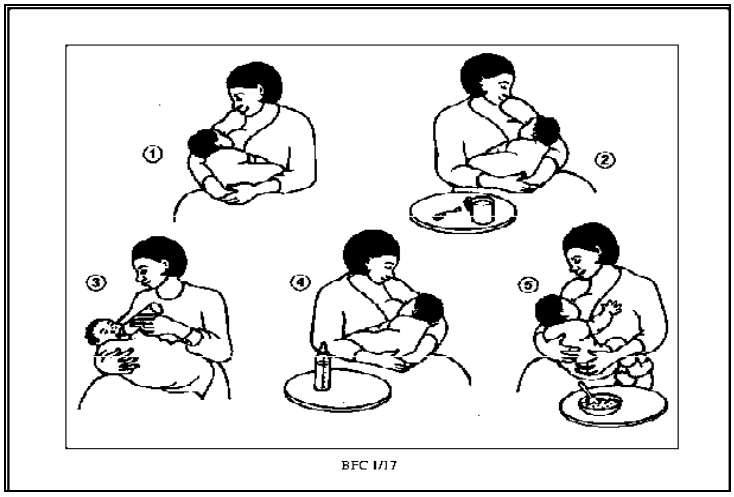
- Breast cancer, and some forms of ovarian cancers.
- Type II DM
- Retention of fat deposited during pregnancy which may result in later obesity.
- Anaemia due to low contraction of the uterus following birth and early return of menses.
- Frequent pregnancies due to lack of child spacing effect of breastfeeding.

Dangers from the use of formula milk

- Infant formula may be contaminated through manufacture error.
- Powered infant formula is not sterile and during manufacture may be contaminated with bacteria.
- Infant formula may contain unsafe ingredients or may lack vital ingredients.
- Water used for washing bottles or mixing infant formula may be contaminated.
- Errors in mixing formula, over concentration or under concentration, may cause infant illness.
- Purchase of infant formula creates unnecessary expenses for the family.

Breastfeeding is fundamental to child health and survival, and important for the health of women

Terms of Infant Feeding



Exclusive breastfeeding

Giving a baby no other food or drink, not even water, in addition to breastfeeding (except medicines and vitamin or mineral drop; expressed breast milk is also permitted)

Predominant breastfeeding

Breastfeeding a baby, but also giving small amounts of water or water bases drinks, such as tea

Full breastfeeding

Means breastfeeding either exclusively or predominantly

Bottle feeding

Feeding a baby from a bottle, whatever is in the bottle, including expressed breast milk

Artificial feeding

Feeding a baby on infant formula, animal milk, or other drinks or foods such as dilute cereals and not breastfeeding at all.

Partial breastfeeding, or mixed feeding

Giving a baby some breastfeeds, and some artificial feeds, either milk or cereal, or other foods

Introduction of complementary foods

Giving a baby solid, semi-solid or soft foods starting at 6 months of age

4. PROMOTING BREASTFEEDING DURING PREGNANCY

Step 3: Antenatal Information (WHO 2018 revised):

Step 3: Discuss the importance and management of breastfeeding with pregnant and their families.

- All pregnant women and their families should be counseled about the benefits and management of breastfeeding in order to make informed decision.
- A protocol for antenatal discussion of breastfeeding includes at a minimum:
  - the importance of breastfeeding;
  - global recommendations on exclusive breastfeeding for the first 6 months, the risks of giving formula or other breast-milk substitutes, and the fact that breastfeeding continues to be important after 6 months when other foods are given;
  - the importance of immediate and sustained skin-to-skin contact;
  - the importance of early initiation of breastfeeding;
  - the importance of rooming-in;
  - the basics of good positioning and attachment;
  - recognition of feeding cues.
- It is important for health workers to educate women about breastfeeding as early as possible and to identify mothers and babies who may be at risk of breastfeeding difficulties.
- In order to make an informed decision about feeding her baby a woman needs:
  - Information that is accurate and factual about the importance of breastfeeding and the risks of giving formula or other breast-milk substitutes.
    If a baby is not breastfed, the issues of replacement milk in finding time, equipment, hygiene, financial impact to the family.
  - Understanding of the information in her individual situation.
  - Confidence, which means building the woman's confidence in her ability to exclusively breastfeed. If *she is not breastfeeding*, she needs to be confident that she can find a replacement feeding method that is as safe as possible in her situation.
  - Support to carry out her feeding decision. This includes support to successfully feed her baby and to overcome any difficulties.

Breastfeeding talk during pregnancy

Group talk

Facilitator presents the following information as if it was a talk to a group of pregnant women.

- Importance of breastfeeding to mothers and babies
- Mother's milk is all a baby needs:
  - Exclusive breastfeeding is recommended for the first six months.
  - Breastfeeding continues to be important after the first six months when other foods are given to the baby.

- Practices that can help breastfeeding to go well
  - Have a labour companion
  - Avoid labour and birth interventions such as sedating pain relief and caesarean sections unless they are medically necessary.
  - Importance of skin-to-skin contact immediately after birth
  - Importance of rooming
  - Learn feeding cues so that feeding is baby-led rather than to a schedule.
  - Feeding frequently.
  - Breastfeeding exclusively with no supplements, bottles, or artificial teats.
- It is important to learn how to position and attach the baby for feeding
- *Before a mother leaves the birth facility she will be told how to find on-going help and support with feeding her baby.*

<u>Individual discussion</u>

- A woman's decision about how to feed her baby may be influenced by the baby's father, her own mother or another family member. It can be helpful to ask:
  "What people are there who are close to you who will support you to feed your baby?"
- May suggest that a family member who is important to the woman comes with her to hear more about feeding her baby
- Previous experience in infant feeding.
- Personal concerns

Antenatal breast and nipple preparation

- Breasts and nipples can look different and still work perfectly well, except in very rare cases.
- Practices that are not useful:-
  - wearing a bra,
  - using creams,
  - performing breast massage or nipple exercises,
  - wearing breast shells
  - Practices such as 'toughening' of the nipples by rubbing with rough towel

Further information for the health worker

- Breast examination during pregnancy can be helpful if it is used to:
  - Point out to a woman how her breasts are changing and increasing in size, and her body is getting ready to breastfeed.
  - Check for any previous chest or breast surgery, trauma or other problem (e.g. lumps in breast).
- Breast examination during pregnancy can be harmful if it is used to judge a woman's

nipples or breasts as suitable or unsuitable for breastfeeding.

Women who need extra attention

- Identify women with special concerns. Help them to talk about issues that may affect their plans about feeding their baby. Offer to talk also to significant family members as needed so that they can support the woman. A woman may need special counselling and support if she:
  - had difficulties breastfeeding a previous baby, or never breastfed.
  - must spend time away from her baby because she works away from home
  - has a family difficulty.
  - is depressed.
  - is isolated, without a social support.
  - is a young or single mother.
  - has an intention to leave the baby for adoption.
  - had previous breast surgery or trauma that could interfere with milk production.
  - has a chronic illness or needs medication.
  - is at high risk of her baby needing special care after birth, or twin pregnancy.
  - is tested and shown to be HIV-positive.

Breastfeeding during Pregnancy

There is generally no need to stop breastfeeding an older baby during a succeeding pregnancy. If the woman has a history of premature labour or experiences uterine cramping while breastfeeding, she should discuss this with her doctor. Similar to all pregnant women, the mother who is breastfeeding and is pregnant needs to take care of herself, which includes eating well and resting. Sometimes the breasts feel more tender, or the milk seems to decrease in the mid-trimester of the pregnancy; but these are not reasons of themselves to stop breastfeeding.

- However, if the woman is HIV positive, partial breastfeeding has been shown to carry a higher risk of HIV transmission than exclusive breastfeeding.
- ***If a mother is not breastfeeding, for a medical reason such as HIV or her informed personal decision, then it is important that she knows how to feed her baby. These women need individual discussion about replacement feeding and assistance to learn how to prepare feeds.***

5. LABOUR AND BIRTH PRACTICES TO SUPPORT EARLY BREASTFEEDING

Step 4: Immediate postnatal care

- ***Facilitate immediate and uninterrupted skin-to-skin contact and support mothers to initiate breastfeeding as soon as possible after birth.***

Implementation:

- Place babies in skin-to-skin contact with their mothers immediately following birth for at least an hour and encourage mothers to recognise when their babies are ready to breastfeed, offering help if needed.
- Skin-to-skin is when the infant is placed prone to the mother's abdomen or chest with no clothing separating them.

*Practices that may **help** a woman to feel competent, in control, supported and ready to interact with her baby who is alert, help to put this Step into action. These practices include:*

- Emotional support during labour.
- Attention to the effects of pain medication on the baby.
- Offering light foods and fluids during early labour.
- Freedom of movement during labour.
- Avoidance of unnecessary caesarean sections.
- Early mother-baby contact.
- Facilitating the first feed.

*Practices that may **hinder** mother and baby early contact and the establishment of breastfeeding include:*

- Requiring the mother to lie in bed during labour and birth.
- Lack of support.
- Withholding food and fluids during early labour.
- Pain medications that sedate mother or baby, episiotomy, intravenous lines, continuous electronic fetal monitoring and other interventions used as routine without medical reasons.
- Wrapping the baby tightly after birth.
- Separating the mother and baby after birth.

Support during labour

- A companion during labour and birth can:
  - Reduce the perception of severe pain, reduce stress
  - Encourage mobility

  - Speed labour and birth
  - Reduce the need for medical interventions
  - Increase the mother's confidence in her body and her abilities.
- The support can result in:
  - Increased alertness of baby as less pain relief drugs reach the baby
  - Reduced risk of infant hypothermia and hypoglycaemia because baby is less stressed and thus using less energy.
  - Early and frequent breastfeeding
  - Easier bonding with the baby.
- The labour and birth companion can be a mother, sister, friend, family member or the baby's father or a member of the health facility staff. The support person needs to remain continuously with the woman through labour and the birth.
- The companion provides non-medical support that can include:
  - Encouragement to walk and move in labour
  - Offering light nourishment and fluids
  - Building the mother's confidence by focusing on how well she is progressing
  - Suggesting ways to keep pain and anxiety manageable
  - Providing massage, hand holding, cool cloths,
  - Using positive words.

Pain relief

- Offer non-medication methods of pain relief before offering pain medications. These non-medication methods include:
  - Labour support
  - Walking and moving around
  - Massage, warm water
  - Verbal and physical reassurances
  - Quiet environment with no bright lights and as few people as possible
  - Labouring and giving birth positioning of the mother's choice.
- Pain medications can increase the risk of:
  - Longer labour
  - Operative interventions
  - Delayed start to mother baby contact and breastfeeding
  - Separation of mother and baby after birth
  - Sleepy, hard to rouse baby
  - Diminished sucking reflex
  - Reduced milk intake increasing the risk of jaundice, hypoglycaemia, and low weight gain.
- Extra time and assistance may be needed to establish breastfeeding and bonding if pain medications are used.
- Discuss ways to cope with pain and discomfort and their risks and benefits during

antenatal care. The need for pain relief is affected by stress, lack of support and other factors in the labour ward.

Light foods and fluids during labour

- Labour and birth are hard work. The woman needs energy to do this work.
  - There is no evidence that withholding of light food and drink. Restricting food and fluid can be distressing to the labouring woman.
- Intravenous (IV) fluids in labour need to be used only for a clear medical indication. Fluid overload can lead to electrolyte imbalance in the baby, and high weight loss as the baby sheds the excess fluid. An IV drip may limit the woman's movement.
- Following a normal birth, a woman may be hungry and she should have access to food.

Birth practices

- When giving birth, all women need:
  - A skilled attendant present.
  - Minimal use of invasive procedures such as episiotomy.
  - Universal precautions to be followed to prevent transmission of HIV and blood-borne infections.
  - Caesarean sections or any other intervention only used when medically required.
- Instrumental birth (forceps or vacuum extraction) can be traumatic, disrupt the alignment of the bones in the baby's head and affect nerve and muscle function, resulting in problems with feeding.
- Normal vaginal birth is assisted by the woman being mobile during early labour with access to fluids and food, and by being in an upright or squatting position for birth.
- Episiotomy will result in pain and difficulty in the early days after birth, which can affect skin-to-skin contact, breastfeeding, and mother-baby contact.
- The cord should not be clamped until pulsing reduces and baby has received sufficient additional blood to boost iron stores.
- When considering birth practices remember that the practices have an effect on the baby as well as the mother.

Importance of early contact

Skin-to-skin contact

- Ensure uninterrupted, unhurried skin-to-skin contact between every mother and unwrapped healthy baby. Start immediately, even before cord clamping, or as soon as possible in the first few minutes after birth. Arrange that this skin-to-skin contact continue for at least one hour after birth. A longer period of skin-to-skin contact is recommended if the baby has not suckled by one hour after birth.

- Skin-to-skin contact:
  - Calms the mother and the baby, helps to stabilise the baby's heartbeat and breathing.
  - Reduces infant crying, thus reducing stress and energy use.
  - Keeps the baby warm.
  - Assists with metabolic adaptation and blood glucose stabilization
  - Enables colonization of the baby's gut with the mother's normal body bacteria gut, provided that she is the first person to hold the baby and not a nurse, doctor, or others.
  - Facilitates bonding between the mother and her baby, as the baby is alert in the first one to two hours. After two to three hours, it is common for babies to sleep for long periods of time.
  - Allows the baby to find the breast and self-attach, which is more likely to result in effective suckling.
- ***All stable babies*** and mothers benefit from skin-to-skin contact immediately after birth. All babies should be dried off as they are placed on the mother's skin. Holding the baby is not implicated in HIV transmission. It is important for a mother with HIV to hold, cuddle and have physical contact with her baby so that she feels close and loving.
- Babies, who are not stable immediately after birth can receive skin-to-skin contact later when they are stable.

Overcoming barriers to early skin-to-skin contact

- ***Concern that the baby will get cold***
  - Dry the baby and place baby naked on the mother's chest. Babies in skin-to-skin contact have better temperature regulation than those under a heater.
- ***Baby needs to be examined***
  - Most examinations can be done with the baby on the mother's chest where baby is likely to be lying quietly. Weighing can be done later.
- ***Mother needs to be stitched***
  - The infant can remain on the mother's chest if an episiotomy or caesarean section needs to be stitched.
- ***Baby needs to be bathed***
  - Delaying the first bath allows for the vernix to soak into the baby's skin, lubricating and protecting it. Delaying the bath also prevents temperature loss.
- **Delivery room is busy**
  - If the delivery room is busy, the mother and baby can be transferred to the ward in skin-to-skin contact, and contact can continue on the ward.
- ***No staff available to stay with mother and baby.***
  - A family member can stay with the mother.
- ***Baby is not alert***
  - If a baby is sleepy due to maternal medications it is even more important that the

baby has contact as he needs extra support to bond and feed.

- ***Mother is tired***
  - A mother is rarely so tired that she does not want to hold her baby. Contact with her baby can help the mother to relax. Review labour practices such as withholding fluid and foods, and practices that may increase the length of labour, which can tire the mother.
- ***Mother does not want to hold her baby***
  - If a mother is unwilling to hold her baby it may be an indication that she is depressed and at greater risk of abandonment, neglect or abuse of the baby. Encouraging contact is important as it may reduce the risk of harm to the baby.
- ***Mother with twin delivery***
  - With twins the interval between the births varies. Generally, the first infant can have skin to skin contact until the mother starts to labour for the second birth. The first twin can be held in skin to skin contact by a family member for warmth and contact while the second twin is born. Then the two infants are held by the mother in skin to skin contact and assisted to breastfeed when ready.

It may be helpful to add an item to the mother's labour/birth chart to record the time that skin-to-skin contact started and the time that it finished. This is an indication that skin contact is as important as other practices of which a record is required.

Helping to initiate breastfeeding

How

- When the baby is on the mother's chest with skin-to-skin contact the breast odour will encourage the baby to move towards the nipple.
- *Help a mother to recognise the pre-feeding behaviours or cues*
  - When a mother and baby are kept quietly in skin-to-skin contact, the baby typically works through a series of pre-feeding behaviours. This may be a few minutes or an hour or more. The behaviours of the baby include:
    - a short rest in an alert state to settle to the new surroundings;
    - hand-to-mouth movement, and making sucking motions; sounds, and touching the nipple with the hand;
    - focusing on the dark area of the breast,
    - moving towards the breast and rooting;
    - finding the nipple area and attaching with a wide open mouth.
- *There should be no pressure on the mother or baby* regarding how soon the first feed takes place, how long a first feed lasts, how well attached the baby is or how much colostrum the baby takes. The first time of suckling at the breast should be *considered an introduction to the breast* rather than a *feed.*
- More assistance with breastfeeding can be provided at the *next feed* to help the mother learn about positioning, attachment, feeding signs and other skills she will need.

- The role of the health worker at this time is to:
  - provide time and a calm atmosphere;
  - help the mother to find a comfortable position;
  - point out positive behaviours of the baby such as alertness and rooting;
  - build the mother's confidence;
  - avoid rushing the baby to the breast or pushing the breast into the baby's mouth.

Ways to support breastfeeding after a Caesarean section.

- A Caesarean section is major abdominal surgery. The mother is likely to:
  - be frightened and stressed;
  - IV drip and urinary catheter inserted;
  - be confined to bed and restricted in movement;
  - have restricted fluid and food intake both before and after the birth, thus be deprived of energy to care for her baby;
  - receive anaesthetics and analgesia for pain, which can affect the responses of both the mother and baby;
  - have altered levels of oxytocin and prolactin, the hormones of lactation;
  - be at higher risk of infection, and bleeding;
  - be separated from her baby;
  - feel a sense of failure that her body was not able to work normally to give birth.
- The baby is also affected by a caesarean birth. The baby:
  - is a high risk of not breastfeeding or of breastfeeding for only short duration;
  - may have more breathing problems;
  - may need suction of mucus, which can hurt the baby's mouth and throat;
  - may be sedated from maternal medications;
  - is less likely to have early contact;
  - is more likely to receive supplements;
  - is more likely to have nursery care increasing the risk of cross-infection as well as restricting breastfeeding.
  - The father or other family member can give skin-to-skin contact which helps keep the baby warm and comforted while waiting for the mother to return from the operating theatre. If contact is delayed, the baby should be wrapped in a way that facilitates unwrapping for skin-to-skin contact later when the mother is responsive.
  - Babies who are premature or born with a disability also benefit from skin-to-skin contact. If a baby is not stable and needs immediate attention, skin-to-sin contact can be given when the baby is stable.
- *Assist with initiating breastfeeding*
  - When the baby and mother show signs of readiness. The mother does not need to be able to sit up, to hold her baby or meet other mobility criteria in order to breastfeed. It is the baby that is finding the breast and suckling. As long as there is a support

person with the mother and baby, the baby can go to the breast if the mother is still sleepy from the anaesthesia.

- *Help Caesarean mothers find a comfortable position for breastfeeding*
  - The I.V. drip may need adjustment to allow for positioning the baby at the breast.
  - Side-lying in bed. This position helps to avoid pain in the first hours and allows breastfeeding even if the mother must lie flat after spinal anaesthesia.
  - Sitting up with a pillow over the incision or with the baby held along the side of her body with the arm closest to the breast.
  - Laid-back with the baby place on top of the mother. Support (e.g. pillow) under her knees when sitting up.
- Provide assistance as needed until the mother can care for her baby.
- When staffs are supportive and knowledgeable, the longer stay in hospital following a Caesarean section may assist in establishing breastfeeding.

BFHI practices and women who are not breastfeeding

- All mothers should have support during labour and birth. Harmful practices should be avoided.
- Early skin-to-skin contact benefits all mothers and babies.
- Unless there is a known medical reason for not breastfeeding, (for example that the woman has been tested and found to be HIV-positive and following counselling during pregnancy has decided not to breastfeed) all mothers should be encouraged to let their baby suckle at the breast. If a mother has a strong personal desire not to breastfeed, she can say so at this time.
- The breastfeeding baby receives colostrum in the first feeds in small amounts suitable for a newborn's stomach. If the baby is not breastfeeding, replacement feeds should start with small amounts. Arrangements will need to be made to ensure there are replacement feeds available for any infants who are not breastfeeding.
- *Discuss how replacement feeds could be made and given in the first few hours after the woman has given birth.*

MOTHER-FRIENDLY CARE CRITERIA CHECKLIST

	YES	NO
MF.1 Do hospital polices require mother-friendly labour and birthing practices and procedures, including:		
Encouraging women to have companions of their choice to provide constant or continuous physical and/or emotional support during labour and birth, if desired?	☐	☐
Allow women to drink and eat light foods during labour, if desired?	☐	☐
Encouraging women to consider the use of non-drug methods of pain relief unless analgesic or anaesthetic drugs are necessary because of complications, respecting the personal preferences of the women?	☐	☐
Encouraging women to talk and move about during labour, if desired, And assume positions of their choice while giving birth, unless a restriction is specifically required for a complication and the reason is explained to the mother?	☐	☐
Care that avoids invasive procedures such as rupture of the membranes, episiotomies, acceleration or induction of labour, instrumental deliveries, caesarean section unless specifically required for a complication and the reason is explained to the mother?	☐	☐
MF.2 Has the staff received orientation or training on mother-friendly labour and birthing policies and procedures such as those described above?	☐	☐
MF.3 Are women informed during antenatal care (if provided by the facility) that women may have companions of their choice during labour and birth to provide continuous physical and/or emotional support, if they desire?	☐	☐
MF.4 Once they are in labour, are their companions made welcome and encouraged to provide the support the mothers want?	☐	☐
MF.5 Are women given advice during antenatal care (if provided by the facility) about ways to use non-drug comfort measures to deal with pain during labour and what is better for mothers and babies?	☐	☐
MF.6 Are women told that it is better for mothers and babies if medications can be avoided or minimized, unless specifically required for a complication?	☐	☐
MF.7 Are women informed during antenatal care (if provided by the facility) that they can move around during labour and assume positions of their choice while giving birth, unless a restriction is specifically required due to a complication?	☐	☐
MF.8 Are women encouraged, in practice, to walk and move around during labour, if desired, and assume whatever positions they want while giving birth, unless a restriction is specifically required due to a complication?	☐	☐

Source: Baby Friendly Hospital Initiative –Revised Updated and Expanded for Integrated Care. Section 4: Hospital Self- Appraisal and Monitoring 2009.

6. PRACTICES THAT ASSIST BREASTFEEDING *(WHO 2018 revised)*

Step 6: Supplementation

Step 6: Do not provide breastfed newborns any food or fluids other than breast milk unless medically indicated

Giving newborns any foods or fluids other than breast milk in the first few days after birth interferes with the establishment of breast-milk production. Healthy full term babies rarely have a medical need for supplements or prelacteal feeds. In addition, foods and liquids may contain harmful bacteria and carry a risk of disease. Supplementation with artificial milk significantly alters the intestinal microflora.

Dangers of supplements

- Overfill a baby's stomach, so the baby does not suckle at the breast.
- Reduce milk supply because the baby is not suckling, resulting in over fullness of the breasts.
- Cause the baby to gain insufficient weight if feeds of water, teas, or glucose water, are given instead of milk feeds.
- Reduce the protective effect of breastfeeding thus increasing the risk of diarrhoea, and other illnesses.
- Expose the baby to possible allergens and intolerances that could lead to eczema and asthma.
- Reduce the mother's confidence if a supplement is used as a means of settling a crying baby.
- Be an unnecessary and potentially damaging expense.
- A mother who is looking for a supplement may be indicating that she is having difficulties feeding and caring for her baby.
- It is better to help the mother to overcome the difficulties than to give a supplement and ignore the difficulties.
- A health worker who offers a supplement as the solution to difficulties may be indicating a lack of knowledge and skill in supporting breastfeeding.
- Frequent use of supplements may indicate an overall stressful atmosphere where a quick temporary solution is chosen in preference to solving the problem.

Even if many mothers are giving replacement feeds, this does not prevent a hospital from being designated as baby-friendly if those mothers have all been counselled, tested, and made genuine informed choices.

Step 7: Rooming-in

Step 7: Enable mothers and their infants to remain together and practice rooming-in 24 hours a day

Rationale: Rooming-in is necessary to enable mothers to practise responsive feeding, as mothers cannot learn to recognize and respond to their infants' cues for feeding if they are separated from them.

- Babies should only be separated from their mothers for justifiable medical and safety reasons.
- If preterm or sick infants need to be in a separate room to allow for adequate treatment and observation, efforts must be made for the mother to recuperate postpartum with her infant, or to have no restrictions for visiting her infant. Mothers should have adequate space to express milk adjacent to their infants.
- Mothers of term infants should have their babies stay with them since birth, without separation lasting for more than 1 hour.

Importance of rooming-in

- Babies sleep better and cry less.
- Before birth the mothers and infant have developed a sleep/awake rhythm.
- Breastfeeding is well established and the baby gains weight quickly.
- Feeding in response to a baby's cues is easier thus helping to develop a good milk supply.
- Mothers become confident in caring for their baby.
- Mothers can see that their baby is well and they are not worried that a baby crying in a nursery is their baby.
- Baby is exposed to fewer infections when next to his or her mother.
- It promotes bonding between mother and baby even if mother is not breastfeeding.

Barriers to rooming-in and possible solutions

- Concerns that mothers are tired.
  - Ward routines need to facilitate the mother's rest with quiet times
  - Review birth practices to determine if long labours, inappropriate use of anaesthesia and episiotomies, lack of nourishment and stressful conditions.
- Taking the baby to the nursery for procedures.
  - Care should take place at the mother's bedside or with the mother present.
- Belief that newborn babies need to be observed.
  - Baby can be observed next to the mother as easily as in a nursery.
  - A mother is very good at observing her own baby.
- No space on the ward
  - Babies can share their mothers' bed.
  - Helping a mother to learn to care for her baby at night is more useful

Step 8: Responsive feeding

Step 8: Support mothers to recognize and respond to their infants' cues for feeding

Responsive feeding also called on-demand or baby-led feeding. This means that puts no restriction on the frequency or length of infant's feeds, and mothers are advised to breastfeed whenever the infant is hungry or as often as the infants wants. It is important that mothers know that crying is a late cue and should learn to recognize the early signs of hunger cue for infant.

Regardless of whether mothers breastfed or not, they should be supported to recognize and respond to their infants' cues for feeding, closeness and comfort, and enabled to respond accordingly to these cues with a variety of options, during their stay at the facility providing maternity and newborn services.

Responsive breastfeeding

Responsive breastfeeding involves a mother responding to her baby's cues, as well as her own desire to feed her baby. Feeding responsively means that feeds are not just for nutrition, but also for love, comfort and reassurance between baby and mother. Breastfeeds can be long or short, according to the needs.

Breastfeeding can be used:

- to feed babies for their hunger or thirst;
- to comfort and sooth babies;
- when the mother's breasts feel full, or when she would like to sit down and rest.

Responsive bottle-feeding

Bottle feeding can also be responsive. Mothers should

- tune in to feeding cues
- gently invite the baby to take the teat
- pace the feeds and avoid forcing the baby to finish the feed and
- hold their babies close during feeds

This way of feeding can help reduce the risk of overfeeding and build the mother-baby relationship and help their baby to feel safe and secure.

Reference:

World Health Organization (2017). Guideline: protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services.

https://www.unicef.org.uk/babyfriendly/wp-content/uploads/sites/2/2017/12/Responsive-Feeding-Infosheet-Unicef-UK-Baby-Friendly-Initiative.pdf

Importance of responsive feeding

- Responsive feeding results in:
- Baby gets more immune rich colostrum and therefore more protection from illness.
- Faster development of milk supply.
- Faster weight gain.
- Less neonatal jaundice.
- Less breast engorgement.
- Mother learns to respond to her baby.
- Easy establishment of breastfeeding.
- Less crying so less temptation to supplement.
- Longer breastfeeding duration.
- Infants who are allowed to control the frequency and duration of a feed learn to recognize their own signs of hunger and satiety. This ability to self-regulate may be related to the lower rates of obesity in children who were breastfed.

Signs of satiety

- At the start of a feed, most babies have a tense body. As they get full, their body relaxes.
- Most babies let go of the breast when they have had enough, though some continue to take small gentle sucks until they are asleep.
- Explain to the mother that she should let her baby finish one breast before she offers the other breast in order to feed the rich hind milk and to increase milk supply.

Feeding patterns

- Some babies feed for a short time at frequent intervals. Other babies feed for a long time and then wait a few hours until the next feed.
- Teach mothers the typical feeding pattern for a full term healthy newborn:
  - Newborns want to breastfeed about every one to three hours in the first two to seven days, but it may be more frequent.
  - Night feeds are important to ensure adequate stimulation for milk production and milk transfer, and for fertility suppression.
  - Once lactation is established (the milk supply ‘comes in’), 8-12 breastfeeds in 24 hours is common.
- During periods of rapid growth, a baby may be hungrier than usual and feed more often for a few days to increase milk production.
- Very long feeds (more than 40 mins for most feeds), very short feeds (less than 10 min. for most feeds) or very frequent feeds (more than 12 feeds in 24 hours on most days) may indicate that the baby is not well attached at the breast.
- Sore nipples are the result of poor attachment, not the result of feeding too often or too long. ***If a baby is well attached, it does not matter if she or he feeds often or for a long time at some feeds.***

Ways to wake a sleepy baby and to settle a crying baby

If the baby seems too sleepy to feed, suggest that the mother to:

- Remove blankets and heavy clothing and let her baby's arms and legs move.
- Breastfeed with her baby in a more upright position.
- Gently massage her baby's body and talk to her baby.
- Wait half an hour and try again.
- Avoid hurting the baby by flicking or tapping on the cheek or feet.

Step 9: Feeding bottles, teats and pacifiers

Step 9 : Counsel mothers on the use and risks of feeding bottles, teats and pacifiers.

Proper guidance and counselling of mothers and other family members enables them to make informed decisions on the use or avoidance of pacifiers and/or feeding bottles and teats until the successful establishment of breastfeeding.

The physiology of suckling at the breast is different from the physiology of suckling from a feeding bottle and teat. It is possible that the use of the feeding bottle and teat could lead to breastfeeding difficulties, particularly if use is prolonged. If expressed milk or other feeds are medically indicated for term infants, feeding methods such as cups, spoons or feeding bottles and teats can be used during their stay at the facility.

However, it is important that staff do not become reliant on teats as an easy response to suckling difficulties instead of counselling mothers and enabling them to attach babies properly and suckle effectively.

- Sometimes babies develop a preference for an artificial teat or pacifier and refuse to suckle on the mother’s breast.
- If a hungry baby is given a pacifier instead of a feed, the baby takes less milk and grows less well.
- Teats, bottles, and pacifiers can carry infection and are not needed, even for the non breastfeeding infant.
- Ear infections and dental problems are more common with artificial teat or pacifier use and may be related to abnormal oral muscle function.
- In the rare situation that a supplement is needed, feeding with an open cup is recommended, as a cup is easier to clean and also ensures that the baby is held and looked at while feeding. It takes no longer than bottle-feeding.

Step 10: Care at discharge

Step 10: Coordinate discharge so that parents and their infants have timely access to ongoing support and care.

Mothers need sustained support to continue breastfeeding. Breastfeeding support is especially critical in the succeeding days and weeks after discharge, to identify and address early

breastfeeding challenges that occur.

Maternity facilities must know about and refer mothers to the variety of resources that exist in the community. Facilities need to provide appropriate referrals to ensure that mothers and babies are seen by a health worker 2–4 days after birth and again in the second week, to assess the feeding situation.

Follow-up care is especially crucial for preterm and low-birth-weight babies.

The facility should maintain contact with the groups and individuals providing the support as much as possible, and invite them to the facility where feasible.

ACCEPTABLE MEDICAL REASONS FOR SUPPLEMENTATION

A small number of health conditions of the infant or the mother may justify recommending that she does not breastfeed temporarily or permanently. These conditions, which concern very few mothers and their infants, are listed below together with some health conditions of the mother that, although serious, are not medical reasons for using breast-milk substitutes.

Whenever stopping breastfeeding is considered, the benefits of breastfeeding should be weighed against the risks posed by the presence of the specific conditions listed.

Infant Conditions

Infants who should not receive breast milk or any other milk except specialized formula

- Infants with classic galactosemia: a special galactose-free formula is needed.
- Infants with maple syrup urine disease: a special formula free of leucine, isoleucine and valine is needed.
- Infants with phenylketonuria: a special phenylalanine-free formula is needed (some breastfeeding is possible, under careful monitoring).

Infants for whom breast milk remains the best feeding option but who may need other food in addition to breast milk for a limited period

- Infants born weighing less than 1500 g (very low birth weight).
- Infants born at less than 32 weeks of gestation (very preterm).
- Newborn infants who are at risk of hypoglycaemia by virtue of impaired metabolic adaptation or increased glucose demand (such as those who are preterm, small for gestational age or who have experienced significant intrapartum hypoxic/ischaemic stress, those who are ill and those whose mothers are diabetic if their blood sugar fails to respond to optimal breastfeeding or breast-milk feeding.

Maternal Conditions

Mothers who are affected by any of the conditions mentioned below should receive treatment according to standard guidelines.

Maternal conditions that may justify permanent avoidance of breastfeeding

- HIV infection: if replacement feeding is acceptable, feasible, affordable, sustainable and safe (AFASS). Otherwise, exclusive breastfeeding for the first six months is recommended.

Maternal conditions that may justify temporary avoidance of breastfeeding

- Severe illness that prevents a mother from caring for her infant, for example sepsis.
- Herpes simplex virus type 1 (HSV-1): direct contact between lesions on the mother's breasts and the infant's mouth should be avoided until all active lesions have resolved.

- Maternal medication:
  - sedating psychotherapeutic drugs, anti-epileptic drugs and opioids and their combinations may cause side effects such as drowsiness and respiratory depression and are better avoided if a safer alternative is available;
  - radioactive iodine-131 is better avoided given that safer alternatives are available - a mother can resume breastfeeding about two months after receiving this substance;
  - excessive use of topical iodine or iodophors (e.g., povidone-iodine), especially on open wounds or mucous membranes, can result in thyroid suppression or electrolyte abnormalities in the breastfed infant and should be avoided;
  - cytotoxic chemotherapy requires that a mother stops breastfeeding during therapy.

Maternal conditions during which breastfeeding can still continue, although health problems may be of concern

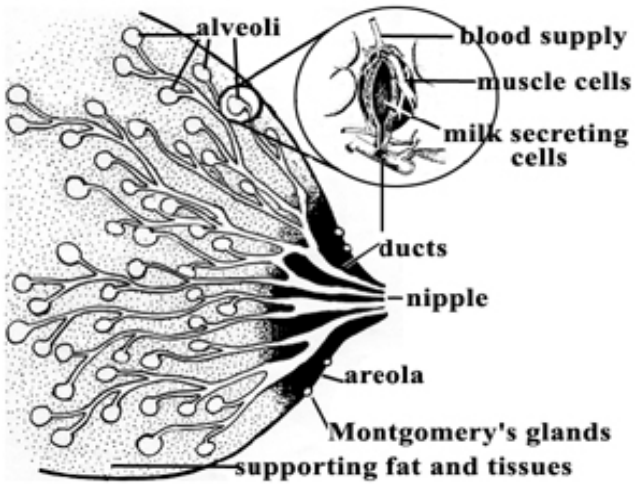
- Breast abscess: breastfeeding should continue on the unaffected breast; feeding from the affected breast can resume once treatment has started.
- Hepatitis B: infants should be given hepatitis B vaccine, within the first 48 hours or as soon as possible thereafter.
- Hepatitis C.
- Mastitis: if breastfeeding is very painful, milk must be removed by expression to prevent progression of the condition.
- Tuberculosis: mother and baby should be managed according to national tuberculosis guidelines.
- Substance use:
  - maternal use of nicotine, alcohol, ecstasy, amphetamines, cocaine and related stimulants has been demonstrated to have harmful effects on breastfed babies;
  - alcohol, opioids, benzodiazepines and cannabis can cause sedation in both the mother and the baby.

  Mothers should be encouraged not to use these substances, and given opportunities and support to abstain.

7. HOW BREASTFEEDING WORKS

- In normal breastfeeding, there are two elements necessary for getting milk from the breast to the baby:
  1. a breast that produces and releases milk, and
  2. a baby who is able to remove the milk from the breast with effective suckling.
- There are many variations in the size and shape of women's breasts. The amount of milk produced does not depend on breast size. Be sure to tell every mother that her breasts are good for breastfeeding, and avoid frightening words like "problem."

Anatomy



- ***Areola,*** a darkened area around the nipple. The baby needs to get a large amount of the areola into his or her mouth to feed well.
- ***Montgomery glands*** provide an oily fluid to keep the skin healthy. They are the source of the mother's smell, which helps the baby to find the breast and to recognize her.

Inside the breast, are:

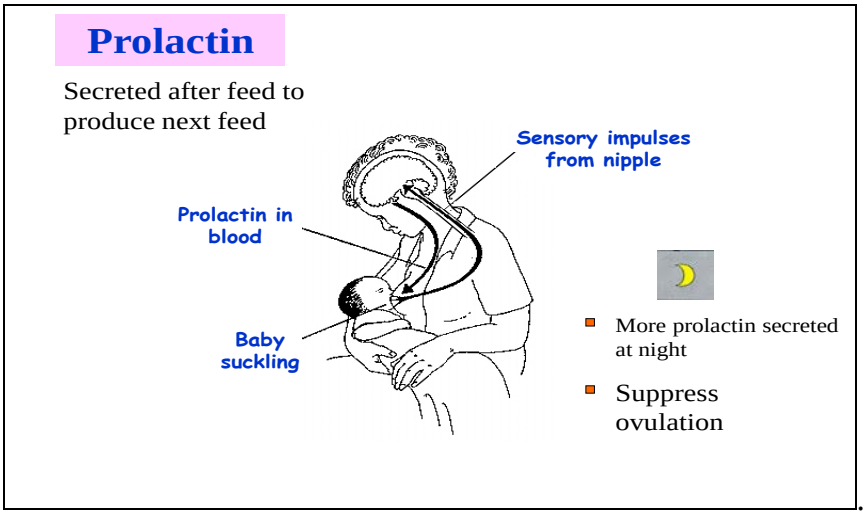
- Fat and ***supporting tissue*** that give the breast its size and shape
- ***Nerves*** which transmit messages from breast to brain and trigger the release of lactation hormones.
- ***Alveoli***: Little sacs of milk-producing cells or that produce milk. A hormone called ***prolactin*** makes these cells produce milk.Milk ***ducts*** that carry milk to the ***nipple***. The ducts join to form 7-10 larger ducts which pass through the nipple.
- Surrounding each alveolus are little muscles that contract to squeeze the milk out into the ducts. There is also a network of blood vessels around the alveolus that brings the nutrients to the cells to make milk. A hormone called **oxytocin** makes the muscle cells contract.

Breast milk production

- The first stages of milk production are under the control of hormones or chemical messengers in the blood.
- During pregnancy, hormones help the breasts to develop and grow in size. The breasts also start to make colostrum.
- After birth, the hormones of pregnancy decrease. Two hormones - prolactin and oxytocin become important to help *production* and *flow* of milk.
- Under the influence of prolactin, the breasts start to make larger quantities of milk. It usually takes 30 - 40 hours after birth before a large volume of milk is produced.
- Colostrum is already there when baby is born.

PROLACTIN

- A hormone that makes the alveoli produces milk.
- It works after a baby has taken a feed to make the milk for the next feed.
- It makes the mother feel sleepy and relaxed.
- It is high in the first 2 hours after birth. It is also high at night. Hence, breastfeeding at night allows for more prolactin secretion.
- The prolactin level is high in pregnancy, but it cannot make the cells secrete milk at that time, because the hormone progesterone blocks it. After delivery, progesterone decreases, and prolactin can start working. This causes the start of milk production 2-3 days after delivery. A mother notices that her breasts feel full, and we say that the milk has “come in”.
- Prolactin is important to *initiate*, or start, milk production after delivery; and to *sustain*, or continue milk production.



OXYTOCIN

Oxytocin reflex, milk ejection reflex, or letdown

- When a baby suckles, sensory impulses go from the nipple to the brain. The posterior part of the pituitary gland at the base of the brain secretes the hormone oxytocin. ***Oxytocin makes the muscle cells around the alveoli contract***. This makes the milk which has collected in the alveoli flow along the ducts towards the nipple. The ***larger ducts*** beneath the areola increase in size as they fill with milk. The milk flows to the outside sometimes. This is essential to enable the baby to get the milk.
- It may happen several times during a feed.
- Oxytocin is produced more quickly than prolactin. It makes the milk in the breast flow for ***THIS*** feed.
- Oxytocin can start working before a baby suckles, when a mother learns to expect a feed.
- If the oxytocin reflex does not work well, the baby may have difficulty in getting the milk. The breasts are producing milk, but it is not flowing out.
- Mothers may experience the oxytocin reflex soon after a baby is born, but some mothers do not always feel a physical sensation.
- Seeing, hearing, touching and thinking lovingly about the baby, helps the oxytocin reflex.
- ***Signs of the oxytocin reflex***:-
  - A squeezing or tingling sensation in her breasts just before she feeds her baby, or during a feed.
  - Milk flowing from her breasts when she thinks of her baby, or hears him crying.
  - Milk dripping from her other breast, when her baby is suckling.
  - Milk flowing from her breasts in fine streams, if her baby comes off the breast during a feed.
  - Pain from uterine contractions, sometimes with a gush of blood, during feeds in the first week.
  - Slow deep sucks and swallowing by the baby, which show that breastmilk is flowing into his mouth.

The mother can assist the oxytocin to work by:

- Feeling pleased about her baby and confident that her milk is best.
- Relaxing and getting comfortable for feeds.
- Expressing a little milk and gently stimulating the nipple.
- Keeping her baby near so she can see, smell, touch and respond to her baby.
- If necessary, asking someone to massage her upper back, especially along the sides of the backbone.

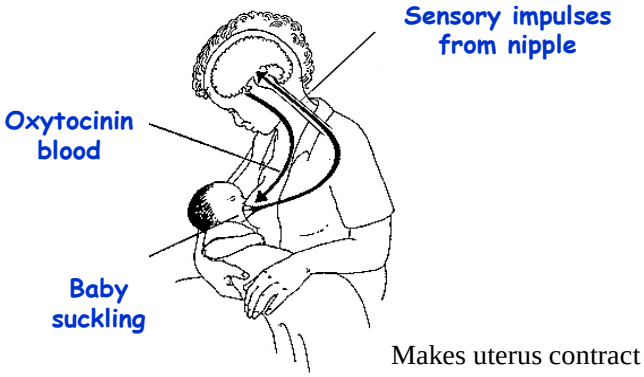
Oxytocin release can be inhibited temporarily by:

- Extreme pain, such as a fissured nipple or stitches from a caesarean birth or episiotomy.
- Stress from any cause, including doubts, embarrassment, or anxiety.
- Nicotine and alcohol.

- It explains these two **key points** about caring for mothers and babies:
  - A mother needs to have her baby near her all the time, so that she can see and touch and respond to him. This helps her body to prepare for a breastfeed, and it helps her breastmilk to flow. If a mother is separated from her baby between feeds, her oxytocin reflex may not work so easily.
  - You need to remember a mother's feelings whenever you talk to her. It is important that you try to make her feel good and build her confidence, to help her breastmilk to flow well. You must not say anything which may make her worry about or doubt her breastmilk supply.

Oxytocin Reflex

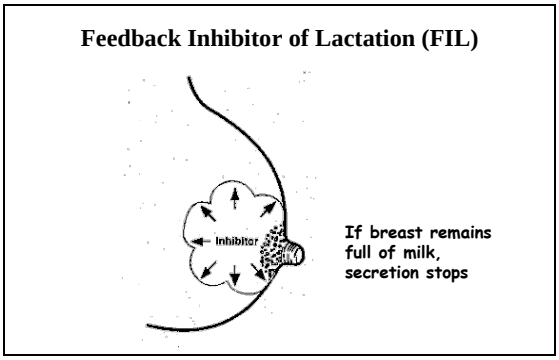
Works BEFORE or DURING feed to make milk flow



Feedback Inhibitor of Lactation (FIL)

- It is a substance in breastmilk which can reduce or *inhibit* milk production.
- If a lot of milk is left in a breast, the inhibitor stops the cells from secreting any more. This helps to protect the breast from the harmful effects of being too full.
- If milk is not removed and the breast is full, this inhibitor decreases production of milk. If milk is removed from the breast, then the inhibitor level falls and milk production increases. Thus, the amount of milk that is produced depends on how much is removed. Therefore, to ensure plentiful milk production, make sure that milk is removed from the breast efficiently.

- To prevent the FIL from collecting and reducing milk production:
  - make sure that the baby is well attached;
  - encourage frequent breastfeeds;
  - allow baby to feed for as long as she or he wants at each breast;
  - let the baby finish the first breast before offering the second breast;
  - if baby does not suckle, express the milk so that milk production continues.



The baby's role in milk transfer

- The baby's suckling controls the prolactin production, the oxytocin reflex and the removal of the inhibitor within the breast.
- For a mother to produce the milk that her baby needs, her baby must suckle often and suckle in the right way. A baby cannot get the milk by sucking only on the nipple.
- For a mother to produce enough milk, her baby must suckle often enough and the milk must be removed. Her breasts will respond and produce as much milk as the baby takes.

MORE EFFECTIVE SUCKLING MAKES MORE MILK.

GOOD AND POOR ATTACHMENT

The next two pictures show what happens inside a baby's mouth, when baby is breastfeeding.

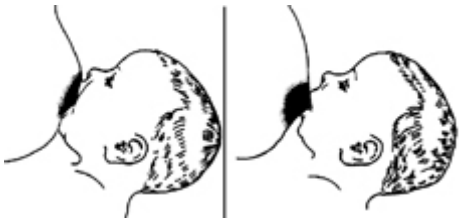
Notice these points:

- He has taken much of the areola and the underlying tissues into his mouth.
- The larger milk ducts are included in these underlying tissues.
- The baby has stretched the breast tissue out to form a long `teat'.
- The nipple forms only about one-third of the `teat'.
- The baby is suckling from the breast, not the nipple.

His tongue is forward, over his lower gums, and beneath the milk ducts. His tongue is in fact cupped round the `teat' of breast tissue.

We say that he is ***well attached*** to the breast.

- He uses suction to pull out the breast tissue to form a teat, and to hold the breast tissue in his mouth.
- The oxytocin reflexes makes breastmilk flow and fill the ducts beneath the areola.
- The action of his tongue presses the milk from the ducts into his mouth.



- ***Good*** attachment
  - The baby's **mouth** is wide open.
  - The **lower lip** is turned out.
  - The **chin** is touching the breast (or nearly so).
  - More **areola** is visible above the baby's mouth than below.
- ***Poor*** attachment
  - The nipple and areola are not stretched out to form a teat.
  - The milk ducts are not inside the baby's mouth.
  - The baby's tongue is back inside the mouth, and cannot press out the milk.

If you see *any one* of these signs, then the baby is *poorly attached* and cannot suckle effectively. If the mother feels discomfort, that is also a sign of poor attachment.

Signs that a baby is suckling effectively

- If a baby is well attached, she or he is probably suckling well and getting breast milk during the feed. Signs that a baby is getting breast milk easily are:
  - The baby takes **slow, deep sucks,** sometimes pausing for a short time.
  - You can see or hear the baby **swallowing**.
  - The baby's **cheeks** are full and not drawn inward during a feed.
  - Baby is relaxed and calm during feeding
  - Breastfeeding doesn't hurt.
  - The baby finishes the feed and **releases the breast by himself or herself** and looks contented. These signs tell you that a baby is "drinking in" the milk, and this is effective suckling.

Signs that a baby is NOT suckling effectively

- Baby makes only rapid sucks;
- Baby makes smacking or clicking sounds;
- Baby has cheeks drawn in;

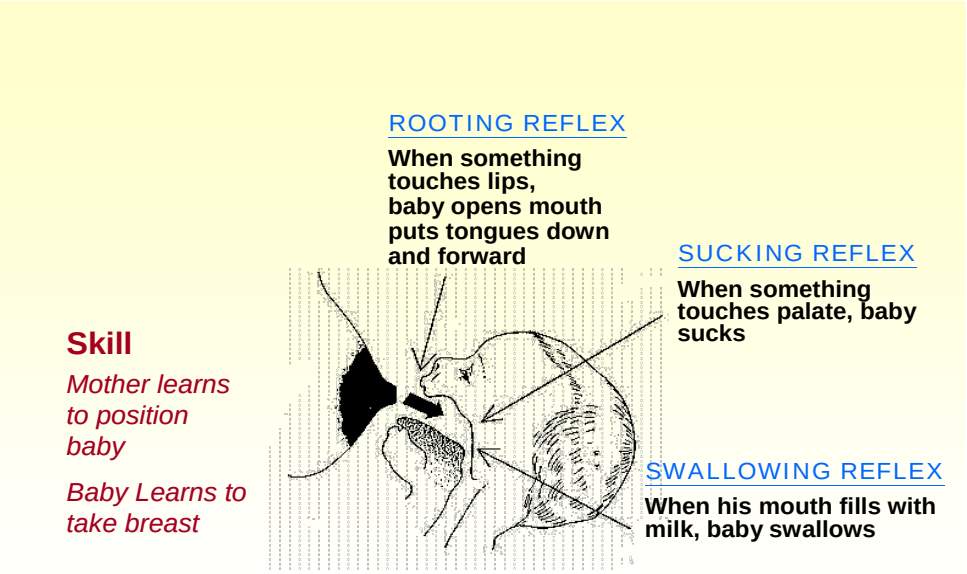
- Baby fusses or appears unsettled at the breast, and comes on and off the breast;
- Baby feeds very frequently - more often than every hour or so EVERY day;
- Baby feeds for a very long time - for more than an hour at EVERY feed, unless low birth weight;
- Baby is not contented at the end of a feed.

- If a baby is poorly attached, he does not remove breastmilk effectively. The way that he suckles is called ineffective suckling. These can be the results:
  - The breasts may become engorged.
  - The baby may be unsatisfied, because the breastmilk comes slowly.
  - He may cry a lot, and want to feed often, or for a very long time at each feed.
  - The baby may not get enough breastmilk.
  - He may be so frustrated that he refuses to feed altogether.
  - He may fail to gain weight.
  - If the oxytocin reflex works well, he may get enough breastmilk at least for a few weeks, by feeding very often. But it can exhaust his mother.
  - The breasts may make less milk, because the milk is not removed.
- Poor attachment can make it SEEM as though a mother is not producing enough milk. In other words she has an *apparent* poor milk supply.
- Teach mothers how they can keep milk production plentiful:
  - Help the baby to breastfed soon after birth.
  - Make sure the baby is well attached at the breast and do not give any artificial dummies or teats that would confuse his or her suckling and reduce stimulation of the breast.
  - Breastfeed exclusively.
  - Feed the baby as frequently as he or she wants, usually every 1-3 hours, for as long as he or she wants at a feed.
  - Feed the baby at night, when prolactin release in response to suckling is high.

Causes of poor attachment

- Use of a feeding bottle.
- Inexperienced mother.
- Functional difficulty.
  - If a baby is very small or weak;
  - If a mother's nipples and the underlying tissue are *poorly protractile* (difficult to stretch out to form a `teat' ');
  - If her breasts are engorged;
  - If there has been a delay in starting to breastfeed.
- Lack of skilled support.

Reflexes in the baby



Notice in the drawing that the baby is not coming straight towards the breast. He is coming up to it from below the nipple. This helps him to attach well because:

- The nipple is aiming towards the baby's palate, so it can stimulate his sucking reflex.
- The baby's lower lip is aiming well below the nipple so he can get his tongue under the larger ducts.

8. ASSESSING AND OBSERVING A BREASTFEED

Assessing a breastfeed can:

- Help you to identify and praise what the mother and baby are doing well.
- Give you information about current difficulties with breastfeeding.
- Highlight practices that may result in problems later if not changed.

Assessing a breastfeed involves watching what the mother and baby are doing and listening to what the mother tells you. It can help to put the mother at ease if you explain that you would like to watch the *baby* feeding, rather than saying you are watching what the *mother* is doing.

Area to be assessed	Points to be noted
The mother in general	• Age, general appearance, • She looks healthy or ill, happy or sad, comfortable or tense? • Signs of bonding?
The baby in general	• General health, alert or sleepy, • Calm or crying, • Any conditions that could affect feeding such as a blocked nose or cleft palate • The baby's respond – looking for the breast when hungry, close to mother or pulling away?
Her breasts	• How do her breasts and nipples look – healthy or red, swollen or sore? • Pain or act as if she is afraid to feed the baby? • How does she hold her breast for a feed? • Are her fingers in the way of the baby taking a large mouthful of the breast?
Position of the baby	• Head and body (spine) in line, • Body held close, body supported, facing the breast, and approaching nose to nipple? • Or is the baby's body twisted, not close, unsupported, and chin to nipple?

Area to be assessed	Points to be noted
Signs of attachment	• More areola above the baby's top lip than below? • Mouth open wide? • Lower lip turned out? and • Chin touching breast?
Suckling	• Slow deep sucks? • Gentle swallowing or clicks and gulps, • Cheeks are rounded and not drawn inward during a feed. • How the feed finishes - does baby releases the breast by himself or herself • Look contented?
How mother feels	• Any signs of oxytocin reflex, e.g. leaking or tingling? • Is there any discomfort or pain?

Signs of good attachment	***Signs of poor attachment***
	
• Chin touching breast (or nearly so) • Mouth open wide • Lower lip turns outward • Areola: more visible above than below the mouth	• Chin away from breast • Mouth not open wide • Lower lip pointing outward, or turning inward • Areola: more visible below than above , or equal amounts

BREASTFEED OBSERVATION JOB AID

Mother's name _____ Date _____

Baby's name _____ Baby's age _____

Signs that breastfeeding is going well:	Signs of possible difficulty:
GENERAL	
Mother:	*Mother:*
☐ Mother looks healthy	☐ Mother looks ill or depressed
☐ Mother relaxed and comfortable	☐ Mother looks tense and uncomfortable
☐ Signs of bonding between mother and baby	☐ No mother/baby eye contact
Baby:	*Baby:*
☐ Baby looks healthy	☐ Baby looks sleepy or ill
☐ Baby calm and relaxed	☐ Baby is restless or crying
☐ Baby reaches or roots for breast if hungry	☐ Baby does not reach or root
BREASTS	
☐ Breasts look healthy	☐ Breasts look red, swollen, or sore
☐ Nipples stand out, protractile	☐ Nipples inverted, large or long
☐ No pain or discomfort	☐ Breast or nipple painful
☐ Breast well supported with fingers away from nipple	☐ Breast held with fingers on areola
BABY'S POSITION	
☐ Baby's head and body in line	☐ Baby's neck and head twisted to feed
☐ Baby held close to mother's body	☐ Baby not held close
☐ Baby's whole body supported	☐ Baby supported by head and neck only
☐ Baby approaches breast, nose to nipple	☐ Baby approaches breast, lower lip/chin to nipple
BABY'S ATTACHMENT	
☐ More areola seen above baby's top lip	☐ More areola seen below bottom lip
☐ Baby's mouth open wide	☐ Baby's mouth not open wide
☐ Lower lip turned outwards	☐ Lips pointing forward or turned in
☐ Baby's chin touches breast	☐ Baby's chin not touching breast
SUCKLING	
☐ Slow, deep sucks with pauses	☐ Rapid shallow sucks
☐ Cheeks round when suckling	☐ Cheeks pulled in when suckling
☐ Baby releases breast when finished	☐ Mother takes baby off the breast
☐ Mother notices signs of oxytocin reflex	☐ No signs of oxytocin reflex noticed

9. POSITIONING A BABY AT THE BREAST

Introduction

Positioning means how the mother holds her baby to help the baby to attach well to the breast. It is crucial to help a mother to position her baby at the breast, so that he is well attached and can suckle effectively. It does not help the mother's confidence if the health worker can position the baby but she is not able to herself.

There are three main kinds of mother whom you may need to help:

- New mothers
- Mothers who bottle fed previously
- Mothers who have some difficulty with breastfeeding.

Mother's position

There are many positions that a mother may use – for example, sitting on the floor or the ground, or sitting on a chair, lying down, standing up, or walking. If the mother is sitting or lying down, she should be:

- Comfortable with back supported.
- Feet supported if sitting so that the legs are not hanging loose or uncomfortable.
- Breast supported, if needed.

Baby's position

The baby also can be in different positions, such as along the mother's arm, under the mother's arm, or along her side. Whatever position is used, the same four key points are used to help the baby be comfortable.

The baby's body needs to be:

- ***In line*** with ear, shoulder and hip in a straight line**,** so that the neck is neither twisted nor bent forward or far back.
- ***Close*** to the mother's body so the baby is brought to the breast rather than the breast taken to the baby.
- ***Supported*** at the head, shoulders and if newborn, the whole body supported.
- ***Facing*** the breast with the baby's nose to the nipple as she or he comes to the breast.

Always observe a mother breastfeeding before your help her.

- Take time to see what she does, so that you can understand her situation clearly.
- Do not rush to make her do something different.

Give mother help only if she has difficulty.

Some mothers and babies breastfeed satisfactorily in positions would make difficulties for others. This is especially true with babies more than about 2 months old. There is no point trying to change a baby's position if he is getting breastmilk effectively, and his mother is comfortable.

Let the mother do as much as possible herself. (Hand-off Technique)

Be careful not to 'take over' from her. Explain what you want her to do. If possible, demonstrate on your own body to show her what you mean.

Make sure that she understands what you do so that she can do it herself.

Your aim is to help her to position her own baby. It does not help if you can get a baby to attach effectively, if his mother cannot.

How to help a mother who is sitting

- *Greet* the mother, introduce yourself, and ask her name and her baby's name.
- *Ask her how she is* and ask one or two open questions about how breastfeeding is going.
- *Ask her if you may see how her baby breastfeeds,* and ask her to put her baby to her breast in the usual way.
- *Sit down yourself,* so that you also are comfortable and relaxed, and in a convenient position to help.
- *Assess* a breastfeed

  Ask if you see how her baby breastfeeds, and ask her to put him to her breast in the usual way. Observe the breastfeed for a few minutes.
- When you are observing the breastfeed, go through the Breastfeed Observation Aid.

  Observe:
  - the mother and baby in general;
  - the mother's breasts;
  - baby's position and attachment during the feed;
  - the baby's suckling.
- If you decide that the mother needs help to improve her baby's attachment:

  Say something encouraging, like:

  "He really wants your breastmilk, doesn't he?"

  Then explain what might help and ask if she would like you to show her.

  For example, say something like:

  "Breastfeeding might be more comfortable for you if (baby's name) took a large mouthful of breast when he suckles. Would you like me to show you how?"
- Make sure that she is sitting in a relaxed position.(flat lap & back supported)

  Bring the baby level with the breast, using a rolled up towel or clothes, cushion or pillow, if needed.

- Explain to the mother how to hold her baby, Show her what to do if necessary.
  Make these **four key points** clear:
    - The baby's head and body should be in a line.
    - Mother should hold baby's body close to hers.
    - Support the whole body, and not just the head and shoulders.
    - Bring baby towards the breast, approaching it with the baby's nose opposite the nipple.
- Show her how to *support her breast* with her hand to offer it to her baby:
  - Resting the fingers on the chest wall under the breast, so that the first finger forms a support at the base of the breast.
  - Using the thumb to press the top of the breast slightly. This can improve the shape of the breast so that it is easier for the baby to attach well, however, this pressure should be light.
  - Making sure that the fingers are not near the nipple.
- Then help the baby to come to the breast and attach by:
  - Touching the baby's upper lips with the nipple, so that the baby opens his or her mouth.
  - Waiting until the baby's mouth is opening wide, and then moving the baby onto the breast. Baby's mouth needs to be wide open to take a large mouthful of breast.
  - Aiming the lower lip well below the nipple, so that his chin and lower lip will touch the breast first before the upper lip.
  - Bringing the baby to the breast. The mother should not move herself or her breast to her baby.
- Notice how the mother responds.
- Look for all the signs of good attachment. If not good, try again.
- When mother is positioning her baby for breastfeeding, the health care worker should NOT tickle baby's chin and cheek to "hurry" baby's suckling.

How to help a mother who is lying down

- Help the mother to lie down in a comfortable, relaxed position.
- Show her how to hold her baby.
- Exactly the same four key points are important, as for a mother who is sitting.
- If she does not support her breast, she can hold her baby with her upper arm.
  It may be helpful to put a pillow or a roll of cloth at the baby's back to keep him in position.

In any position, the important thing is for the baby to take enough of the breast into his mouth so that he can suckle effectively.

For example:

- a mother can breastfeed standing up;
- if a baby has difficulty attaching to the breast, it sometimes helps if the mother lies on her front, propped on her elbows, with the baby underneath her;
- if she has very large nipples, it may help to lean over the baby and offer the nipple to him from that position.
- if she has an oversupply of milk, (and the baby gets too much milk too fast), lying on her back with the baby on top of her sometimes helps.

Breastfeeding Positions:

	**Cradle position** • The baby's lower arm is tucked around the mother's side. Not between the baby's chest and the mother. • Take care that the baby's head is not too far into the crook of the mother's arm that the breast is pulled to one side making it difficult to stay attached.
	**Cross arm position** • Useful for small or ill baby. Mother has good control of baby's head and body, so may be useful when learning to breastfeed. • Take care that the baby's head is not held too tightly preventing movement.
	**Lying down on side position** • Make sure mother's back and thigh are well support. • Baby's nose also close to mother's nipple when positioning. NO pressure on back of head • The baby's nose is on a level with mother's nipple, and that baby does not need to bend his or her neck to reach the breast(baby close to mother)

	**Underarm position** • Useful for small babies, newborns, twins • To help to drain all areas of the breast. • Take care that baby is not bending his or her neck forcing the chin down to the chest.
Adapted from Breastfeeding Counselling: a training course	
	**Laid-Back (Biological Nurturing)** • Lean back on a coach /bed with head & shoulder well supported • Baby's whole front touch mother's whole front • Baby on the chest, gravity help him in position with his body molded to mothers • Baby's cheek rest near mother's bare chest
Adapted from 2010 La Leche League International, the Womanly Art of Breastfeeding, Chapter 20	

Steps in bring baby to breast

Attachment:

1. Support the baby's head and shoulder in such a way that he is free to extend slightly as brought to the breast --- so his chin and lower jaw reach the breast first.
2. Move the baby against the breast (NOT THE BREAST TO BABY), so that his mouth touches the nipple --- in order to elicit the gape.
3. At the height of the gape, move baby quickly to the breast, aiming his bottom lip as far away as possible from the base of the nipple.

HOW TO HELP A MOTHER TO POSITION HER BABY

(use a doll and breast model to demonstrate)

- Greet the mother and ask how breastfeeding is going.
- Assess a breastfeed.
- Explain what might help, and ask if she would like you to show her.
- Make sure that she is comfortable and relaxed.
- Sit down yourself in a comfortable, convenient position.
- Explain how to hold her baby, and show her if necessary.
  The **four key points** are:
  - with his head and body straight'
  - with his body close to her body
  - supporting his whole body
  - approaching her breast with his nose opposite her nipple
- Show her how to support her breast:
  - with her fingers against her chest wall below her breast;
  - with her first finger supporting the breast;
  - with her thumb above
  - Her fingers should not be too near the nipple.
- Explain or show her how to help the baby to attach:
  - touch her baby's upper lips with her nipple;
  - wait until her baby's mouth is opening wide;
  - move her baby quickly onto her breast, aiming his lower lip below the nipple.
- Notice how she responds and ask her how her baby's suckling feels.
- Look for signs of good attachment.
  If the attachment is not good, try again.
- Show her how to hold her baby in other position which may be easier or more comfortable.

Sitting arrangement

10. BREAST EXAMINATION

- It is not necessary to examine every woman's breast routinely, antenatally or postnatally. Examine only if you suspect a breast problem or the woman has pain or difficulties or if she is worried about her breast.
- Always observe the condition of the mother's breasts when you observe a breastfeed. In most cases this is all that you need to do.
- If breast examination is required, do it gently and modestly. Look at or inspect the breast first. Feel or palpate the breasts only if you suspect a breast problem

What can we learn by inspecting the breasts?

- Size and shape of the breasts, nipple and areola
- If the breast look soft, full or engorged
- Any redness, or fissures around the base or across the tip of the nipple
- Whether milk is dripping from the breasts
- Any scars from breast surgery

What can we learn by palpating the breasts?

- If the breast is full, hard or engorged
- If there are any lumps, hard areas, hot patches, or tenderness
- If the nipple is protractile

Steps to examine the breasts

- Wait until baby has finished breastfeeding
- Explain what you want to do. Ask mother's permission
- Inspect the breast without touching
- Ask if she has noticed anything wrong
- If it is necessary to palpate, ask her permission
- Palpate gently all parts of the breast
- Thanks the mother and talk to her your findings

Breast palpation

- Hold hand flat with fingers together and straight
- Feel gently all over the breast with the flat of hand
- Watch mother's face as you palpate
- Do **not** pinch and poke the breast

Talk to the mother about the findings of breast examination

- Use confidence and support skills
- Do not say anything critical
- Do not tell her things that will worry her when it is not necessary to do so

If her breasts are perfectly alright

- Praise her, e.g. your breasts are very good for breastfeeding

If there is something that worries the mother, but should not cause any difficulty with breastfeeding e.g. very small breast or areola

- Accept her worries
- Give praise
- Give relevant information

If you find something that could cause difficulties with breastfeeding e.g. inverted nipples

- If she is not worried:
  - Praise her for wanting breastfeed
  - Better to say nothing about her nipples
  - Wait and see how breastfeeding goes, and be ready to help her if she does have difficulties
- If she is worried
  - Give her accurate and relevant information
  - Be positive, and encourage her to believe that breastfeeding is possible
  - Suggest what she can do to help baby to breastfeed
  - Explain that you or your colleagues will help her

11. BREAST and NIPPLE CONDITIONS

1. NIPPLE SIZE AND SHAPE

- There are many different size and shape of nipple. Babies can breastfeed from almost all of them,
- Nipples can change shape during pregnancy and become more protractile. There is no need to 'diagnose' or treat a nipple that looks flat or inverted during pregnancy.

Flat / retracted nipples

- Flat nipples
  - Nipples become erect or protrude when stimulated or compressed
  - no treatment is required in pregnancy

- Retracted nipples
  - due to adhesion of the tiny bands of connective tissue that attach to the inner breast tissue
  - nipples retracted rather than protrude when the areola is compressed

Management

- Antenatal treatment is probably not helpful
- Explain that a baby suckles from the breast but not the nipple
- Encourage her to give plenty of skin-to-skin contact, and let her baby to explore her breasts
- Help her to position the baby and try different positions to hold the baby
- Help her to make her nipple stand out more before a feed, e.g. using a disposable syringe
- If a baby cannot suckle effectively in the first week or two, help mother to express her milk and feed it to her baby with a cup.

Long nipples

May cause difficulties because the baby is likely to suck only the nipple, and may not take the breast with the large ducts into his mouth.

Management

- To be ready to help mother with her breastfeeding technique. Help her to get her baby to take more of her breast into his mouth – not just her nipple.
- If the baby gags repeatedly because of the long nipple, ask the mother to express the milk and cup feed the baby for some days. Babies grow quickly and their mouths soon become bigger.

Large nipples

It may be difficult for a baby to get a very large nipple into his mouth

Management

- Help the mother to hold her baby in a good position and touch his mouth so that he opens it, he may open wide enough to attach to the breast.
- Show the mother how to lean over her baby, on a bed or table, so that her breast falls towards the baby's mouth.
- Suggest mother to give baby plenty of skin-to-skin contact.
- Teach mother how to express her milk and feed her baby with a cup until he has grown and his mouth is big enough to suckle more easily.

2. SORE AND CRACKED NIPPLES

Causes

- Improper latching on of the baby
- Secondary to engorgement: nipples become flat & taut and baby grasps only the tip of the nipple in his mouth
- Taking baby off the breast without first breaking the suction
- Baby with tongue tie
- Candida infection
- Improper use of breast pump: cause excessive stretching of nipple

Prevention

- Latching the baby on properly starts from the first day
- Breaking the suction by gently insert a finger in the corner of the baby's mouth or pull down the baby's chin
- Prevent engorgement by adequate emptying of the breasts

Management

- Look for and treat the cause
  - Check attachment and examine the breasts for any engorgement.
  - Check for baby's mouth for tongue tie and Candida.
- Build the mother's confidence
- Help the mother to improve attachment and positioning.
- Show the mother how to feed baby in different feeding positions.
- Express enough milk to soften the areola before feeding if it is due to engorgement.
- Suggest comfort measures while the nipples are healing
  - Apply a warm, wet cloth to the breast before feed to stimulate letdown.
  - Begin each breastfeed on the least sore breast.
  - Apply expressed breast milk to the nipples after a breastfeed to lubricate and soothe the nipple tissue.

What does NOT help sore nipples?

- Wash her breasts more than once a day
- Wash with soap, or rub hard.
- Use medicated lotions and ointments because these can irritate the skin.
- Stop breastfeeding to rest nipple.
  The mother may become engorge, and makes it hard for the baby to attach to the breast. The milk supply will decrease if milk is not removed from the breast
- Limit the frequency or length of breastfeeds (limiting feeds will not help if the basic problem is not addressed).
- Use a nipple shield as a routine measure.
  A nipple shield may cause more problems. Some shields result in less stimulation of the breast and reduce the amount of milk transferred, which may lead to reduced production. It can affect the way the baby sucks resulting in more soreness when it is stopped. It also presents a health risk to the baby from the possibility of contamination.

3. BREAST ENGORGEMENT

- Breast fullness from extra blood, lymph fluid & milk comes in a few days after delivery is normal
- engorgement means that the breasts are overfull, partly with milk, an partly with increased tissue fluid and blood, which interferes with the flow of milk

Full breasts	**Engorged breasts**
Hot	Painful
Heavy	Edematous
Hard	Shiny, tight especially nipple
Milk flowing	Milk **not** flowing
No fever	May be fever for 24 hours

- breasts are hard, tender, warm & red, throbbing pain, flattening of the nipple, mastitis & damaging milk-producing cells

Causes

- Delay starting to breastfeed
- Poor attachment to breast
- Infrequent removal of milk
- Restriction the length of feeds
- Plenty of milk

Prevention

- Start breastfeeding soon after delivery
- Ensure good attachment
- Encourage unrestricted breastfeeding

Management

- Reassurance & support
- If baby able to suckle: feed frequently, help with positioning
- If baby not able to suckle: express milk by hand or with pump
- Before feed : to stimulate oxytocin reflex
- After feed : to reduce edema by applying cold compresses
- For non-nursing mother, give reassurance, analgesic, wear well fitted and supportive bra, avoid any nipple stimulation, then engorgement can be suppressed physiologically (some studies report that applying cabbage leaves onto the engorged breast is useful)

4. BLOCKED DUCT AND MASTITIS

Symptoms of block duct and mastitis

Blocked Duct → milk stasis → non-infective mastitis → Infective Mastitis

Lump,		Hard swelling
Tender,	⟶	Severe pain
Localized redness	PROGRESS TO	Red area
No fever	⟶	Fever
Feels well		Feels ill

Causes

- Infrequent or short breastfeeds, for example:
  - When the mother is very busy
  - When the baby starts feeding less often
  - If the mother is stressed, or overworked
- Inefficient removal of milk from part or all of the breast, for example:
  - Baby is poorly attached
  - Pressure from tight clothes, usually a bra, especially she wears it at night
  - Lying on the breast which can block one of the ducts
  - Pressure from mother's fingers, which can block milk flow during a breastfeed
- Nipple fissure (cracked nipple) to allow entry of bacteria

Management

A. Immediate management

The most important part of treatment is to improve the removal of milk from the affected part of the breast.

- Look for cause and correct.
- Breastfeeds frequently. The best way is to rest with her baby, so that she can respond to him and feed him whenever he is willing.
- Gently massage the breast while baby is sucking. Show mother how to massage gently over the blocked area, right down to the nipple.
- Apply warm compresses to breast between feeds.
- Suggest: start feed on unaffected side, using vary position
- Treat symptoms of pain and fever.

B. Subsequent Management

If any severe symptoms or fissure, or no improvement after 24hours, treat in addition with:

- Antibiotics
- Complete rest
- Analgesics

5. CANDIDA INFECTION (THRUSH)

Candida infections often follow the use of antibiotics to treat mastitis, or other infections

Signs and Symptoms

- Sore nipples persist even when baby's attachment is good
- Mothers often describe burning or stinging and sometimes the pain shoots deep into the breast.
- The pain continues after the end of a feed, and may be worse between feeds than during them.
- The skin may look red, shiny and flaky. The nipple and areola may lose some of their pigmentation. Sometimes, the nipple looks normal.
- Baby may have white patches (thrush) inside his cheeks, or may have a rash on his bottom.

Treatment

- Treat both mother and baby with gentian violet, or nystatin. If treatment is not effective, consider use of fluconazole which is given orally.
- Advise the mother to stop using pacifiers. Help her to stop using teats, and nipple shields.

EXERCISE: BREAST CONDITION

Case 1:

Mrs. WONG says that both her breasts are swollen and painful!

She put her baby to her breast for the first time on the 3rd day, when her milk "came in". This is the 6th day. Her baby is sucking, but now it rather painful, so she does not let him suck very long. Her milk is not dripping out as fast as it did before.

1. What is the diagnosis?

2. What may have caused the condition?

3. How can you help Mrs. Wong?

Case 2:

Mrs. CHAN has had a painful swelling in her left breast for 3 days. The skin of a large part of the breast looks red, hard and extremely tender!

She has fever and feels too ill to go to work today. She is a teacher in the local primary school. Her baby sleeps with her and breastfeeds at night. By day, she expresses milk to leave for her baby. She has no difficulty in expressing milk but she is very busy and it is difficult for her to find time to express milk or to breastfeed her baby during the day.

1. What is the diagnosis?

2. Why do you think that Mrs. CHAN has this condition?

3. What management and treatment would be for Mrs. CHAN?

4. What could you suggest to prevent the same problem occurring again?

Case 3:

Mrs. TAM says that her right breast has been painful since yesterday, and she can feel a lump in it, which is tender!

She has no fever and feels well. She has started to wear an old bra which is tight, because she wants to prevent her breasts from sagging. Her baby is 10 weeks old and now sometimes sleeps for 6 – 7 hours at night without feeding. By observation: close holding, baby's chin touching at breast, mouth is open wide and takes slow, deep suckling.

1. What is diagnosis?

2. What may be the cause?

3. What 3 suggestions would you give Mrs. TAM?

Case 4:

Mrs. NG's baby is 3 months old. She says that her nipples are sore.

Nipples have been sore on and off since an attack of mastitis several weeks ago. The mastitis cleared up after a course of antibiotics. This new ***pain feels like needles going deep into her breast*** *when her baby suckles. The pain continues between feeds, and her nipples are sometimes itchy.*

Breastfeeding observation:

- Can see areola above baby's mouth but not below.
- Baby's mouth is wide open, his lower lip is turned back, and chin is close to the breast.
- Baby takes some slow deep sucks and swallowing can be seen.

1. What might be the cause of Mrs. NG's sore nipples?

2. What treatment would be offered to Mrs. NG and her baby?

3. How you would you build Mrs. NG's confidence?

12. EXPRESSING BREASTMILK

Introduction

There are many situations in which expressing breastmilk are useful and important to enable a mother to initiate or continue breastfeeding.

Expressing milk is useful to:

- Relieve engorgement
- Relieve blocked duct or milk stasis
- Feed a baby while he learns to suckle from an inverted nipple
- Feed a baby who has difficulty in coordinating suckling
- Feed a baby who 'refuses', while he learns to enjoy breastfeeding
- Feed a low-birth-weight baby who cannot breastfeed
- Feed a sick baby, who cannot suckle enough
- Keep up the supply of breast milk when a mother or baby is ill
- Leave breast milk for a baby when his mother goes out or to work
- Prevent leaking when a mother is away from her baby
- Help a baby to attach to a full breast
- Express breast milk directly into a baby's mouth
- Prevent the nipple and areola from becoming dry and sore

It is a good idea for all mothers to learn how to express their breastmilk, so that they know what to do if the need arises.

The most useful way for a mother to express milk is by hand. It needs no appliance, so as she can do it anywhere and at any time. With a good technique, it can be very efficient. It is easy to hand express when the breasts are soft. It is more difficult when the breasts are engorged or tender. So teach a mother how to hand express on the first or second day after delivery.

Many mothers are able to express plenty of breast milk using rather strange techniques. If a mother's technique works for her, let her do it that way. But if a mother is having difficulty expressing enough milk, teach her a more effective technique.

Stimulating the oxytocin reflex

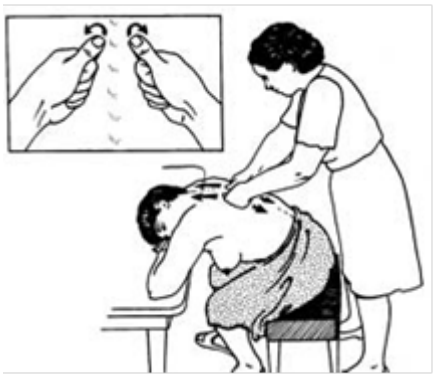
The oxytocin reflex may not work as well when a mother expresses as it does when a baby suckles. A mother needs to know how to help her oxytocin reflex, or she may find it difficult to express her milk.

How to stimulate the oxytocin reflex

Help the mother psychologically:

- Build her confidence
- Try to reduce any sources of pain or anxiety
- Help her to have good thoughts and feelings about the baby

Help the mother practically. Help or advise her to:

- Sit quietly and privately or with a supportive friend.
  Some mothers can express easily in a group of other mothers who are also expressing for their babies.
- Hold her baby with skin-to-skin contact if possible.
  She can hold her baby on her lap while she expresses. If this is not possible, she can look at the baby. If this is not possible, sometimes even looking at a photograph of her baby helps.
- Take a warm soothing drink. The drink should not be coffee.
- Warm her breasts. For example, she can apply a warm compress, or warm water, or have a warm shower.
- Stimulate her nipples. She can gently pull or roll her nipples with her fingers.
- Massage or stroke the breasts lightly.
  - Some women find that it helps if they stroke the nipple and areola gently with finger tips or with a comb.
  - Some women find that it helps to gently roll their closed fist over the breast towards the nipple.
- Ask a helper to rub her back.
  - The mother sits down, leans forward, folds her arms on a table in front of her, and rests her head on her arms. Her breasts hang loose, unclothed.
  - The helper rubs down both sides of the mother's spine. She uses her closed fist with her thumbs pointing forwards. She presses firmly making small circular movements with her thumbs. She works down both sides of the spine at the same time, from the neck to the shoulder blades, for two or three minutes.
  - 

How often a mother should express milk

- To establish lactation, to feed a low-birth-weight (LBW) or sick newborn:
  - She should start to express milk early, within 1-2 hours after delivery.
  - She may only express a few drops of colostrums at first, but it helps breast milk production to begin, in the same way that a baby suckling soon after delivery helps breast milk production to begin.
  - She should express as much as she can as often as her baby would breastfeed. This should be at least every 3 hours, including during the night. If she expresses only a few times, or if there are long intervals between expressions, she may not be able to produce enough milk.
- To keep up her milk supply to feed a sick baby:
  - She should express as much as she can as often as her baby would feed, at least every 3 hours.
- To build up her milk supply, if it seems to be decreasing after a few weeks:
  - Express very often for a few days (every 1/2 – 1 hour), and at least every 3 hours during the night.
- To leave milk for a baby while she is out at work:
  - Express as much as possible before she goes to work, to leave for the baby. It is also very important to express while at work to help keep up the supply.
- To relieve symptoms, such as engorgement, or leaking at work:
  - Express only as much as is necessary.
- To keep nipple skin healthy:
  - Express a small drop to rub on her nipple after a bath or shower.

How to express breast milk by hand

Teach a mother to do this herself. Do not express her milk for her. It should be demonstrated by using a breast model.

Touch her only to show her what to do. Be gentle.

Teach her to:

- Wash her hands thoroughly
- Sit or stand comfortably, and hold the container near her breast.
- Hold the breast and walk the thumb from above downward towards the areola and feel for the larger ducts by the thumb. She supports the breast with her other fingers.
- Place the thumb and index finger, opposite to each other, about 3 cm away from the nipple. (Figure 1)
- Push back towards the chest while pressing the thumb and fingers together rhythmically to milk the larger ducts (lactiferous sinuses). (Figure 2)
- Rotate the thumb and finger position to milk the other large ducts. (Figure 3)

- Press and release, press and release. This should not hurt, if it hurts, the technique is wrong. At first no milk may come, but after pressing a few times, milk starts to drip out. It may flow in streams if the oxytocin reflex is active.
- Shift to the other breast when milk let down reflex stops.
- Avoid rubbing and sliding of fingers when expressing. Pressing and pulling the nipple cannot express milk out. (Figure 4)
- Express one breast for about 5 – 7 minutes or until the flow of milk slows down before switching to the other breast for the next 5 – 7 minutes. Repeat this process once or twice more. The entire procedure should not be more than half an hour.

Figure 1

Figure 2

Figure 3

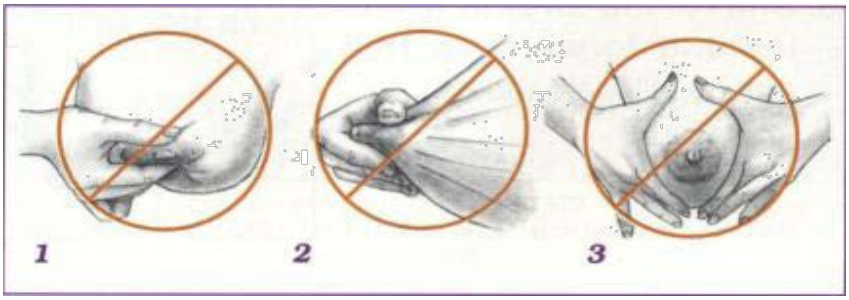


Figure 4

Storage of breast milk (at home) for normal term babies

Always wash hands before pumping / expressing / handling breast milk:

1. Use sterile plastic container with airtight lid.
2. Label each container with date and time.
3. Quantity in each bottle should just enough for baby's one feed.
4. Do not pour warm milk direct to frozen milk.
5. Several expressions throughout a day may be combined to get the desired volume in a container. Chill the newly expressed milk for at least 1 hour in the main body of the fridge, and then add it to previously chilled milk expressed on the same day.
6. For previously frozen milk, thawed in refrigerator, but not warmed, can be stored in refrigerator for 24 hours.
7. Stand refrigerated milk in warm water before use, never boil it or warm it in a microwave oven.
8. Do not refreeze the thawed milk.
9. Refrigerated milk separates. Mixed well before use.
10. Discard any remaining milk after feeding.

Breast Milk Storage

(Proper storage and preparation of breast milk: Guidelines are for home settings, CDC 2019)

Storage Location and Temperatures			
Type of Breast Milk	**Countertop** **77°F (25°C) or colder** (room temperature)	**Refrigerator** **40°F (4°C)**	**Freezer** **0°F (-18°C) or colder**
Freshly Expressed or Pumped	Up to **4 Hours**	Up to **4 Days**	Within **6 months** is best Up to **12 months** is acceptable
Thawed, Previously Frozen	**1–2 Hours**	Up to **1 Day** (24 hours)	NEVER refreeze human milk after it has been thawed
Leftover from a Feeding (baby did not finish the bottle)	Use within **2 hours** after the baby is finished feeding		

For sick and hospitalized babies, please refer to (breastfeeding preterm and LBW Babies)

Guidance on the Storage of Expressed Breastmilk (EBM)				
	Breastmilk Status	Room Environment≤ 25°C	***(store at back, away from door/sides)***	
			Refrigerator ≤ 4°C	**Freezer ≤ - 18°C**
Storage Duration	Freshly expressed (EBM/colostrum)	≤ 4 hours	**48 hours**	**3 months for hospitalized babies** **6 months in a deep freezer (<-20°C)for healthy discharged Babies**
	Chilled (Freshly expressed outside hospital, transport with insulated cooler bag with ice packs)	**≤4 hours**	**48 hours**	
	Previously frozen, thawed in 4ºC refrigerator but not warmed	≤ 2 hours	**24 hours**	**Do not return to freezer**
	Thawed in warm water / warmed milk	**≤1 hour**	**Do not return to refrigerator or freezer**	

Reference: Guideline on Collection, Storage and Transportation & Administration of Expressed Breastmilk, Hospital Authority 2019.

13. OTHER FEEDING ALTERNATIVES

Step 9 of Ten Steps to successful breastfeeding: ***Counsel mothers on the use and risks of feeding bottles, teats and pacifiers.***

The physiology of suckling at the breast is different from the physiology of suckling from a feeding bottle and teat. It is possible that the use of the feeding bottle and teat could lead to breastfeeding difficulties, particularly if use is prolonged. If expressed milk or other feeds are medically indicated for term infants, feeding methods such as cups, spoons or feeding bottles and teats can be used during their stay at the facility. However, it is important that staff do not become reliant on teats as an easy response to suckling difficulties instead of counselling mothers and enabling them to attach babies properly and suckle effectively.

Expressed breast milk is the ideal milk to use but formula milk may also be given.

Other feeding alternatives that is advised:

1. Cup
2. Breastfeeding supplementer
3. Syringe
4. Spoon

CUP FEEDING

Why cup feeding is safer than bottle feeding?

- Cups are easy to clean with soap and water, if boiling is not possible.
- Cups are less likely than bottles to be carried around for a long time, giving bacteria time to breed.
- A cup cannot be left beside a baby, for the baby to feed himself. The person who feeds a baby by cup has to hold the baby and look at him and give him some of the contact that he needs.
- A cup does not interfere with suckling at the breast.

How to Cup-Feed

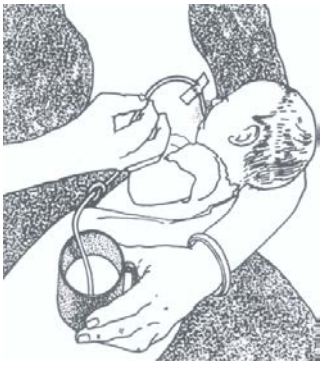
- Wrap the baby securely, to prevent his/her hands knocking the cup. Place a napkin under its chin.
- Sit the baby upright or semi-upright on your lap.
- Hold the small cup of milk to the baby's lips. The cup rests lightly on baby's lower lip, and the edges of the cup touch the outer part of the baby's upper lip.
- Tip or tilt the cup so that the milk just reaches the baby's lips.
- Do not pour the milk into the baby's mouth. Just hold the cup to the baby's lips and let him or her take it himself or herself.

- Do not keep removing the cup when the baby stops drinking. It is important to let the baby take as much as he/she needs in its own time.
- Wash the cup in warm soapy water after use. Rinse in clean warm water before sterilizing

BREASTFEEDING SUPPLEMENTER

Is a device for giving supplement to a baby while she/he is suckling at a breast which is not producing enough milk.

A hungry baby may become frustrated and refuse to suckle at an 'empty' breast. A breastfeeding supplementer helps to get the baby to continue suckling and stimulate the breast to produce milk.



How to use a breastfeeding supplementer

- Use a fine naso-gastric tube (FR 5), or other fine plastic tubing, and a cup to hold the milk. If there is no very fine tube, use the best available.
- Prepare a cup of milk containing the amount of milk that her baby needs for one feed.
- Put one end of the tube along her nipple, so that her baby suckles the breast and the tube at the same time.
- Tape the tube in place on her breast.
- Put the other end of the tube into the cup of milk.
- Tie a knot in the tube if it is wide, or put a paper clip on it, or pinch it. This controls the flow of milk, so that her baby does not finish the feed too fast.
- Control the flow of milk so that her baby suckles for about 30 minutes at each feed if possible. (Raising the cup makes the milk flow fast, lowering the cup makes the milk flow more slowly.)
- Let her baby suckle at any time that he is willing – not just when she is using the supplementer.
- Clean and sterilize the tube of the supplementer and the cup or bottle, each time she uses them.

SYRINGE

Is another way to give baby supplement while she/he is suckling at the breast.

It is useful if a baby does not suckle strongly at the breast or if the mother finds a supplementer difficult.

How to use a syringe

- Use a 5-ml or 10-ml syringe.
- Fix a length of fine tubing to the adaptor, about 5 cm in length.
- Fill the syringe with milk from a cup.
- Put the end of the tube into the corner of baby's mouth, & presses out the milk slowly as he suckles.
- Refill the syringe & continue until baby finish the feed. (try to make the feed continue for about 30 minutes)

SPOON

- Can be used for giving very small amount of milk.
- Takes longer time than cup feeding.
- Mothers often find it difficult because she needs to hold the baby, the cup of milk and the spoon.
- Baby cannot control the flow.
- Easier to feed the baby if he is very ill or with difficult breathing.

14. BREASTFEEDING MOTHERS WITH HEALTH PROBLEMS

When a mother is ill

- The mother may feel overwhelmed and worries, both about herself and her baby.
- She often stops BF because
  - fear that baby will catch the illness
  - advised by "somebody'
  - separation due to hospital admission
  - too tired
  - worry about the medication effect on baby
  - "Think" milk supply will decrease due to poor health or physical illness
- However
  - ***RARELY*** necessary for a sick mother to stop BF
  - With most common infections, antibodies in breast milk is the best protection for baby
- If BF is stopped abruptly, it will cause
  - engorgement or complications (mastitis or breast abscess)
  - upset the baby & affects its growth & development

Separation of mother & baby for management is rarely necessary

- We should
  - ***Acknowledge*** mother's concern & worries
  - ***Listen & accept her feelings.*** This helps her to move on to next steps: sorting information, discussing option and decision making.
  - ***Respect*** the choice of the woman and the family

Guidelines in Helping a Sick Mother to Breastfeed

Any sick woman	• Ask if she has a breastfeeding baby. • Encourage her to continue to breastfeed
If a mother is admitted to hospital	• Admit her baby with her
If she has fever	• Encourage her to drink plenty to avoid decrease in milk production due to dehydration.
If she concerns about her medication	• Facilitate her discussion with her doctor and / or baby's doctor • Use information on pharmaco-kinetics to make the safest choice
If she is unwilling to breastfeed or feels too	• Suggest her to express her breast milk as often as her baby would feed, or about every 3 hours to keep up the

unwell	supply • Feed the baby her EBM if possible, or artificial milk if necessary by cup.
If extremely ill	• Consider to help her to express her milk and feed the baby by cup
If she is mentally ill	• Encourage the mother to breastfeed her baby if she is mentally fit • Find a helper who can care for mother and baby together.
When the mother is well again	• Help her to increase her breast milk or re-lactate if necessary
If she must wean her baby permanently	• Find out how soon her baby must be weaned • Discuss the weaning process • Help her to come up with a time table for gradual weaning which is less stressful for her and her baby

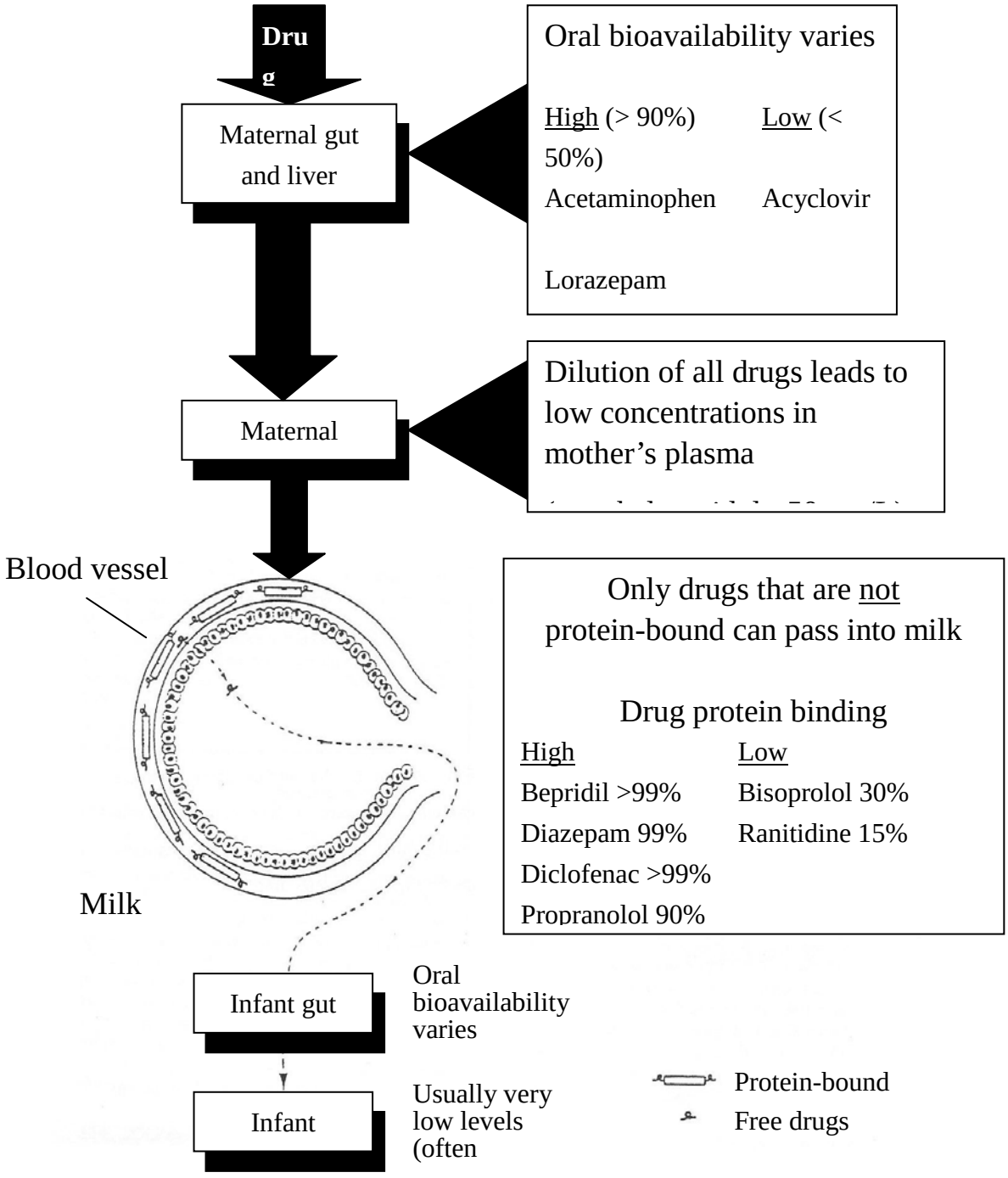
15. BREASTFEEDING AND MEDICATION

Quantity of drug appearing in breastmilk is related to the concentration of free drug in the maternal plasma.

This concentration is determined by drug dose, absorption, tissue distribution & protein binding.

About 1-2% of drug appears in breastmilk.

Routine of drugs from mother to baby via breastmilk



SUGGESTED APPROACH TO PRESCRIBING DRUGS TO BREASTFEEDING MOTHERS

Useful reference: Lactmed, Medication and Mothers' Milk 2019

1. Use medication only when indicated.
    - As a rule of thumb, the baby will get approximately 1% of the total maternal dose of a drug administered to the mother after childbirth.

2. Medication that is used for infants is safe during breastfeeding.

3. It is not necessarily true that medication that is considered safe during pregnancy is safe during lactation.
    - The mother is metabolizing the drug for the fetus, and, thus, accumulation of the drug will not usually occur in the fetus. E.g. Bromocriptine

4. Some drugs have active metabolites.

5. Use information on pharmacokinetics to make the safest choice.
    - When a choice of medications is available, ***use the drug with***
        - ***the highest plasma protein binding,***
        - ***the lowest plasma blood levels,***
        - ***lowest milk-plasma ratio,***
        - ***shortest half lives and***
        - ***least toxicity.***

    1. Drugs that are applied to the skin, eye or in the vagina rarely achieve significant blood levels, and are even less likely to achieve detectable milk levels. Many inhaled drugs (e.g. salbutamol, steroids) are poorly absorbed from the respiratory mucosa, and are safe while breastfeeding.

6. Be flexible

7. Timing of medication
    - With medications that require regular, frequent dosing, advise the mother to feed baby immediately before taking the medication so that the drug concentration in milk will be at the lowest.

8. Drugs contraindicated during breastfeeding include anticancer drugs, lithium, oral retinoids, iodine, amiodarone and gold salts.

16. HIV AND BREASTFEEDING

Mother-To-Child Transmission (MTCT)

- There is a known risk of transmission to the baby during pregnancy, birth and during breastfeeding.

Background

Human Immunodeficiency Virus (HIV) refers to the virus that can lead to acquired immunodeficiency syndrome, or AIDS, if not treated. Mother-to-child transmission (MTCT) is one of the transmission routes: HIV can be transmitted to infant via pregnancy, labour and breast feeding

In southern and eastern Africa, HIV infection is common and a leading cause of death.

WHO guidance on HIV and infant feeding developed at 2006, revised on 2013 and 2016; mainly for countries with high HIV prevalence and settings in which diarrhoea, pneumonia and undernutrition are common causes of infant and child mortality.

- Anti-retrovirals Therapy (ART), C/S and avoidance of breastfeeding reduces the risk of MTCT to **1-2%.**
- All pregnant women should be offered counselling and voluntary testing for HIV. Women who are tested and found to be HIV-positive need extra care and attention during their pregnancies.

Risk of MTCT of HIV
WITHOUT and WITH Anti-retroviral therapy (ART) interventions

	WITHOUT ART	**WITH ART**
During pregnancy	5-8%	0-1%
During labour and delivery	10-20%	1-2%
During Breastfeeding	5-20% (Breastfeed for 2 years)	2-3% (Breastfeed 0-12 months)
Overall with breastfeeding	20-48%	3-5%

Remain uninfected, even with breastfeeding

WITHOUT ART	**WITH ART**
52-80% (Breastfeed for 2 years)	95-97% (Breastfeed 0-12 months)

- Breastfeeding is recommended for (at least the first two years of life, in line with recommendations for the general population) :
  - women lives in a place where test for HIV is not possible or available
  - women and their infants are ***BOTH*** HIV positive
  - women who do not know their status, and
  - women who are HIV-negative
- For women known to be HIV infected
  - Breastfeed and receive ARV intervention, ***OR*** avoid all breastfeeding (most likely to give infants the greatest chance of HIV-free survival)
  - In settings where the risk of child mortality and morbidity from not exclusively breastfed is higher than the risk of HIV transmission, women needs counselling:
    - ***Information*** about the risks and benefits of various infant feeding options;
    - ***Guidance*** in selecting the most suitable option for their situation; and
    - ***Support*** to carry out their choice.
- Encourage all mothers with unknown HIV status to obtain HIV testing and counseling
- Counsel all HIV negative mothers about ways to prevent HIV infection and about the services that are available such as family planning to help them to remain uninfected.

For HIV ***positive*** mothers who ***chooses*** breastfeeding

- Exclusively breastfeed for 6 months then complementary feed and continue breastfeeding for the first 12 months of life. Not advised to rapidly wean.
- ***Exclusive breastfeeding carries a lower risk of HIV transmission than mixed breastfeeding.***
- **Safer** Breastfeeding: Good attachment, frequent exclusive breastfeeding, seek immediate attention for breast health problems, practice safer sex and discontinue BF only if safe alternative available.

Safe Replacement Feeding for HIV ***positive*** mothers, ***who*** do ***not*** plan to breastfeed:

- Safe water and sanitation
- Mother or caregiver can reliably provide sufficient formal to support normal growth
- Mother or caregiver can prepare formula frequently and cleanly so that it is safe
- It is possible to formula feed exclusively for 6 months, without any breastfeeding
- The family is supportive
- The family has access to reliable health services

WHO recommendation highlights

1. For the mother who is known HIV positive, avoid BF if preferred, but for some countries like southern and eastern Africa, have to balance the risk of MTCT HIV via BF with risk of undernutrition, pneumonia and diarrhoea.
2. National or health authorities have the responsibilities in preventing MTCT of HIV by:
   - Provide HIV screening during pregnancy, and CD4 blood test
   - Provide ART medication
   - Provide HIV related health services and counselling
3. For HIV positive mother: take ART and BF (at least for 12 months and keep 2 years or beyond) or avoid BF
4. For unknown HIV status: do the test and EBF for 6 months and BF for 2 years or beyond
5. For ART drug is not available: EBF for 6 months and BF for 2 years or beyond.

HK situation on HIV& Breastfeeding

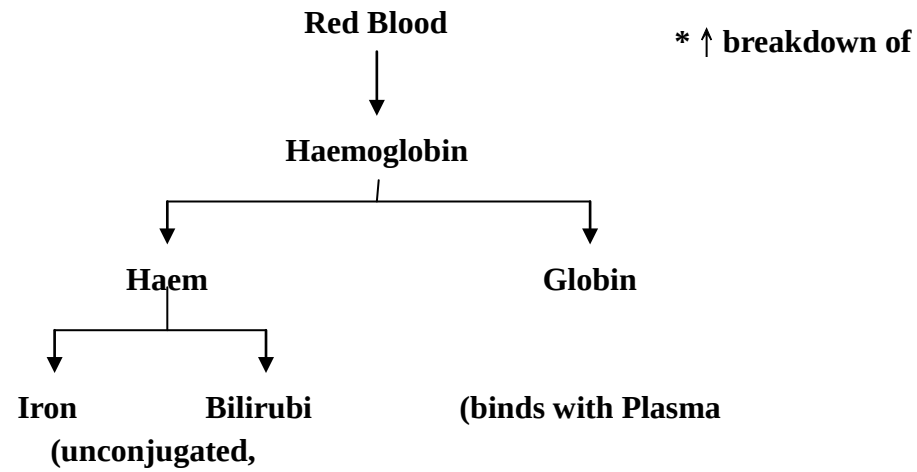
https://www.chp.gov.hk/files/pdf/recommended_clinical_guidelines_on_prevention_of_perinatal_hiv_transmission_r_duplicate.pdf

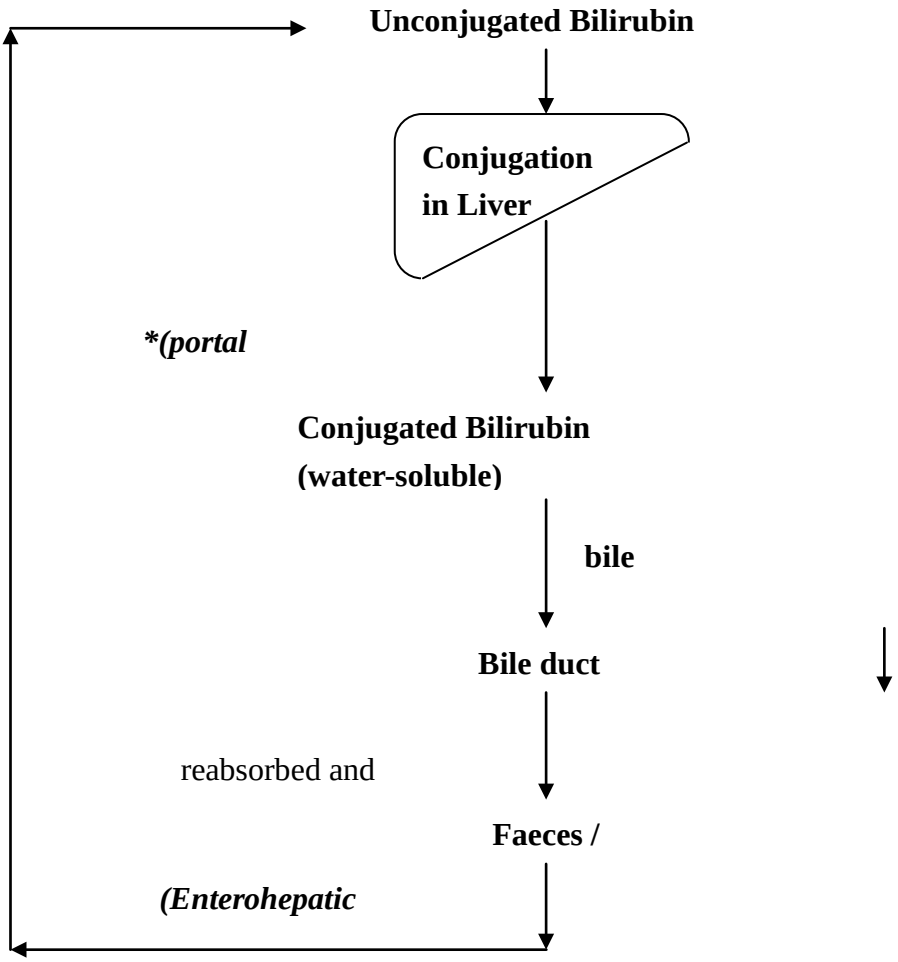
References

Guideline: updates on HIV and Infant Feeding. 2016 UNICEF WHO

17. NEONATAL JAUNDICE

METABOLIC PATHWAY OF BILIRUBIN





NEONATAL JAUNDICE (HYPERBILIRUBINAEMIA)

Definition of neonatal jaundice

- Jaundice occurs during the first month of life due to hyperbilirubinaemia.
- Jaundice is a yellow coloring in baby's skin, and sometimes, the whites of the eyes

Bilirubin

- In the fetus – the placenta eliminates most of the lipid-soluble bilirubin.
- In the newborn – bilirubin must be conjugated in the liver to a water-soluble form, before it can be excreted in the bile.
- An endogenous 'anti-oxidant' produced in the body.

Type of Jaundice

1. **Physiological Jaundice**
    - May be caused by the breakdown of fetal red blood cells and immature liver conjugation function
    - The baby's body does not get rid of bilirubin very efficiently in the first days of life.
2. **Early Neonatal Jaundice**
    - G6PD Deficiency
    - Haemolytic disease of newborn (ABO, rhesus incompatibility)
    - Polycythemia
    - Congenital infection /Sepsis
    - Concealed haemorrhage, e.g. cephalohematoma
    - Poor feeding /dehydration
3. **Breastmilk Jaundice**
    - Occurs in only 2% of exclusively breastfed babies.
    - Onset after day 7, peak at 10-21 days, last for 2-3 months
    - Thriving baby
    - It may be caused by a substance in breast milk that blocks the elimination of bilirubin.
4. **Other pathological cause** such as hypothyroidism, biliary atresia

Prevention of NNJ due to Poor Feeding/dehydration

1. Acknowledge the risk factor:
    - Consequences of "Early Discharge' from hospital
    - Inexperienced mothers with breastfeeding problems
2. Provide optimal care in early breastfeeding management
    - Initiate early breastfeeding, preferably in the first hour after birth.

- Observe and Assess:
  - Ensure comfortable positioning, good attachment with effective suckling and milk transfer.
  - Unrestricted and effective breastfeeding (at least 3-4 times in the first 24 hours and 8–12 times or more in 24 hours)
- Explain and encourage skin-to-skin contact
- Educate on early feeding cues and observe output
- Hand expression of colostrum or expression of breastmilk can provide extra milk to support intake in some infants at risk for jaundice and assist in establishing a good milk supply.

3. *Management of NNJ for breastfed babies*
   - Monitor the transcutaneous bilirubin (TcB) or total serum bilirubin (TSB) for every infant before discharge from the birthing hospital
   - Treatment threshold is gestation specific for neonate, please refer to the local hospital guideline
   - When TSB level rise above the thresholds stated in guidelines, phototherapy is recommended as the most effective treatment.
   - For breastfed babies receiving phototherapy,
     - breastfeeding is encouraged and continued,
     - short disruption for phototherapy for breastfeeding should be allowed
     - Encourage more frequent breastfeeding and/ or breastmilk feed to ensure adequate hydration to compensate insensible fluid loss during phototherapy.
   - Lactation support to ensure effective milk transfer/intake

Three principles for happy breastfeeding

1. Make sure breastfeeding does not hurt you
   - The good attachment principle
2. Let your baby suckle as often and as long as she wants
   - The supply and demand principle
3. Know that you can make enough milk for your baby
   - The confidence principle

Reference:

- National Institute for Health and Clinical Excellence (2010) Neonatal jaundice. (Clinical guideline 98.) www.nice.org.uk/CG98.
- Flaherman, V.J. Maisels, M.J. & the Academy of Breastfeeding Meidcine (2017). ABM Clinical Protocol 22: Guidelines for Management of Jaundice in the Breastfeeding Infant 35 Weeks or More of Gestation. *Breastfeeding Medicine,12(5)*: 250-257
- Lucey J. (2018*) Newborn Jaundice*. Health Library: Evidence-Based Information.

18. BREASTFEEDING PRETERM AND LOW BIRTH WEIGHT BABIES

Low Birth Weight (LBW)

LBW means a birth weight of less than 2,500 grams.

1. Pre-term (born before 37 weeks of gestational age)
2. Small for gestational age
   - Term (Intra-uterine growth retardation, IUGR)
   - Pre-term

Pre-term

- Small with fat
- ↓ Capacity to feed
- Immature

Intra-uterine growth retardation (IUGR)

- Small and hungry
- ↑ Capacity to feed
- More Mature

Advantages of breastfeeding to pre-term babies

Pre-term milk produced during early post-partum period has more protein and electrolyte level which suit the nutritional requirement. Preterm babies need milk with more protein than full-term babies. Much of the extra protein in preterm milk consists of anti-infective factors, which gives preterm babies the protection that they need.

The importance of breast milk for preterm, low birth weight or special needs infants

Breast milk contains:

- Protective immune factors, which help to prevent infection.
- Physiologic amino acid and fat profile, high digestibility and absorption of these proteins and fats
- Active enzyme and hormones enhances the maturation and supplements the enzyme activity of the under-developed gut. Enzymes which make it easier to digest and absorb the milk.
- Low renal solute load.
- Growth factors which help the baby's gut and other systems to develop.
- Special essential fatty acids that help brain development and better cognitive development

In addition, breastfeeding:

- Calms the baby and reduces pain
- Gives the mother an important role in caring for her baby. Breastfeeding bring mother and baby closer.

- Comforts the baby and maintains the link with the family.
- Babies with special needs such as neurological conditions, cardiac problems or cleft lip/palate and babies who are ill, need breast milk as much if not more than babies who are well.

The approach to feeding will depend on the individual baby and his or her condition.

- Baby not able to take oral feeds
- Baby able to take oral feeds but is not able to suckle.
- Baby able to suckle but not for full feeds.
- Baby can suckle well.
- Baby is not able to receive any breast milk.

Baby's behavior with regards to gestational age

Behaviour at the breast	Response when offered expressed breast milk by cup	Gestational age (wks)	Feeding readiness	Range of birth weight
No definite mouthing	No extrusion of tongue, no licking	< 28	IV feeding needed	<1000g
Occasional, ineffective suckling attempts	Opens mouth, tongue out, licks milk. Cannot co-ordinate breathing and swallowing	28 - 31	Intragastric feeding	1000-1500g
May root and attach to breast. Weak suckling attempts	Opens mouth, tongue forward, licks milk Able to co-ordinate breathing and swallowing.	32 - 34	Cup or other alternative feeding method for most feeds. Try breastfeeding.	1300-1800g
Able to root and attach to the breast. May have periods of organized suckling with long pauses	As above and able to suck at the milk from the cup and other alternatives.	33 - 35	Breastfeed for part of feed Cup or other alternative to ensure adequate intake	1600-2000g
Able to suckle effectively at the breast	Able to suck at milk from the cup and other alternative feeding methods	34 - 36	Breastfeed, and may need some supplements by cup or other alternative	1800-2200g

How to help breastfeeding succeed if baby is sick?

If baby is:	***Help mother to***:
• in hospital	• stay in hospital with baby
• can suckle well breastfeed more often	• breastfeed more often
• suckle less than before (sick)	• give more frequent, shorter feeds
• is not able or refuse to suck	• express her breastmilk, give it by cup
• cannot take oral feed	• express 3 hourly
• recovering	• start breastfeeding • breastfeed more often to build up supply

Myths on breastfeeding pre-term/LBW babies

- Breastfeeding is too stressful
- Babies cannot coordinate suckling and swallowing until 34 - 35 weeks
- Babies must be able to bottle feed before they can breastfeed

Concerns in the volume of breastmilk:

- ***If a mother is expressing more than her LBW baby needs***:
  Let her express the second half of the milk from each breast into a different container. Let her offer the second half of the EBM first. Her baby gets more hindmilk, which helps him to get the extra energy that he needs. This helps a baby to grow faster.
- ***If a mother can only express very small volumes at first:***
  Give whatever she can produce to her baby. Even very small amounts help to prevent infection. Help the mother to feel that this small amount is valuable. This helps her confidence, and will help her to produce more milk. Supplement if necessary with donated breastmilk.
- ***If a mother expresses small amounts, it can be difficult to collect it in a cup.***
  Suggest that she asks a helper to collect it using a small syringe. This makes the volume appear to be more, and less is lost. The milk can be given to the baby directly from the syringe.

Time of first oral feed

- If oral feeding is possible as soon as a baby is born, the first feed should be given within the first 2 hours, and every 2 - 3 hours thereafter to prevent hypoglycaemia.
- Give donated breastmilk or formula if mother's milk is not available

Cup feeds

Cup feeds give a baby valuable experience of taking food by mouth, and the pleasure of taste. They stimulate the baby's digestion. Many babies show signs of wanting to take things into their mouths at this stage, yet they are not able to suckle effectively at the breast.

Development of coordinated suckling

- Babies can already swallow and suck long before 32 weeks.
- From about 32 weeks, many babies can suckle from the breast, and some can breastfeed fully from this age, but they may have difficulty in coordinating suckling, swallowing and breathing. They need to pause during a breastfeed to breathe. They can suckle effectively for a short time, but they often cannot suckle long enough to take all the breastmilk that they need
- By about 36 weeks, most babies can coordinate suckling and breathing, and they can take all that they need by breastfeeding.
- However, a baby may feed well sometimes, but tire and feed poorly at other times.
- If a baby suckles poorly, offer a cup feed after the breastfeed. If he is hungry, he will take milk from the cup. If he had enough, he will not take milk from the cup.

Skin-to-skin contact and kangaroo mother care (KMC)

- Skin-to-skin contact between a mother (or father) and baby has been found to help both bonding and breastfeeding, probably because it stimulates the secretion of prolactin and oxytocin.
- If a baby is too sick to move, contact can be between the mother's hand and the baby's body. If a baby is well enough, let his mother hold him next to her body. Usually the best place is between her breasts, inside her clothes. This is called *kangaroo mother care.* It has the following advantages:
  - The warmth of the mother's body keeps her baby warm. He does not get cold, and he does not use up extra energy to keep warm. There is less need for incubators.
  - The baby's heart works better, and he breathes more regularly.
  - The baby cries less and sleeps better.
  - It is easier to establish breastfeeding.
  - The baby gains weight better.
  - The rest and care can be synchronized with mother.
  - Increase mother’s confidence to care her baby.
  - Study showed that baby can be discharged home earlier.
  - Baby acquires less infection from the hospital.

Help mother of pre-term babies with breastfeeding

Support for breastfeeding in the special care baby unit

- **Arrange contact** between mother and baby, day and night.
  - Encourage the mother to visit, touch, and care for her baby
  - A mother produces antibodies (one kind of protective factor) against bacteria and viruses (germs) that she is in contact with.
  - 'Kangaroo mother care' encourages the mother to hold her baby (dressed only in a diaper) beneath her clothing close to her breast. The baby can then go to breast un-restrictly. Skin-to-skin contact also helps to increases the production of milk.

- **Take care of the mother**. The mother is very important to the baby's well being and survival.
  - Let the parents know breast milk and breastfeeding are important.
  - Help the mother to stay at the hospital
  - Ensure she has a place to rest when she is at the hospital.
  - The mother has a suitable seat near the baby.
  - Encourage to provide food and fluids for the mother.
  - Answer the parents' questions and explain patiently. The parents may be upset, overwhelmed and frightened when their baby is ill.

- **Help to establish breastfeeding:**
  - Assist the mother to express her milk, starting within 6 hours of birth, and expressing six or more times each 24 hours.
  - Encourage babies to spend time at the breast as early as possible even if they are not able to suckle well as yet. If the baby has the maturity to lick, root, suck and swallow at the breast, he will do so without harm.
  - Describe the early times at the breast as 'getting to know the breast' rather than expecting the baby to take full feeds.
  - The baby can go to the breast while receiving a tube feed to associate the feeling of fullness with being at the breast.
  - Weight is not an accurate measure of ability to breastfeed. Maturity is a more important factor.
  - Until a baby is able to breastfeed, he may be fed expressed breastmilk by tube or cup.
  - Avoid using artificial teats.

- **Putting a baby to breast**
  - Put a baby to the breast when the baby is just starting to wake up, as seen with rapid eye movements. When ready to feed, a baby may make sucking movements with his or her tongue and mouth. Help a mother learn how to anticipate feeding time to avoid her baby using up energy by crying.

- **Explain to mothers what to expect at feeds**
  - Expect that the baby will probably feed for a long time, and that the baby will pause frequently to rest during a feed. Plan for quiet, unhurried, rather long breastfeeds (an hour or so for each feed).
  - Expect some gulping and choking, because of the baby's low muscle tone and uncoordinated suckle.
  - Stop trying to feed if the baby seems too sleepy or fussy. The mother can continue to hold her baby against her breast without trying to initiate suckling.
  - Keep the feed as calm as possible. Avoid loud noises, bright lights, stroking, jiggling or talking to the baby during feeding attempts.

19. COUNSELLING SKILLS 1 - LISTENING AND LEARNING

Counseling is:

- People become engaged in counseling when a person, occupying regularly or temporarily the role of counselor offers or agrees explicitly to offer **time** , **attention** and **respect** to another person or persons, temporarily in the role of client
- Counseling is a way of working with people in which you understand how they feel, and help them to decide what to do.

Breastfeeding counseling:

- Is a skill to listen, and to make mother feel that you are interested in her and encourage her to tell you more.
- She will be less likely to "turn off" and say nothing.

Skills for listening & learning

- Use helpful non-verbal communication
- Ask open questions
- Use responses and gesture which show interest
- Reflect back what the mother says
- Empathise – show that you understand how she feels
- Avoid words which sound judging

Non-verbal communication

- Showing your attitude through:
  - Posture
  - Expression
  - Everything except through speaking
- Helping mother feel that you are interested in her
- Helping her to talk to you

Helpful non-verbal communication

- Keep your head level
- Pay attention
- Remove barriers
- Take time
- Touch appropriately

Five skills to apply:

1. ***Ask open questions:***

- Open questions start with “How? What? When? Why?”
  - For example, “How are you feeding your baby?”
- Closed-end questions start with “Are you? Did he? Has he? Does she?”
- Can answer with “Yes” or “No”
  - For example, “did you breastfeed your last baby?”

2. ***Use responses & gestures which show interest***

- Gesture: nodding, smiling
- Simple responses: “Mmm” or “Aha”
- They show mother that you are interested in her

3. ***Reflect back what the mother says***

- Repeating back what a mother has said to you
- Show that you have heard, and to encourage her to say more
- Try to say in a slightly different way
- “My baby was crying too much last night”
- “You baby kept you awake crying all night?”

4 ***Empathise***

- Showing that you understand how a person feels
  “My baby wants to feed very often and it makes me feel so tired.” (empathizing)
  “You are feeling very tired all the time?”
  “How often is he feeling? What else do you give him?” (not empathizing)
  They show mother that you are interested in her

5. ***Avoid words which sound judging***

- Judging words:
  Right, wrong, well badly, good, enough, properly
  Make mother feel that she is wrong or there is something wrong with her baby
  “good “ may be used to build a mother’s confidenc

EXERCISE: LISTENING AND LEARNING

Exercises 1 Experiencing problems associated with listening

1. Pair up and divide into “a” & “b”
   “a” talks to “b” on any subject for 1 minute and “b” does not listen
   “b” talks to “a” on any subject for 1 minute and “a” does not listen
2. Report to the other what you disliked and what they liked about the activity
3. Comment on what you will be able to carry over from it into the real counseling situation

Exercises 2 Asking open question

Change the following close questions into open questions.

e.g. Do you breastfeed your baby?

How are you feeding your baby?

1. Does your baby sleep with you?

   _____

2 Are your nipples sore?

   _____

3. Mr. & Mrs. So bring their 3-month-old boy to the clinic. They want to talk to you because he is not gaining weight.

Write 2 open questions that you would ask the couple.

   _____

   _____

Exercise 3 Reflect back what the mother says

Mark the response that “reflects back” what the statement says.

e.g. My mother says that I don’t have enough milk.

a. Do you think you have enough?
b. Why does she think that?
✓ c. She says that you have a low milk supply?

1. He doesn’t seem to want to suckle from me.
   a. Has he had any bottle feeds?
   b. How long he has been refusing?
   c. He seems to be refusing to suckle?

2. I tried feeding him from a bottle, but he spate it out.
   a. Why did you trying using a bottle?
   b. He refused to suck from a bottle?
   c. Have you tried to use a cup?

Make your own response which "reflects back" what the mother says.

3. Sometimes he doesn't pass a stool for 3 or 4 days.

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4. My husband says that our baby is old enough to stop breastfeeding now.

Exercises 4 Empathizing – to show that you understand how she feels

e.g. My baby wants to feed so often at night that <u>I feel exhausted</u>.

   a. How many times does he feed altogether?
   b. Does he wake you every night?
✓ c. You are <u>really tired</u> with the night feeding.

Underline the words in the mother's statement which show something about how she feels. Mark the response which is most empathetic.

1. My nipples are so painful! I will have to bottle feed.
   a. The pain makes you want to stop breastfeeding?
   b. Did you bottle feed any of your previous children?
   c. Oh! Don't do that – it's not necessary to stop just because of sore nipples.

2. My breastmilk looks so thin – I am sure it cannot be good.
   a. That's the fore milk – it always looks rather watery.
   b. You are worried about how your breastmilk looks?
   c. Well, how much does the baby weigh?

3. I do not have any milk in my breasts, and my baby is a day old already.
   a. You are upset because your breastmilk has not come in yet?
   b. Has she started suckling yet?
   c. It always takes a few days for breastmilk to come in.

Underline the feeling words, and then make up your own empathizing response.

4. My breasts leak milk all day at work – it is so embarrassing.

   _____

5. I have bad stomach pains when he is breastfeeding.

   _____

Exercise 5 Translating judging words:

English	Cantonese	Judging question	Non-judging question
Well	_____	Does he suckle well?	_____
Normal	_____	Are his stools normal?	_____
Enough		Is he gaining enough weight?	_____
	_____		_____
Problem		Do you have any problems breastfeeding?	_____
	_____		_____
Crying too much		Does he cry too much at night?	_____
	_____		_____

20. COUNSELLING SKILL 2 – BUILDING CONFIDENCE AND GIVING SUPPORT

Aims:

- Help the mother succeed with breastfeeding
- Help the mother to resist pressures from other people

Six skills to apply:

1. Accept what a mother thinks and feels

- *Disagree / criticize a mistaken idea*
  - will make a mother feel that she is wrong and reduces her confidence
- *Agree a mistaken idea*
  - Difficult to suggest something different afterward
- *Accept/reflect what she thinks*
  - Respond in a neutral way, help her to feel confident and good about herself

Reflecting back and making simple responses are useful ways to show acceptance
Give information to correct a mistaken idea later when rapport is built.

2. Recognize and praise what a mother and baby are doing right

- *Telling what she is doing something wrong*
  - Will make her feel bad, decrease her confidence
- *Recognizing what she is doing something right*
  - Will build a mother's confidence
  - Encourages her to continue those good practices
  - Easier for her to accept suggestions later

3. Give practical help

- *Sometimes giving practical help is better than saying anything*

Examples:

- Help to make her clean & comfortable
- Give a warm drink or something to eat
- Make it easier for her to hold her baby, adjust the seat or support her back with pillow
- Help her to hold baby when she goes to wash herself, to toilet etc.
- Practical help in breastfeeding includes positioning of mother & baby, relieving engorgement, etc.

4. *Give little, relevant information*

- *Relevant information is information that is useful for a mother <u>at the present moment</u>*

Points to remember;

– Tell her think that she can do today, not in a few weeks time
– Try to give only one or two pieces of information at a time, especially if she is tired, and has already received a lot of advice
– Wait until you have built her confidence, by accepting what she says, and praising what she and her baby do right. You do not need to give new information or to correct a mistaken idea immediately
– Give information in a positive way, so that it does not sound critical. This is especially important if you want to correct a mistaken idea.

5. *Use simple language*

Most people do not understand the technical terms or medical terms. So remember to use simple familiar terms to explain things to mothers.

6. Make one or two suggestions, not commands

- *Command a mother to do something*
  – Doesn't help her to feel confident
- *Suggest a mother to do differently*
  – Mother can make choice to do
  – Leave her feelings in control\
  – Help her to feel confident

Summary of Counseling Skills

1. Accept what a mother thinks and feels
2. Recognize and praise what a mother and baby are doing right
3. Give practical help
4. Give a little, relevant information
5. Use simple language
6. Make one or two suggestions, not commands

EXERCISE: BUILDING CONFIDENCE & GIVING SUPPOT

Exercises 1 Accepting what a mother feels

Please tick the appropriate answer.

1. Mary is in tears. She says that her breasts have become soft again, so her milk must be less, but the baby is only three weeks old.
   a. Don't cry – I'm sure you still have plenty of milk
   b. You are really upset about this, I know
   c. Breasts often become soft at this time – It doesn't mean that you have less milk

2. Daisy is very bothered. Her baby sometimes does not pass a stool for one or two days. When he does pass a stool, he pulls up his knees and goes red in the face. The stools are soft and yellowish brown.
   a. Some babies don't pass a stool for 4-5 days
   b. You needn't be so bothered – this is quite normal for babies
   c. It really bothers you when he does not pass a stool, doesn't it?

3. Nancy is crying. She takes off her baby's clothes and shows you a rash on the baby's buttocks, which looks like a nappy rash.
   a. Lots of babies have this rash – we can soon make it better.
   b. Don't cry – it is not serious
   c. You are really miserable about this rash, aren't you?

4. Janet's baby girl has a cold and blocked nose, and is finding it difficult to breastfeed.
   a. Don't worry – he is doing very well
   b. You don't need to cry – he will soon be better
   c. It's upsetting when a baby is ill, isn't it?

Exercises 2 Praising what a mother and baby are doing right

Please tick the respond which praises what the mother & baby are doing right, to build the mother's confidence.

1. A mother has started bottle feeding her baby by day while she is at work. She breastfeeds as soon as she gets home, but the baby does not seem to want to suckle as much as he did before.
   a. It would be better if you gave him artificial feeds by cup and not by bottle.
   b. You are very wise to breastfeed whenever you are at home.
   c. Babies often do stop wanting breastfeeds when you start giving bottles

2. The mother of a 3-month-old baby says that he is crying a lot in the evenings, and she thinks that her milk supply is decreasing. The baby gained weighted well last month.
   a. He is growing very well – and that is on your breastmilk alone.
   b. Many babies cry at that time of day – it is nothing to worry about.
   c. Just let him suckle more often - that will soon build up your milk supply.

3. A 15- month-old child is breastfeeding and having thin porridge and sometimes tea and bread. He has not gained weight for 6 months, and is thin and miserable.
   a. He needs to eat a more balanced diet
   b. It is good that you are continuing to breastfeed him at this age, as well as giving him other food.
   c. You should be giving him more than breastmilk and thin porridge at this age.

4. A mother is breastfeeding her 3-month-old baby, and giving drinks of fruit juice. Her baby has slight diarrhoea.
   a. You should stop the fruit juice – that's probably what is causing the diarrhoea
   b. It is good that you are breastfeeding – breastmilk should help him to recover
   c. It is better not to give babies anything but breastmilk until they are about 6 months old.

Exercises 3 Give a little and relevant information

Below is a list of six mothers with babies of different ages. There are also 6 pieces of information that those mothers may need. Please do the matching from the left to the right by drawing straight lines.

Mother 1-6	**Information**
Mother returning to work	Foremilk normally looks watery, and hind milk is whiter
Mother with 12- month-old baby	Exclusive breastfeeding is best until a baby is 6 months old
Mother who thinks that her milk is too thin	More suckling makes more milk
Mother who thinks that she does not have enough breastmilk	Colostrum is all that a baby needs at this time
Mother with 2-month –old baby who is exclusively breastfed	Night breastfeeds are good for a baby and help to keep up the milk supply
A newly delivered mother who wants to give her baby prelacteal feeds	Breastfeeding is valuable for two years or more

Exercises 4 Giving information in a positive way

Below are some mistaken ideas, please excises on the skill of accepting the mother thinks and then write the correct information in a positive way.

1. A mother says “I don’t have enough milk, because my breasts are so small”.

Accept what she says:

Give correct information in a positive way:

2. A mother says “I don’t let Mary suckle for more than 10 minutes, because it would make my nipples sore”.

Accept what she says:

Give correct information in a positive way:

Exercises 5 Using simple language

Below are 3 pieces of information that you might want to give to mothers. Although the information is correct, it uses technical terms that a mother who is not a health worker might not understand. Please rewrite the information in simple language that a mother could easily understand.

1. Information: Colostrum is all that a baby needs in the first few days

   Using simple language:

2. Information: Exclusive breastfeeding is best up to 6 months of age.

   Using simple language:

3. Information: Foremilk normally looks watery, and hindmilk is whiter.

   Using simple language:

Exercises 6 Making one or two suggestions, not commands

Below are some commands, which you might want to give to a breastfeeding mother.
Please rewrite the commands as suggestions

1. Command: Keep the baby in bed with you so that he can feed at night!

   Suggestions

2. Command: Do not give your baby any drinks of water or glucose water, before he is 6 months old!

   Suggestions

3. Command: Feed him more often, whenever he is hungry, then your milk supply will increase!

   Suggestions

COUNSELLING CHECKLIST

LISTENING AND LEARNING SKILLS

- ☐ Use helpful non-verbal communication
- ☐ Ask open questions
- ☐ Use responses and gestures which show interest
- ☐ Reflect back what the mothers says
- ☐ Empathize – how that you understand how she feels
- ☐ Avoid words which sound judging

CONFIDENCE AND SUPPORT SKILLS

- ☐ Accept what a mother thinks and feels
- ☐ Recognize and praise what a mother and baby are doing right
- ☐ Give a little, relevant information
- ☐ Use simple language
- ☐ Make one or two suggestions, not commands

COUNSELLING SKILLS CHECKLIST

Listening and learning

☐ Helpful non-verbal communication
☐ Ask open questions
☐ Responses showing interest
☐ Reflect back
☐ Empathize
☐ Avoid judging words

Assessing a breastfeed

☐ Mother general
☐ Baby general
☐ Breasts
☐ Baby's position
☐ Baby's attachment
☐ Suckling

Confidence and support skills

☐ Accept what mother says
☐ Praise what is right
☐ Give relevant information
☐ Use simple language
☐ Make one or two suggestions

Taking a history

☐ Baby's feeding now
☐ Baby's Health behaviour
☐ Pregnancy, birth, early feeds
☐ Mother's condition and FP
☐ Previous infant feeding
☐ Family and social situation

21. TAKING A BREASTFEEDING HISTORY

Why taking a history

- In order to help a mother, you need to ***understand her situation.*** You cannot learn everything that you need to know by observing and listening and learning.
- You need to ask some relevant questions in a ***systematic*** way. The method in general is described in the ***How To Take A Breastfeeding History***.
- The specific things you need to learn about breastfeeding are included in the ***Breastfeeding History Job Aid***

BREASTFEEDING HISTORY JOB AID
Mother's name Baby's name Age of child Particular concerns about feeding of child
Feeding Milk (breast milk, formula, cow's milk, other) Frequency of milk feeds Length of breastfeeds/quantity of other milks Night feeds Other foods in addition to milk (when started, what, frequency) Other fluids in addition to milk (when started, what, frequency) Use of bottles and how cleaned Feeding difficulties (breastfeeding/other feeding)
Health Growth chart (birth weight, weight now) Urine frequency per day (6 times or more), if less than 6 months Stools (frequency, consistency) Illnesses Behaviour (feeding, sleeping, crying)
Pregnancy, birth, early feeds (where applicable) Antenatal care Feeding discussed at ante-natal care Delivery experience – early contact, first breastfeed within first hour Rooming-in Prelacteal feeds Postnatal help with feeding
Mother's condition and family planning Age Health – including nutrition and medications Breast health Family planning
Previous infant feeding experience Number of previous babies How many breastfed and for how long If breastfed – exclusive or mixed fed Other feeding experiences
Family and social situation Work situation Economic situation Family's attitude to infant feeding practices Help with baby at home

22. NOT ENOUGH MILK

Introduction

- Almost all mothers can produce enough breastmilk for one or even two babies
- Sometimes a baby does not get enough milk from:
  - Not suckling enough
  - Not suckling effectively
  - But rarely because his mother cannot produce enough
- Therefore, it is important to think not about how much milk a mother can produce, but about how much milk a baby is getting

Signs that a baby may not get enough breastmilk

Definitive signs

- Poor weight gain
  - Growth slower than standard curves
  - Newborn loses more than 10% of birth weight
  - Less than birth weight after 2 weeks
- Passing small amount of concentrated urine
  - Less than 6 times a day
  - Yellow and strong smelling

Possible signs

- Baby not satisfied after breastfeeds
- Baby cries often
- Very frequent breastfeeds
- Very long breastfeeds
- Baby refuses to breastfeed
- Baby has hard, dry or green stools
- No milk comes when mother tries to express
- Breasts did not enlarge (during pregnancy)
- Milk did not ‘come in’ (after delivery)

Things do not affect the breastmilk supply

- Age of mother
- Sexual intercourse
- Menstruation
- Disapproval of relatives and neighbours
- Returning to a job (if baby continues to suckle often)
- Age of baby
- Cesarean section
- Many children
- Simple, ordinary diet

Reasons why a baby may not get enough breastmilk

These are common		These are not common	
Breastfeeding factors	Mother: psychological factors	Mother : physical factors	Baby's condition
• Delayed start • Infrequent feeds • No night feeds • Short feeds • Poor attachment • Bottles, pacifiers • Complementary feeds	• Lack of confidence • Worry, stress • Dislike of breastfeeding • Rejection of baby • Tiredness	• Contraceptive pills, diuretics • Pregnancy • Severe malnutrition • Alcohol • Smoking • Retained piece placenta (rare) • Poor breast development (rare)	• Illness • Abnormality

How to help a mother whose baby is not getting enough milk

- Look for a cause
- Build confidence and give support
- Help with less common causes
- Follow up

How to help a mother who thinks that she does not have enough breastmilk

- Understand her situation
- Build confidence and give support

Exercise: Not Enough Breastmilk

Case Study 1

Mrs. R's baby is 7 weeks old. She says that her breast milk is not good. Her baby does not seem satisfied after breastfeeds. He cries and wants to feed again very soon, sometimes in half an hour, or an hour. He cries and wants to breastfeed often at night too, and Mrs. R is exhausted. He passes urine about 6 times a day.
When he breastfeeds, you notice that his lower lip is turned in, and there is more areola visible below his mouth than above it.

The baby weighed 3.7 kilos at birth. He now weighs 4.8 kilos

1. Is Mrs. R's baby getting as much breast milk as he needs?

2. What may be the reason for his behaviour?

3. What could you praise, to build Mrs. R's confidence?

4. What practical help would you offer to Mrs. R?

Case study 2

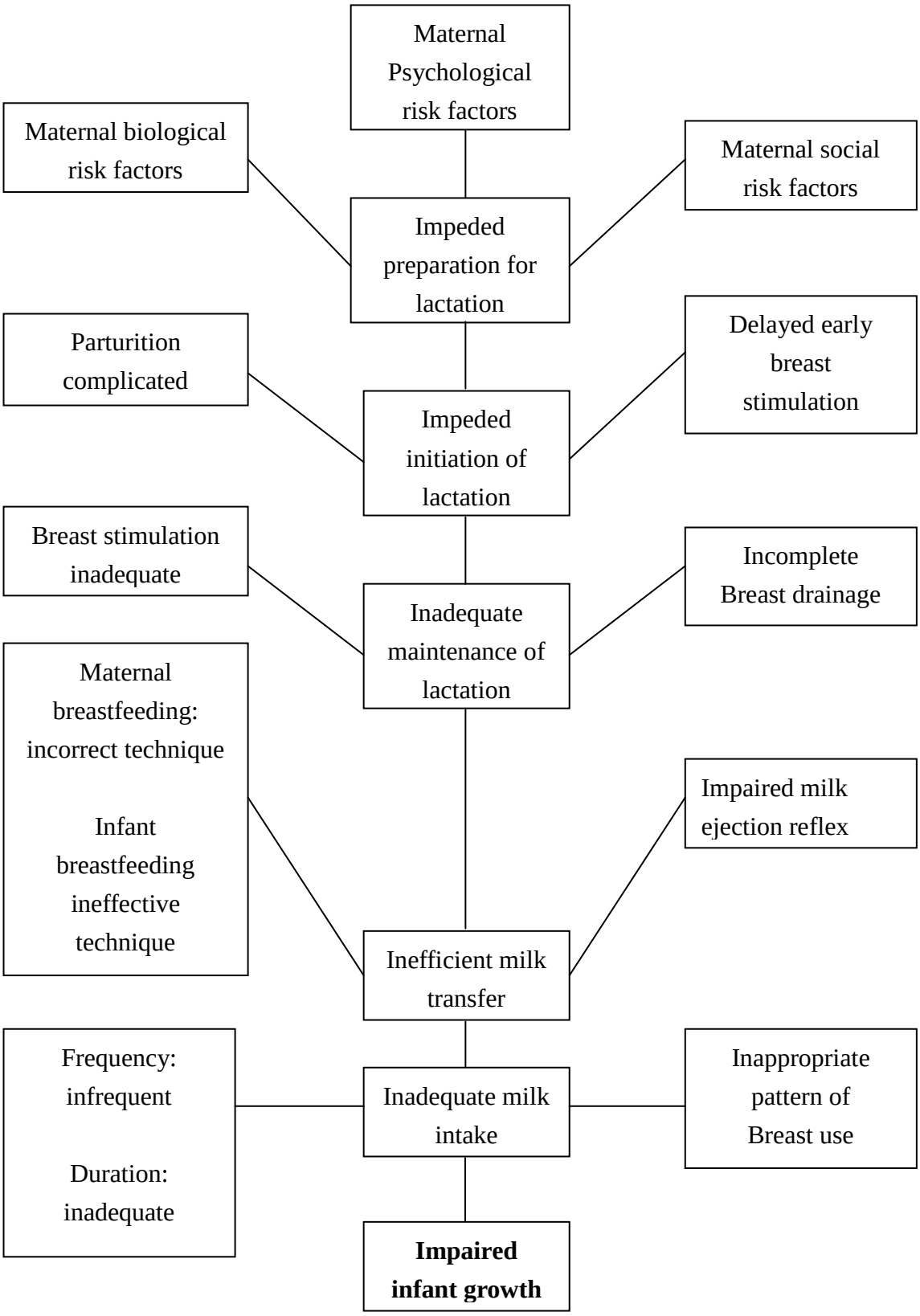
Mrs. T's baby is 6 weeks old. He wants to feed about every 2-3 hours – sometimes after 1 hours, sometimes he sleeps for 5 hours. He has gained 800 g since he was born. Mrs. T's mother says that the baby is crying too much, and looks too thin. She says that Mrs. T does not have enough milk, and should give some bottle feeds.

1. What are the good things that are happening?

2. Do you think that Mrs. T's baby is getting enough milk?

3. What would you do to help Mrs. T?

Insufficient Milk Syndrome



23. INCREASING BREAST MILK AND RELACTATION

If a mother's breast milk supply is reduced, she needs to increase it. This often happens when there is a breastfeeding difficulty and the baby does not get enough milk.

If a mother has stopped breastfeeding, she may want to start again. This is called *relactation*.

The situations in which mothers may want to relactate include when:

- A baby has been sick and has not suckled for a time.
- A baby has been artificially fed, but the mother wants now to try breastfeeding.
- A baby becomes ill or fails to thrive on artificial feeds.
- The mother has been sick and stopped feeding her baby.
- A woman who had a baby of her own before adopts a baby.

The most important thing for a woman to do to increase her breastmilk supply is to let her baby suckle often to stimulate her breast and stimulate prolactin secretion.

Eating more does not by itself increase a woman's milk supply. However, if she is undernourished, she needs to eat more to build up her strength and energy. If she is not undernourished, food and warm nourishing drinks may help her to feel confident and relaxed.

Taking more fluid than they want does not increase their milk supply. They should drink to satisfy their thirst.

Lactogogues are special foods, drinks or herbs which people believe increase the breast milk supply. They may help a woman to feel confident and relaxed.

Length of time to increase the breast milk supply

The length of time that it takes for a woman's breast milk supply to increase varies very much. It helps if the mother is strongly motivated and if her baby is willing to suckle frequently.

- If baby is still breastfeeding sometimes, the breast milk supply increases in a few days.
- If baby has stopped breastfeeding, it may take 1 - 2 weeks or more before much breast milk comes. It is easier if a baby stopped breastfeeding recently, than if he stopped a long time ago.
- It is easier to relactate if a baby is very young (less than 2 months) than if he is older (more than 6 months). However, it is possible at any age.
- A woman who has not breastfed for years can produce milk again, even if she is post-menopausal.

HOW TO HELP A WOMAN TO INCREASE HER BREASTMILK SUPPLY

- Try to help the mother and baby at home if possible. Sometimes it is helpful to admit them to hospital for a week or two, especially if the mother may feel pressure to use a bottle again at home, but *only if* there is enough skilled help available in hospital.

- Discuss with the mother the reason for her poor milk supply.

- Explain what she needs to do to increase her supply. Explain that it takes patience and perseverance.

- Use all the ways you have learnt to build her confidence. Help her to feel that she can produce breast-milk again or increase her supply. Try to see her and talk to her every day at least once.

- Make sure that she has enough to eat and drink.

- If you know of a locally valued lactogogue, encourage her to take that.

- Encourage her to rest more, and to try to relax when she breastfeeds.

- Explain that she should keep her baby near her, give him plenty of skin-to-skin contact, and do as much as possible for him herself. Grandmothers can help if they take over other responsibilities - but they should not care for the baby at this time. Later they can do so again.

- Explain that the most important thing is to *let her baby suckle more* at least 10 times in 24 hours, more if he is willing.
  - She can offer her breast every two hours.
  - She should let him suckle whenever he seems interested.
  - She should let him suckle longer than before at each breast.
  - She should keep him with her and breastfeed at night.
  - Sometimes it is easiest to get a baby to suckle when he is sleepy.

- Make sure that her baby attaches well to the breast.

- Discuss how to give other milk feeds, while she waits for breast-milk to come.

- Show her how to give the other feeds from a cup, not from a bottle. She should not use a pacifier.

- If her baby refuses to suckle on an ‘empty’ breast, help her to find a way to give the baby milk while he is suckling. For example, with a dropper or a *breastfeeding supplementer* (see below).

- Discuss how much of the other feeds to give. To start with, she should give the full amount of artificial feed for a baby of his weight (150ml per kilogram body weight per day) or the same amount that he has been having before. As soon as some breastmilk comes, she can reduce the daily total by 30-60 ml each day.

- Divide the total amount of milk for a day by the number of feeds (8, 10 or 12) to decide how much to give for each feed, and add a small amount for spillage.

- Check the baby's weight gain and urine output, to make sure that he is getting enough milk.
  - If he is not gaining weight, do not reduce the artificial feed for a few days.
  - If necessary, increase the amount of artificial milk for a day or two.

  Some women can decrease the amount by more than 30-60 ml each day.

24. REFUSAL TO BREASTFEED

Introduction

- A common reason for stopping breastfeeding
- Can cause great distress to the baby's mother
- Mother may feel rejected and frustrated by the experience
- Forms of refusal:
  - The baby attaches to the breast, then does not suckle or swallow, or suckles very weakly.
  - A baby cries and fights at the breast, when his mother tries to breastfeed him.
  - A baby suckles for a minute and then comes off the breast choking or crying. He may do this several times during a single feed.
  - A baby takes one breast, but refuses the other.

Causes of breast refusal

Illness, pain, or sedation	Infection Brain damage Pain from bruise (V/E, F/D) Blocked nose Sore mouth (thrush, teething)
Difficulty with breastfeeding technique	Bottle feeds, dummies Not getting much milk (poor attachment, engorgement) Pressure on back of head when positioning Mother shaking breast Restricting feeds Oversupply of breastmilk Difficulty coordinating suckle
Change which upsets baby (especially aged 3-12 months)	Separation from mother New carer, too many carers Change in family routine Mother ill or mastitis Mother menstruating Change in smell of mother
Apparent refusal	Newborn – rooting Age 4-8 months – distraction Above 1 year – self-weaning

Principles of managing breast refusal

- Assessment to identify the possible cause in the particular baby
- Treating or removing the cause if possible
- Helping the mother and baby to enjoy breast feeding again

Treating or removing the cause (if possible)

Illness

- Refer if necessary
- Treat infections with appropriate antibiotics & other therapy
- If a baby is unable to suckle, he may need special care in hospital
- Help his mother to express her breastmilk to feed him by cup or by tube, until he is able to breastfeed again

Pain & discomfort

- ***Bruise***: help the mother to find a way to hold her baby without pressing on a painful place
- ***Thrush***: treat with antifungal agent, e.g. Nystatin
- ***Teething***: encourage her to be patient and to keep offering him her breast
- ***Blocked nose***: explain how she can clear it. Suggest short feeds, More often than usual for a few days

Sedation

- If the mother is on regular medication, try to find an alternative

Breastfeeding technique

- Discuss the reason for the difficulty with the mother
- When the baby is willing to breastfeed again, help her more with her technique

Oversupply

- This is the usual cause of too much milk coming too fast
- Oversupply can result from poor attachment (ineffective suckling → more frequent feeding / for a long time → more stimulation to produce more milk) or as the result of feeding the baby on both breasts at each feed when he does not need to
- Reducing Oversupply:
  - Help the mother to improve her baby's attachment
  - Suggest that she lets him suckle from only one breast at each feed
  - Let him continue at that breast until he finishes by himself so that he gets plenty of the fat-rich hindmilk
  - At the next feed, give him the other breast
  - May consider
    - Express some milk before a feed
    - Lie on her back to breastfeed (if milk flows upwards, it is slower)
    - Hold her breast with the scissor hold to slow the flow

Changes which upset a baby

- Discuss the need to reduce separation and changes if possible
- Suggest that she stops using the new soap, perfume or food

Apparent refusal

Rooting

- Explain that this is normal
- Can hold her baby at her breast to explore her nipple
- Help her to hold him closer to ease attachment

Distraction

- Suggest mother to try feeding the baby somewhere more quiet for a while

Self-weaning

- Makes sure that the child eats enough family food
- Gives him plenty of extra attention in other ways
- Continues to help with him because night feeds may continue

Helping a mother and baby to breastfeed again

- Keep her baby close – no other carers
  - Give plenty of skin-to-skin contact at all times, not just at feeding times
  - Sleep with her baby
  - Ask other people to help in other ways
- Offer her breast whenever her baby is willing to suckle
  - When sleepy, or after a cup feed
  - In different positions
  - When she feels her ejection reflex working
- Help her baby to take the breast
  - Express breastmilk into his mouth
  - Position him so that he can attach easily to the breast
  - Avoid pressing the back of his head or shaking her breast
- Feed her baby by cup
  - Give her own expressed breastmilk if possible, if necessary give artificial feeds and feed him by cup
  - Avoid using bottles, teats, pacifiers

25. CRYING BABY

Introduction

- Crying is the baby's way of communication of feelings and needs
- A baby who cries a lot can upset the relationship between him and his mother
- Mother may start unnecessary complements that they think their babies are hunger and they do not have enough milk
- It can cause tension among other members of the family

Causes of crying

Discomfort

- From wet or soiled diaper
- Hot / cold of the environment or from inappropriate clothing

Tiredness

- Too many visitors

Illness or pain

- Note the changed of pattern of crying

Hunger due to growth spurt

- Very hunger for a few days, possibly because he is growing faster than before.
- Demands to feed very often.
- Commonest at the ages of about 2weeks, 6weeks and 3months, but can occur at other times.
- If he suckles often for a few days, the breastmilk increases and he breastfeeds less often again.

Mother's food

- Any food, sometimes cow's milk
- No special foods to advise mothers to avoid, unless she notices a problem
- Babies can become allergic to the protein of some foods in their mother's diet, e.g. cow's milk, soy, egg, and peanuts
- Babies may become allergic to cow's milk protein after only one or two prelacteal feeds of formula

Substances mother takes

- If mother takes cigarettes or other drugs, her baby is more likely to cry than other babies
- Caffeine in coffee, tea, and colas can pass into breastmilk and upset a baby

Oversupply of breastmilk

- It can occur if the baby is poorly attached.
- He may suckle too frequently or for too long and stimulate the breast too much so that the milk supply increases.
- It can occur if a mother takes her baby off the first breast before he has finished and makes him take the second breast.
- The baby may get too much foremilk and not enough hindmilk
- He may have loose green stools and a poor weight gain or he may grow well but cry and want to feed often.
- Even though she has plenty of milk, the mother may think that she does not have enough for her baby.

Colic

- A clear pattern
  - the baby cries continuously at certain times of day, often in the evening
  - he may pull up his legs as if he has abdominal pain
  - he may appear to want to suckle but it is very difficult to comfort him
- Babies who cry in this way may have a very active gut, or wind, but the cause is not clear.
- Colicky babies usually grow well, and the crying usually becomes less after the baby is 3 months old.

High needs' babies

- Babies cry more than others.
- Need to be held and carried more.
- In communities where mothers carry their babies with them, crying is less common than in communities where mothers like to put their babies down to leave them, or where they put them to sleep in separate cots.

How to help a family with a baby who cries a lot?

- Look for a cause
  - Listen and learning
    - to help mother to express feelings
    - to understand mother how she learns about baby's feeding and behavior
  - History taking
  - Breastfeeding assessment
  - Examine the baby
    - Growth rate
    - Any illness

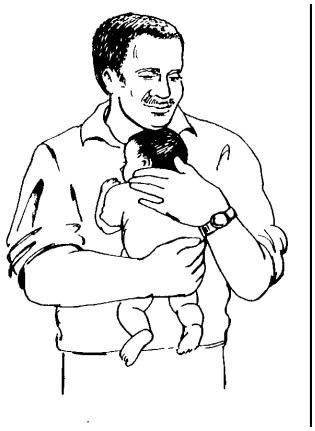
- Building confidence and give support
  - Accept mother's idea and feeling of the baby crying
  - Praise her, such as her breast milk provides all that baby needs
  - Give relevant information according to the cause, such as
    - Comfort suckling at breast is safe
    - Artificial fed babies also have colic
  - Offer practical help and give support, such as
    - Show mother that the baby is well attached at the breast
    - Discuss situation with family

How to hold and carry a colicky baby

- Babies are most often comforted with closeness, gentle movement, and gentle pressure on the abdomen.

- There are several ways to provide this. Demonstrate with a doll:

1. Hold a doll along your forearm, pressing on its back with your other hand.
   - Move gently backwards and forwards (Figure A)
2. Sit down and hold the doll lying face down across you lap.
   - Gently rub the doll's back.
3. Sit down and hold the doll sitting on your lap, with its back to your chest.
   - Hold it round the abdomen, gently pressing on the abdomen.
4. A man can hold a baby in the way (as shown in Figure B).
   - He should hold the doll upright against his chest, with the doll's head against his throat. He should hum gently, so that a baby would hear his deep voice, which is very comforting.

Figure A.	Figure B.
	
Figure A. Holding the baby along your forearm	Figure B. Father holding the baby against his chest

26. NUTRITIONAL REQUIREMENT FOR NURSING MOTHERS (DURING LACTATION)

- It is important to think about mother's nutrition, as it would affect her health, energy and well being.
- In cross-cultural studies, insufficient milk supply for baby appears to be unrelated to maternal nutritional status.
- If mother eats when she is not hungry, she eats more than her baby needs.
- If mother is on very poor diet, she uses any stored nutrients to make milk.
- If mother has no store, nutrition comes from her own body tissue, and she becomes malnourished.

Calorie consumption in lactation

- Theoretically, the energy sources for making milk is about 700 kcal
  i.e. 200 kcal consumed from fat store and 500 kcal from daily intake.

Nutritional needs in lactation

- Women energy requirement during lactation varies widely.
- A well balanced diet is encouraged before / during pregnancy & during breastfeeding.
- Eats according to cues of hunger or in response to appetite
- Drinks according to thirst ---- Studies showed forced fluid intake beyond thirst produced less milk.
- Food / vitamins supplement if needed, to mother, not to baby. This ensures nutrients / vitamins in breast milk.
- A strict vegetarian would require B12 supplement during pregnancy and lactation.

Malnutrition

- Moderate malnutrition: Still adequate & of good quality
- Severe malnutrition:
  - Production reduces, but may up to 500ml in case of frequent suckling
  - Contains less fat, less vitamins & sufficient protein, still of good quality

Food to avoid

- In clinical experience, it is suggested that some babies do not tolerate certain food in mother's diet, predominantly specific vegetables and fruits. For example, garlic onion may cause colic in some infants. Some babies may react to the protein of dairy product taken by the mother. If suspected, suggested mother to stop taking the food for 1 week and observe baby's reaction.
- Chinese soup with herb is not contraindicated with breastfeeding. To begin with, use ingredients in small amount and observe for baby's response. Observe for excessive PV bleeding if the herbs are used to improve circulation.

- Interestingly, breastfed babies actually experience a wide variety of odors and flavors during lactation, which may enhance their weaning to solid foods.

27. BREASTFEEDING AND WORK

How to have a Totally Breastfed Baby and Work Too

Starting out

- First 3 weeks breastfeed only to establish milk supply
- Nurse the baby unrestrictedly to build up milk supply
- Relax and enjoy the time nursing totally

Establishing a home milk supply by expression of the breasts

- Do not attempt to pump the breasts until the third week postpartum or 2-3 weeks before return to work
- Perform hand expression or start pumping and start to stock up some milk in the freezer for some days that the mother is not at home.
- In the beginning the mother will only be able to express approximately 1/2 to 1 ounce of breast milk…

DON'T PANIC! After practicing and believing, will be able to express more.

Methods to get extra-stock of breast milk

- Perform expression of the breasts in-between feeding, especially at the time feel more full or baby take less.
- Perform expression of the breast when breastfeeding the baby and the mother can have a good let-down reflex.

Try to start give the baby bottle of expressed milk and observe his reaction to teat after fourth week.

Prepare few bottles of frozen milk at home

- Freeze after breast milk expression.
- Add the follow expressed milk to the previous frozen milk ONLY after cooled in the refrigerator. Don't directly express to the cooled or frozen milk.
- Stock up to the amount that baby need at that stage e.g. 5 oz at 6 weeks.
- Date milk and use the oldest first.

Expression of Breast Milk at work

- Schedule the work and perform expression whenever the mother feels convenient.
- Relax and find some methods that can encourage let-down reflex e.g. baby's photo, a cup of hot drink, warm up the funnel of pump before milk expression etc.
- Use a new bottle for each milk expression.
- Add the milk together to the amount desired at the same temperature.
- Put the milk in refrigerator if the traveling time is short, otherwise put in the freezer.
- For the breast pump, wash under diluted soapy water or hot water, rinse with boiled water and store in a clean container. (KEEP PUMP CLEAN IS OK!)

What else does the mother need?

- A good baby-sitter who understands the importance of breastfeeding and supports the mother wholeheartedly in what she does.
- Support from colleagues and supervisors. Mother should be open about her breastfeeding and breastmilk expression. Do not hide the fact that she has to express milk. It will contribute to stress which she does not need.
- The full support of husband and family members.

28. FAMILY-PLANNING

OPTIONS AS RELATE TO SPECIFIC CONCERNS OF BREASTFEEDING WOMEN

Method	Advantages	Disadvantages	Comments
Non-hormonal methods			
Condoms	No effects on breastfeeding. Can be very effective if used correctly.	May be irritating to vagina and may require additional lubrication.	Offer some protection against STD. No risks to mother and child.
Intrauterine devices	No effect of IUD itself, or of the copper in some IUDs, on breastfeeding. Very effective.	Possible risk of expulsion and uterine perforation if not properly placed, or if inserted prior to six weeks postpartum.	Insertion may need to be delayed until after six weeks postpartum to reduce the possibility of expulsion and/or perforation of the uterus.
Natural family planning	No effect on breastfeeding. Can be very effective if used correctly.	May require extended periods of abstinence. May be difficult to interpret fertility signs during breastfeeding.	Additional training of method users may be necessary to accurately interpret signs and symptoms of fertility during breastfeeding. Calendar rhythm method alone has limited value prior to first ovulation.
Vasectomy	No effect on breastfeeding. Nearly 100% effective.	Minor surgery with chance of side effects for father. It is irreversible.	A recommended method if no more children is desired. Counseling necessary for couples. No risk to mother and child.
Tubal ligation	No direct effect on breastfeeding. Nearly 100% effective.	May involve short-term mother/ infant separation. Risks of surgery. Anaethesia can pass into breastmilk. Irreversible.	Counseling necessary for couples
Lactational amenorrhoea method	No effect on breastfeeding. Effective for 6 months after delivery in amenorrhoeic women.	Requires adequate information. Recovery of infertility may be difficult to interpret during breastfeeding.	Basic and first choice method especially in developing countries
Progestin-only methods			
Progestin-only methods (pills, injections, implants)	Can be very effective. May increase milk volume. Effectiveness during breastfeeding approaches that of combined pill.	Some hormone may pass into breastmilk.	There is no evidence of adverse effects on the infant from the very small amount of hormone which passes into the milk.
Combined oral contraceptives		Estrogen may reduce milk supply	Suppression of milk supply lead to earlier cessation of breastfeeding
Combined pills	Very effective	Some hormone may pass into breastmilk.	No evidence of negative effect to infants

LACTATIONAL AMENORRHEA METHOD

A contraceptive method which is based on the physiological infertility experienced during breastfeeding

Physiology:

Suckling at the breast sends neural signals to the hypothalamus.

- This mediates the level and rhythm of gonadotropin releasing hormone (GnRH) secretion.
- Which in turn suppress the release of follicle stimulating hormone (FSH) and luteinising hormone (LH), the hormones responsible for follicle development and ovulation.
- Hence ***regular*** and ***frequent*** breastfeeding results in disorganization of follicular development.

- However, each woman's body is unique. It is difficult to say how long breastfeeding will suppress fertility
- Note the criteria when you counsel a breastfeeding mother for LAM.
- Provide other options when LAM is no longer effective

Advantage of LAM

- Effectively prevents pregnancy for up to six months
- Is provided and controlled by the woman
- Can be used immediately after childbirth
- Is universally available to postpartum women
- Does not require supplies or procedures
- Is economical
- Has no hormonal, or other, side effects (for breastfeeding mother or infant)
- Raises no religious objections

Criteria for LAM

- She has 1-2% pregnancy rate if she meets ***all*** the 3 criteria
- She should be amenorrheic, fully or nearly fully breastfeeding, and
- less than 6 months post-partum.

Menstrual bleeding

- Lochia discharge or bleeding during the first 8 weeks postpartum is not considered menstrual bleeding.
- After these 8 weeks, occurrence of two ***consecutive*** days of bleeding / spotting indicates the end of amenorrhea.

The mother should full or nearly full breastfeeding

- Feed the baby when baby indicates cues of hunger. When baby is very young, feeding may be every 2-3 hours or more.
- Frequency:
  - During the day – no more than 4 hours between 2 feedings
  - At night – no more than 6 hours between 2 feedings
- Do not give baby other foods or liquids regularly

Age of baby

- The baby should be younger than 6 months.
  At about 6 months, mother should begin introduce other food to baby. Baby will breastfeed less when this happens, thus, LAM becomes less effective.

29. SUSTAINING BREASTFEEDING

Introduction

Mothers may stop breastfeeding among other reasons because:

- of the attitudes and beliefs in their communities;
- they have to resume work outside home
- health care practices are not supportive.

Health workers have an essential role to support and encourage women to breastfeed their babies as part of their regular work. If they do not actively support breastfeeding, they may hinder it by mistake.

Facility based and community based health workers, and peer counsellors are important.

Baby-friendly practices in hospitals, including antenatal preparation, can increase the numbers of women who *initiate* breastfeeding. But for mothers to *establish* and *sustain* good feeding practices, they need both baby-friendly deliveries and continuing support after delivery.

Research has shown that the more times a mother has support from a health worker or peer counsellor who has been trained in breastfeeding counselling, the more likely she is to sustain breastfeeding.

This support should be given to all mothers, at specified times, when help is most likely to be effective, and when mothers can expect it. We call these times when a health worker helps a mother "*contacts"* because they can happen in different places: in hospital, or in a clinic, or on a community or home visit. The task that is needed at a particular contact is usually the same wherever the contact takes place, and whoever is responsible for doing it.

There are a basic **SEVEN CONTACTS** that all mothers need, and **ONGOING CONTACTS** that are more variable.
The exact timing of the different contacts can vary according to local policy and services. But in each district or country they should be the same for all mothers and infants.

SEVEN + CONTACTS TO SUSTAIN BREASTFEEDING

Contact 1 – Antenatal

- The health worker discusses benefits and management of breastfeeding, including about early skin-to-skin contact to prevent surprises.
- At a second antenatal contact, discuss more details and mother's concerns.

Contact 2 – At delivery, in a maternity facility or at home

The baby is placed on the mother's naked chest immediately after delivery for early skin-to-skin contact and allowed to crawl to the breast to attach and suckle.

Contact 3 – Postnatal 1 within 24 hours

This may be within 6 hours in a maternity facility (by the birth attendant), or on the first day after a home delivery.

The health worker counsels the mother and helps her to position and attach the baby at the breast; informs her about follow up support and mothers groups

Contact 4 – Postnatal 2 – at 2-4 days

The health worker checks the condition of mother and baby, follows up on previous contacts, observes a breastfeed,

counsels the mother about any difficulties, helps with positioning and attachment, explains the feeding pattern, and encourages exclusive breastfeeding.

Contact 5 – Postnatal 3 – at 5-8 days

The health worker checks the condition of mother and baby, follows up on previous contacts, observes a breastfeed, counsels the mother about any difficulties, helps with positioning and attachment, explains the feeding pattern, and encourages exclusive breastfeeding.

Contact 6 – Postnatal 4 between 14 and 28 days

The health worker checks the condition of mother and baby, follows up on previous contacts, observes a breastfeed, counsels the mother about any difficulties, helps with positioning and attachment, explains the feeding pattern, and encourages exclusive breastfeeding.

Contact 7 – Postnatal 5 between 6 and 8 weeks

This may take place at the mother's postpartum contact (6 weeks)

The health worker checks the condition of mother and baby, makes sure that breastfeeding is going well, counsels the mother about any difficulties and encourages exclusive breastfeeding.

Ongoing contacts – after 2 months

These should take place at all Growth Monitoring and Immunization contacts, or when the mother and baby are in contact for illness or family planning.

The health worker checks that breastfeeding is going well; counsels the mother about any difficulties; encourages exclusive breastfeeding up to 6 months; and from 6 months, introduction of complementary foods with continued breastfeeding to 2 years. Mothers who are HIV positive may need referral for further individual counselling according to national policy.

How a health worker can help to sustain breastfeeding?

Every contact that a health worker has with a mother may be an opportunity to encourage and sustain breastfeeding.

Every time you see a mother, try to build her confidence. Use your counselling skills.

Praise her for what she and her baby are doing right.

Give relevant information, and

Suggest something appropriate.

It is especially important to discuss breastfeeding when you weigh a baby. Growth monitoring is a helpful way to know if a baby is getting enough breastmilk. Poor growth is an important sign that a mother and baby need help.

If a mother does not have a growth chart, or if you cannot weigh a baby, you can still talk about breastfeeding. You should have a good idea if breastfeeding is going well or not from the baby's appearance and behaviour. You can ask about his urine output.

When a mother brings her baby to a health facility for a routine procedure, for example, weighing, or immunization, and if everything is satisfactory, the health worker often says nothing. She may only tell a mother if something is wrong. Mothers are sometimes confused or even upset if a health worker says nothing, or sounds critical. They may not feel encouraged to come again.

Health workers are often short of time, but they can use the time that they have to say something encouraging and supportive.

Job Aids for postnatal and ongoing contacts

For health workers to carry out the postnatal contacts efficiently, it is useful to have simple Job-Aids to remind them what to do each time.

JOB AID FOR POSTNATAL CONTACTS

Use counselling skills – [listen to mother, build her confidence]

Follow up on previous observations and questions

Ask:

☐ How is breastfeeding?

[how many times, length of feeds, comfort, condition of breasts]

☐ Is baby receiving other fluids or foods, bottles, dummies?

☐ Baby's health and behaviour

☐ Pregnancy, birth, early feeds

☐ Mother's condition and family planning

☐ Previous infant feeding experience

☐ Family and social situation – support at home, work

Observe:

☐ Condition of mother

☐ Condition of baby

☐ Observe a breastfeed [including condition of breasts]

☐ Child's growth curve (weight and length as appropriate)

Help mother to:

☐ Position and attach her baby if necessary

☐ Express milk and cup feed baby [if necessary, if not done before]

Explain or Recap as needed:

☐ How milk 'comes in'

☐ Feeding pattern – demand feeding

[baby with mother, respond day and night, let baby finish first breast, offer second]

☐ Exclusive breastfeeding – supplements not needed

☐ Signs baby has what he/she needs [passing urine, contented]

Respond to any other questions and worries

Help [including possible referral] if needed with any difficulties:

☐ Poor (or excessive) weight gain

☐ Concerns about "Not enough milk"

☐ Concerns about baby's crying

☐ Suckling difficulties

☐ Flat inverted or large nipples

☐ Sore nipples

☐ Engorgement

JOB AID FOR ONGOING CONTACTS (after 2 months)

Use counselling skills – [listen to mother, build her confidence]

Follow up on previous observations and questions

Ask:

☐☐How is breastfeeding?

- [how many times, length of feeds, comfort, condition of breasts]
- Is baby receiving other fluids or foods, bottles, dummies?

☐☐Baby's health and behaviour

☐☐Pregnancy, birth, early feeds

☐☐Mother's condition and family planning

☐☐Previous infant feeding experience

☐☐Family and social situation – support at home, work

Observe:

☐☐[Condition of mother]

☐☐Condition of baby

☐☐[Observe a breastfeed, including condition of breasts, if any difficulty]

☐☐**Growth monitoring - check baby's weight and/or length**

Discuss:

☐☐Importance of exclusive breastfeeding to 6 months

☐☐Introduction of complementary foods from 6 months

☐☐Continue to demand feed as often as infant wants, day and night

☐☐Family support [talk to family if possible]

☐☐Family planning

☐☐Preparation for returning to work [see Session 32 'Women and work']

☐☐Any other questions

Help [including possible referral] **with difficulties**

☐☐Poor or excessive weight gain

☐☐Concerns about "Not enough milk"

☐☐Concerns about baby's crying

☐☐Suckling difficulties

☐☐Flat inverted or large nipples

☐☐Sore nipples

☐☐Engorgement

☐☐Mastitis

☐☐Refusal to feed

30. INTERNATIONAL CODE OF MARKETING OF BREASTMILK SUBSTITUTES

WHO

The International World Health

"Inappropriate feeding practices lead to infant malnutrition, morbidity and mortality in all countries, and improper practices in the marketing of breastmilk substitutes and related products can contribute to these major public health problems."
– Code Preamble

Summary

The International Code was adopted by the World Health Assembly on 21 May 1981. It is intended to be adopted as a minimum requirement by all governments and aims to protect infant health by preventing inappropriate marketing of breastmilk substitutes.

Member States are urged to strengthen implementation of the International Code of Marketing of Breastmilk Substitutes and subsequent relevant Health Assembly resolutions by scaling up efforts to monitor and enforce national measures in order to protect breastfeeding while keeping in mind the Health Assembly resolutions to avoid conflicts of interest

WHA 61.20 [2008]

Scope

The Code covers the marketing of all breastmilk substitutes (Article 2). These include:

- infant formula (including so-called 'special' baby milks such as 'hypo-allergenic' formula, preterm milks and others);
- follow-up milks;
- baby foods and drinks marketed for use before the baby is 6 months old such as cereals, jarred and canned foods, biscuits, teas, juices and water, and
- Feeding bottles and teats.

Articles 2, 3 and WHA 54.2 [2001]

The above items are hereinafter referred to collectively as "products".

Provision of Clear Information

Information and educational materials on infant and young child feeding should include clear and consistent information on all the following points:

a) the benefits and superiority of breastfeeding;
b) maternal nutrition and the preparation for and maintenance of breastfeeding;
c) the negative effect on breastfeeding of introducing partial bottle feeding;
d) the difficulty of reversing the decision not to breastfeed; and
e) where needed, the proper use of infant formula.

When such materials contain information about the use of infant formula, they should include:

- the social and financial implications of its use;
- the health hazards of inappropriate foods or feeding methods;
- the health hazards of unnecessary or improper use of infant formula and other breastmilk substitutes.
- No pictures or text which may idealise the use of breastmilk substitutes.

Articles 4.2 and 7.2

- Health workers, parents and other caregivers must be provided with information that powdered infant formula may contain pathogenic microorganisms and must be prepared used appropriately.

WHA 58.32 [2005]

No Promotion to the Public

There should be no advertising or other form of promotion of products. There should be no point-of-sale advertising, giving of samples or any other promotional device to induce sales directly to the consumer at the retail level, such as special displays, discount coupons, premiums, special sales, loss-leaders and tie-in sales. Marketing personnel should not seek direct or indirect contact with pregnant women or with mothers of infants and young children. Article 5

There should be an end to inappropriate promotion of food for infants and young children.

(WHA 63.23 [2010])

No Gifts to Mothers or Health Workers

Manufacturers and distributors should not distribute to pregnant women or mothers of infants and young children any gifts which may promote the use of products. No financial or material inducements to promote products should be offered to health workers or members of their families.

Articles 5.4 and 7.3

Financial support and other incentives for programmes and health professionals working in infant and young child health should not create conflicts of interest. Research on infant and young child feeding which may form the basis for public policies should contain a declaration relating to conflicts of interest and be subjected to independent peer review.

WHA 49.15 [1996] and WHA 58.32 [2005])

No Promotion to Health Care Facilities

Facilities of health care systems should not be used to promote products. Nor should they be used for product displays or placards or posters concerning such products, or for the distribution of materials bearing the brand names of products

Articles 6.2, 6.3 and 4.3

No Promotion to Health Workers

Information provided to health professionals by manufacturers and distributors should be restricted to scientific and factual matters, and should not imply or create a belief that bottle feeding is equivalent or superior to breastfeeding. Samples of products or equipment or utensils for their preparation or use, should only be provided to health workers for professional evaluation or research at the institutional level.

Articles 7.2 and 7.4

Code & Subsequent Assembly Resolutions

unicef

No Free Samples or Supplies

Product samples should not be given to pregnant women or mothers of infants and young children. Free or low-cost supplies of products are not allowed in any part of the health care system.

In emergency relief operations, donated supplies should only be given for infants who have to be fed on breastmilk substitutes. Such supplies should continue for as long as the infants concerned need them and not be used as a sales inducement.

Note: Articles 6.6 and 6.7 of the Code have been superseded by WHA 39.28 [1986], WHA 45.34 [1992] and WHA 47.5 [1994].

National and international preparedness plans and emergency responses need to minimize the risks of artificial feeding, by ensuring that any required breastmilk substitutes are purchased, distributed and used according to strict criteria.

WHA 63.23 [2010]

No Promotion of Complementary Foods Before They Are Needed

It is important that infants be exclusively breastfed for 6 months and only receive safe and appropriate complementary foods thereafter. Every effort should be made to use locally available foods.

Marketing of complementary foods should not undermine exclusive and sustained breastfeeding. Breastfeeding should continue for up to 2 years and beyond.

Code Preamble, WHA 39.28 [1986], WHA 45.34 [1992], WHA 47.5 [1994], WHA 49.15 [1996], WHA 54.2 [2001]) and WHA 58.32 [2005]

Adequate Labels: Clear Information, No Promotion, No Baby Pictures

Labels should provide information about the appropriate use of the product, and not discourage breastfeeding. Infant formula containers should carry a clear, conspicuous and easily readable message in an appropriate language, which includes all the following points:

a) the words "Important Notice" or their equivalent;
b) a statement about the superiority of breastfeeding;
c) a statement that the product should only be used on the advice of a health worker as to the need for its use and the proper method of use; and
d) instructions for appropriate preparation, and a warning of the health hazards of inappropriate preparation.

Neither the container nor the label should have pictures of infants, or other pictures or text which may idealise the use of infant formula. The terms 'humanised', 'maternalised' or similar terms should not be used.

Articles 9.1 and 9.2

Nutrition and health claims shall not be permitted for foods for infants and young children, except where specifically provided for, in relevant Codex Alimentarius standards or national legislation.

Where applicable, information that powdered infant formula may contain pathogenic microorganisms and must be prepared and used appropriately should be conveyed through an explicit warning on packaging.

WHA 58.32 [2005] & WHA 63.23 [2010]

Food Safety & Quality

The Codex Alimentarius Commission must continue to improve the quality standards of processed foods for infants and young children and promote their safe and proper use at an appropriate age, including through adequate labelling, consistent with the International Code, resolution WHA 54.2 and other relevant resolutions of the Health Assembly

(WHA 55.25 [2002])

Nutrition and health claims are not permitted unless allowed by national legislation.

(WHA 58.32 [2005])

WHO/FAO guidelines on safe preparation, storage and handling of powdered infant formula should be applied and widely disseminated in order to minimize the risk of bacterial infection and, in particular, ensure that the labelling of powdered formula conforms with the standards, guidelines and recommendations of the Codex Alimentarius Commission.

(WHA 61.20 [2008])

Note: FAO/WHO Guidelines for the safe preparation, storage and handling of powdered infant formula are obtainable from http://www.who.int/foodsafety/publications/micro/pif2007/en/index.html

Companies Must Comply with the International Code

Monitoring the application of the International Code and subsequent Resolutions should be carried out in a transparent, independent manner, free from commercial influence.

(WHA 49.15 [1996])

Independently of any other measures taken for implementation of the Code, manufacturers and distributors should be responsible for monitoring their marketing practices according to the principles and aim of the Code and take steps to ensure that their conduct at every level conforms to all provisions above.

(Article 11. 3)

Note: For the full text of Code and resolutions, see: www.ibfan.org/English/resource/who/fullcode.html

"…In view of the vulnerability of infants in the early months of life and the risks involved in inappropriate feeding practices, including the unnecessary and improper use of breastmilk substitutes, the marketing of breastmilk substitutes requires special treatment, which makes usual marketing practices unsuitable for these products" – Code preamble

31. Support to Artificial Feeding Mothers

For parents who choose non-breastfeeding, health care staff must discuss with them on concerns and options so that they can make their decision. This should include the acceptability, safety, sustainability, feasibility and financial impact in choosing artificial feeds. Health care staff should demonstrate a supportive attitude towards families who choose artificial feeding

Aims

- Ensure all artificial feeding mothers are provided with clear, accurate and impartial information to ensure safe replacement feeding.

Help family to establish

- Close relationship with the baby.
- Methods to reduce the risk in formula feeding.

Parent education and support

- Assess at each mother contact to identify any potential concerns with infant feeding
- Importance of skin-to-skin contact.
- Importance of rooming-in 24 hours a day.
- Importance of responsive feeding
- Safe preparation and use of infant formula.
- Methods of holding and feeding a baby: keep baby at upright position with feeding bottle at horizontal level during feeding, eye contact, reduce number of people feeding the baby, preferably parents.
- Support service on infant feeding after discharge
- All information given to mothers must be free from advertising and comply with the Code.
- Able to prepare the milk feeds accurately and hygienically.
- Prepare feeding utensils appropriately, assess for adequate hydration and assess tolerance for the selected formula milk.
- Advice on breast care including the management of full, uncomfortable breasts.

Powdered Infant Formula

- Associated with serious illness and death in infants due to infections:
  Enterobacter sakazakii (阪崎腸桿菌)
  Salmonella enterica (腸道沙門氏菌)

Conditions for safe replacement feeding

- Safe water and sanitation should be assured at household levels and in the community.
- The mothers or others caregiver can reliably provide sufficient infant milk to support normal growth and development.
- The mothers or caregiver can capable to prepare cleanly and frequently enough, so it is safe and carries a low risk of diarrhea and malnutrition.
- The family is supportive of this decision and practice.
- The mother or caregiver can access health care that offers comprehensive child health services.

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How to clean, sterilize and store feeding equipment

Cleaning, sterilizing & storing

It is very important that all the equipment (including feeding bottles, teats, bottle covers, rings, lids and other accessories) for breastmilk or infant formula should be thoroughly cleaned and sterilized before use. Cleaning and sterilizing equipment removes harmful bacteria that could grow in the feed and makes infants ill.

Sterilizing

Cleaned equipment can be sterilized using a commercial sterilizer (follow manufacturer's instructions), or a pan and boiling water.

WHO (2007) Safe preparation, storage and handling of powder infant formula

How to prepare formula for bottle-feeding at home

- Cleanse and disinfect the surface to prepare the feed
- Wash hands
- Read the instructions on the formula's packing
- Pour the correct amount of boiled water into a sterilized bottle. (The water should be no cooler than 70^{o}C, so do not leave water cool down for more than 30 minutes after boiling)
- Add the exact amount of formula to the water into the bottle

How to store a prepared infant formula

- It is best to make up a fresh feed each time your baby needs one, and to consume it immediately
- If you have to make up a feed in advance, cool the feed immediately after it is prepared and store it in the fridge at temperature of 4°C or below
- Discard the refrigerated feeds if they are not used within 24 hours

How to rewarm a feed

- Rewarm a refrigerated feed no more than 15 minutes. Rewarm the feed by placing the bottle in a container of warm water. Make sure the water level dose not touch the cap or the teat. Swirl the bottle occasionally to ensure the milk warms up evenly.
- Follow the manufacturer's instructions if you use a bottle warmer.
- Never rewarm leftover feeds.

Key facts

- A formula feed should be consumed within 2 hours of rewarming. Throw it away if it is not consumed within that time.
- Never use a microwave oven to rewarm refrigerated formula feeds. Microwave heats the feeds unevenly. This can scald the baby.

How much milk does a baby need in a day

- Every baby is unique. Some need small frequent feedings, while some need to feed less frequently but take more milk each time.
- On the first few days after birth, babies take only small amount of infant formula as their stomach is quite small. In the following days, the amount of milk needed will be increased.
- Babies know how much they need for their growth and body needs. Do not try to make him finish the bottle.
- Babies' appetite changes from day to day, follow his cues and let him decide how much he needs.

Choosing the Infant formula

- Infant formula (Stage 1 formula) is suitable for newborns and babies below 12 months of age.
- Follow-on formula (Stage 2 formula) is not suitable for infants below 6 months of age. Switching to follow-on formula is not necessary after 6 months old.

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USEFUL WEBSITES:

1. https://www.unicef.org.uk/babyfriendly/
2. www.breastfeeding.org.hk
3. www.breastfeeding.com
4. www.promom.org
5. www.bflrc.com
6. www.lalecheleague.org
7. www.infactcanada.ca/
8. www.unicef.org/
9. www.breastfeeding.asn.au
10. www.bfmed.org
11. www.ilac.org
12. http://www.breastfeeding.org.tw/about/about.php