

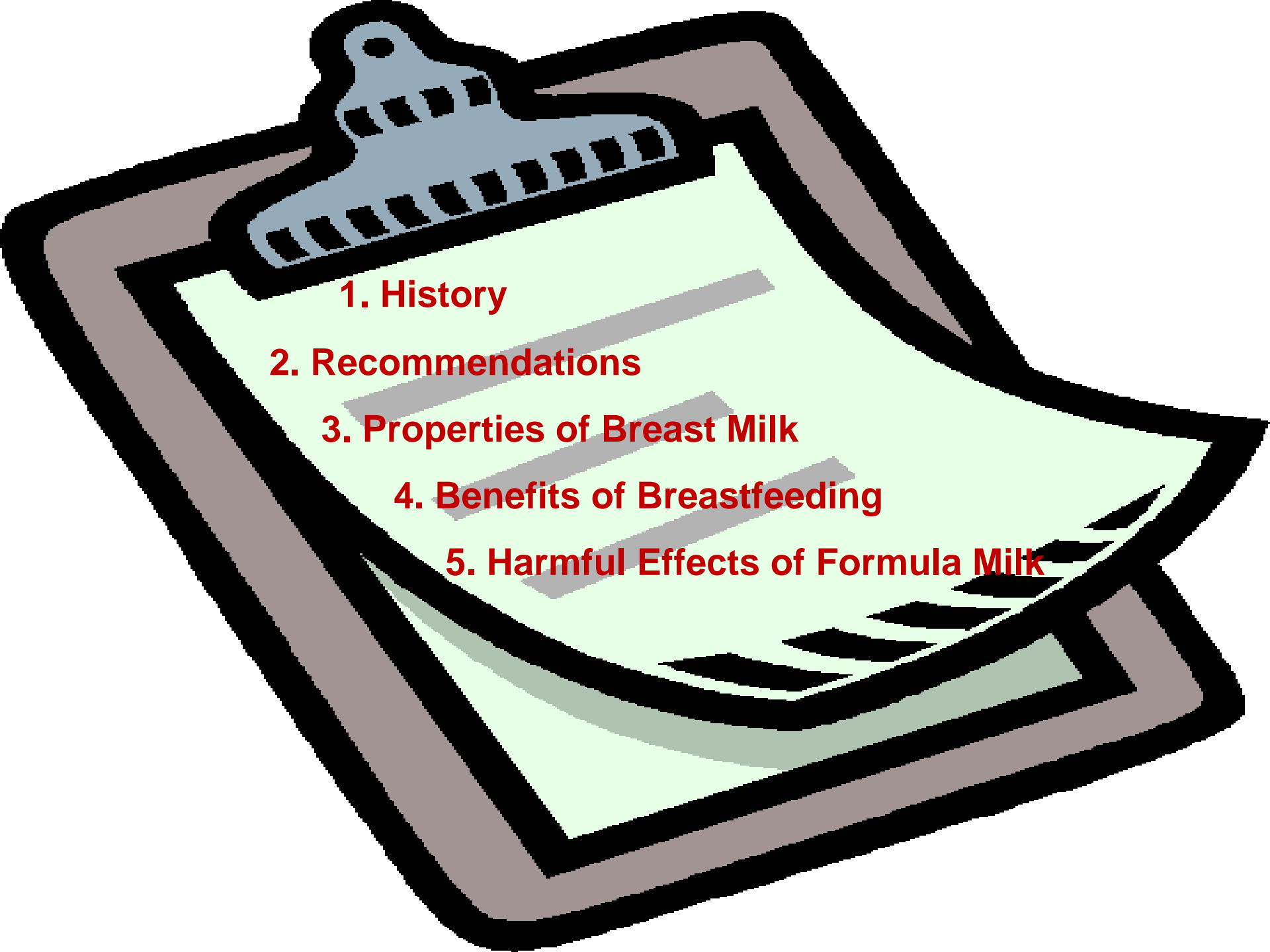
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BREASTFEEDING





1. History

2. Recommendations

3. Properties of Breast Milk

4. Benefits of Breastfeeding

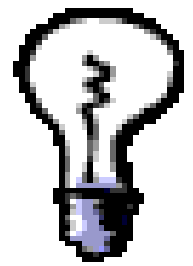
5. Harmful Effects of Formula Milk



**6. Why Some Mothers Choose
Formula Vs. Breast Milk**

7. Other Options (Contraindication)


8. Additional Resources



OBJECTIVE

- To increase awareness about the benefits of breastfeeding.**
- To know about the properties of breastfeeding.**
- To educate about the basics of breastfeeding and empower parents to make an informed choice.**
- To educate about the harms associated with formula feeding.**
- To know about the contraindication of breastfeeding**

HISTORY

- ❖ **Artificial feeding becomes readily available at turn of century**
 - ❖ **By 1940's control of birth & feedings given to doctors**
 - ❖ **By 1970, historical low in breastfeeding rates in western world**
 - ❖ **Rates peak in 1980s**
 - ❖ **Duration rates still generally low**
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BREASTFEEDING

Breastfeeding is one of the most effective ways to ensure child health and survival.

If every child was breastfed within an hour of birth, given only breast milk for their first six months of life, and continued breastfeeding up to the age of two years, about 800 000 child lives would be saved every year¹.

Globally, less than **40%** of infants under **six months** of age are exclusively breastfed.

WHO 2015

[Black RE, Victora CG, Walker SP, and the Maternal and Child Nutrition Study Group. Maternal and child undernutrition and overweight in low-income and middle-income countries. Lancet 2013;](#)

SUB-OPTIMAL BREASTFEEDING

Around **32%** of children less than 5 years of age in developing countries are **stunted** and **10%** are wasted.

It is estimated that sub-optimal breastfeeding, especially non-exclusive breastfeeding in the **first 6 months** of life, results in **1.4 million** deaths and **10%** of the disease burden in children younger than 5 years.

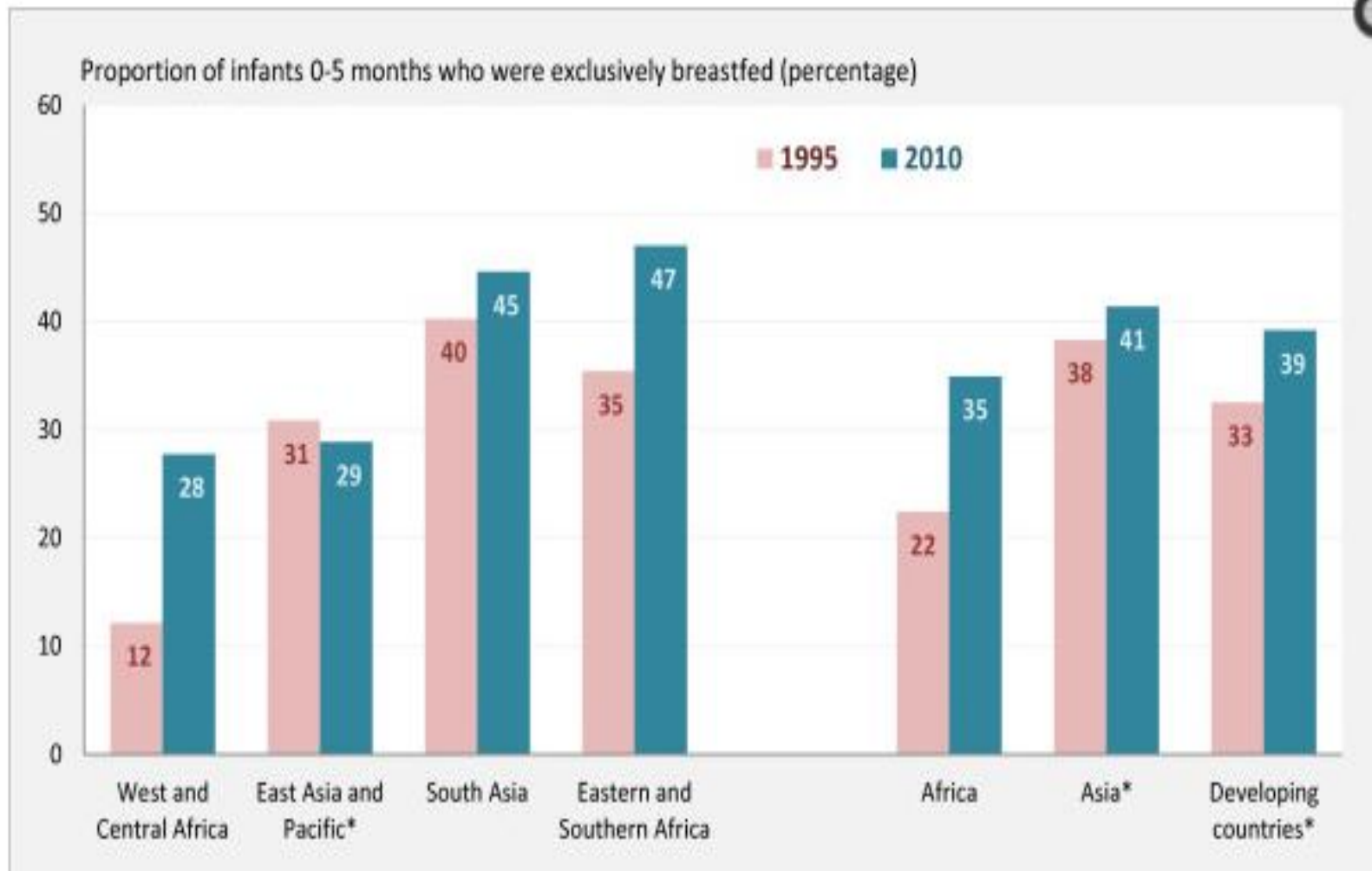
World Health Organization. *The global burden of disease: 2004 update*. Geneva, World Health Organization, 2008.

FIGURE 2
Trends in exclusive breastfeeding rates (1996–2006)



Source: UNICEF. *Progress for children: a world fit for children. Statistical Review, Number 6.* New York, UNICEF, 2007.

Figure 1



DHS and other national household surveys, around 1995 to around 2010, with additional analysis by UNICEF.

RECOMMENDATIONS OF WHO

- ❑ Exclusive breastfeeding until **6 months** of age
- ❑ Introduce **complimentary foods** with continued breastfeeding up to **2 years**. In addition:
 - ❖ breastfeeding should begin within one hour of birth.
 - ❖ breastfeeding should be "**on demand**", as often as the child wants day and night; and
 - ❖ bottles or pacifiers should be avoided.
 - ❖ breastfeeding should not be decreased when starting on solids.



HOW OFTEN SHOULD I BREASTFEED AND HOW LONG SHOULD A FEEDING LAST?

A woman should breastfeed when her baby shows signs of being hungry. A baby can show that he or she is hungry by:

- Waking up from sleep.**
- Moving the head around as if he or she is looking for the breast.**
- Sucking on his or her hands, lips, or tongue.**

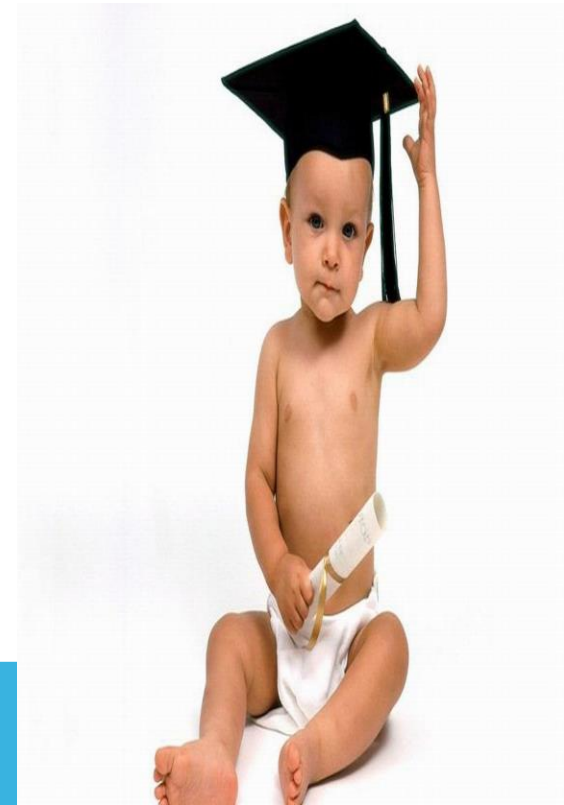
HOW DO I KNOW IF MY BABY IS GETTING ENOUGH BREAST MILK?

You can tell if your baby is getting enough breast milk by:

- Checking his or her diapers – By day **4 or 5** after birth, babies should have at least **6 wet diapers** a day.
- Checking his or her bowel movements – By day **4** after birth, babies should have **4 or more** bowel movements a day. By day **5**, their bowel movements should be yellow.
- Having your doctor or nurse check to see if your baby is gaining weight.

PROPERTIES OF BREASTMILK

- ❑ **Biologic specificity => Long-chain omega-3 Fatty Acids**
- ❑ **Important for brain and retinal development**
- ❑ **Higher IQs (a meta-analysis of 20 studies showed scores of cognitive function on average 3.2 points higher among children who were breastfed compared with those who were formula fed)**



MILK VOLUME

- ❑ Healthy exclusively breastfeeding women produce approximately **750 to 800 mL** per day of milk when lactation is fully established.
- ❑ However, milk volume varies among individuals and can range from **450 to 1200 mL** per day.
- ❑ Milk volume is low on the first two days postpartum, increases markedly on days **three** and **four**, then gradually increases to levels seen in full lactation.

BREAST MILK COMPOSITION

- **Protein:** The concentration of protein in breast milk (0.9 g per 100 ml) is lower than in animal milks.
- **Fat:** (3.5 g per 100ml) provides up to 50% of caloric needs, cholesterol levels constant, lipolytic enzymes aid in fat digestion)
- **Carbohydrates:** (**lactose** = milk sugar) predominantly in human milk (7 g per 100 ml) provides up to 40% caloric needs, essential for development of CNS, enhances calcium & iron absorption)



BREAST MILK COMPOSITION

Vitamins and minerals

Breast milk normally contains sufficient vitamins for an infant, unless the mother herself is deficient. The exception is **vitamin D**. The infant needs exposure to sunlight to generate endogenous vitamin D or, if this is not possible, a supplement.

The minerals **iron** and **zinc** are present in relatively **low concentration**, but their bioavailability and absorption is high.



IMMUNOLOGIC SPECIFICITY

Colostrum = Baby's first vaccination



- Is the special milk that is secreted in the first **2–3 days** after delivery.
- It is produced in small amounts, about **40–50 ml** on the first day, but is all that an infant normally needs at this time.
- Colostrum is rich in **white cells** and **antibodies**, especially **IgA**, and it contains a larger percentage of protein, minerals and fat-soluble vitamins (**A, E and K**) than later milk

ANTI-MICROBIAL ACTIVITY of BREAST MILK

Breast milk contains many factors that help to protect an infant against infection including:

- ❑ **Immunoglobulin**, principally (**IgA**), which coats the intestinal mucosa and prevents bacteria from entering the cells.
- ❑ **White blood cells** which can kill micro-organisms.
- ❑ **Whey proteins (lysozyme and lactoferrin)** which can kill bacteria, viruses and fungi.
- ❑ **Oligosaccharides** which prevent bacteria from attaching to mucosal surfaces.

ANTI-MICROBIAL ACTIVITY of BREAST MILK

- **Carbohydrates (Bifidus factor = growth factor present only in human milk required for establishing an acidic environment in the gut to inhibit growth of bacteria, fungi and parasites)**



HORMONAL CONTROL OF MILK PRODUCTION

There are two hormones that directly affect breastfeeding: ***prolactin*** and ***oxytocin***.

The prolactin level is highest about 30 minutes after the beginning of the feed, so its most important effect is to make milk for the next Feed.

More prolactin is produced **at night**, so breastfeeding at night is especially helpful for keeping up the milk supply.

2. THE PHYSIOLOGICAL BASIS OF BREASTFEEDING

FIGURE 3
Anatomy of the breast

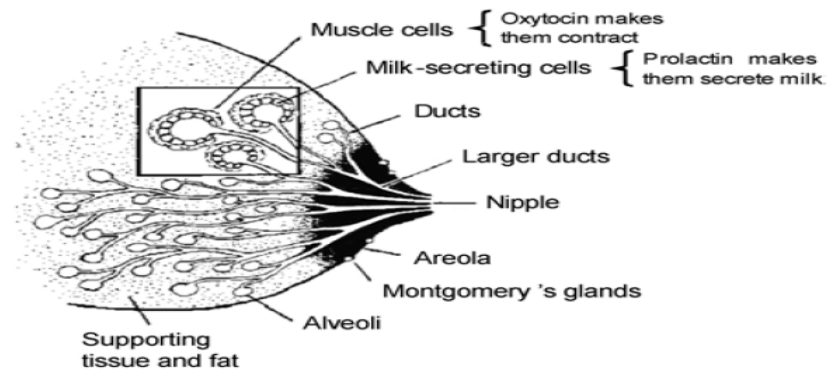
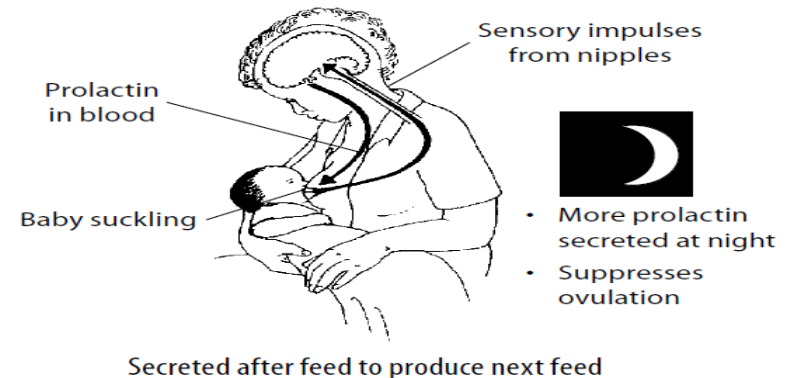


FIGURE 4
Prolactin



BENEFITS of BREASTFEEDING

- **Ecological:**
 - Saves resources
 - Less waste
 - No refrigeration
 - No manufacturing
 - No bottles, cans
 - No trucking
 - No handling



BENEFITS OF BREASTFEEDING

■ For Society

- Smarter
- Healthier
- Less cost to healthcare system
- Stronger families



BENEFITS of BREASTFEEDING

To Families

- Less trips to doctors, hospitals**
- Less prescriptions**
- Less stress**
- Less illness**
- More bonding**
- Inexpensive**




BENEFITS of BREASTFEEDING

- **Benefits to baby:**
 - Better dental health
 - Increased visual acuity
 - Decreased duration and intensity of illnesses
 - Less allergies
 - Better health & less risk of illnesses



BREAST FEEDING AND UTI


- ❑ The risk of UTI was **2-3 times** higher in non-breastfed children when compared with exclusively breastfed children
 - ❑ The protective effect of breastfeeding was dependent on the **duration of breastfeeding** as well as the **gender** of the child or infant.
 - ❑ A longer duration of breastfeeding was associated with a lower risk of infection after weaning and the effect was stronger in **girls**.
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BENEFITS TO MOTHER

- ❑ Psychological (Attachment, bonding, security).
- ❑ Decreased postpartum bleeding, depression, type 2 DM.
- ❑ More rapid uterine involution due to increased of oxytocin.
- ❑ Decreased menstrual blood loss.
- ❑ Method of birth control (98% protection in the first six months after birth).
- ❑ Earlier return to prepregnancy weight
- ❑ Decreased risk of **breast cancer**.
- ❑ Decreased risk of **ovarian cancer**.
- ❑ Decreased risk of hip fractures and osteoporosis in the postmenopausal period.



WHEN CAN I START BREASTFEEDING?

- ❑ Most women can start breastfeeding within a few hours after giving birth.
 - ❑ For the first few days, most women make only a small amount of yellowish milk called “**colostrum.**”
 - ❑ Colostrum has all of the nutrition a newborn needs.
 - ❑ Most women start making more milk after **2 or 3 days.**
- 

INITIATION of BREAST FEEDING

- ❑ Should be started within **30-60 min.** of delivery.
- ❑ Baby should be fed on demand.
- ❑ With-in **4-6 weeks** baby goes into routine.
- ❑ Breast Feeding should be given for **5-15 minutes.**
- ❑ Both breast should be offered.



Timing of breastfeeding initiation:

Early breastfeeding: if initiated to baby within the first one hour of birth.

Delayed breastfeeding: if the time of the first breastfeeding initiation is more than one hour after birth).

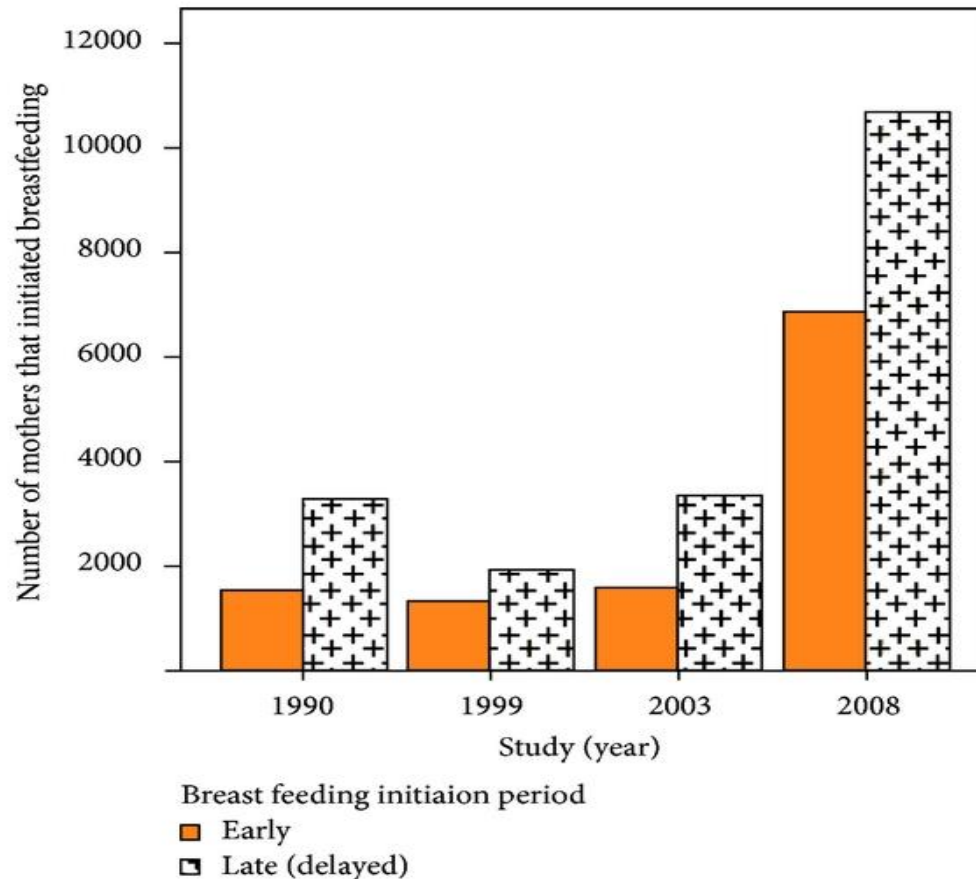



Figure 1: Bar chart of number of nursing mothers with early and delayed initiation of breastfeeding from 1990 and 2008. Breastfeeding behaviours of mothers among the early and late initiators of breastfeeding were apparently similar in 1990 and 2003.

SIGNS for ADEQUATE BREASTFEEDING

- A satisfactory weight gain of baby.**
 - Baby looks active and well.**
 - Passes frequent but normal stools.**
 - Urinate a number of times/ daily without any sinister signs.**
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WHO/UNICEF **Ten Steps** to Successful Breastfeeding

1. Have a written breastfeeding policy communicated to all health care staff.
2. Train all health care staff to implement this policy
3. Inform all pregnant women about benefits of breastfeeding
4. Initiate the breastfeeding within the first hour
5. Show mothers how to breastfeed and how to maintain lactation
6. Give newborn infants no food or drink other than breast milk, unless medically indicated
7. Allow mothers and infants to remain together 24 hour a day
8. Encourage breast feeding on demand
9. Give no artificial nipples or pacifiers to breastfeeding infants
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from hospital

HARMFUL EFFECTS OF FORMULA MILK



**NO FORMULA MILK
ADVERTISEMENTS**

WHY SOME MOTHERS CHOOSE FORMULA vs. BREAST MILK

- Distressed by physical discomfort of early breastfeeding problems.
- Convenience issues
- Pressures of employment/school
- Worries that breast shape will change
- Formula manufacturers manipulate people through their advantages
- Doctors and nurses need more lactation training



WHY SOME MOTHERS CHOOSE FORMULA VS. BREAST MILK

- Moms given very little time to adjust to changes of postpartum
- Family demands
- Non-supportive family/health professionals
- Embarrassment
- Lack of confidence in self
- Feeling that one cannot produce enough milk



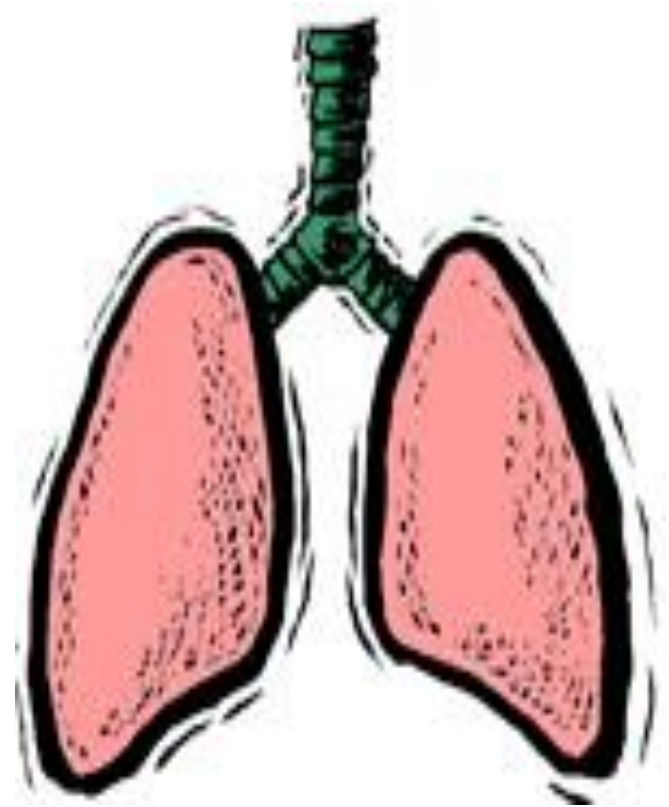
FORMULA MILK ILLNESS “RELATIVE RISK”

- ❑ Allergies, eczema **2 to 7 times**
- ❑ Urinary tract infections **2.6 to 5.5 times**
- ❑ Inflammatory bowel disease **1.5 to 1.9 times**
- ❑ Diabetes, type 1 **2.4 times**
- ❑ Gastroenteritis **3 times**
- ❑ Hodgkin's lymphoma **1.8 to 6.7 times**
- ❑ Otitis media **2.4 times**
- ❑ *Haemophilus influenzae* meningitis **3.8 times**
- ❑ Necrotizing enterocolitis **6 to 10 times**



FORMULA MILK ILLNESS “RELATIVE RISK”

- ❑ Pneumonia/lower respiratory tract infection **1.7 to 5 times**
- ❑ Respiratory syncytial virus infection **3.9 times**
- ❑ Sepsis **2.1 times**
- ❑ Sudden infant death syndrome **2.0 times**
- ❑ Industrialized-world hospitalization **3 times**



RISK REDUCTION of BREAST MILK

Diabetes:

Up to a **30%** reduction in the incidence of **type 1 DM** is reported for infants who exclusively breastfed for at least **3 months**.

Childhood leukaemia:

A reduction of **20%** in the risk of acute lymphocytic leukaemia and **15%** in the risk of acute myeloid leukaemia in infants breastfed for **6 months** or longer.

Sudden Infant Death Syndrome (SIDS):

A **36%** reduction in risk of SIDS

BREAST ENGORGEMENT


Engorgement refers to swelling within the breast tissue, which can be painful. In some women with engorgement, the breasts become firm, flushed, warm to the touch, and feel as if they are throbbing. Some women develop a slight fever .

The best treatment for engorgement is to :

- Empty the breasts frequently and completely by breastfeeding.
- Expressing milk by hand or breast pump can help to soften the areola and allow the baby to latch on more easily.
- Use of a cold compress or ice pack can be helpful in relieving the discomfort of engorgement.
- Pain medications : Paracetamol / Ibuprofen are safe

CONTRAINDICATION of BREAST FEEDING

HIV and breastfeeding

- ❑ An HIV-infected mother can pass the infection to her infant during pregnancy, delivery and through breastfeeding.
 - ❑ However, antiretroviral (ARV) drugs given to either the mother or HIV-exposed infant reduces the risk of transmission.
 - ❑ WHO recommends that when HIV-infected mothers breastfeed, they should receive ARVs and follow WHO guidance for infant feeding.
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RECOMMENDATIONS

Table 1. The 2016 WHO recommendations on HIV and infant feeding

RECOMMENDATIONS	Strength of the recommendation	Quality of the evidence
<p>1. The duration of breastfeeding by mothers living with HIV^a</p> <p>For how long should a mother living with HIV breastfeed if she is receiving ART and there is no evidence of clinical, immune or viral failure?</p>		
<p>Mothers living with HIV should breastfeed for at least 12 months and may continue breastfeeding for up to 24 months or longer (similar to the general population) while being fully supported for ART adherence (see the WHO consolidated guidelines on ARV drugs for interventions to optimize adherence).^b</p>	<p>Strong</p>	<p>12 months: low 24 months: very low</p>

GUIDING PRACTICE STATEMENTS

1. When mothers living with HIV do not exclusively breastfeed
- If a mother living with HIV does not exclusively breastfeed, is mixed feeding with ART better than no breastfeeding at all?**

Mothers living with HIV and health-care workers can be reassured that ART reduces the risk of postnatal HIV transmission in the context of mixed feeding. Although exclusive breastfeeding is recommended, practising mixed feeding is not a reason to stop breastfeeding in the presence of ARV drugs.

CONTRAINDICATION of BREAST FEEDING

- Untreated brucellosis
- Active or untreated tuberculosis (use expressed milk)
- Active herpes simplex on her breast (use expressed milk)
- Mothers with H1N1 influenza, temporarily be isolated until become afebrile
- Mothers who are receiving diagnostic or therapeutic radioactive isotopes.
- Infant with galactosaemia

CONDITIONS THAT ARE NOT CONTRAINDICATIONS TO BREASTFEEDING

Mothers with:

Hepatitis B

Hepatitis C

OTHER OPTIONS if BREASTFEEDING is NOT POSSIBLE

Mom can still use her milk, even if she decides not to breastfeed:

- Use a breast pump (electric), efficient to produce milk.
- Cup or bowl feeding
- Spoon feeding
- Eyedropper or feeding syringe
- Nursing supplementer

THE END

**There is no freedom of choice for humans
if it has been taken away from them
at the beginning.**

**Breast-feeding is not a choice,
but an obligation to the choice,**

Give your child the freedom of choice.

ADDITIONAL RESOURCES

- World Health Organization
- Community Health Nurses
- Lactation Consultants
- Public Health Agency of Canada



World Breastfeeding Week

1 - 7 August 2018



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