

# MEDICINE



## BREASTFEEDING



EDITING FILE =)

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MEDICINE  
KING SAUD UNIVERSITY

You are gonna be a great doctor





# OBJECTIVES

- **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**



# BREASTFEEDING AND RECOMMENDATIONS

**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 year .

Globally, less than **40%** of infants **under six months** of age are **exclusively**(1) breastfed



Around 32% of children less than 5 years of age in developing countries are stunted(2) 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.

(1) exclusively means only

(2) (2) short stature





# BREASTFEEDING AND RECOMMENDATIONS CONT'

- ❑ Exclusive breastfeeding until **6 months** of age(1)
- ❑ 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.

## Signs of baby that He/She is **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.

## Baby is getting enough milk if He/She :

- at least **6 wet diapers** a day  
( after 4<sup>th</sup> or 5<sup>th</sup> day of birth )
- **4 or more bowel movements** a day  
( after 4<sup>th</sup> day of birth )
- Gaining weight .

Bowel movement by 5<sup>th</sup> day should be yellow



\* After 6 months we don't call it exclusive any more  
(1) No intervention with any thing



# PROPERTIES OF BREAST MILK AND ITS COMPOSITIONS



## 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<sup>(1)</sup> 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)

## VITAMINS AND MENIRALS

Breast milk normally contains sufficient vitamins for an infant, unless the mother herself is deficient. The exception is vitamin D<sup>(2)</sup>. 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.

(1) Considered as good amount.

(2) قليل في الحليب و بالعادة يعطى مكملات ٤ قطرات , Total of 400 IU





# BREAST MILK COMPOSITIONS CONT'

## 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**)(1) than later milk

## ANTIMICROBIAL ACTIVITY OF BREAST MILK

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

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

## 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)

(1) سياره كيا

(2) أشياء طبيعية تزيد الحليب مثل : (١)- الحلبة (٢)-حلاوة طحينية (٣)-شوفان كويكر





# BENEFITS OF BREAST MILK

## Just read it

<b>Ecological</b>	Saves resources, Less waste, No refrigeration, No manufacturing, No bottles or cans, No trucking, No handling
<b>Society</b>	smarter, healthier, less cost to healthcare system and stronger families
<b>Families</b>	Less trips to doctors, hospitals, Less prescriptions, Less stress, Less illness, More bonding, Inexpensive
<b>baby</b>	Better dental health, increased visual acuity, Decreased duration and intensity of illnesses, Less allergies, Better health & less risk of illnesses

## For 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 pre-pregnancy weight
- **Decreased risk of breast cancer.**
- **Decreased risk of ovarian cancer.**
- Decreased risk of hip fractures and
- Osteoporosis in the postmenopausal period.



# BENEFITS OF BREAST MILK CONT'

## Breast feeding And UTI(1)

- 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 ↓ risk of infection after weaning and the effect was stronger in **girls**.

## When can I start breastfeeding? (2)

- 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 for 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).

### Signs for adequate breastfeeding

- A satisfactory weight gain of baby.
- Baby looks active and well.
- Passes frequent but normal stools.
- Urinates a number of times/ daily without any sinister signs.



(١) الرضاعة تقلل نسبة ال UTI ٣مرات  
(٢) الإرضاع في الأيام الأولى مباشرة مهم لأجل المناعة





# STEPS TO SUCCESSFUL BREASTFEEDING

**JUST READ IT**

## WHO/UNICEF Ten Steps to Successful Breastfeeding

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

**FIGURE 3**  
**Anatomy of the breast**



## 2. THE PHYSIOLOGICAL BASIS OF BREASTFEEDING

**FIGURE 4**  
**Prolactin**





# WHY SOME MOTHERS CHOOSE FORMULA INSTEAD?

- 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(1)
- 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

(1) You need to advise your patient.





# HARMFUL EFFECT OF FORMULA MILK

- ✓ 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
- ✓ 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(1)** 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 (2)

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 : (3)

- 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 easily.
- Use of a cold compress or ice pack can be helpful in relieving the discomfort of engorgement.
- Pain medications : Paracetamol / Ibuprofen are safe

(1) T1DM is not inherited

(2) الحليب مايطلع بسهولة ، ممكن يسبب إذا الطفل يرضع من ثدي واحد فقط (3) No antibiotics





# CONTRAINDICATIONS

- ❖ *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(1)*

## CONDITIONS THAT ARE NOT CONTRAINDICATIONS TO BREASTFEEDING :

*Mothers with/ Hepatitis B, Hepatitis C*

## Other Options if Breastfeeding is Not Possible :

- *Use a breast pump(2) (electric), efficient to produce milk.*
- *Cup or bowl feeding*
- *Spoon feeding*
- *Eyedropper or feeding syringe*
- *Nursing supplemented*

(1) intolerant to galactose

(2) كل ساعتين تفضى





# CONTRAINDICATIONS CONT'

## 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.

### 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<sup>a</sup> 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).<sup>b</sup></p>	Strong	12 months: low 24 months: very low

### GUIDING PRACTICE STATEMENTS

- 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.

## ❖ EXAMIN YOUR SELF !

How to know if baby's getting enough of milk ?

- A. 4 wet diapers
- B. 4 or more bowel movements
- C. A+B

Ans B

Which one of the following if a benefit for breastfeeding mothers?

- A. Decrease risk of cancers
- B. Slower uterine involution
- C. Increase chance for pregnancy early

Ans A

Which of the following is a component of mother's milk?

- A. Vit D
- B. Fructose
- C. Lactose

Ans C

Which one of the following will be reduced if we use breast milk for the baby?

- A. Sudden Infant Death Syndrome (SIDS)
- B. Type 2 DM
- C. Ovarian cancer

Ans A

Which one of the following conditions is contraindicated for breast milk?

- A. Hepatitis B
- B. Mother with H1N1
- C. Hepatitis C

Ans B

Why some moms choose formula milk instead of breast milk?

- A. Embarrassment
- B. Family demands
- C. A+B

Ans C

# THANK YOU

FOR CHECKING OUR TEAMWORK

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