

Breastfeeding

Recommendations of WHO

Benefits of breastfeeding for mothers

- ❑ Breastfeeding should begin within one hour of birth
- ❑ **Exclusive breastfeeding until 6 months of age.**
You don't have to give your baby supplements except for vitamin D if the exposure to sunlight is not possible.
Fact: Globally, less than 40% of infants under six months of age are exclusively breastfed!
- ❑ Introduce complimentary foods with continued breastfeeding up to 2 years. In addition:
 - Breastfeeding should be "on demand"
 - Bottles or pacifiers should be avoided.
 - Breastfeeding should not be decreased when starting on solids.

- Helps the uterus to regress to its size before pregnancy (due to increased of oxytocin)
- Losing accumulated fat during pregnancy.
- Decrease risk of osteoporosis
- **Decreased risk of breast cancer.**
- **Decreased risk of ovarian cancer.**
- Decreased postpartum depression, T2DM
- Decrease incidence of high cholesterol, gallstone formation & rheumatoid arthritis
- Psychological (bonding, security)
- Method of birth control (98% protection in the first six months after birth)

Milk volume

Milk volume is low on first 2 days postpartum, increases markedly on days 3 and 4, and then gradually increases to levels seen in full lactation. The most satisfactory stimulus to the secretion of human milk is regular & complete emptying of the breast; **milk production is reduced when the secreted milk is not drained**

Breast milk composition

Composition is dynamic & varies within a feeding, diurnally, over lactation & between mothers & populations

Differs between preterm & term milk "preterm milk is higher in protein and fat"

Macronutrients	Protein	The concentration of protein in breast milk is lower than in animal milks. "It is adequate for baby's growth / excess protein in animal milk is considered as a load for the baby"
	Fat	Provides up to 50% of caloric needs
	Carbohydrates	Predominant in human milk, provides up to 40% caloric needs, essential for development of CNS, enhances calcium & iron absorption
Micronutrients	Micronutrients that depend on maternal diet & body stores	Vitamins A, B1, B2, B6, B12, D, iodine, iron and zinc. Vitamin D is low quantity in human milk, particularly with low maternal exposure to sunshine
	Regardless of maternal diet	Vitamin K is low in human milk and thus, the American Academy of Pediatrics recommends an injection of this vitamin to avoid hemorrhagic disease of the newborn
Bioactive factors	Immunoglobulins mainly (IgA)	Which coats the intestinal mucosa and prevents bacteria from entering the cells
	White blood cells	Which can kill micro-organisms
	Whey proteins (lysozyme/lactoferrin)	Which can kill bacteria, viruses and fung
	Oligosaccharides	Prevent bacteria from attaching to mucosal surfaces
	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

Colostrum "liquid gold"

Yellowish, sticky breast milk produced in the first 2-3 days after delivery. It is produced in small amounts, but is all that an infant normally needs at this time

- It is higher in:
Immunological components (IgA, lactoferrin, WBCs, developmental factors "epidermal growth factors")
Minerals (Na / Cl / Mg) / fat-soluble vitamins (A, E, K)
Proteins / WBCs / antibodies (especially IgA)
- It is lower in:
Volume / carbohydrate (lactose) / fat / K / Ca

Basic nutritional info on Breast milk

	Colostrum	Breast milk	Cows milk
• Calories	58	70	65
• Protein	3.7gm	1.3gm	3.4gm
• Carbohy	5.3gm	7.4gm	4.8gm
• Fats	2.9gms	4.2gms	3.7gm
• Colostrum->	Thin , yellow , Low on fat & carbs.		
• Breast milk ->	White, thin, watery & sweet.		
• Foremilk->	Watery, low fat & high carbs.		
• Hindmilk->	Creamier, thick, high fat		

Superior health outcomes in breastfed infant / Benefits of breastfeeding for babies	
Protection during breastfeeding	<ul style="list-style-type: none"> – Gastrointestinal infections / respiratory infections – Urinary infections / meningitis / sepsis – Atopic dermatitis / Food allergies / Necrotizing enterocolitis – Wheezing / Celiac disease / Growth faltering / Visual acuity
Protection after weaning "early childhood"	<ul style="list-style-type: none"> – Gastrointestinal infections / respiratory infections – Wheezing / Celiac disease / Growth faltering / Visual acuity – Cognition
Protection later in childhood	<ul style="list-style-type: none"> – Cognition / personality – Obesity / Types I and II diabetes / Leukemia / lymphomas / Crohn's disease
Risk Reduction of Breast milk <ul style="list-style-type: none"> – 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 	
Contraindications of breast feeding	
HIV and breastfeeding	
<p>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.</p>	<ul style="list-style-type: none"> – Mothers living with HIV should breastfed for at least 12 months and may continue for up to 24 months or longer (like in normal mothers) while being full supported for ART adherence (strong recommendation) – 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
Contraindications!	Conditions that are not contraindications to breastfeeding
<ul style="list-style-type: none"> <input type="checkbox"/> Untreated brucellosis <input type="checkbox"/> Active or untreated TB (use expressed milk) <input type="checkbox"/> Active herpes simplex on her breast (use expressed milk) <input type="checkbox"/> Mothers with H1N1 influenza, temporarily be isolated until become afebrile <input type="checkbox"/> Mothers who are receiving diagnostic or therapeutic radioactive isotopes. <input type="checkbox"/> Infant with galactosaemia 	<p>Mothers with</p> <ul style="list-style-type: none"> <input type="checkbox"/> Hepatitis B <input type="checkbox"/> Hepatitis C

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