



**BENEFITS OF BREASTFEEDING TO MOTHER AND CHILD- A
LITERATURE REVIEW**

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ABSTRACT

Breastfeeding and human milk are the normative standards for infant feeding and nutrition. Breastfeeding is the greatest of gifts, from Mother Nature to Human Infants. Breastfeeding provides a tight emotional bonding between mother and nursing infant. This bonding enhances the mother's love, availability and protection for her child. There are both short and long term health benefits to mothers who breastfeed. Such mothers have decreased postpartum blood loss and

more rapid involution of the uterus. Breastfeeding and the use of human milk give unique nutritional and non nutritional advantages to both infant and the mother and, in turn, optimize infant, child, and adult health as well as child growth and development. So infant feeding should not be considered as a lifestyle choice but rather as a basic health issue.

KEYWORDS: Breastfeeding, Health, Infant, Mother, Milk.

INTRODUCTION

Breastfeeding and human milk are the normative standards for infant feeding and nutrition. Given the documented short-and long-term medical and neuro developmental advantages of breastfeeding, infant nutrition should be considered a public health issue and not only a lifestyle choice.

Breastfeeding is the greatest of gifts, from Mother Nature to Human Infants. This was the only choice for the mother to nurse her Infant, since the evolution of human being. But with advent of Infant formula milk after industrial revolution in the West, mothers had the choice to breastfeed or not.

Recent research and recommendations by the WHO, UNICEF, Indian Academy of Pediatrics (IAP), American Academy of Pediatrics (AAP) and other similar organization for exclusive breastfeeding up to the age of six month and to continue until the age of fifteen months has gained wide acceptance among nursing mothers. Today many of the Mothers accept the fact that "**Breast is Best**". Breastfeeding provides a tight emotional bonding between mother and nursing infant. This bonding enhances the mother's love, availability and protection for her child. In spite of millions of dollars spent, decades of research and promising marketing claims, the infant formula milk industry is not able to make a exact duplication of human milk, with regards to its protective immune functions, its nutritional advantages and most important, mother infant bonding. For the sake of discussions, let us assume that even if infant food industry is able to produce, better food for infant, it's now known that skipping the lactation phase would be problematic for mothers' future health. In fact, not breastfeeding after giving birth seems to put women at higher risk for breast and ovarian cancer, diabetes, cardiovascular disease and many other serious health conditions. The precise reasons for these increased risks are still not known, but researchers think that, mother nature has prepared the body for pregnancy, delivery and lactation, and not engaging in breastfeeding, may lead many crucial systems going out of control. The effects of these can last for decades after children are weaned off from breastfeeding.

"**The normal physiology is breastfeeding after pregnancy,**" says Alison Stuebe, an assistant professor in the Division of Maternal Fetal Medicine at the University of North Carolina in Chapel Hill. She describes breastfeeding as the fourth trimester of pregnancy. When women cannot or choose not to breastfeed, "there are myriad consequences, and we're just figuring them out," she says.

ADVANTAGE MOTHERS

There are both short and long term health benefits to mothers who breastfeed. Such mothers have decreased postpartum blood loss and more rapid involution of the uterus. Continued breastfeeding leads to increased child spacing secondary to lactation amenorrhea The two endocrine neuro peptides, **oxytocin** and **prolactin**, have the potential in relieving stress.^[1,2]

Oxytocin, known as "the love hormone", "the cuddle chemical" and "the hormone of love and bonding" which helps the mother and the child feel calm and firmly attach to each

other. It has a key role in uterine involution during labor and controls postpartum bleeding, one of the major causes of maternal mortality.^[3]

Prolactin, known as the "mothering hormone", besides producing breast milk, induces maternal behaviors and helps the mother take responsibilities, putting her child's needs ahead of her own. These two hormones are designed for helping a woman become a mother and enjoy her motherhood.

In addition to its emotional impact, breastfeeding has health benefits for lactating mothers too, it helps overcome child birth problems and its long-term effects. Breastfeeding mother lose extra fat stored during pregnancy as their bodies can burn 200-500 calories every day by milk production. Half of the calories consumed for producing milk are derived from body fat storage.^[4,5] Studies showed that breastfeeding mothers lose stubborn hip and thigh fat faster than their formula-feeding counterparts.

During lactation phase, the body takes calcium from the bones and after weaning, calcium will be deposited at higher concentration. These demineralization and remineralization cycles will prevent future osteoporosis.

Some studies suggest that breastfeeding can improve glucose tolerance in mothers with recent gestational diabetes mellitus (DM) and decrease the risk of developing Type 2 DM later in life.^[6] The need for insulin is decreased in nursing mothers with type 1 DM.

Breastfeeding mothers tend to have high HDL cholesterol. Controlled blood sugar levels, high HDL cholesterol and ideal weight loss, caused by breastfeeding may eventually result in a lower risk of cardiovascular disease.^[7, 8] Recent research has shown that aortic calcification, the risk factor of stroke, heart attack and other cardiovascular complications, are remarkably less in mothers with three months or more history of breastfeeding than in those who had not breastfed.

Due to the lower level of estrogen and inhibition of ovulation during lactation, nursing mothers can benefit from the cancer-fighting effects of breastfeeding. Some studies have shown that breastfeeding mothers are protected against premenstrual breast cancer and also uterine and ovarian cancers.

It is obvious that breastfeeding isn't just about milk; it is a gift beyond measure with many beneficial impacts. Needless to say, great effort should be made to encourage mothers understand the valuable benefits of this amazing motherly art.

Prospective cohort studies have noted an increase in postpartum depression in mothers who do not breastfeed or who wean early.^[9] A large prospective study on child abuse and neglect perpetuated by mothers found, after correcting for potential confounders, that the rate of abuse/ neglect was significantly increased for mothers who did not breastfeed as opposed to those who did.

The relative risk of rheumatoid arthritis was 0.8 (95% CI: 0.8–1.0), and if the cumulative duration of breastfeeding was longer than 24 months, the relative risk of rheumatoid arthritis was 0.5 (95% CI: 0.3–0.8).^[10]

ADVANTAGE BABIES

The benefits of breast milk for babies are numerous. Decrease incidences of childhood obesity, asthma and better cognitive development are all linked to breast feeding in infancy.

Respiratory Tract Infections and Otitis Media: The risk of hospitalization for lower respiratory tract infections in the first year is reduced by 72% if infants are breastfed exclusively for more than 4 months.^[11,12] Infants who exclusively breastfed for 4 to 6 months had a fourfold increase in the risk of pneumonia compared with infants who exclusively breastfed for more than 6 months.^[13] The severity (duration of hospitalization and oxygen requirements) of respiratory syncytial virus bronchiolitis is reduced by 74% in infants who breastfed exclusively for 4 months compared with infants who never or only partially breastfed.^[14] Any breastfeeding compared with exclusive commercial infant formula feeding will reduce the incidence of Otitis media (OM) by 23%.¹³ Exclusive breastfeeding for more than 3 months reduces the risk of Otitis media by 50%. Serious colds and ear and throat infections were reduced by 63% in infants who exclusively breastfed for 6 months.^[15]

Gastrointestinal Tract Infections: Any breastfeeding is associated with a 64% reduction in the incidence of nonspecific gastrointestinal tract infections, and this effect lasts for 2 months after cessation of breastfeeding.^[11,12]

Necrotizing Enterocolitis: A meta-analysis of 4 randomized clinical trials performed over the period 1983 to 2005 supports the conclusion that feeding preterm infants human milk is

associated with a significant reduction (58%) in the incidence of Necrotizing Enterocolitis (NEC). A more recent pediatrics publications.org study of preterm infants fed an exclusive human milk diet compared with those fed human milk supplemented with cow-milk-based infant formula products noted a 77% reduction in NEC.^[16, 17]

Sudden Infant Death Syndrome and Infant Mortality: Meta-analyses with a clear definition of degree of breastfeeding and adjusted for confounders and other known risks for sudden infant death syndrome (SIDS), notes that breastfeeding is associated with a 36% reduced risk of SIDS. Approximately (21%) of the US infant mortality has been attributed, in part, to the increased rate of SIDS in infants who were never breastfed.^[18] That the positive effect of breastfeeding on SIDS rates is independent of sleep position was confirmed in a large case-control study of supine-sleeping infants.^[19,20]

Allergic Disease: There is a protective effect of exclusive breastfeeding for 3 to 4 months in reducing the incidence of clinical asthma, atopic dermatitis, and eczema by 27% in a low-risk population and up to 42% in infants with positive family history.^[21] There are conflicting studies that examine the timing of adding complementary foods after 4 months and the risk of allergy, including food allergies, atopic dermatitis, and asthma, in either the allergy-prone or non atopic individual.²⁶ Similarly, there are no convincing data that delaying introduction of potentially allergenic foods after 6 months has any protective effect.^[22-25]

Celiac Disease: There is a reduction of 52% in the risk of developing celiac disease in infants who were breastfed at the time of gluten exposure.^[26] Over all, there is an association between increased duration of breastfeeding and reduced risk of celiac disease when measured as the presence of celiac antibodies. The critical protective factor appears to be not the timing of the gluten exposure but the overlap of breastfeeding at the time of the initial gluten ingestion. Thus, gluten-containing foods should be introduced while the infant is receiving only breast milk and not infant formula or other bovine milk products.

Inflammatory Bowel Disease: Breastfeeding is associated with a 31% reduction in the risk of childhood inflammatory bowel disease.^[27] the protective effect is hypothesized^[27] to result from the interaction of the immune modulating effect of human milk. Different patterns of intestinal colonization in breastfed versus commercial infant formula-fed infants may add to the preventive effect of human milk.^[28]

Obesity: Because rates of obesity are significantly lower in breastfed infants, national campaigns to prevent obesity begin with breastfeeding support.^[29,30] Although complex factors confound studies of obesity, there is a 15% to 30% reduction in adolescent and adult obesity rates if any breastfeeding occurred in infancy compared with no breastfeeding.^[31] The Framingham Offspring study noted a relationship of breastfeeding and a lower BMI and higher high-density lipoprotein concentration in adults.^[32]

Diabetes: Up to a 30% reduction in the incidence of type 1 diabetes mellitus is reported for infants who exclusively breastfed for at least 3 months, thus avoiding exposure to cow milk protein.^[33] It has been postulated that the putative mechanism in the development of type 1 diabetes mellitus is the infant's exposure to cow milk β -lacto globulin, which stimulates an immune-mediated process cross reacting with pancreatic β cells.

A reduction of 40% in the incidence of type 2 diabetes mellitus is reported, possibly reflecting the long-term positive effect of breastfeeding on weight control and feeding self-regulation.^[34]

Childhood Leukemia and Lymphoma: There is a reduction in leukemia that is correlated with the duration of breastfeeding.^[35] A reduction of 20% in the risk of Acute Lymphatic Leukemia (ALL) and 15% in the risk of acute Myeloid Leukemia in infants breastfed for 6 months or longer.^[36, 37] Breastfeeding for less than 6 months is protective but of less magnitude (approximately 12% and 10%, respectively). The question of whether the protective effect of breastfeeding is a direct mechanism of human milk on malignancies or secondarily mediated by its reduction of early childhood infections has yet to be answered.

Neuro developmental Outcomes: Consistent differences in neuro developmental outcome between breastfed and commercial infant formula-fed infants have been reported, but the outcomes are confounded by differences in parental education, intelligence, home environment, and socioeconomic status.^[38] The large, randomized Promotion of Breastfeeding Intervention Trial provided evidence that adjusted outcomes of intelligence scores and teacher's ratings are significantly greater in breastfed infants.^[39-41] In addition, higher intelligence scores are noted in infants who exclusively breastfed for 3 months or longer and higher teacher ratings were observed if exclusive breastfeeding was practiced for 3 months or longer. Significantly positive effects of human milk feeding on long-term

neurodevelopment are observed in preterm infants, the population more at risk for these adverse neuro developmental outcomes.^[42-45]

ROP and Metabolic Disorders: Human milk feeding in the NICU also is associated with lower rates of severe retinopathy of prematurity. Long-term studies of preterm infants also suggest that human milk feeding is associated with lower rates of metabolic syndrome, and in adolescents, it is associated with lower blood pressures and low-density lipoprotein concentrations and improved leptin and insulin metabolism.

Preterm Infant: There are several significant short and long-term beneficial effects of feeding preterm infants human milk. Lower rates of sepsis and NEC indicate that human milk contributes to the development of the preterm infant's immature host defense.^[46-50] The benefits of feeding human milk to preterm infants are realized not only in the NICU but also in the fewer hospital readmissions for illness in the year after NICU discharge.^[51,52] Furthermore, the implications for a reduction in incidence of NEC include not only lower mortality rates but also lower long-term growth failure and neuro developmental disabilities.^[53,54] Clinical feeding tolerance is improved, and the attainment of full enteral feeding is hastened by a diet of human milk.

CONCLUSIONS

From above Research and analysis, and our practical experience it is concluded that breastfeeding and the use of human milk give unique nutritional and non nutritional advantages to both infant and the mother and, in turn, optimize infant, child, and adult health as well as child growth and development. Recently, published evidence-based studies have confirmed and quantified the risks of not breastfeeding. Thus, infant feeding should not be considered as a lifestyle choice but rather as a basic health issue. As such, the pediatrician's role in advocating and supporting proper breastfeeding practices is essential and vital for the achievement of this preferred public health goal.

RECOMODATIONS

Recommendations on Breastfeeding Management for Healthy Term Infants (AMERICAN ACADEMY OF PEDIATRICS)

1. Exclusive breastfeeding for about 6 months

- Breastfeeding preferred; alternatively expressed mother's milk, or donor milk

- To continue for at least the first year and beyond for as long as mutually desired by mother and child.
 - Complementary foods rich in iron and other micronutrients should be introduced at about 6 months of age
2. Peri partum policies and practices that optimize breastfeeding initiation and maintenance should be compatible with the AAP and Academy of Breastfeeding Medicine Model Hospital Policy and include the following:
- Direct skin-to-skin contact with mothers immediately after delivery until the first feeding is accomplished and encouraged throughout the postpartum period
 - Delay in routine procedures (weighing, measuring, bathing, blood tests, vaccines, and eye prophylaxis) until after the first feeding is completed
 - Delay in administration of intramuscular vitamin K until after the first feeding is completed but within 6 h of birth
 - Ensure 8 to 12 feedings at the breast every 24 hours
 - Ensure formal evaluation and documentation of breastfeeding by trained caregivers (including position, latch, milk transfer, examination) at least for each nursing shift
 - Give no supplements (water, glucose water, commercial infant formula, or other fluids) to breastfeeding newborn infants unless medically indicated using standard evidence-based guidelines for the management of hyper bilirubinemia and hypoglycemia
 - Avoid routine pacifier use in the postpartum period
 - Begin daily oral vitamin D drops (400 IU) at hospital discharge
3. All breastfeeding newborn infants should be seen by a pediatrician at 3 to 5 d of age, which is within 48 to 72 h after discharge from the hospital
- Evaluate hydration (elimination patterns)
 - Evaluate body wt gain (body wt loss no more than 7% from birth and no further wt loss by day 5, assess feeding and consider more frequent follow-up)
 - Discuss maternal/infant issues
 - Observe feeding.
4. Mother and infant should sleep in proximity to each other to facilitate breastfeeding
5. Pacifier should be offered, while placing infant in back-to-sleep-position, no earlier than 3 to 4 wk of age and after breastfeeding has been established

Recommendations on Breastfeeding Management for Preterm Infants: (AMERICAN ACADEMY OF PEDIATRICS)

- ⌚ All preterm infants should receive human milk.
- ⌚ Human milk should be fortified, with protein, minerals, and vitamins to ensure optimal nutrient intake for infants weighing <1500 g at birth.
- ⌚ Pasteurized donor human milk, appropriately fortified, should be used if mother's own milk is unavailable or its use is contraindicated.
- ⌚ Methods and training protocols for manual and mechanical milk expression must be available to mothers.

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