



## Breastfeeding complements the development of the infant's immune system.

Infants who are breastfed receive less antimicrobial medications and less second-line antibiotics in the first year of life as compared to their formula-fed peers.

*Flores, M.S. & Fairbrok, M.P. The relationship of breastfeeding to antimicrobial exposure in the first year of life. Clin Pediatr 04-9; 43(7):631-36.*

In this study it was found that the concentrations of three important micronerals: iron, zinc, and copper in human milk are independent of maternal mineral status. This suggests that the human mammary gland actively transports those micronerals into milk secretions.

*Domellof, M. et al. Iron, zinc, and copper concentrations in breast milk are independent of maternal mineral status. Am J Clin Nutr 04; 79:111-15.*

This study evaluated whether thymic size affects the secretion of signal-joint T cell receptor-rearrangement excision circles, an indication of gene diversity for the immune response. It also tested for a relationship between infant thymus size and the concentration of interleukin 7 in human milk. These findings, along with a previous study showing that the thymuses of breastfed infants were larger than that of formula-fed infants, suggest the involvement of human milk factors in thymus development.

*Ngom, P.T. et al. Improved thymic function in exclusively breastfed infants is associated with higher interleukin 7 concentrations in their mothers' breast milk. Am J Clin Nutr 04; 80:722-28.*

## Breastfeeding promotes and protects optimal weight gain in infancy and beyond.

An overview of existing research revealed that each month of breastfeeding is associated with a 4% decrease in a child's risk of becoming overweight.

*Harder, T. et al. Duration of breastfeeding and risk of overweight: a meta-analysis. Am J Epidemiol 05-9-1; 162(5):397-403.*

A systematic review was done of published studies investigating the association between infant feeding and obesity among initially breastfed babies compared to those fed formula. It concluded that initial breastfeeding protects against obesity in later life.

*Owen, C.G. et al. Effect of infant feeding on the risk of obesity across the life course: A quantitative review of published evidence. Pediatrics 05; 115:1369-77.*

Mothers who exclusively breastfed their babies through 6 months of age were far less likely to either restrict or control their children's food intake at one year. This encouragement toward the children's food self-regulation may answer in part the question of how breastfeeding helps reduce risk of overweight.

*Taveras, E.M. et al. Association of breastfeeding with maternal control of infant feeding at age 1 year. Pediatrics 04; 114(5):577-83.*

## Breastfeeding supports optimal dental health.

Bottle-fed children who do non-nutritive sucking had more than double the risk of posterior cross-bite. Breastfeeding appears to offer a protective effect on the development of posterior cross-bite in deciduous dentition.

*Viggiano, D. et al. Breast feeding, bottle feeding, and non-nutritive sucking; effects on occlusion in deciduous dentition. Arch Dis Child 04; 89:1121-23.*

## Cosleeping and breastfeeding are mutually supportive practices that can be combined safely.

There are biological and anthropological reasons why cosleeping is normal and even protective for human infants. Breastfeeding while cosleeping supports protection from SIDS. Bedsharing is safest when the parents are non-smokers and unimpaired by alcohol or drugs; the mattress is firm; the bedding can't slip over the baby's head; and the baby doesn't sleep on a pillow or under an adult duvet.

*McKenra, J.J. & McDade, T. Why babies should never sleep alone: a review of the co-sleeping controversy*

*in relation to SIDS, bedsharing and breastfeeding. Paediatr Resp Rev 05 Jun; 6(2):134-52.*

Breastfed babies sleep less than their bottle-fed counterparts, but breastfeeding mothers who cosleep average more time asleep than do bottle-feeding mothers. An additional finding supports previous research indicating that the average sleep amount for a 4-week-old infant is about 14 hours in 24, not the 16-20 previously asserted.

*Quillin, S.I.M. & Glenn, L.L. Interaction between feeding method and co-sleeping on maternal-newborn sleep. JOGNN 04-9/10; 33(5): 580-88.*

## Advantages from breastfeeding continue past the infancy period.

Scholars agree that children who are breastfed are generally more intelligent and this study evaluated the relationship between breastfeeding and cognitive development or ability in a population in which breastfeeding was inversely correlated with socioeconomic advantages and other healthy maternal behaviors. This analysis shows the importance of long-term breastfeeding after initial introduction of complementary foods, particularly in LBW infants born close to term.

*Daniels, M.C. & Alair, L.S. Breastfeeding influences cognitive development in Filipino children. J Nutr 05 Nov; 135(11):2589-95.*

Breastfeeding less than three months was identified with other significant factors that increase the risk of bronchial hyperresponsiveness (BHR) in children up to five years of age with wheezing-associated respiratory infection (WARI).

*Futrakul, S. et al. Risk factors of bronchial hyperresponsiveness in children with wheezing-associated respiratory infection. Pediatr Pulmonol 05 Jul; 40(1):81-87.*

In a study analyzing the relationship between breastfeeding and mental development at 24 months of age, it was concluded that breastfeeding for longer than 4 months resulted in a statistically significant increase (4.3 points) on a scale of mental development.

*Gómez-Sanchiz, M. et al. Influence of breast-feeding and parental intelligence on cognitive development in the 24-month-old child. Clin Pediatr 04-10; 43(8):753-61.*

Longer duration of breastfeeding, greater than 4 months, results in a significantly decreased risk of developing gastrointestinal complaints later in childhood, particularly those associated with sensitivity to cow's milk proteins.

*Kokkonen, J. et al. Gastrointestinal complaints and diagnosis in children: a population-based study. Acta Paediatr 04-7; 93(7):880-86.*

The risk of developing asthma by age six seems to be decreased by 4% for each month of exclusive breastfeeding. Exclusive breastfeeding is recommended for six months.

*Oddy, W.H. et al. The relation of breastfeeding and body mass index to asthma and atopy in children: a prospective cohort study to age 6 years. Am J Public Health 04 Sep; 94(9): 1531-37.*

## The advantages of breastfeeding extend to the breastfeeding mother.

Breastfeeding for longer than one year was found to be inversely related to rheumatoid arthritis (RA) risk and appears to continue increasing the longer breastfeeding continues. Total risk reduction may be affected by confounding factors such as early menarche and irregular menstruation.

*Karlsen, E.W. Do breast-feeding and other reproductive factors influence future risk of rheumatoid arthritis? Arthritis & Rheumatism 04-11; 50(11):3458-67.*

Breastfeeding significantly reduces negative maternal response to stressors and assists in maintaining positive mood. Increased cardiac and parasympathetic nervous system modulation and maternal perception of decreased stress were also observed. Reduced stress levels lead to increases in both physical and mental health.

*Mezzacappa, E.S. Breastfeeding and maternal stress response and health. Nutr Rev 04-7; 62(7):261-68.*

Participants in this study were from the Nurses' Health Study in 1976 of 121,700 female nurses and the Nurses' Health Study II in 1989 of 116,671 female nurses. It was the first to examine the effect of lactation on the later development of Type 2 diabetes in the nurses studied. Each year of lifetime exclusive breastfeeding was associated with a greater reduction in the incidence of Type 2 diabetes. Their data suggest also that each year of exclusive breastfeeding provides more protection than each year of any breastfeeding.

*Strube, A.M. et al. Duration of lactation and incidence of Type 2 diabetes. JAMA 05; 294(20):2601-10.*

### Breastfeeding is possible even when the mother has a serious infection.

Hepatitis E virus and HEV RNA are present in the colostrum of infected mothers. In a study of 93 mother/baby pairs, 87 infants were exclusively breastfed for 3.6 months with no evidence of infection.

Future research should focus on close physical contact between infected mothers and their babies as the mode of transmission rather than on feeding method.

*Chibber, R.M. et al. Should HEV infected mothers breast feed? Arch Gynecol Obstet 04-7; 270(1):15-20.*

The risk of HIV transmission seems to be mitigated when breastfeeding is exclusive for the first 6 months. It was found that the cumulative probability of HIV infection was similar among never breastfed and exclusively breastfed infants up to six months, but was significantly higher among infants who received mixed feedings. It has been shown that pasteurization of expressed human milk can effectively kill all cell-free HIV. This method may be relevant after 6 months or when mother is unwell or away from her child.

*Coutsoudis, A. Current status of HIV and breastfeeding research. Breastfeeding Abstracts 05; 24(2): 11-12.*

### Support and accurate information are vital to successful breastfeeding.

Blood serum levels of 26 breastfed infants whose mothers were taking SSRI antidepressants were tested and found to be either low or nonexistent, supporting previous research

indicating that for most women, SSRIs should not be contraindicated during lactation.

*Berle, M.D. et al. Breastfeeding during maternal antidepressant treatment with serotonin reuptake inhibitors [SSRIs]: infant exposure, clinical symptoms, and cytochrome P450 genotypes. J Clin Psychiatry 04 Sep; 65(9):1228-34.*

Health care providers outside of obstetrics are likely to serve lactating women in their practices, so all should be informed about methods supportive of breastfeeding.

*Crenshaw, J. Breastfeeding in nonmaternity settings. Am J Nurs 05-1; 105(1):40-50.*

Pediatricians should be the strongest supporters of breastfeeding despite cultural and societal pressures against it. Breastfeeding continues to prove singularly effective in producing the best possible mental and physical health benefits for growing infants.

*Gartner, L.M. et al. Breastfeeding and the use of human milk. Pediatrics 05-2; 115(2):496-506.*

In a study of 215 infants less than 3 months of age with ankyloglossia (tongue tie), 80% of their mothers described relief of most symptoms following a nearly bloodless, anesthetic-free procedure to divide the frenulum.

*Griffiths, D.M. Do tongue ties affect breastfeeding? J Hum Lact 04-11; 20(4):409-14.*

Recommendations adopted by the World Health Assembly place improving exclusive breastfeeding rates as the most cost-effective and scientifically proven approach to reducing early childhood undernutrition. Social misperceptions that artificial baby milk is the same as or superior to human milk must be vigorously fought.

*Gupta, A. & Rohde, J.E. Infant and young child undernutrition—where lie the solutions? Econ Pol Wkly 04:5213-16.*

While health organizations recognize that breastfeeding is the safest and most beneficial form of infant feeding, cultural pressures, civil unrest, and lack of education continue to suppress the widespread practice that would result in healthier babies in every country. Education, research, and local community support are identified as key ways to promote breastfeeding throughout the world.

*Heinig, J. Promotion and support of optimal feeding practices for infants and young children: a global challenge, a global responsibility. J Hum Lact 04-5; 20(2):137-39.*

Interest in using human milk as a biomonitoring matrix has increased. This article provides needed guidance on facilitating human milk collection including long-term storage and how to communicate to parents and professionals that human milk is still the best nutrition despite environmental chemical exposure. Research has repeatedly demonstrated that postnatal exposures are not thought to be related to adverse health effects. Endogenous chemicals in human milk may help to protect infants from environmental chemicals.

*Berlin, C.M., Crase, B.L., Furst, P. et al. Methodologic considerations for improving and facilitating human milk research. J Toxicol Environ Health A. 05 Oct 22; 68(20): 1803-23.*

The average transfer of most medications into human milk is exceedingly low. Thousands of studies on maternal medications suggest that most medications are safe for breastfed babies. The author recommends that the mother and her physician must always weigh the risk to the infant from the medication in milk against the enormous benefits offered in human milk. Mothers are cautioned to resist discontinuation of breastfeeding until they have consulted with a physician versed in the safety of maternal medications for breastfeeding mothers.

*Hale, T.W. Evaluating medications for the lactating woman. Breastfeeding Abstracts 04; 24(1): 3-4.*

This CDC publication discusses all major types of interventions known to have been implemented to promote and support breastfeeding including maternity care; peer, professional, and workplace support; education for mother; and media and social marketing.

*Shealy, K.R. et al. The CDC Guide to Breastfeeding Interventions. Atlanta: US Department of Health and Human Services, CDC, 05.*

Breastfeeding-promotion efforts of the Central Texas Healthy Mothers, Healthy Babies Coalition during the 2003 legislative session are reported in this article. A group consisting of professional lactation consultants,

peer counselors, La Leche League Leaders, attorneys, physicians, representatives from the Texas Department of Health (TDH), and others developed a proposal to create a breastfeeding-friendly physician designation that would include: staff training, encouragement for pregnant women to breastfeed, and ways to provide pregnant women and new mothers with information about breastfeeding and related community resources. The authors reported that potential activists need not be intimidated and that lobbying efforts can be learned while alliances are forged.

*Wilson-Clay, B. et al. Learning to lobby for pro-breastfeeding legislation: The story of a Texas bill to create a breastfeeding-friendly physician designation. J Hum Lact 05; 21(2):191-98.*

### Improved management of newborns is encouraged.

In a study of 60 healthy full-term newborns, half the infants were randomly assigned to have a 50-minute period of close skin-to-skin contact with the mother immediately following birth. These infants were better able to distinguish their own mother's milk later. This finding supports the contention that skin-to-skin contact immediately after birth can significantly improve the likelihood of a smooth start to breastfeeding.

*Mizuno, K. et al. Mother-infant skin-to-skin contact after delivery results in early recognition of own mother's milk odor. Acta Paediatr 04-12; 93(12):1640-45.*

The effects of reducing newborn pain by allowing babies to breastfeed during venipuncture for the newborn metabolic screen were studied. Two groups were randomly assigned to either receive 1 ml of 30% glucose solution or 1 ml of sterile water (placebo) administered orally by syringe one minute before the venipuncture. Pain was assessed by the Premature Infant Pain Profile (PIPP), and crying time was assessed. Infants who were breastfed and given glucose demonstrated significantly less pain and reduced crying time.

*Gradin, M. et al. Feeding and oral glucose: Additive effects on pain reduction in newborns. Early Hum Dev 04; 77:57-65.*