

Risks of Formula

Breastfeeding is the normal way to provide nutrition for a human baby. It is the standard against which all baby milks are measured. There are health related and cognitive risks to feeding your baby infant formula. Human milk provides food, protection and emotional nurturing for your baby. Its components ensure normal growth and development of your baby. Feeding infant formula provides none of these. One feeding of infant formula milk can endanger your baby. ⁽¹⁾ Regular feeding of formula produces sub-standard development. Mothers-- protect your baby and yourself! Exclusively breastfeed for six months, and keep breastmilk part of your child's experience for up to two years and beyond. ⁽²⁾

Sub-standard Health Outcomes from Infant Formula

- Increased rates of morbidity and mortality (sickness and death), and chronic diseases ⁽³⁾
- Increased rates of respiratory (chest) diseases and asthma ⁽⁴⁾
- Increased rate of otitis media (ear infections) ⁽⁵⁾
- Increased rate of gastroenteritis (diarrheal disease) ⁽⁶⁾
- Increased rate of necrotizing enterocolitis (severe bowel disease) in preterm or low birth weight babies ⁽⁷⁾
- Increased risk of obesity ⁽⁸⁾
- Increased risk of Sudden Infant Death Syndrome (SIDS) ⁽⁹⁾
- Increased incidence of allergies ⁽¹⁰⁾
- Increased risk of coeliac disease (intolerance to gluten in foods) ⁽¹¹⁾
- Increased risk of childhood cancers ⁽¹²⁾
- Increased risk of diabetes (insulin dependent diabetes mellitus IDDM and non-IDDM) ⁽¹³⁾
- Increased rates of ulcerative colitis and diarrhea ⁽¹⁴⁾
- Increased risk of cardiovascular disease and high blood pressure ⁽¹⁵⁾
- Risk of E. Sakazakii infection from powdered artificial baby milk formulas ⁽¹⁶⁾
- Reduced response to vaccines ⁽¹⁷⁾
- Increased risk of post partum depression, cardiovascular disease, Type II Diabetes, breast cancer, endometrial cancer and osteoporosis in mother ⁽¹⁸⁾
- Mother misses advantage of post partum weight loss with no breastfeeding ⁽¹⁹⁾
- Increased risk of Rheumatoid Arthritis ⁽²⁰⁾

Sub-standard Composition of Infant Formula ⁽²⁸⁾

Artificial baby milks may contain food, but they do NOT contain any of the over 200 active components in human milk such as;

- Immunoglobins (Secretory IgA gives immediate protection from infections in child's environment)
- Lysozyme (enzyme which breaks down infectious bacteria within infant's gut)
- Lactoferrin (antimicrobial; anti-inflammatory; restricts iron from toxic bacterial growth in baby's gut)
- Hormones (growth of infant gut and immune system)
- Growth factors (anti-inflammatory; matures commensal bacteria)
- Other anti-inflammatory components (antioxidants, protease inhibitors; anti-inflammatory cytokines)
- Human source long chain polyunsaturated fatty acids (DHA and AA) (normal brain and eye development)

Infant formula milk cannot meet human milk standards. No randomized controlled trials have been done to prove that these milks meet the standards of human milk. The only baby milk that meets these standards is human milk - a living fluid.

Sub- standard Cognitive and IQ Outcomes from Infant Formula

One feeding of infant formula milk can endanger your baby.

- Cognitive underdevelopment for small for gestation infants ⁽²¹⁾
 - Cognitive underdevelopment at age 1 and 5 years ⁽²²⁾
 - Lower IQ at 6 and 6.5 years of age ⁽²³⁾
 - Lower IQ at 8 and 9 years of age ⁽²⁴⁾
 - Lower cognitive scores at ages 8.5 and 11 years ⁽²⁵⁾
- 8.5 point lower IQ at ages 7.5 to 8 years of age for prematurely born child ⁽²⁶⁾
- Lower cognitive outcomes sustained through adolescence; a dose response to breastfeeding ⁽²⁷⁾

Infant formula cannot meet human milk standards

Bibliography

1. Marsha Walker 2005 <http://www.naba-breastfeeding.org/images/Just%20one.pdf>
2. Health Canada, Dietitians of Canada, Canadian Pediatric Society. Nutrition for Healthy Term Infants. 2005 http://www.hc-sc.gc.ca/fn-an/pubs/infant-nourrisson/nut_infant_nourrisson_term-eng.php
3. Schack-Nielsen L, Michaelsen KF. *Curr Opin Clin Nutr Metab Care*;2006;9(3) and Chen A, Rogan WJ. *Pediatrics* 2004;113(5):e435-9 and Kaisler et al. *Am J Public Health* 1999;89(1):25-30 and Davis MK. *Pediatr Clin North Amer.* 2001;48(1):125-41
4. Kramer MS et al. *Biol.* 2004;554:63-77 and Kramer MS et al. *Cochrane Database Syst Rev* 2002;(1):CD003517 and Dell S, To T. *Arch Pediatr Adolesc Med* 2001;155(11)
5. Duncan B et al. *Pediatr* 1993;91(5):867-72 and Aniansson G. et al. *Pediatr Infect Dis. J.* 1994;13(3):183-88
6. Kramer MS et al. *Am J Clin Nutr* 2003;78(2):291-5 and Kramer MS et al. *JAMA* 2001;285(4):413-20
7. Quigley MA et al. *Cochrane Database Syst Rev.* 2007 Oct 17;(4):CD002971
8. Owen CG et al. *Pediatrics* 2005;115(5) and Harder T et al. *Am J Epidemiol* 2005;162(5):397-403 and Owen CG et al. *Am J Clin Nutr* 2005;82(6) and Grummer-Strawn LM, Mei Z. *Pediatrics* 2004;113(2):e81-86 and Gillman MW et al. *JAMA* 2001;285(19)
9. McVea KL et al. *J Hum Lact* 2000;16(1):13-20 and Vennemann MM, et al. *Pediatrics* 2009; 123(3): e406-e410.
10. Friedman NJ et al. *J Allergy Clin Immunol.* 2005;115(6) and Ludvigsson JF et al. *Pediatr Allergy Immunol.* 2005;16(3):201-208
11. Akobeng AK et al. *Arch Dis Child.*2006;91(1):39-43
12. Martin RM et al. *Int J Cancer* 2005;117(6) and Kwan ML et al. *Public Health rep* 2004;119:521-35
13. Malcova H et al. *Eur J Pediatr* 2006;165(2):114-119 and Owen CG et al. *Am J Clin Nutr* 2006 Nov;85(5) and Young TK et al. *Arch Pediatr Adolesc Med* 2002;156(7):651-5
14. Klement et al *Am J Clin Nutr.* 2004;80(5)
15. Singhal A et al. *The Lancet.* 2001.;357(9254):413-19 and Martin RM et al. *Am J Epidemiol* 2005;161(1):15-26
16. Weir E. *CMAJ* 2002;166(12) and Lai KK. *Medicine Baltimore* 2001;80(2):113-122
17. Pabst HF. *Pediatr Infect Dis J* 1997;16:991-995
18. Schwartz E et al *Obstet Gynecol* 2009;113:974-82 and Stuebe AM. *JAMA.* 2005 Nov 23;294(20):2601-10. and AICR 2007 www.aicr.org and Akkus Z. *Saudi Med J.* 2005 Sep;26(9):1351-9
19. Baker J et al. *Am J Clin Nutr* 2008;88:1543-51
20. Pikwer *Ann Rheum Dis* 2009;68(4):526-30
21. Rao MR et al. *Acta Pediatr* 2002;91(3):267-74
22. Angelsen NK et al. *Arch Dis Child* 2001;85(3):183-8
23. Oddy WH et al. *Paediatr Perinat Epidemiol* 2003;17(1):81-90 and Kramer MS et al. *Arch Gen Psychiatry.* 2008;65(5):578-584
24. Horwood LJ, Ferfusson DM. *Pediatrics* 1998;101(1):E9
25. Daniels MC Adair LS. *J Nutr* 2005;135(11)
26. Lucas A et al. *Lancet* 1992;339(8788):261-4
27. Anderson JW et al. *Am J Clin Nutr* 1999;70(4)
28. See labels on cans of artificial milk (formula), and for discussion of inferiority of artificial milk compared to breastmilk, see Labbok MH et al. *Breastfeeding Review* 2005;123(3)15-22 and Oddy W. *Breastfeeding Review* 2002;10(3)5-18

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Other Resources

- ◇ Feldman P, Frati F. Evidence based benefits of breastfeeding for The Breastfeeding Committee for Canada. 2008. www.breastfeedingcanada.ca
- ◇ Horta B, Rajiv B, Martines J, Victora C. Evidence on the long-term effects of breastfeeding: systematic review and meta-analyses. Geneva:WHO, 2007. URL http://whqlibdoc.who.int/publications/2007/9789241595230_eng.pdf
- ◇ Breastfeeding and Maternal and Infant Health Outcomes in Developed Countries, Structured Abstract. April 2007. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.ahrq.gov/clinic/tp/brfouftp.htm>
- ◇ Allen J, Hector D. Benefits of breastfeeding. *NSW Public Health Bull* 2005;16(3-4):42-46 Leon-Cava N, Lutter C, Ross J, Martin L. Quantifying the benefits of breastfeeding: a summary of the evidence. The Linkages Project 2002. <http://www.linkagesproject.org/media/publications/Technical%20Reports/BOB.pdf>
- ◇ Bartik M, Reinhold A. The burden of suboptimal breastfeeding in the United States: a pediatric cost analysis. *Pediatrics.* Published online 05 April 2010; DOI:10.1542/peds.2009-1616 www.pediatrics.org
- ◇ Wall G. Outcomes of Breastfeeding versus Formula. February 2010 www.LLLL.org