

# 21 Dangers of Infant Formula

*the Infant Formula Companies don't want you to know!*

**For Your Child:** When you feed your baby infant formula, you increase your baby's chance of having:

- 1 asthma
- 2 allergies
- 3 ear infections
- 4 high blood pressure & heart disease
- 5 respiratory infections
- 6 lower IQ & cognitive development
- 7 obesity
- 8 iron-deficiency anemia
- 9 SIDS (Sudden Infant Death Syndrome)
- 10 diabetes (types 1 & 2)
- 11 digestive problems



- 12 childhood cancers
- 13 exposure to environmental contaminants
- 14 sleep apnea
- 15 dental problems & malocclusions

**For the Mother:** When you don't breastfeed, you increase your own chance of developing:

- 16 diabetes (both gestational as well as type 2)
- 17 overweight & obesity
- 18 osteoporosis
- 19 breast cancer, ovarian cancer & uterine cancer
- 20 hypertensive & cardiovascular diseases
- 21 reduced child spacing

## References

### Formula Risks for Infants:

- 1) **Asthma:** Exclusive breastfeeding provides protection in early childhood up to age 6. [Kim, J., Ellwood, P. & Asher, M. (2009). Diet and asthma: Looking back, moving forward. *Respiratory Research*, 10(49), doi: 10.1186/1465-9921-10-49.; Silvers, K., Frampton, C., et al. (2009). Breastfeeding protects against adverse respiratory outcomes at 15 months of age. *Maternal and Child Nutrition*, 5, 243-250, doi: 10.1111/j.1740-8709.2008.00169.]
- 2) **Allergy:** Although the interaction with exposure to allergens and development of allergies is complex, exclusive breastfeeding appears to provide some protection in development of allergies in infants, regardless of familial history of allergies. [Kramer, M. (2011). Breastfeeding and allergy: the evidence. *Annals of Nutrition & Metabolism*, 59(Suppl 1), 20-26.; Prescott, S., Nowak-Wegrzyn, A. (2011). Strategies to prevent or reduce allergic disease. *Annals of Nutrition & Metabolism*, 59(Suppl 1), 28-42.]
- 3) **Ear Infections:** Infants fed formula during the first 6 months of life have more ear infections [Abrahams, S. & Labbok, M. (2011). Breastfeeding and otitis media: A review of recent evidence. *Current Allergy and Asthma Reports*, 11(6), 508-512.]
- 4) **High blood pressure & Heart Disease:** Small-for-gestation and normal-weight infants who gained weight quickly on formula had higher risk of developing hypertension later in life than did breastfed infants. Additionally, although the physiological/biological mechanisms underlying measurable cardiovascular differences are unclear, infants receiving formula diets have poorer microvascular function as teenagers. [Khan, F., Green, F., et al. (2009). The beneficial effects of breastfeeding on microvascular function in 11-14-year-old children. *Vascular Medicine*, 14:137-142.; Labayan, I., Ruiz, J., et al. (2012). Exclusive breastfeeding duration and cardiorespiratory fitness in children and adolescents. *The American Journal of Clinical Nutrition*, 95(2), 498-505.; Vaag, A. (2009). Low birth weight and early weight gain in the metabolic syndrome: Consequences for infant nutrition. *International Journal of Gynecology and Obstetrics*, 104(Suppl 1) S32-S34.]
- 5) **Respiratory Infections:** Formula fed infants suffer more frequently and more severely from respiratory infections, both viral, and bacterial. [Duijts, L., Jaddoe, V., Hofman, A. & Moll, H. (2010). Prolonged and exclusive breastfeeding reduces the risk of infectious diseases in infancy. *Pediatrics*, 126(1), e18-e25.; Roth, D., Caulfield, L., Ezzati, M. & Black, R. (2008). Acute lower respiratory infections in childhood: Opportunities for reducing the global burden through nutritional interventions. *Bulletin of the World Health Organization*, 86(5), 356-364.]
- 6) **Reduced IQ & Cognitive Development:** Formula fed infants consistently score lower on IQ and cognitive tests, even when study results are controlled for all possible socioeconomic confounders. [Kramer, M., Aboud, F., et al. (2008) Breastfeeding and Child Cognitive Development. *Archives of General Psychiatry*, 65(5), 578-584.; Quigley, M., Hockley, C., et al. (2012). Breastfeeding is associated with improved child cognitive development: A population-based cohort study. *The Journal of Pediatrics*, 160(1), 25-32.; Jedrychowski, W., Perera, F., et al. (2012). Effect of exclusive breastfeeding on the development

of children's cognitive function in the Krakow prospective birth cohort study. *European Journal of Pediatrics*, 171(1) 151-158.]

- 7) **Obesity:** Formula feeding in infancy is associated with increased incidence of childhood and adolescent obesity, and higher BMI in adults. [Bartok, C. & Ventura, A. (2009). Mechanisms underlying the association between breastfeeding and obesity. *International Journal of Pediatric Obesity*, 4:196-204.; Metzger, M. & McDade, T. (2010). Breastfeeding as obesity prevention in the United States: A sibling difference model. *American Journal of Human Biology*, 22(3) 291-296.; Parikh, N., Hwang, S., et al. (2009). Breastfeeding in infancy and adult cardiovascular disease risk factors. *The American Journal of Medicine*, 122(7), 656-663.]
- 8) **Iron-Deficiency Anemia:** Formula-fed infants have higher rates of iron-deficiency anemia due to low bioavailability of ferrous sulfate in cows' milk based formulas. [Raj, S., Faridi, M., Rusia, U. & Singh, O. (2008) A prospective study of iron status in exclusively breastfed term infants up to 6 months of age. *International Breastfeeding Journal*, 3(3).]
- 9) **SIDS (Sudden Infant Death Syndrome):** Formula feeding increases the risk of dying from SIDS by up to 50% throughout the first year of life. [Vennemann, M., Bajanowski, T., et al. (2009). Does breastfeeding reduce the risk of Sudden Infant Death Syndrome? *Pediatrics*, 123(3), e406-e410.]
- 10) **Diabetes (both types 1 & 2):** Formula fed infants have greater risk for developing both type 1 and type 2 diabetes, irrespective of parents' diabetic status. Additionally, when mother has gestational, type 1 or type 2 diabetes, these risks are increased. [Owen, C., Martin, R., Whincup, P., Smith, G., Cook, D. (2006). Does breastfeeding influence risk of type 2 diabetes in later life? A quantitative analysis of published evidence. *The American Journal of Clinical Nutrition*, 84(5), 1043-1054.; Gouveri, E., Papanas, N., Hatzitolios, A.I., Maltezos, E. (2011). Breastfeeding and Diabetes. *Current Diabetes Reviews*, 7(2), 135-142.]
- 11) **Digestive Problems:** Diarrheal disease is twice as high in formula fed infants, in both industrialized and resource-dependent countries, and the increased risk of diarrheal disease when formula fed extends through the first 2 years of life. Infants fed formula have greater chance of developing Crohn's Disease and ulcerative colitis in adulthood. [Lamberti, L., Fisher-Walker, C., Noiman, A., Victoria, C. & Black, R. (2011). Breastfeeding and the risk for diarrhea morbidity and mortality. *BMC Public Health*, 11(Suppl 3), S15-S27.; Ehlayel M.S., Bener A., Abdulrahman H.M. (2009). Protective effect of breastfeeding on diarrhea among children in a rapidly growing newly developed society. *Turkish Journal of Pediatrics*, 51:527-533.; Klement, E., Cohen, R., Boxman, J., Joseph, A. & Reif, S. (2004). Breastfeeding and risk of inflammatory bowel disease: a systematic review with meta-analysis. *American Journal of Clinical Nutrition*, 80(1), 1342-1352.]
- 12) **Childhood Cancers:** Formula fed infants are at greater risk for developing childhood cancers, and the benefits of breastfeeding are dose-dependent, increasing with length of duration and exclusivity. [Ortega-Garcia, J., Ferris-Tortajada, J., et al. (2008). Full breastfeeding and paediatric cancer. *Journal of Paediatrics and Child Health*, 44:10-13.; Guise, J.M., Austin, D. & Morris, C. (2005). Review of case-control studies related to breastfeeding and reduced risk of childhood leukemia. *Pediatrics*, 116(5), e724-e731.]

13) **Exposure to Environmental Contaminants:** When exposed to contaminants in utero, children who are subsequently formula-fed perform poorer on neurological tests up to 9 years of age compared to similarly exposed breastfed children. [Ribas-Fito, N., Julvez, J., Torrent, M., Grimalt, J. & Sunyer, J. (2007). Beneficial effects of breastfeeding on cognition regardless of DDT concentrations at birth. *American Journal of Epidemiology*, 166:1198-1202.; Vreugdenhill, H.J.J., Van Zanten, G., Brocaar, M., Mulder, P.G.H. & Weisglas-Kuperus, N. (2004). Prenatal exposure to polychlorinated biphenyl and breastfeeding: Opposing effects on auditory P300 latencies in 9-year old Dutch children. *Developmental Medicine & Child Neurology*, 46:398-405.]

14) **Sleep Apnea:** Formula-fed infants are at higher risk for developing sleep-disordered breathing problems. [Montgomery-Downs, H., Crabtree, V., Capdevila, O. & Goyal, D. (2007). Infant-feeding methods and childhood sleep-disordered breathing. *Pediatrics*, 120(5), 1030-1035.; Shenghui, L., Xinming, J., et al. (2010). Habitual snoring in school-aged children: Environmental and biological predictors. *Respiratory Research*, 11:144.]

15) **Dental problems requiring orthodontia:** Formula fed children have a significantly higher chance of having dental malocclusions, (particularly anterior overbite and crossbite problems). [Romero, C., Scavone-Junior, H., et al. (2011). Breastfeeding and non-nutritive sucking patterns related to the prevalence of anterior open bite in primary dentition. *Journal of Applied Oral Science*, 19(2), 161-168.; Sanchez-Molin, Carbo, J., et al. (2010). Comparative study of the craniofacial growth depending on the type of lactation received. *Journal of European Paediatric Dentistry*, 11(2), 87-92.; Castro, C., Vianna, M. & Goncalves, A. (2011). Influence of duration of breastfeeding in the oral habits and malocclusion in children. *Journal of Epidemiology and Community Health*, 65(Suppl1), A205.]

### Risks for Mothers:

16) **Diabetes:** Compared to women who do not have children, women who give birth but do not breastfeed their children have a significantly higher incidence (14%) of developing type 2 diabetes than women who breastfeed. [Liu, B., Jorm, L. & Banks, E. (2010). Parity, breastfeeding and the subsequent risk of maternal type 2 diabetes. *Diabetes Care*, 33:1239-1241.; Trout, K., Averbuch, T. & Barowski, M. (2011). Promoting breastfeeding among obese women and women with gestational diabetes mellitus. *Current Diabetes Reports*, 11(1), 7-12.]

17) **Overweight & Obesity:** Formula feeding mothers retain their pregnancy weight longer and are at risk to keep weight gain between pregnancies. [Baker, J., Gamborg, M., et al. (2008). Breastfeeding reduces postpartum weight retention. *American Journal of Clinical Nutrition*, 88(6), 1543-1551.; Okechukwa, A., Opke, E. & Okolo, A. (2009). Exclusive breastfeeding and postnatal changes in maternal anthropometry. *Nigerian Journal of Clinical Practice*, 12(4), 383-388.]

18) **Osteoporosis:** Formula feeding mothers are at greater risk to experience hip fractures and other problems related to osteoporosis in the postmenopausal period. [Huo, D., Lauderdale, D. & Li, L. (2003). Influence of reproductive factors on hip fracture risk in Chinese women. *A Journal Established as a Result of Cooperation Between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the U.S.A.*, 14(8), 694-700.; Wiklund, P., Xu, L., et al. (2011).

Lactation is associated with greater maternal bone size and bone strength later in life. Osteoporosis International, published online 17 September, 2011.]

19) **Breast Cancer, Ovarian Cancer & Uterine Cancer:** Formula feeding mothers have increased risk of developing breast, ovarian and uterine cancers later in life. [Awatef, M., Olfa, G., et al. (2010). Breastfeeding reduces breast cancer risk: a case-control study in Tunisia. *Cancer Causes & Control*, 21(3), 393-397.; Jordan, J., Siskind, V., et al. (2010). Breastfeeding and risk of epithelial ovarian cancer. *Cancer Causes & Control*, 21(1), 109-116.; Chiapparino, F., Pelucchi, C., et al. (2005). Breastfeeding and the risk of epithelial ovarian cancer in an Italian population. *Gynecologic Oncology*, 98(2), 3-4-308.]

20) **Hypertension & Cardiovascular diseases:** Formula feeding mothers have higher BP levels in the initial postpartum period. They are also at increased risk to develop hypertension, hyperlipidemia, and cardiovascular disease later in life. [Steube, A., Schwartz, E., et al. (2011). Duration of lactation and incidence of maternal hypertension: A longitudinal cohort study. *American Journal of Epidemiology*, 174(10), 1147-1158.; Steube, A.M. & Schwartz, E.B. (2010). The risks and benefits of infant feeding practices for women and their children. *Journal of Perinatology*, 30(3), pp.155-163.; Jonas, W., Nissen, E., Ransjo-Arvidson, A., Wiklung, I., Hendrikson, P. & Uvnas-Moberg, K. (2008). Short and long term decrease of blood pressure in women during breastfeeding. *Breastfeeding Medicine: Official Journal of Academy of Breastfeeding Medicine*, 3(2), 103-109.]

21) **Reduced Natural Child Spacing:** Formula feeding mothers are at increased risk of having less space between pregnancies, thereby placing both mother and children (already living as well as future pregnancies) at increased risk of mortality, morbidity, and malnutrition. [Erenal, A., et al. (2010). A natural method for family planning: lactational amenorrhea method. Ankara: Gülhane Askeri Tip Akademisi, 383-390.; Rutstein, S.O. (2005). Effects of preceding birth intervals on neonatal, infant and under-five years mortality and nutritional status in developing countries: evidence from the demographic and health surveys. *International Journal of Gynaecology and Obstetrics*, 89(Suppl 1), s7-24.]



The World Alliance for Breastfeeding Action (WABA) is a global network of individuals and organisations concerned with the protection, promotion & support of breastfeeding worldwide. WABA action is based on the Innocenti Declaration, the Ten Links for Nurturing the Future and the Global Strategy for Infant and Young Child Feeding. WABA is in consultative status with UNICEF & an NGO in Special Consultative Status with the Economic and Social Council of the United Nations (ECOSOC). WABA's present Core Partners are also all the main international breastfeeding organisations: Academy for Breastfeeding Medicine (ABM), International Baby Food Action Network (IBFAN), International Lactation Consultant Association (ILCA), La Leche League International (LLL), and Wellstart International (WI).

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