

## Does Breastfeeding Reduce the Risk of Obesity in Normal Weight, Full Term Children?

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**Introduction:** Protective effects of breastfeeding against overweight and obesity in childhood are claimed by some government agencies, scientists, and clinicians. Potential mechanisms that have been suggested include exclusive breastfeeding eliminating inappropriate complementary feeding, differences in protein and energy intake being associated with obesity later in childhood, differences in hormone secretion observed between breastfed and formula-fed infants, and hormones and biological factors found in breast milk.

**Objective:** To evaluate the potential relationship between infant feeding regimens and obesity in childhood.

**Methods:** The search terms obesity or overweight or adiposity or BMI or body mass index or BMI z score AND breastfeeding or infant formula or lactation were used to identify literature, published in English between 2006 and 2013, and referenced in PubMed and Cochrane databases. Of the 1058 articles identified, 114 studies were stratified by study design and further evaluated. Analyses that reported a decrease in overweight / obesity-related endpoints with increased breastfeeding duration, intensity, or relative consumption were considered an inverse relationship. Analyses that reported an increase in overweight or obesity related endpoints with an increase in breastfeeding duration or decrease in formula feeding duration were defined as a direct association.

**Results:** No association between breastfeeding and obesity was found in 67% of the randomized clinical trials in this evaluation. One direct association was identified by 25% and at least one inverse association was identified by 13% of the randomized trials. Forty-two prospective cohort studies met the inclusion criteria for this review. Of these, 65% found no association while 35% found at least one inverse association and 3% found at least one direct association. A previously published meta-analysis reported inconclusive results.

**Conclusion:** The evidence comparing breastfeeding to formula feeding for risk of obesity was inconclusive. Evidence from randomized clinical trials does not support an association between breastfeeding and obesity while the evidence from observational, retrospective and prospective cohort studies is inconclusive. Of the four meta-analyses reviewed, two reported a small inverse association that was diminished after a longer duration of follow-up while two reported no association of breastfeeding and obesity.

