



"Breastfeeding prevents death, childhood illness and non-communicable diseases, while supporting brain development and protecting maternal health. It is also environmentally sustainable and mitigates inequities by reaching even those with limited access to health services¹."

LONG-TERM EFFECTS OF BREASTFEEDING

Breastfeeding presents definite short-term benefits for child health, mainly protection against morbidity and mortality from infectious diseases. However, it is also important to look at the long-term effects of breastfeeding. While some studies report that breastfed subjects present a higher level of school achievement and performance in intelligence tests, as well as lower blood pressure, lower total cholesterol and a lower prevalence of overweight and obesity, others have failed to detect such associations.

An independent review and meta-analysis² of observational and randomized studies assessing the long-term effects of breastfeeding on blood pressure, obesity, total cholesterol, type-2 diabetes, and intellectual performance provide the following results:

EFFECT ON BLOOD PRESSURE

The analysis included 30 and 25 estimates for systolic and diastolic blood pressure, respectively. In a random effects model, systolic and diastolic blood pressures were lower among breastfed subjects. Publication bias was evident, with smaller studies reporting a greater protective effect of breastfeeding. However, even among studies with ≥ 1000 participants a statistically significant effect of breastfeeding was observed. Adjustment for confounding was also a source of heterogeneity between study results, but even among those studies controlling for several socio-economic and demographic variables, systolic (mean difference: -1.19; 95% CI: -1.70 to -0.69) and diastolic (mean difference: -0.61; 95% CI: -1.12 to -0.10) blood pressures were lower

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among breastfed subjects. Publication bias and residual confounding may be responsible for part (but not all) of the observed effects of breastfeeding on blood pressure.

EFFECT ON SERUM CHOLESTEROL

Breastfed subjects presented lower mean total cholesterol in adulthood (mean difference: -0.18; 95% CI: -0.30 to -0.06 mmol/L), whereas for children and adolescents the association was not statistically significant. Age at assessment of cholesterol explained about 60% of the heterogeneity between studies, whereas study size, control for confounding, year of birth and categorization of breastfeeding duration did not play a significant role. The evidence suggests that breastfeeding is related to lower cholesterol levels and this association is not due to publication bias or residual confounding.

EFFECT ON OBESITY

The analysis obtained 39 estimates of the effects of breastfeeding on prevalence of obesity. In a random effects model, breastfed individuals were less likely to be considered as obese, with a pooled odds ratio of 0.78 (95% CI: 0.72-0.84). Control for confounding, age at assessment, year of birth and study design did not modify the effect of breastfeeding. Because a statistically significant protective effect was observed among those studies that controlled for socio-economic status and parental anthropometry, as well as with ≥ 1500 participants, the effect of breastfeeding was not likely to be due to publication bias or confounding.

EFFECT ON TYPE-2 DIABETES

The analysis identified five papers that evaluated the relationship between breastfeeding duration and type-2 diabetes. Breastfed subjects were less likely to present type-2 diabetes (pooled odds ratio: 0.63; 95% CI: 0.45-0.89).

EFFECT ON INTELLIGENCE AND SCHOOLING

For assessing the performance in intelligence tests, the analysis obtained data from eight studies that controlled for intellectual stimulation at home and collected information on feeding in infancy, in which the duration of breastfeeding was of at least one month among breastfed subjects. Performance in intelligence tests was higher among those

subjects who had been breastfed. Positive studies included a randomized trial. Regarding school performance in late adolescence or young adulthood, three studies showed a positive effect of breastfeeding.

LIMITATIONS

Because nearly all studies included in the analyses are observational, it is not possible to completely rule out the possibility that these results may be partly explained by self-selection of breastfeeding mothers or by residual confounding. Publication bias was assessed by examining the effect of study size on the estimates and was found not to be important for most outcomes. Very few studies were available from low/middle-income countries, where the effect of breastfeeding may be modified by social and cultural conditions.

CONCLUSION

The available evidence suggests that breastfeeding may have long-term benefits. Subjects who were breastfed experienced lower mean blood pressure and total cholesterol, as well as higher performance in intelligence tests. Furthermore, the prevalence of obesity and type-2 diabetes was lower among breastfed subjects. All effects were statistically significant, but for some outcomes their magnitude was relatively modest.



¹ UNICEF, A Post-2015 World Fit for Children, Issue Brief: Breastfeeding

² Evidence on the Long-Term Effects of Breastfeeding: Systematic Reviews and Meta-Analyses, Bernardo L. Horta... [et al.]

³ WHO, Comprehensive Implementation Plan on MIYCN, 2014 Infographics: World Health Organization