A breastfeeding intervention increased breast feeding and reduced GI tract infections and atopic eczema

Kramer MS, Chalmers B, Hodnett ED, et al for the PROBIT Study Group. ***Promotion of breastfeeding intervention trial (PROBIT): a randomized trial in the Republic of Belarus.*** *JAMA 2001 Jan 24/31;**285**:413–20.*

QUESTION: In women who have initiated breast feeding, does a breastfeeding promotion intervention increase duration and exclusivity of breast feeding and reduce gastrointestinal (GI) tract infection?

Design
Cluster randomised (cluster allocation concealed), unblinded, controlled trial with 12 months of follow up.

Setting
32 maternity hospitals and clinics in Belarus.

Participants
Mother-infant pairs were enrolled if the mother intended to breast feed, had no illnesses contraindicating breast feeding, and had given birth to a healthy, singleton infant who had a gestational age ≥37 weeks, birth weight ≥2500 g, and a 5 minute Apgar score ≥5. 17046 mother-infant pairs were enrolled and 16442 (97%) completed follow up. 31 sites were included in the analysis.

Intervention
Study sites were allocated to an experimental intervention based on the Baby Friendly Hospital Initiative (BFHI) (n=16) or a control intervention of standard care (n=15). The experimental intervention involved training midwives, nurses, and physicians in the BFHI lacation management course, which emphasised methods to maintain lactation, promote exclusive and prolonged breast feeding, and solve common problems.

Main outcome measures
The primary outcome was risk of GI tract infection. Secondary outcomes were respiratory tract infection, atopic eczema, and rates of exclusive breast feeding (no solids and no liquids other than breast milk) and predominant breast feeding (no solids or non-breast milk; other liquids were permitted).

Main results
Analysis was by intention to treat. The risk of GI tract infection was lower in the control group than predicted, but the risk was significantly lower among infants in the experimental intervention group (table). The groups did not differ for respiratory tract infection. Atopic eczema was lower in the intervention group (table). Infants in the intervention group were more likely to be breast fed than infants in the control group during their first 12 months (table).

Conclusion
In women who had initiated breast feeding, a breastfeeding promotion intervention increased duration and exclusivity of breast feeding and reduced gastrointestinal tract infection.

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Experimental intervention based on the Baby Friendly Health Initiative v control to promote breast feeding

Outcomes	Intervention	Control	p Value	Adjusted odds ratio (95% CI)
≥1 gastrointestinal tract infection	9%	13%	—	0.60 (0.40 to 0.91)*
Atopic eczema	3%	6%	—	0.54 (0.31 to 0.95)†
Any breast feeding at 12 months	20%	11%	—	0.47 (0.32 to 0.69)‡
Exclusive breast feeding at 6 months	8%	0.6%	p=0.01	—
Predominant breast feeding at 6 months	11%	2%	p=0.003	—

*Adjusted for birth weight and number of other children in household.
†Adjusted for family atopic history.
‡Adjusted for birth weight, maternal age, and previous breastfeeding history.

COMMENTARY

The study by Kramer *et al* is particularly relevant for managers of maternity services and healthcare professionals who work with mothers during pregnancy and after delivery. The trial is well designed, and is a good example of where use of experimental designs can enhance knowledge and understanding of interventions previously evaluated by observational studies. The results add strength to the existing evidence from observational studies and confirm that breast feeding is protective against gastrointestinal illness and atopic eczema. The study also shows how professional intervention can increase and prolong breast feeding.

The context in which the research was done is important to the interpretation of the study findings. The experimental design was only possible because of the current cultural context of Belarus, and the extent to which the findings can be generalised to other cultures is not clear. The authors explain that although health services and sanitation in Belarus are similar to those in North America and Western Europe today, maternity practices mirror those of 20–30 years ago. Other differences include the centralisation of the Belarussian healthcare system, the prolonged hospital stay of women who have experienced normal vaginal deliveries (6–7 d), and the high cost of breast milk substitutes, which may have positively motivated women to continue breast feeding. Nevertheless, the findings are robust and confirm several health benefits associated with breast feeding.[1,2]

This research has established the value of the BFHI in terms of tangible health outcomes. Implications for future research include the evaluation of similar health promotion initiatives across both hospital and community settings, and the longer term health outcomes of breast feeding.

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1 Henschel D, Inch S. *Breastfeeding: a guide for midwives.* Hale: Books for Midwives Press, 1996.
2 Enkin M, Keirse MJ, Renfrew M, *et al. A guide to effective care in pregnancy and childbirth.* Oxford: Oxford University Press, 1995.