Breast-feeding Duration and Infant Atopic Manifestations, by Maternal Allergic Status, in the First 2 Years of Life (KOALA Study)


PURPOSE OF THE STUDY. To investigate the potential effect of modification by maternal allergic status on the relationship between breastfeeding duration and infant atopic manifestations in the first 2 years of life.

STUDY POPULATION. Data from 2705 infants of the KOALA Birth Cohort Study (Netherlands) were analyzed.

RESULTS. Longer duration of breastfeeding was associated with a lower risk for eczema in infants of mothers without allergy or asthma (\(P_{trend} = .01\)) and slightly lower risk in those of mothers with allergy but no asthma (\(P_{trend} = .14\)). There was no such association for asthmatic mothers (\(P_{trend} = .87\)). Longer breastfeeding duration decreased the risk of recurrent wheeze independent of maternal allergy (\(P_{trend} = .02\)) or asthma (\(P_{trend} = .06\)) status.

CONCLUSIONS. The findings show that the relationship between breastfeeding and infant eczema in the first 2 years of life is modified by maternal allergic status. The protective effect of breastfeeding on recurrent wheeze may be associated with protection against respiratory infections.

Effect of Prolonged and Exclusive Breastfeeding on Risk of Allergy and Asthma: Cluster Randomised Trial


PURPOSE OF THE STUDY. To evaluate if exclusive and prolonged breastfeeding reduces the risk of childhood asthma and allergy.
STUDY POPULATION. The Promotion of Breastfeeding Intervention Trial (PROBIT) is a birth cohort of 17,046 healthy, term infants enrolled from 31 maternity hospitals in the Republic of Belarus. Of this group, 13,889 (81.5%) had a follow-up evaluation at 6 years of age.

METHODS. The maternity hospitals were randomly assigned to the intervention or control group. The intervention hospitals adopted the infant-friendly initiative, which was developed by the World Health Organization and the United Nations Children’s Fund to promote and support breastfeeding, particularly among mothers who have chosen to start breastfeeding. The control hospitals continued the practices that were already in place. At follow-up at 6 years of age, subjects were evaluated for allergic symptoms and diagnoses by using the International Study of Asthma and Allergy in Childhood (ISAAC) questionnaire and underwent skin-prick allergy tests.

RESULTS. The intervention led to an increase in duration of any breastfeeding as measured at 3, 6, 9, and 12 months of age. In addition, the prevalence of exclusive breastfeeding was higher in the intervention group at 3 months (43.3% vs 6.4%; P < .001) and 6 months (7.9% vs 0.6%; P = .01). At follow-up at 6 years of age, there were no differences found between the 2 groups for rates of atopic illness such as wheezing, asthma, hay fever, and eczema. In addition, there were no differences between the groups for the rates of positive skin-prick test results. Additional analysis, after the exclusion of 6 sites (3 experimental and 3 control) with suspiciously high rates of positive skin-prick test results, demonstrated significantly higher rates of positive skin-prick test results for those in the intervention group.

CONCLUSIONS. These results indicate that promoting breastfeeding did not reduce the risk of atopic illnesses at 6 years of age despite large increases in the duration and exclusivity of breastfeeding.

REVIEWER COMMENTS. Rates of pediatric atopic illnesses have increased in industrialized countries over the past several decades. Many studies have searched for reasons that explain this rise and ways to reverse the current trend. The PROBIT study group has focused on the association between breastfeeding and subsequent risk of asthma and other allergic diseases. Previous studies on this topic have demonstrated conflicting results. This study discovered that, despite large increases in the duration of breastfeeding, there was not a reduction in the risk of asthma, hay fever, eczema, or aeroallergen sensitivity. The researchers concluded that public health measures to increase breastfeeding are unlikely to assist in the reduction of atopic diseases. The authors acknowledged that one of the limitations of the study was the relatively low rates of allergic diagnoses among children in the study group. For example, the rates of asthma (1.2%), hay fever (4.6%), and eczema (1.0%) in the PROBIT children were lower than those generally seen in Western industrialized countries. Therefore, it may be difficult to extrapolate these results to countries in which atopic disease occurs more frequently.

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Effect of Breastfeeding on Lung Function in Childhood and Modulation by Maternal Asthma and Atopy
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PURPOSE OF THE STUDY. Breastfeeding and its relationship to the development of subsequent asthma remain controversial. To clarify these complex issues, this study examined the association between lung function and infant-feeding practices.

STUDY POPULATION. A population-based cohort of healthy infants was enrolled at birth in the Children’s Respiratory Study in Tucson, Arizona (n = 1246); the analysis was of 679 study participants on whom lung-function testing was performed at ages 11 and/or 16 years and provided data regarding infant-feeding practices.

METHODS. In the Children’s Respiratory Study in Tucson, feeding practices were assessed prospectively on the basis of questionnaires completed at enrollment and well-child visits. Formula introduction was categorized as having occurred before 2 months (n = 143, “early formula introduction”), from 2 to before 4 months (n = 336), or at ≥4 months (n = 200, “longer breastfed”). Lung function was measured at ages 11 and 16 years. A random-effects model was used to assess the relationship of infant-feeding practices to measures of lung function.

RESULTS. Forced vital capacity (FVC) by age 16 was increased by 103 ± 40 mL (P = .01), and the forced expiratory volume in 1 second (FEV₁) was lower (−1.9 ± 0.6%; P = .004) in the longer-breastfed children compared with children with early formula introduction. This effect was modified after stratifying according to maternal asthma. Compared with children with early formula introduction, longer-breastfed children with asthmatic mothers had an FVC that was not increased (P = .7) and an FEV₁/FVC ratio that was significantly decreased by age 16. Longer-breastfed children with nonatopic, nonasthmatic mothers demonstrated an increased FVC (142 ± 71 mL; P = .047) and no decrease in FEV₁/FVC (P = .7) compared with children with early formula introduction.
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