STUDY POPULATION. A total of 14,893 children 5 to 13 years of age were included from the cross-sectional, multicenter, Prevention of Allergy–Risk Factors for Sensitization in Children Related to Farming and Anthroposophic Lifestyle (PARSIFAL) study, conducted in 5 European countries.

METHODS. Four groups of children were compared, those in farming communities, those attending Steiner schools (which are known for avoidance of immunizations), and nonfarming and non-Steiner reference groups. By using parental questionnaires based on previously validated questionnaires (including the International Study of Asthma and Allergies in Children), 14,893 children (69% response rate) were evaluated for environmental exposures, history of vaccinations and infections, lifestyle factors, and symptoms and diagnoses of allergic diseases. Atopic sensitization was defined as ≥1 allergen-specific immunoglobulin E level of ≥0.35 kU/L against inhalant allergens and/or foods. A sample of children with complete information on measles vaccination and infection was invited to undergo an additional blood test, and 4,049 children (83% response rate) did so, with parental consent.

RESULTS. In reviewing the entire group of children, atopic sensitization was inversely related to measles infection and vaccination. After exclusion of children who confirmed symptoms of wheezing and/or eczema in the first year of life, an inverse relationship was noted between confirmed symptoms of wheezing and/or eczema in the first year of life, an inverse relationship was noted between measles infection but not vaccination and “any allergic symptom” or “any diagnosis of allergy by a physician.”

CONCLUSIONS. The authors concluded that measles infection may be protective against allergic conditions in children.

REVIEWER COMMENTS. The literature is inconsistent on the relationship between measles infection and allergic disease or atopic sensitization. The predominant confounder in these studies is determining and controlling for whether the exposure precedes the disease, which is a problem in this study as well. The strengths of the study are its size and international design, with a high prevalence of measles infection. However, there was a low prevalence of allergic disease and sensitization in the reference group. The authors also cannot exclude other vaccinations included in the measles-mumps-rubella vaccine or other aspects of the anthroposophic lifestyle that may affect the observed relationship. Additional prospective cohort studies are needed to establish causality.

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Relevance of the Hygiene Hypothesis to Early vs. Late Onset Allergic Rhinitis

PURPOSE OF THE STUDY. To compare the effects of siblings, infections, and rural environment on the development of allergic rhinitis before and after 7 years of age.

STUDY POPULATION. The population-based cohort of participants in the Tasmanian Longitudinal Health Study (TAHS) was studied. Initial data were collected on 8,583 children 7 years of age, comprising 99% of the schoolchildren in Tasmania born in 1961. The most recent follow-up evaluation occurred in 2004 and captured 5,729 of the original participants at the age of 44 years, with the balance either lost to follow-up monitoring or deceased.

METHODS. Subjects were categorized according to outcome, as those with early-onset allergic rhinitis (developed before the age of 7 years), those with late-onset allergic rhinitis (developed after the age of 7 years), and a reference group of those who did not report allergic rhinitis. The exposures considered were siblings, infections, tonsillectomy, and farm residence during childhood. Potential confounders considered were gender, maternal and paternal atopy, mother’s age at participant’s birth, paternal socioeconomic status in 1968, and personal socioeconomic status in 2004. Univariate associations were evaluated by using χ² tests. Multinomial logistic regression was used to examine independent effects of different exposures on outcome with adjustment for confounders. The main analysis included 3,429 subjects.

RESULTS. Subjects with sibling exposure before the age of 2 had less early-onset allergic rhinitis than did those with no siblings (<1-year sibling exposure, odds ratio [OR]: 0.6 [95% confidence interval [CI]: 0.3–1.0]; 1- to 3-year sibling exposure, OR: 0.6 [95% CI: 0.4–0.9]; >3-year sibling exposure, OR: 0.4 [95% CI: 0.3–0.8]). This effect was dose dependent, with a P value of .001 for trend. It was stronger than the effect of sibling exposure before 6 months or before 4 years. The trend for the effect of sibling exposure before the age of 2 was apparent (P = .001), although weaker, in late-onset allergic rhinitis. Early- but not later-onset allergic rhinitis decreased with viral infections during childhood (OR: 0.7 [95% CI: 0.5–0.9]). Tonsillectomy before the age of 7 increased the rate of early- but not later-onset allergic rhinitis (OR: 1.7 [95% CI: 1.2–2.5]).

CONCLUSIONS. Exposures related to the hygiene hypothesis are more strongly related to early- than late-onset allergic rhinitis. The immunologic mechanisms for these risk factors are poorly understood. Additional research should focus on early-onset allergic rhinitis when ex-
Probiotic Supplementation in the First 6 Months of Life in at Risk Asian Infants: Effects on Eczema and Atopic Sensitization at the Age of 1 Year


PURPOSE OF THE STUDY. To determine the effect of probiotic supplementation from birth to 6 months of age on eczema and allergic sensitization at 1 year of age in Asian infants at risk of allergic disease.

STUDY POPULATION. A total of 253 infants with a family history of allergic disease, defined as having a first-degree relative with doctor-diagnosed asthma, allergic rhinitis, or eczema, and positive skin-prick test result to dust mite, were voluntarily recruited prenatally at the clinics between May 2004 and June 2006.

METHODS. The subjects were randomly assigned to receive 60 mL/day of commercially available cow’s milk–based formula either with or without probiotic supplementation from birth to the age of 6 months. The probiotics used were Bifidobacterium longum (10^7 colony-forming units per g) and Lactobacillus rhamnosus (2 × 10^8 colony-forming units per g). The primary outcome was eczema (pruritic rash with chronic relapsing course), and the secondary outcome was allergen sensitization. Questionnaires and pediatrician evaluations were performed at 1, 3, 6, and 12 months. The scoring atopic dermatitis index was used to objectively define the severity of atopic dermatitis. Skin-prick tests (to soy, milk, egg yolk, egg white, and 2 locally prevalent dust mites) were performed at 1 year of age. The 2 outcomes were compared by using chi-square tests, and logistic regression was used to calculate the odds ratio and to adjust for potential confounders (gender, birth order, prenatal smoking exposure, and feeding history).

RESULTS. The incidence of eczema in the probiotic group (22%) was similar to that in the placebo group (25%) (odds ratio: 0.8 [95% confidence interval: 0.4–1.5]). Severity among those with eczema according to the scoring atopic dermatitis index was not significantly different (P = .17). The rate of sensitization at 1 year showed no difference between the groups (24% [probiotic group] vs 19% [placebo]).

CONCLUSIONS. The results of this study do not support the role of early-life probiotic supplementation as a modality for primary eczema prevention.

Impact of Maternal Atopy and Probiotic Supplementation During Pregnancy on Infant Sensitization: A Double-Blind Placebo-Controlled Study


PURPOSE OF THE STUDY. To explore factors in infant sensitization and the effect of probiotics.

STUDY POPULATION. The researchers evaluated 171 mother-infant pairs from an ongoing, placebo-controlled, double-blind study with nutrition modulation through dietary counseling and probiotic supplementation.
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Lara S. Ford and Scott H. Sicherer
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