RESULTS. At 1 month of age, infantile eczema, seborrheic dermatitis, intertrigo, and diaper dermatitis were diagnosed in a total of 29, 7, 14, and 24 neonates, respectively. No associations (such as family history of allergic disease or mode of feeding) were found for the prevalence of these eruptions. Neonates with infantile eczema had a significantly higher number of eosinophils in the cord blood ($P < .0001$). In contrast, no such tendency was found for any other skin eruption. In neonates with infantile eczema at 1 month of age, the diagnosis of atopic dermatitis had been made significantly earlier, and the prevalence of wheezing illness was significantly higher compared with infants who did not have infantile eczema.

CONCLUSIONS. Infantile eczema, but not other skin eruptions, precedes the development of atopic dermatitis and wheezing illness during early infancy. This may be secondary to the activation of eosinophils before birth.

REVIEWER COMMENTS. Patients with infantile eczema are at increased risk for atopic disease. The measurement of cord blood eosinophils may aid in predicting which infants will develop infantile eczema and, in addition, may have diagnostic utility in predicting which patients are at risk for the development of further allergic disease.

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Risk Factors for Atopic Dermatitis in New Zealand Children at 3.5 Years of Age


PURPOSE OF THE STUDY. To examine factors associated with a diagnosis of atopic dermatitis (AD) at 3.5 years of age, especially factors implicated by the hygiene hypothesis.

STUDY POPULATION. There were 871 children enrolled at birth for the Auckland Birthweight Collaborative study, 744 (85.4%) participated at 1 year, and 550 (63.2%) at 3.5 years. AD was diagnosed in 87 (15.8%) children at 3.5 years.

METHODS. The Auckland Birthweight Collaborative study is a case-control study of risk factors for small-for-gestational-age infants. Case subjects were born at term with birth weight at ≤10th percentile; controls were appropriate for gestational age, with birth weight >10th percentile. AD was defined as the presence of an itchy rash in the past 12 months with ≥3 of the following by history: flexural involvement, generally dry skin, atopic disease in parents or siblings, or visible flexural dermatitis by photographic protocol.

RESULTS. The prevalence of AD did not differ by birth weight. AD at 3.5 years was associated with raised serum immunoglobulin E, wheezing, asthma, rash, or eczema at 1 year. In multivariate analysis adjusting for parental atopy and breastfeeding, AD at 3.5 years was associated with atopic disease in the parents (maternal atopy only [adjusted odds ratio (aOR): 3.83; 95% confidence interval (CI): 1.2–12.2]; paternal atopy only [aOR: 3.6; 95% CI: 1.09–11.75]; both parents atopic [aOR: 6.12; 95% CI: 2.0–18.5]). There was a higher risk of AD with longer duration of breastfeeding (<6 months [aOR: 6.13; 95% CI: 1.5–25.9]; >6 months [aOR: 9.70; 95% CI: 2.5–38.2]) compared with never breastfeeding. AD at 3.5 years had a negative association with cat ownership (aOR: 0.5; 95% CI: 0.2–0.97) but was not associated with owning a dog at 3.5 years, having pets at 1 year, or with older siblings. AD at 3.5 years was not associated with gender, socioeconomic status, maternal smoking, parity, mold exposure, immunizations, BMI, or antibiotic use in the first year of life.

CONCLUSIONS. A personal and a parental history of atopic disease are risk factors for AD at 3.5 years. Duration of breastfeeding was associated with an increased risk of AD. No association was found with factors implicated by the hygiene hypothesis.

REVIEWER COMMENTS. This is one of many studies to look at various risk factors for atopy, here focusing on AD. Similar to other studies, the authors show that family history of atopy is a risk factor for AD. However, compared with other studies, the authors did not find any association with gender, socioeconomic status, environmental risks, or BMI. This discrepancy is probably attributable to differences in populations and different environmental factors. The data on atopy prevention by breastfeeding remain unclear and may be affected by reverse causation (breastfeeding longer in response to observing AD); although this is one of several negative studies, meta-analyses of multiple studies typically show a prevention effect.

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BCG Immunization at Birth and Atopic Diseases in a Homogeneous Population of Spanish Schoolchildren


PURPOSE OF THE STUDY. To investigate the effect of vaccination with BCG on the development of atopic diseases in a homogeneous population of Spanish schoolchildren.
STUDY POPULATION. Children aged 6 to 7 years who were living in 3 cities (Bilbao, San Sebastian, and La Coruña) and 1 province (Asturias) of the North Atlantic coast of Spain.

METHODS. The International Study of Asthma and Allergies in Childhood (ISAAC) core and environmental questionnaires were used in 4 different centers of the Spanish North Atlantic coast. Bilbao, San Sebastian, and Asturias have a universal BCG immunization policy during the first days of life, whereas La Coruña discontinued this practice in 1989. Except for this center, immunization coverage was >90%. Parents of children aged 6 and 7 years were surveyed from a random sample of schools of Asturias or all schools in the city district among the remainder of the centers.

RESULTS. The participation rate was >70%. After excluding those children born outside Spain, there were 6762 immunized and 2828 nonimmunized. After adjusting for gender, age, smoking habits of the father and mother, truck traffic near the household, presence of older and younger siblings, and ownership of a cat or a dog during the first year of the child’s life, the adjusted odds ratios of the BCG-immunized children according to disease outcome were 0.87 for asthma (95% confidence interval [CI]: 0.76–1.00), 0.87 for hay fever (95% CI: 0.75–1.01), and 0.89 for atopic dermatitis (95% CI: 0.76–1.05).

CONCLUSIONS. BCG immunization offers weak protection against atopic diseases in Spanish schoolchildren.

REVIEWER COMMENTS. BCG vaccination has received attention because of its ability to provoke a T-helper (Th)1 response. Many investigators have hypothesized that vaccination with BCG may offer protection from Th2-skewed diseases such as asthma, allergic rhinitis, and atopic dermatitis. Although this study reveals that immunization with BCG offers weak protection against asthma and allergic rhinitis in a homogeneous population, it is important to remember that these diseases are multifactorial, with genetic and environmental influences also impacting pathogenesis.

Hospitalization for RSV Bronchiolitis Before 12 Months of Age and Subsequent Asthma, Atopy and Wheeze: A Longitudinal Birth Cohort Study


PURPOSE OF THE STUDY. To compare asthma and atopy outcomes of children according to whether they had been admitted to a hospital in the first 12 months with respiratory syncytial virus (RSV)–proven bronchiolitis.

STUDY POPULATION. Data from a large, population-based, birth cohort (Avon Longitudinal Study of Parents and Children) were used.

METHODS. Outcomes considered were 12-month prevalence of wheeze at 2 ages (between 30–42 and 69–81 months), cumulative prevalence of doctor-diagnosed asthma at 91 months, and skin-prick test–defined atopy at 7 years. Multivariable logistic-regression models were used to calculate odds ratios for outcomes adjusted for potential confounders.

RESULTS. A total of 150 infants (1.1% of the cohort) were admitted to a hospital within 12 months of birth with RSV bronchiolitis. The prevalence of wheezing was 28.1% in the RSV group and 13.1% in controls at 30 to 42 months and 22.6% vs 9.6% at 69 to 81 months. The cumulative prevalence of asthma was 38.4% in the RSV group and 20.1% in the controls at 91 months. Atopy was found in 14.6% of those in the RSV group and in 20.7% of the controls at 7 years. RSV bronchiolitis was associated with subsequent wheezing between 30 to 42 months (odds ratio [OR]: 2.3; 95% confidence interval [CI]: 1.3–3.9) and 69 to 81 months (OR: 3.5; 95% CI: 1.8–6.6) and with the cumulative prevalence of asthma at 91 months (OR: 2.5; 95% CI: 1.4–4.3) but not with atopy (OR: 0.7; 95% CI: 0.2–1.7).

CONCLUSIONS. In a population-based birth cohort, RSV bronchiolitis was associated with subsequent wheezing and asthma but not with the development of atopy by 7 years of age.

REVIEWER COMMENTS. Because infants who have severe RSV infection have recurrent wheezing later in life, RSV has been suggested to be a risk factor for asthma. Some also postulate that early RSV infection may predispose children to atopy; however, this has been controversial. Henderson et al show in their large prospective cohort that severe RSV infection requiring hospitalization is associated with wheezing but not atopy. These results indicate that RSV infection may be a risk factor for nonallergic asthma.

Early Respiratory Infections, Asthma, and Allergy: 10-Year Follow-up of the Oslo Birth Cohort

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