**Allergy**

**PREDICTION, PREVENTION, AND THE “HYGIENE HYPOTHESIS”**

**Perennial Allergen Sensitization Early in Life and Chronic Asthma in Children: A Birth Cohort Study**

**PURPOSE OF THE STUDY.** To evaluate the effect of allergic sensitization and allergen exposure early in life on subsequent loss of pulmonary function in atopic wheezers, nonatopic wheezers, and control children.

**STUDY POPULATION.** There were 1314 healthy, term infants enrolled onto the German Multicenter Allergy Study who were followed from birth to 13 years of age.

**METHODS.** Parental reports of wheezing, medication usage, and respiratory tract infections were collected by standardized questionnaire and interviews at regular intervals. Specific immunoglobulin E (IgE) antibodies to food and inhalant allergens and measurements of carpet dust for dust-mite and cat-allergen content were serially obtained, and atopy was defined as a specific IgE level of >0.35 kU/L for ≥1 allergen. Lung-function measurements were obtained at ages 7, 10, and 13 years, and a bronchial challenge was performed at age 7 years.

**RESULTS.** Lung function at 7 years of age was significantly reduced in atopic wheezers sensitized to perennial allergens (ie, dust mite, cat, and dog) and exposed to high levels of the respective allergens in the first 3 years of life. This reduction in lung function at 7 years of age persisted at ages 10 and 13 years, whereas nonatopic wheezers and control children experienced no change in lung function after early exposure to perennial allergens. Atopic wheezers also demonstrated more frequent asthma exacerbations, and a greater proportion had airway hyperresponsiveness compared with nonatopic wheezers. Furthermore, 45% of atopic wheezers continued to have symptoms past 13 years of age, whereas 90% of nonatopic wheezers lost all asthmatic symptoms by the same age. Early sensitization to seasonal allergens and food allergens had no significant effect on subsequent lung function in the 3 study groups.

**CONCLUSIONS.** Early sensitization and exposure to perennial allergens in the first 3 years of life in atopic wheezers predicts chronic asthma characterized by more frequent symptoms and lower lung function by 7 years of age.

**REVIEWER COMMENTS.** Halting the progression toward development of chronic asthma symptoms has been a major goal of pediatric asthma research. Recent studies on daily inhaled corticosteroid therapy in wheezy infants have shown an improvement in symptom-free days while the infants were taking the inhaled corticosteroid but no sustained difference in preservation of lung function or ultimate progression to chronic asthma symptoms after cessation of daily steroid therapy. Thus, the mechanisms that cause asthma disease progression and loss of lung function may be different from those that determine acute symptoms and the frequency of asthma exacerbations. Because none of the previous studies have stratified patients into atopic and nonatopic wheezers, future studies aimed at preventing airway remodeling and the development of chronic asthma in children may need to focus more closely on the early wheezers with perennial allergen sensitization and exposure. It may be that early atopy control may affect the subsequent clinical expression of asthma in children.

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**Long-term Follow-up of Atopic Dermatitis: Retrospective Analysis of Related Risk Factors and Association With Concomitant Allergic Diseases**

**PURPOSE OF THE STUDY.** To examine the natural course of atopic dermatitis (AD), the factors influencing its persistence, and the appearance of other allergic diseases with particular focus on asthma and the presence of specific immunoglobulin E (IgE) at first observation.

**STUDY POPULATION.** The prospective study included 252 children between 6 and 36 months of age with AD noted on the first clinical visit to a pediatric or dermatology department in Bologna, Italy.

**METHODS.** Patients were followed for 13 to 22 years. AD diagnosis was based on the criteria of Hanifin and Rajka. Allergic rhinitis and asthma were determined by physician diagnosis. AD severity was based on validated clinical score. Total IgE and specific IgE to various allergens (cow’s milk, egg white, soybean, wheat, peanut, nut, codfish, tomato, grass pollens, house dust mites, cat dander, horse dander, dog dander, and Alternaria) were determined at baseline. For radioallergosorbent test (RAST) testing, ≥1 was considered positive for inhalant allergen and ≥2 was considered positive for food allergies.

**RESULTS.** AD had completely resolved in 124 cases (60.5%). Other allergic manifestations that appeared included asthma in 70 cases (34.1%) and rhinoconjunctivitis in 118 cases (57.6%). Generally, the average age of patients who recovered from AD was higher in severe...
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