REVIEWERS COMMENTS. For breastfed infants with food allergy, strict avoidance of the offending food proteins for both mother and child is frequently recommended. Total dietary avoidance of egg is difficult for patients to achieve. Additional study is needed to substantiate or to refute the preliminary observation that regular maternal ingestion of a small quantity of well-cooked egg did not markedly exacerbate eczema symptoms in egg-sensitive breastfed infants.

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The Natural History of Wheat Allergy

PURPOSE OF THE STUDY. Wheat allergy is among the most common of food allergies, affecting ~0.4% of children, but little is known about its natural history. The purpose of this study was to determine at what age wheat allergy is outgrown and to identify clinical and laboratory predictors of tolerance development.

STUDY POPULATION. Participants were children from the Johns Hopkins pediatric allergy clinic who had a history of symptomatic reaction (presumed immunoglobulin E [IgE] mediated) to wheat and a positive wheat-specific IgE test result. Inclusion criteria were met by 103 children.

METHODS. The study was a retrospective, medical record review. Resolution of allergy was determined by the results of food-challenge testing. Kaplan-Meier survival curves were generated to depict resolution of wheat allergy.

RESULTS. The median initial wheat-specific IgE level was 24 kU/L, and the median peak wheat-specific IgE level was 73 kU/L. Rates of resolution of wheat allergy were 29% by the age of 4 years, 56% by the age of 8 years, 65% by the age of 12 years, and 70% by the age of 14 years. Higher wheat-specific IgE levels were associated with worse outcomes. A total of 63 of 103 participants underwent a food challenge during the study period. The peak wheat-specific IgE level recorded was a useful predictor of persistent allergy, although many children with even the highest levels of wheat IgE outgrew wheat allergy.

CONCLUSIONS. The median age of resolution of wheat allergy was 6.5 years in this population. However, 35% of the patients remained allergic into their teenage years.

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High Levels of IgG4 Antibodies to Foods During Infancy Are Associated With Tolerance to Corresponding Foods Later in Life

PURPOSE OF THE STUDY. To examine the serum and salivary antibody responses to food-elimination diets and to identify immunologic parameters related to oral tolerance.

STUDY POPULATION. Prospective study of 89 children <2 years of age with eczema.

METHODS. Children with eczema were examined at 3 time points, that is, at enrollment, after a 6-week treatment period, and at 4.5 years of age. Treatment included topical emollients and/or steroids for all children and a 6-week egg- and/or milk-elimination diet for 60 of the 89 children in the cohort of children who were diagnosed with an allergy to 1 or both foods. Laboratory data

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The highest IgG4/IgE ratios were found in children who reacted to food challenge or confirming a convincing history of past reactions, despite having a positive SPT result. Future studies to determine the utility of immunologic markers should consider the diet after passage of a challenge in the clinic or at home.

RESULTS. Of the 89 participating children, 60 were prescribed elimination diets that were based on SPT results, as follows: 24 egg, 11 milk, and 25 both. At study completion (4.5 years of age), 37 of 49 previously egg-allergic and 11 of 36 previously milk-allergic children were considered to be tolerant. Children who were egg or milk tolerant at 4.5 years of age had significantly higher levels of ovalbumin- or β-lactoglobulin–specific IgG4 at enrollment, respectively. Tolerant children also had higher food-specific IgG4/IgE ratios at 4.5 years. The highest IgG4/IgE ratios were found in children who had circulating milk- and/or egg-specific IgE antibodies but negative SPT results at enrollment. There was no significant difference between total or food-specific IgE levels at enrollment between the tolerant and non-tolerant groups; however, children in the tolerant group had significantly lower food-specific IgE antibodies at 4.5 years, compared with those in the nontolerant group. There were no significant differences in total IgA, saliva IgA, or food-specific IgA levels between groups at enrollment or at 4.5 years.

CONCLUSIONS. High food-specific IgG4 antibodies at <2 years of age and high IgG4/IgE ratios were related to oral tolerance to milk and egg at 4.5 years of age.

METHODS. Patients answered a questionnaire about their perceived food allergies. Allergen-specific diagnoses were based on questionnaire, medical history, and, when relevant, skin-prick test results and serum-specific IgE levels. Sera were analyzed for specific IgE to peanuts, tree nuts, and seeds by ImmunoCAP (Phadia AB, Uppsala, Sweden).

RESULTS. Seventy-two percent of the patients had convincing histories of peanut allergy. Of these, 86% had sensitization to ≥1 tree nut, with 34% having clinical allergy. The majority of study patients had never ingested tree nuts, which made it difficult to determine the true prevalence of these nut allergies. Tree nut clinical allergy occurred with a frequency ranging from 16.4% for walnut to 1.5% for Brazil nut. Seventeen percent of the patients reported reactions to sesame seed. The ranges of increased serum-specific IgE levels for each food varied widely among patients with positive histories. The relationship between diagnoses and allergen-specific IgE levels was estimated through logistic regression, with curves illustrating the likelihood of receiving a positive clinical diagnosis in relation to the specific IgE concentration. Positive predictive values (95%) were established for peanut and walnut (13 and 18.5 kUA/L, respectively) but with sensitivities of just 60% and 17%, respectively. High correlations were found between IgE results for walnut and pecan and between those for cashew and pistachio.

CONCLUSIONS. Quantification of food-specific IgE is a valuable tool that can aid in the diagnosis of symptomatic food allergy and might decrease the need for double-blind, placebo-controlled, food challenges.
High Levels of IgG_{4} Antibodies to Foods During Infancy Are Associated With Tolerance to Corresponding Foods Later in Life

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The online version of this article, along with updated information and services, is located on the World Wide Web at:
/content/124/Supplement_2/S121.2.full.html