Forty-eight (21.5%) had negative results, and 37 reacted. Peanut RASTs of those who underwent challenge scores were different for those who passed (median 0.69 kU/L) versus those who failed (median 2.06 kU/L) at time of challenge but not a time of diagnosis. Patients who had negative challenges were significantly more likely to have had an initial reaction with involvement of the skin alone than those with ongoing peanut allergy. Yet, 17% of those with cutaneous only reactions had RASTs >20 kU/L, and therefore were ineligible for challenge. One child with a reaction involving cutaneous, respiratory, and gastrointestinal systems outgrew his allergy. Six patients with negative RASTs had positive challenges that ranged from simple cutaneous to multisystem involvement.

Conclusions. Peanut allergy is outgrown in approximately 22% of children, especially in those with histories of cutaneous only reactions and with currently low peanut RASTs. Although children with initial RASTs >10 kU/L are unlikely to lose their sensitivity, younger patients should have RASTs monitored annually until at least age 4 years. Challenges in controlled settings should be offered to appropriate patients, because the benefit provided to those who are no longer allergic clearly outweighs the risk of a carefully performed challenge.

Reviewer’s Comments. This reviewer recently peanut challenged a 4-year-old asthmatic girl with a history of persistent cow milk allergy, distant history of positive peanut puncture skin test, no known lifetime exposure to peanut, and currently negative peanut RAST, with resultant biphasic anaphylaxis. Earlier studies have shown that asthma is a major risk factor for life-threatening allergic reactions to peanut, yet no asthmatic children lost their peanut sensitivity in this study. These various observations do not suggest less aggressive avoidance measures or less diligence with adrenaline contingency plans; but closer monitoring of peanut immunoglobulin E with an eye toward ultimate challenge in qualifying children. Does avoidance of peanut at a critical time in life in sensitized children truly alter the natural history of this allergy in some? Also, it would be interesting to know if the natural history of peanut allergy is different in that smaller group of persons who begin with such sensitivity in adulthood.

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THE NATURAL HISTORY OF PEANUT ALLERGY IN YOUNG CHILDREN AND ITS ASSOCIATION WITH SERUM PEANUT-SPECIFIC IgE

Purpose of the Study. To characterize adverse reactions after accidental peanut exposure in young children with peanut allergy and to determine the usefulness of serum peanut-specific immunoglobulin E (IgE) levels during follow-up.

Study Population. One hundred two children were identified who had clinical peanut hypersensitivity before 4 years of age. Inclusion criteria included 1) a convincing history of clinical peanut hypersensitivity and/or a positive double-blind, placebo-controlled food challenge (DBPCFC) response to peanuts and 2) a positive skin prick test response to peanuts.

Methods. Research subjects were contacted at least yearly to track adverse reactions caused by accidental exposure to peanuts. Nineteen participants discontinued their participation in the study or were lost to follow-up, leaving 83 for inclusion in the analysis. Peanut-specific serum IgE levels were determined in 51 of 83 subjects using the Pharmacia CAP system (Uppsala, Sweden).

Results. Thirty-one of 53 (58%) of the subjects followed for 5 years experienced adverse reactions from accidental peanut exposure. Regardless of the nature of their initial reaction, the majority with subsequent reactions (31/60; 52%) experienced potentially life-threatening symptoms. The group with isolated skin symptoms (11/51; 22%) had lower serum peanut-specific IgE levels (median: 1.25 kUa/L vs 11.65 kUa/L; \(P = .004\); Wilcoxon rank sum) than the group with respiratory and/or gastrointestinal symptoms (40/51; 78%). There was no threshold level below which only skin symptoms appeared to occur. Of note, 4 subjects had negative DBPCFC results to peanuts during the follow-up period.

Conclusions. The majority of children with peanut allergy followed for up to 5 years will have adverse reactions from accidental peanut exposure. Symptoms may not be consistent with symptoms reported during initial reactions. A minority of children with peanut allergy can lose their clinical hypersensitivity.

Reviewer’s Comments. This report addresses 2 common questions asked by parents of children with peanut allergy: a) will the reactions become progressively worse? and b) will the reactions ever subside? Despite appropriate counseling on peanut avoidance, the majority of the children experienced an accidental peanut ingestion during follow-up. Moreover, initial clinical reactions involving only the skin can subsequently progress to involve the respiratory and/or gastrointestinal systems. A minority of subjects with low serum peanut-specific IgE levels developed oral tolerance to peanut. This investigation has expanded the growing body of evidence in this research area and has provided practical clinical information for addressing allergic reactions to peanuts. With the inevitability of accidental ingestions, the general trend for worsening of clinical reactions with subsequent exposures, and the inability to predict severity of future reactions, the take-home messages should be that all patients with peanut allergy need proper education about the potential seriousness of future accidental exposures and self-injectable epinephrine to manage future, severe allergic reactions.

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A VOLUNTARY REGISTRY FOR PEANUT AND TREE NUT ALLERGY: CHARACTERISTICS OF THE FIRST 5149 REGISTRANTS

Purpose of the Study. To define features of peanut (PN) and tree nut (TN) allergy among 5149 members of a voluntary registry.

Study Population. Food-allergic subjects (n = 5149) were enrolled from May 1977 to May 2000, with 75% voluntarily registered through membership in the Food Allergy and Anaphylaxis Network (FAAN) and 25% recruited by physicians. Eighty-nine percent of the registrants were children <18 years of age (median age = 5 years; 67% male). Only 16 individuals were ≥65 years of age (28% male).

Methods. A structured questionnaire was distributed to 7000 lay members and 1000 health professional members of the FAAN, as well as to 4000 members of the American Academy of Allergy, Asthma, and Immunology (AAAAI). Participants or parental surrogates provided demographic information and details about allergic reactions to PNs and TNs. Data were analyzed by \(x^2\) analysis.
Results. Isolated PN allergy was reported by 3482 registrants (68%), isolated TN allergy was reported by 464 individuals (9%), and allergy to both by 1203 individuals (23%). Other self-reported food allergies included egg (29%), cow’s milk (22%), soy (11%), wheat (6%), fish (4%), and shellfish (2%). Atopic disorders included atopic dermatitis (50%), asthma (46%), and allergic rhinitis (27%). Participants were more likely to have been born in October, November, or December (P < .0001).

Other self-reported food allergies included egg (29%), cow’s milk (22%), soy (11%), wheat (6%), fish (4%), and shellfish (2%). Other self-reported food allergies included egg (29%), cow’s milk (22%), soy (11%), wheat (6%), fish (4%), and shellfish (2%). Atopic disorders included atopic dermatitis (50%), asthma (46%), and allergic rhinitis (27%). Participants were more likely to have been born in October, November, or December (P < .0001). Eighty-two percent (n = 3877) had been breastfed for a median of 7 months. The median age at first known exposure to PN was age 12 months (mean = 18.5 months), while the first known reaction was at a median age of 14 months (mean = 29.5 months). Seventy-four percent report that the first reaction to PN occurred with the first exposure, and ingestion was reported as the most common route of exposure (91%).

Conclusions. This registry is the largest collection of patients with food allergies and emphasizes important and novel features of PN and TN reactions. Reactions are often severe, often occur on the first exposure, and require some type of medication or medical intervention. Subsequent reactions to PN and TN reportedly worsened in most patients. The majority of patients reported having epinephrine available at all times. Of the 10% who did not, 45% had not been given a prescription.

Reviewers’ Comments. This study provides valuable insight into a very important aspect of food allergy. Because 89% of the registrants are children, this data is very valuable for pediatricians, as it provides new insights into the features of these PN and TN allergies, reaffirms previous observations, and provides a valuable source of information for health care providers.

THE US PEANUT AND TREE NUT ALLERGY REGISTRY: CHARACTERISTICS OF REACTIONS IN SCHOOLS AND DAY CARE


Purpose of the Study. To describe clinical features of allergic reactions to peanuts and tree nuts occurring in school or day care environments.

Study Population. Participants were from the US National Peanut and Tree Nut Allergy Registry (PAR), which is a voluntary, self-reported, or parental reported registry of individuals who are allergic to peanuts and/or tree nuts. This group of individuals from the database had experienced peanut and/or tree nut allergic reactions in a school or day care setting.

Methods. One hundred subjects were randomly selected from the PAR database and telephone interviews were performed to characterize the number of allergic reactions, causative food, initial symptoms, severity of final reactions, method of food contact, and the treatment rendered/school response.

Results. Of 4586 total database registrants, 750 (16%) reported allergic reactions to peanuts and/or tree nuts while in school or day care. Of one hundred subjects or parental surrogates described 115 reactions to peanuts and 9 reactions to tree nuts. For 25% of these subjects, a school reaction was the first indication of peanut or tree nut allergy. A total of 32% had 1 prior reaction, 37% had 2, 11% had 3 and 20% had >3 prior reactions. A total of 64% occurred in preschool with the remainder in elementary school or higher. Mode of contact included 60% occurring from ingestion, 24% from skin contact/possible ingestion, and 16% from inhalation/possible skin contact or ingestion. Peanut butter craft projects accounted for the most common ingestion. Treatment was given in 90% of reactions. Antihistamines were given in 84% and epinephrine in 28%. Epinephrine was administered by teachers, nurses, parents, and others. A nurse was on location for only 23% of reactions. Treatment delays were secondary to delayed recognition of reactions, calling parents, not following emergency plans, and, in 1 case, inability to administer self-injectable epinephrine.

Conclusions. Peanut and tree nut allergic reactions are common in school and day care environments. Both accidental exposures and new onset reactions can occur. School personnel need to be educated to recognize and treat food-allergic reactions.

Reviewers’ Comments. There are 2 weaknesses from this article that stem from the reliance on self-reported information. First, this could represent an overestimation of severity of school peanut and tree nut reactions as described in the article. Second, when nonmedically trained personnel report such events, reliability and historical recall need to be taken into account. However, in the school and day care environment, nonmedically trained personnel will be the first to recognize signs and symptoms of allergic reactions and therefore need to be educated regarding food allergies. Successful management includes prevention, prompt recognition, availability of medications, written emergency plans, and early administration of epinephrine by teachers, nurses, parents, cafeteria workers, and other school and day care personnel.

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SCHOOL READINESS FOR CHILDREN WITH FOOD ALLERGIES


Purpose of the Study. The purpose of this study was to identify and characterize the level of knowledge about food allergy and the prevention and treatment policies for food-allergic children in elementary schools.

Study Population. A total of 273 public elementary schools were randomly selected from the 2082 public elementary schools listed by the Michigan State Education Directory.
A Voluntary Registry for Peanut and Tree Nut Allergy: Characteristics of the First 5149 Registrants
Amy M. Scurlock and Stacie M. Jones
Pediatrics 2002;110;434

The online version of this article, along with updated information and services, is located on the World Wide Web at:
/content/110/Supplement_2/434.1.full.html