

REVIEWER COMMENTS. Food challenge remains the gold standard for diagnosing food allergy. A marker that would alleviate the need for time-consuming and risky food challenges has yet to be found. CRD has allowed some patients to proceed with food challenges deemed to be lower risk. At this time, we still rely on our clinical judgment based on detailed clinical history, specific allergic sensitivity, and comorbid conditions when determining the risk-to-benefit profile, allowing patients to make an informed decision to pursue a food challenge.

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Use of Food Allergy Panels by Pediatric Care Providers Compared With Allergists

Strukus DR, Kempe E, Leber A, Thonrton D, Scherzer R. *Pediatrics*. 2016;138(6):e20161602

PURPOSE OF THE STUDY. To characterize and quantify the use of food-specific serum IgE (sIgE) panels by PCPs and allergists.

STUDY POPULATION. Clinicians (physicians, nurse practitioners, and physician assistants) who placed orders for food sIgEs at the outpatient laboratory at Nationwide Children's Hospital in Columbus, Ohio, were classified according to their primary area of clinical expertise, including allergy and immunology, PCP (including pediatricians, family medicine, and internal medicine), and gastroenterology.

METHODS. This was a retrospective review of all food sIgE tests (individual tests and panels) ordered in 2013.

RESULTS. In the 1-year study time period, 10 794 single-food sIgE tests and 3065 allergen panels containing at least 1 food sIgE were ordered by 447 clinicians. Allergists ordered the majority of single-food sIgE tests compared with PCPs. PCPs ordered the majority of the allergen panels, and 45.1% of all sIgE tests ordered by PCPs were panels, compared with only 1.2% of orders placed by allergists. PCPs in practice for ≤ 15 years ordered $\sim 50\%$ fewer sIgE panels, compared with PCPs in practice for ≥ 16 years. Allergists were much more likely to order single-food sIgE testing for one of the 8 most common food allergens (cow's milk, egg, wheat, soy, peanut, tree nuts, fish, and shellfish, which account for $>90\%$ of all IgE-mediated food allergies) than were PCPs, who ordered significantly more sIgE tests for foods associated with a low prevalence of IgE-mediated food allergy, such as strawberry, beef, corn, and tomato. During the study period, the average laboratory charge for each individual sIgE was \$26.92. The cost of each panel ranged from \$134.60 (for the 5-allergen panel) to \$619.16 (for the 23-allergen panel). The total cost of all sIgE tests ordered

per patient was approximately twice as expensive for PCPs, with the majority of the discrepancy due to ordering sIgE panels.

CONCLUSIONS. Compared with allergists, PCPs order significantly more food allergen panels, more single-food sIgE tests for foods that infrequently cause allergy in children, and generate higher costs per patient for sIgE testing.

REVIEWER COMMENTS. Accurate diagnosis of IgE-mediated food allergies is critical for management. The clinical history of an acute allergic reaction to a suspected trigger is the most important diagnostic tool. Percutaneous skin prick testing and sIgE assays confirm the suspected diagnosis. Oral food challenges are the gold standard in the diagnosis of a food allergy and can be conducted by a food allergy specialist if the diagnosis remains unclear. Clinical guidelines discourage indiscriminate use of sIgE panels, given the low positive predictive value of these tests when used arbitrarily. The Choosing Wisely campaign of the ABIM Foundation highlights this recommendation for allergy tests (<http://www.choosingwisely.org/patient-resources/allergy-tests/>). Food sIgE testing should not be performed without a history consistent with a potential IgE-mediated food allergy. Ordering a panel of tests for allergens does not reduce costs.

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Characteristics of Tree Nut Challenges in Tree Nut–Allergic and Tree Nut–Sensitized Individuals

Couch C, Franxman T, Greenhawt M. *Ann Allergy Asthma Immunol*. 2017;118(5):591–596.e3

PURPOSE OF THE STUDY. To show characteristics and outcomes of oral food challenges (OFCs) in patients with tree nut (TN) sensitization with or without documented tree nut allergy and to help understand the relation between tree nut sensitization (by skin prick testing [SPT] and specific immunoglobulin E [sIgE]) and OFC outcomes.

STUDY POPULATION. All open TN OFCs conducted at the University of Michigan Allergy and Immunology clinics between 2007 and 2015. Patients included in the study had a mean age of 4.5 years. Patients who had TN SPT and or TN sIgE testing before the challenge were included. Patients with a history of a non-IgE-mediated food allergy were excluded.

METHODS. Retrospective analysis was performed by using *International Classification of Diseases, Ninth Revision* and

CPT codes for OFCs. TN SPT wheal size, TN sIgE, any coexisting food allergy, allergic diseases, and OFC reactions were obtained from chart review. Subjects were classified as allergic to TN, sensitized to TN (with no history of allergy to any TN), or avoiding TN despite a lack of sensitization or reaction history. TN-allergic patients did not undergo an OFC to the TN they were allergic to; instead, they underwent OFCs to other TNs without known histories of allergic reaction. National Institutes of Allergy and Infectious Disease and Food Allergy & Anaphylaxis Network anaphylaxis criteria were used to assess documented OFC outcomes.

RESULTS. Of 156 TN OFCs in 109 patients, 86% were negative challenges. Seventy-six percent of patients with a specific TN allergy had a negative challenge to another TN. Among patients with TN sensitization only, 91% had a negative challenge. A negative challenge was seen for 89% of patients with TN sIgE <2 kUA/L ($n = 124$) and for 69% of patients with sIgE ≥ 2 kUA/L ($n = 16$). In patients with a TN SPT wheal ≥ 3 mm ($n = 44$), 61% had a negative challenge. Among patients with peanut allergy and TN co-sensitization, 96% had a negative TN challenge. Sixty percent of OFCs were delayed longer than 12 months.

CONCLUSIONS. TN OFCs are frequently negative, even in patients with sensitization, as demonstrated by SPT or sIgE testing. Most patients with peanut allergy and specific TN allergy and/or sensitization are able to tolerate selected TNs.

REVIEWER COMMENTS. This retrospective study provides useful data regarding outcomes for TN OFCs in patients with a tree nut allergy or sensitization from a single academic center. Additional studies would be beneficial to provide guidance for clinical decision-making regarding when to refer patients with a history of peanut or specific TN allergy or sensitization for consideration of OFCs to other TNs.

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Food Allergy Needs Assessment, Training Curriculum, and Knowledge Assessment for Child Care

Lanser BJ, Covar R, Bird JA. *Ann Allergy Asthma Immunol.* 2016;116(6):533-537.e4

PURPOSE OF THE STUDY. To ascertain the educational needs of child care center workers (CCCWs) in the Dallas-Fort Worth metroplex and to provide education covering topics critical to understanding food allergies and anaphylaxis.

STUDY POPULATION. CCCWs in 72 licensed child care centers in the Dallas-Fort Worth metroplex.

METHODS. The authors developed a needs assessment survey, which was used to develop a training curriculum, and

a knowledge assessment was developed from the training curriculum.

RESULTS. Most of the respondents worked in large child care centers (>50 children), and 93% had at least 1 child with food allergies. Thirty-six percent of respondents reported that a food-related allergic reaction occurred at their center; use of epinephrine autoinjectors was low (9%), whereas the use of antihistamines was high (50%). Twenty-seven percent of respondents reported that none of the children with a food allergy at their center had an emergency action plan. Only 46% of CCCWs reported having prior training regarding food allergies. Training came from a variety of sources, mostly from the families of the food-allergic child but also from online resources. Most believed they had at least a moderately high proficiency in food allergy topics, but knowledge assessment scores indicated that 62% correctly answered questions related to food allergy understanding, 62% correctly recognized a reaction, and 51% understood the correct treatment of food allergy. The training curriculum resulted in significant improvements in knowledge in all categories.

CONCLUSIONS. CCCW training on food allergies is largely informal and is mostly obtained from families of allergic children. There is a need for formal, standardized education on food allergy for CCCWs. Training curriculums can improve knowledge, as demonstrated in this study, but the CCCWs' preference for face-to-face learning and written materials are not practical for widespread dissemination.

REVIEWER COMMENTS. These results demonstrate the need for allergists and pediatricians to continue to educate CCCWs on food allergies, particularly on the recognition of reactions and appropriate treatment. A standardized, online, interactive course would be ideal. Although this was not the preferred method of learning for these CCCWs, it is the most practical approach to disseminate the education to larger groups. Fifty percent of preschool-aged food-allergic children attend daycare, and they need to be safe. Pediatricians and allergists should keep this in mind as they counsel the parents of food-allergic patients.

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Epicutaneous Immunotherapy for the Treatment of Peanut Allergy in Children and Young Adults

Jones SM, Sicherer SH, Burks AW, et al; Consortium of Food Allergy Research. *J Allergy Clin Immunol.* 2017;139(4):1242-1252.e9

PURPOSE OF THE STUDY. To evaluate the clinical, safety, and immunologic effects of epicutaneous immunotherapy (EPIT) for the treatment of peanut allergy.

Characteristics of Tree Nut Challenges in Tree Nut–Allergic and Tree Nut–Sensitized Individuals

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