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 cosensitization, 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.

STUDY POPULATION. The study included 74 patients ages 4–25 years with a peanut allergy, defined as physician-diagnosed or as the patient having a convincing clinical history of a peanut allergy, a positive result on a peanut skin prick test, or peanut-specific IgE and a positive entry oral food challenge (OFC) to 1044 mg of peanut protein or less. Children with a history of severe anaphylaxis were excluded.

METHODS. Participants were randomly assigned to double-blind peanut EPIT using Viaskin Peanut 100 μg (VP100) or 250 μg (VP250) or a placebo patch. The patch was placed on the back or upper arm daily for increasing lengths of time, up to 24 hours per day. The primary outcome, or treatment success, was defined as passing a 5044-mg peanut protein OFC or demonstrating a 10-fold or greater increase in the consumed dose from baseline after 52 weeks of treatment. Secondary outcomes included adverse reactions, adherence, effects of age and dose on outcomes, and immunologic changes.

RESULTS. Twelve percent of the placebo group, 46% of the VP100 group, and 48% of the VP250 group met the primary endpoint, though none in the treatment group passed the 52-week OFC. The median change of successfully consumed peanut protein was 0 mg of protein in the placebo group, 43 mg in the VP100 group, and 130 mg in the VP250 group. Children 11 years or younger were more likely to achieve treatment success. Adverse reactions, most commonly mild patch-site reactions, were more common in the treatment groups (80% of both VP100 and VP250 doses vs 14% of placebo). No epinephrine was used for treatment of dose reactions. Peanut-specific IgG_4 levels and IgG_4/IgE ratios increased in both treatment groups when compared with the placebo group, though no change was seen for peanut-specific IgE levels or skin test size among groups.

CONCLUSIONS. Peanut EPIT resulted in a modest but significant increase in the successfully consumed dose of peanut protein after 1 year of treatment with both the VP100 and VP250 doses when compared with placebo. Younger participants achieved greater treatment success. Immune modulation consistent with other forms of food immunotherapy was noted. Local patch-site reactions were common, but there were no serious reactions. Adherence to therapy was high.

REVIEWER COMMENTS. This is the first trial to comprehensively evaluate EPIT for the treatment of peanut allergy, introducing another prospective treatment option for food allergy. Though clinical and immunologic responses in this study were modest, the safety profile and adherence rate were favorable. Future studies will investigate whether the treatment benefit will become more robust with longer duration of treatment and continue to refine the target patient population who may benefit most from EPIT.

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Early Oral Immunotherapy in Peanut-Allergic Preschool Children is Safe and Highly Effective

Vickery BP, Berglund JP, Burk CM, et al. *J Allergy Clin Immunol*. 2017;139(1):173–181.e8

PURPOSE OF THE STUDY. To evaluate the efficacy, safety, and feasibility of early oral immunotherapy (E-OIT) for treatment of peanut-allergic children.

STUDY POPULATION. The study included 40 infants and preschool children (9–36 months of age) with either a known peanut allergy or peanut sensitization (peanut-specific immunoglobulin E (IgE) $>5kU_A/L$ but no history of reaction). Matched data from a control cohort of 154 participants was retrospectively obtained from a database at Johns Hopkins and compared with study participants.

METHODS. In this randomized active treatment study, each enrolled subject underwent an open oral food challenge to 4 g of peanut protein at study entry. Subjects with IgE-mediated allergic reactions were randomized 1:1 to receive either low-dose (300 mg/d) or high-dose (3000 mg/d) blinded maintenance dosing of peanut protein. Each participant had an initial-day escalation and an ~42-week buildup phase to the goal maintenance dose. Participants in the low-dose arm consumed their peanut protein product mixed with oat flour to maintain blinding. After the study subjects either met specific criteria or had undergone 36 months of maintenance dosing, subjects underwent two double-blinded, placebo-controlled food challenges to assess desensitization and sustained unresponsiveness 4 weeks after cessation of E-OIT. After passing both food challenges, subjects consumed one additional serving of peanut openly and, if tolerated, were allowed to reintroduce peanut ad lib. Peanut-specific IgE levels were followed over time.

RESULTS. Thirty-two subjects had evaluable outcomes, 81% were desensitized (low dose: 76%, high dose: 85%), and 78% achieved 4-SU (low dose: 85%, high dose: 76%, $P = .43$) over a median treatment period of 29 months. The median (IQR) peanut-specific IgE levels declined significantly in the study group (1.6 kU_A/L [0.5–4.9 kU_A/L]) while increasing in the matched control group (57.4 kU_A/L [9–101 kU_A/L]). The proportion of the control group who successfully introduced peanut in their diet was 4%, compared with 78% in the study group (RR, 19.42; 95% CI, 8.7–43.7; $P < .001$). E-OIT was overall safe and well tolerated with no serious

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