



Guest Editorials

Balancing the risks and burdens of food allergen avoidance



In this issue, Egan and Greenhawt¹ go to the heart of the avoidance management strategy for food allergy by providing information that will assist clinicians in appropriately counseling patients with food allergy and lessening the burden of this approach. Because of our unique qualifications to diagnose, assess, and manage the problem, food allergy should be the particular province of allergists. Therefore, allergists and immunologists have a special responsibility to be the source of the best available information for our patients and the public at large. Although more published studies are needed to definitively answer practical clinical questions, we can do better.

Although it has been more than 3 years since the publication of the “Choosing Wisely” advice not to perform immunoglobulin E (IgE) food testing without a reaction history,² I continue to see patients misinformed by inappropriate food testing by allergists and primary care physicians. Unfortunately, these patients have been told to avoid all foods with positive skin test or IgE reactions regardless of the magnitude of positivity or an absent or even contradictory history. Too often, the admonition to avoid foods comes without a reasonable assessment of risk and without adequate guidance on how to execute a reasonable and nutritionally sound avoidance strategy. As a community, we have created disproportionate fears by failing to provide satisfactory guidance. The result is that many families have adopted practices and diets that are inappropriately restrictive, contributing unnecessarily to the burden of food allergy.³

Correct diagnosis is foundational to appropriate avoidance. Is there truly food allergy, asymptomatic sensitization, or is the history inconsistent with IgE- and non-IgE-mediated food reactions? Explaining the characteristics of IgE-mediated food allergy and the difference between the relatively strong negative predictive value of a negative or low positive skin test reaction or specific IgE for an IgE-mediated reaction⁴ and its nonutility for non-IgE-mediated symptoms is time consuming, as is the consideration of food challenges to conclusively diagnose or exclude food allergy. However, these conversations are crucially important to help patients understand the meaning of food allergy test results.

Egan and Greenhawt¹ extrapolate from the well-done study showing non-reaction to peanut butter “fumes”⁵ and attribute a similar lack of risk from exposure to peanut dust generated by shell-ing or contained in packaged peanuts. Although studies of peanut in the environment are reassuring, clinicians are often confronted with parents who adopt an almost legalistic “Is it possible?” position. In the case of fumes⁵ and food dust in airplanes,⁶ we can comfortably say, “It has been disproved.” However, the peanut dust issue is less certain. How do you advise families about restaurants

with peanuts to shell on the table and a floor covered with peanut shells and fragments? Prudence would dictate that patients with peanut allergy avoid such environments, but there is no study directly addressing the issue.

At the level of parent counseling, the issue of tree nut testing is more complex than Egan and Greenhawt suggest. In the cited study,⁷ 3 of 63 patients with peanut allergy and tree nut sensitization reacted to the challenge. Many parents would want to clarify that risk for their child. Negative skin prick test reactions should be very reassuring to a parent given its high negative predictive value. A child’s many caregivers can have different levels of knowledge regarding food allergy. There could be a risk to a child who avoids peanut but eats tree nuts because the food associated with a tree nut (eg, pralines are made with pecans, almonds, or hazelnuts) could be made with peanut or peanut butter. For some families, confronted with the life circumstance in which a toddler is supervised by multiple family members and daycare staff during the week, it might be more reliable to avoid all nuts than to parse the permitted vs prohibited nut. In addition, although Egan and Greenhawt discuss reports of the amount of peanut protein in foods with precautionary labels, they do not specifically address the issue of cross-contamination during the manufacture of products containing tree nuts by producers who sell peanuts and tree nuts. A leading nut brand packages mixed nuts and deluxe mixed nuts. The former contains peanuts⁸ and the latter does not.⁹ The cited report by Ford et al,¹⁰ suggesting that only 20% of precautionary-labeled products would elicit a reaction in the most sensitive 5% of the population, may be of little comfort to parents who do not know what their own child’s reaction-eliciting dose is. The issue is further complicated because parents often want to extend to tree nuts the new recommendations to introduce highly allergenic foods early in life. As long as the allergist educates the parents about false positive testing and is prepared to perform food challenges, if necessary, to make a definite diagnosis, simple skin prick testing can provide important support for tree nut exposure. Parents deserve a thorough discussion of these issues so they can make an informed decision for their family.

The question of the safety of nut and seed oils often creates confusion. Although all oil extraction methods involve some heat, the maximum temperature of cold-pressed or expeller-processed oil is limited. The product is less refined than heat-extracted oil but could contain proteins and other components that impart flavor. Therefore, it is considered higher in quality. The standard admonition of food industry and patient advocacy websites is that patients should ask their physician about using peanut or other nut or seed oils. We need to have some answers. The published data on the tolerability of food oils in patients with nut allergy are limited,¹¹ but the Food Allergen Labeling and Consumer Protection Act of 2004 (FALCPA)¹² that requires labeling of potentially allergenic foods

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exempts highly refined oils derived from the 8 major food allergens, including peanut and tree nuts. Nut oils that are not highly refined require a FALCPA food allergen label. The absence of a FALCPA label is evidence that the oil is highly refined and therefore safe.

As clinicians, we must be ever mindful that although anecdotal experience cannot overrule carefully collected and tested data, each patient and family is unique. Experienced physicians know that some parents will act on their physician's recommendation and others will not be reassured without a test result. Allergists and immunologists who perform in vivo or in vitro IgE food testing must provide appropriate, evidence-based guidance regarding food allergy management including the meaning of test results, application of the results to the individual patient, and a discussion of the risks and benefits of avoidance and introduction. In addition, they must be prepared to perform food challenges, when appropriate, to confirm or refute the diagnosis of food allergy. Our patients deserve no less.

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Allergists' use of epinephrine for food-induced anaphylaxis Time to practice what we preach



The current food allergy epidemic and recent focus on early introduction of peanut has led many allergists to perform more oral food challenges (OFCs).¹ Foods are the most common trigger of anaphylaxis in children, and as such, we are seeing an increase in severe reactions.² It is not controversial that epinephrine is the treatment of choice for anaphylaxis.³ Since the term was first used in 1901, the definition of *anaphylaxis* has been controversial and only more recently well-defined as “a severe, potentially fatal, systemic allergic reaction that occurs suddenly after contact with an allergy-causing substance.”⁴ This definition, however, does nothing to help the physician diagnose anaphylaxis and initiate proper treatment. Tables listing signs and symptoms of anaphylaxis in practice parameters and other publications also fall short in helping a physician or parent determine exactly when epinephrine should be administered.

A variety of grading systems for anaphylaxis have also been proposed from worldwide allergy societies, symposia, and individual authors. Although each has intended to help the practicing allergist and create a definitive grading scale, the variety among these scales and number that exist have not added clarity to this situation. The use of epinephrine when lower respiratory tract signs (eg, cough and wheeze) are present is not controversial. Two common yet controversial signs of an allergic reaction, hives and vomiting, are frequently debated. Some argue that any combination of 2

systems should be treated with epinephrine (eg, hives/skin and vomiting/gastrointestinal symptoms), whereas others suggest that some assessment of severity of these signs of an allergic reaction should be made.^{3–5} Ultimately, the truth likely lies between these 2 positions, and the answer may remain elusive because randomized clinical trials for the treatment of anaphylaxis cannot be undertaken for ethical and safety concerns.⁵ The management of anaphylaxis in the field and the emergency department (ED) setting has received a lot of attention over the years, and allergists are frequently critical of how allergic reactions and anaphylaxis are treated by parents, first responders, and ED practitioners.^{6,7}

In this issue of the *Annals*, the findings by van der Valk et al⁸ suggest that we as allergists should be criticizing ourselves for the underuse of epinephrine, just as we have been critical of other groups. This retrospective study examined 900 failed OFCs performed between 2005 and 2015 at 3 centers in the Netherlands. The OFCs included a mix of clinical and research, as well as open and double-blind, placebo-controlled, challenges. Among the failures, the authors identified 83 cases of anaphylaxis (26.6% of all failed OFCs) that were retrospectively graded using the European Academy of Allergy and Clinical Immunology (EAACI) clinical criteria for diagnosing anaphylaxis.⁹ Of these 83 cases, only 39% were treated with epinephrine. Interestingly, the individuals who underwent clinical OFCs were more likely to be treated with epinephrine compared with the research group, which had a higher rate of anaphylaxis. There was also a significant difference in treatment with epinephrine based on symptoms. Children who had anaphylaxis based on a combination of skin and gastrointestinal symptoms were significantly less likely to receive epinephrine (22%)

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