



Editorial

The importance of food allergy to the practicing clinician



The theme issue on food allergy (*Annals of Allergy, Asthma and Immunology*, March 2018) brings an impressive lineup of state-of-the-art reviews, provocative commentaries, and innovative original research studies.^{1–5}

This focus on food allergy is a natural consequence of the emergence of food allergy as one of the conditions “owned” by allergists.⁶ Reflective of the increasing prevalence of food allergy in childhood and in adulthood, food allergy has assumed an ever-increasing presence in daily practice, across all settings, be they private or academic.⁷ In addition to the increasing volume of patients, disease severity and complexity also appear to be increasing, creating a greater disease burden for patients. At the same time, this presents a challenge to the practitioner who is faced with managing patients with a host of conditions: multiple immunoglobulin E (IgE)-mediated food allergies (some of which might have resulted in anaphylaxis), atopic dermatitis triggered by food, eosinophilic esophagitis with food triggers, and non-IgE-mediated gastrointestinal food allergic disorders such as food protein-induced enterocolitis syndrome. The increasing recognition that food allergy and its related comorbidities pose a global public health burden has prompted international research efforts to identify proximal and distal pipeline solutions and effective strategies for the primary prevention of food allergy and to develop new therapies to treat existing food allergy (eg, allergen-specific immunotherapy or biologic drugs). All these aspects of food allergy are discussed in this current issue of the *Annals*.

In a guest editorial, Brough and Lack¹ discuss the evidence in support of the dual allergen hypothesis, linking the presence of peanut allergen in the indoor environment and development of peanut sensitization and allergy through the epicutaneous route preceding the oral ingestion of peanut. This concept is of critical importance to the foundations of data that have led to recently revised guidelines for food allergy diagnosis and management in the early introduction of peanut in multiple countries.^{8,9}

In a global perspective on food allergy, Tham and Leung² dissect the complexities of the environmental factors that might influence the expression of food allergy and help contribute to the increasing prevalence of food allergy in many countries worldwide. They specifically compare the food allergy-related differences noted in multiple studies based on race. In general, Asian populations might have a lower prevalence of peanut allergy compared with populations in North America, Australia, United Kingdom, and Western Europe. However, several studies observed an increased risk of peanut allergy in children of ethnic Asian parents when migrating from lower-risk geographic areas (eg, China or India) to higher-risk areas (North America, United Kingdom, or Australia). This migration effect could

reflect changes attributable to differences in culture, dietary habits, methods of peanut preparation, hygiene, and types and dose of environmental allergen exposures between environments. A clearer understanding of the mechanisms by which environmental factors affect the phenotypic expression of genetic susceptibility is needed to inform potential novel preventative strategies.

Egan and Greenhawt³ tackle the burdens of myths that are commonly associated with food allergy. Their review tackles common misperceptions and controversies that might hamper optimal management, such as risk of exposure and reaction from airborne peanut dust or vapors or from ingestion of highly refined peanut oils used in commercial cooking; the necessity of tree nut testing and recommended avoidance in individuals with peanut allergy never previously exposed to peanut; the risk of allergy to soy in infants with milk allergy when seeking safe formula alternatives; the risks associated with ingestion of packaged items with precautionary allergy labeling; and the necessity and efficacy of allergen bans in the school setting. This review uses a case didactic format to help clarify the medical evidence behind such myths to provide practical guidance to common clinical questions and difficult conundrums that many of us might face in managing the child with food allergy.

Baker and Sampson⁴ provide novel insights into defining phenotypes and endotypes of food allergy. They categorize how we might currently view food allergy phenotypes and respective endotypes: classic (persistent, transient, food-dependent, exercise-induced, nonsteroidal anti-inflammatory drug-dependent, alcohol-dependent); intermittent and cross-reactive; aerosol sensitization (local reactions to aerosolized cross-reactant antigens, systemic reactions to aerosolized forms of food-specific antigens); galactose- α -1,3-galactose (alpha-gal) syndrome; and sensitized nonreactive. They point out that a formalized cluster analysis of patients with food allergy would not only help redefine and better establish more statistically sound relations that represent phenotypes and endotypes but also help foster new potential insights into the underlying pathophysiology, which could ultimately improve our approach to diagnosis and treatment. This approach has been used with success in asthma and in the Australian Health Nuts food allergy prevalence study.

Sampath et al⁵ discuss new and emerging treatment directions in food allergy. In addition to allergen-specific immunotherapy with native allergens through the oral, sublingual, or epicutaneous route, they describe the pipeline for peanut vaccines such as the DNA-LAMP vaccine, ASP0892, developed by Astellas Pharma, Inc (Tokyo, Japan) that is currently undergoing a phase I clinical trial in adults with peanut allergy. They describe what could be some of the most exciting new developments, which lie within biologic drugs that target critical pathways and molecules in different atopic disorders, which are entering the food allergy space. Food allergy has been devoid of any biologic treatment since anti-IgE therapy was

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investigated as a therapy in the early 2000s, but then not further developed. These new drugs include monoclonal antibodies directed against the interleukin (IL)-4 and IL-13 receptor (dupilumab), IL-33, and IL-13 and potentially thymic stromal lymphopoietin and IL-9. It is very likely that within the next decade we will see several new drug approvals for food allergy by the Food and Drug Administration.

In conclusion, food allergy is a rapidly evolving area of study with massive efforts directed toward prevention and more effective management strategies. Practicing clinicians need to stay tuned for new developments, guidelines, and therapies for food allergy, which are on the horizon. It is our hope that this theme issue is of use to your clinical practice and helps you to address issues that you face currently or will face in the near future. As part of the transformative change that this journal is currently undergoing, we aim to make the *Annals of Allergy, Asthma and Immunology* the pre-eminent source for the most cutting-edge and clinically relevant information that provides the practicing allergist with the tools necessary to optimize the management of patients with food allergy in your office.

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References

- [1] Brough HA, Lack G. The role of environmental exposure to peanut and the development of peanut allergy. *Ann Allergy Asthma Immunol*. 2018; 120:232–233.
- [2] Tham EH, Leung DYM. Global perspectives on food allergy. *Ann Allergy Asthma Immunol*. 2018;120:234–236.
- [3] Egan M, Greenhawt M. Common questions in food allergy avoidance. *Ann Allergy Asthma Immunol*. 2018;120:263–271.
- [4] Baker MG, Sampson HA. Phenotypes and endotypes of food allergy: a path to understanding the pathogenesis and prognosis. *Ann Allergy Asthma Immunol*. 2018; 120:245–253.
- [5] Sampath V, Sindher SB, Zhang W, et al. New treatment directions in food allergy. *Ann Allergy Asthma Immunol*. 2018;120:254–262.
- [6] Sampson HA, Aceves S, Bock SA, et al. Food allergy: a practice parameter update—2014. *J Allergy Clin Immunol*. 2014;134:1016–1025, e43.
- [7] Renz H, Allen KJ, Sicherer SH, et al. Food allergy. *Nat Rev Dis Primers*. 2018;4: 17098.
- [8] Togias A, Cooper SF, Acebal ML, et al. Addendum guidelines for the prevention of peanut allergy in the United States: report of the National Institute of Allergy and Infectious Diseases–sponsored expert panel. *Ann Allergy Asthma Immunol*. 2017;118:166–173, e7.
- [9] Du Toit G, Roberts G, Sayre PH, et al. Randomized trial of peanut consumption in infants at risk for peanut allergy. *N Engl J Med*. 2015;372:803–813.