Abstract

Eczema is one of the most common skin conditions of childhood. Patients with eczema suffer in a chronic cycle of itch, scratch, and inflammation. For children with severe eczema, constant itching and scratching can have many consequences including skin infections, behavioral issues, and sleep problems. Parents often find themselves searching for a trigger for their child’s eczema flare, and after they have switched detergents, applied a thick moisturizer and topical steroids, and removed all wool clothing from their child’s wardrobe, they wonder, “Could food allergies be playing a role?” [Pediatr Ann. 2015;44(7):265-267.]

The answer to this question is controversial, and as we learn more about the pathophysiology of allergies, we come up with more questions than answers. How much can I trust skin prick testing and serum immunoglobulin E (IgE) levels? When do I advise switching from cow’s milk-based formula to elemental formula? When do I recommend a food elimination diet? The prevalence of food allergies in children with eczema is estimated to be between 33% and 63%. In this article, we review common food allergens (Figure 1) that cause eczema, examine the role of...
allergy testing, and discuss the utility of elimination diets.

Identifying eczema triggers can be difficult, in part, because the time course for allergic response varies. The most dramatic and obvious presentation is the type 1 IgE-mediated reaction, in which a patient experiences hives, angioedema, and wheezing almost immediately after ingestion of the offending food. However, there are more subtle presentations of food allergy, such as pruritus that occurs soon after ingestion, or eczema flares that appear 6 to 48 hours after ingestion of the food. Additionally, the natural course of eczema is to wax and wane, and it is hard for parents to be sure that their child’s eczema flared in response to a specific food, or if it would have flared regardless.

COMMON FOOD ALLERGENS

Food allergens appear to play a more significant role in children younger than age 2 years, and in children with severe eczema. The most common food allergies are milk, eggs, soy, wheat, peanuts, tree nuts, fish, and shellfish. Infants have the most trouble from cow’s milk, eggs, wheat, and soy. In toddlers and school-aged children, nuts, fish, and shellfish are added to the list.

Some food allergies are more likely to abate as a child ages. For example, 80% of children with cow’s milk allergy will outgrow it by the time they are age 5 years. Similar findings are seen in children with egg, soy, and wheat allergies. On the other hand, only 20% of patients with tree nut allergy will “grow out” of their allergy.

For infants, eczema (Figure 2) may not be the only manifestation of food allergy, and babies may exhibit gastrointestinal symptoms, failure to thrive, irritability, and sleep disturbance. For children who are breast-fed, eczema may flare in response to allergens in the mother’s diet. Studies of maternal dietary restriction in pregnancy do not show an effect on future development of atopic disease in the child. Studies of maternal dietary restriction for nursing mothers do not support restriction in atopic disease, with the exception of atopic dermatitis. When maternal dietary restriction is considered, one must do so carefully, to ensure adequate nutrition of the mother. It is worth saying that exclusive breast-feeding is recommended in the first 6 months of age by the American Academy of Pediatrics and in the first 4 to 6 months by the National Institute of Allergy and Infectious Diseases (NIAID). There is even some evidence that for infants at high risk for atopy, exclusive breast-feeding for at least 4 months decreases cumulative incidence of atopic dermatitis, cow’s milk allergy, and wheezing in early childhood.

For babies who are formula fed, changing from a standard cow’s milk-based formula to a hydrolyzed formula may be an important part of treatment of atopic dermatitis. Additionally, for babies who are not exclusively breast-fed, parents can consider giving hydrolyzed formulas instead of intact cow’s milk-based formula to prevent or delay atopic disease in children at risk for food allergy. “At risk” is defined as having a biologic parent or sibling with existing or a history of allergic rhinitis, asthma, atopic dermatitis, or food allergy. Unfortunately, the cost of hydrolyzed formula may be prohibitive for some families.

Another important NIAID guideline suggests that one should not delay introduction of potentially allergenic foods beyond ages 4 to 6 months, even in infants at risk of developing allergic disease. The rationale is that little evidence exists to show that this practice prevents atopic disease.

FOOD ALLERGY TESTING

Before undertaking food allergy testing, the provider must explain that the tests are imperfect. The gold standard is oral food challenges, which are conducted under direct supervision with a medical provider, who is prepared for serious allergic reactions. Unfortunately, oral food challenges can be time-intensive and usually require referral to an allergist. More common testing methods include serum IgE levels and skin prick testing. These tests, unfortunately, can be extremely confusing to interpret. Each food has its own positive and negative predictive value, and serum IgE levels are considered positive at different thresholds. For example, a serum IgE level of 3 kU/L may be considered positive for egg allergy in a 1-year-old, but negative for cow’s milk in an older child, yet it is the same absolute value.

Additionally, skin prick testing and serum IgE levels do not always correlate with clinical symptoms. Most allergy specialists recommend against blanket testing for all food allergies, because the positive predictive accuracy is approximately 50% depending on the food. One study estimates that 10% of children with food allergies may have false-negative testing. Instead, testing should be directed, and used to confirm suspicion of food allergy based on the child’s history.

ELIMINATION DIETS

Although there are common food allergies including cow’s milk, eggs, soy, wheat, and shellfish, there is no uniformly recommended diet for children with eczema or nursing mothers.
of infants with eczema. An elimination diet should only be considered when a true food allergy has been diagnosed, either by specific IgE assay, skin prick testing, by atopy patch testing, or oral food challenge. For infants and children with severe eczema and a confirmed food allergy, elimination diets will likely be part of the treatment. However, in a child with mild eczema, the risks and benefits of elimination diets must be considered. The main risk is nutritional deficiency. If you eliminate cow’s milk, for example, another calcium source should replace it. If an elimination diet is undertaken, experts recommend elimination of the specific food for 4 weeks.1 If the elimination diet is successful, one can reintroduce the food for 2 days, and see if the child’s eczema flares again.

CONCLUDING REMARKS
Childhood eczema can be truly debilitating, resulting in poor sleep, behavioral issues, skin infections, and frequent doctor visits. Food allergies seem to play a key role in eczema flares, especially in those children with moderate-to-severe disease. Although there are many questions still to be answered, this article provides many good tips to pediatric primary care pediatricians about how to approach diagnosis and management of food allergies and eczema (Table 1).

REFERENCES