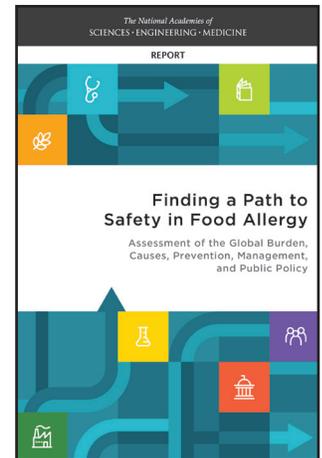


# FINDING A PATH TO SAFETY IN FOOD ALLERGY

## KEY MESSAGES

Food allergy is a complex disease arising from a specific immune response that occurs reproducibly on exposure to a given food and can cause skin, respiratory, and gastrointestinal reactions. For some individuals, it can lead to severe allergic reactions and sometimes even death. Eight food groups are considered to be major allergens, including milk, egg, peanut, tree nuts, wheat, soy, fish, and crustacean shellfish. Food allergies typically develop within the first year of life, but they can also develop later in life.

A report from the National Academies of Sciences, Engineering, and Medicine collects and evaluates the scientific evidence on the prevalence, origins, diagnosis, prevention, and management of food allergy and makes recommendations to guide a concerted effort from a variety of stakeholders to maximize safety and increase research activities related to food allergy.



### FOOD ALLERGY IS A PUBLIC HEALTH CONCERN

The quality of life of individuals with food allergy is diminished as their social interactions and routine life activities are affected. Improving the quality of life for individuals with food allergy is important, as reactions can be traumatic or life-threatening.

Although promising therapeutic approaches are being tested, no effective treatments currently exist for people with food allergies.

Misconceptions persist about the identification, prevention, and management of food allergies among doctors, patients with allergies, and the general public, and some of these misconceptions are potentially dangerous.

The public and health care providers may misinterpret a food allergy and its symptoms for other immune and gastrointestinal diseases—such as lactose intolerance and gluten sensitivity—and therefore may not use the most effective and best management and prevention approaches.

### NO SIMPLE DIAGNOSTIC TESTS EXIST FOR FOOD ALLERGY, AND THEIR INTERPRETATION REQUIRES EXPERTISE

The oral food challenge—which involves a gradual, medically supervised ingestion of increasingly larger doses of the food being tested—is the current gold standard for diagnosis, but it carries risks, is expensive, and is underused. Other tests, like the skin prick test, may suggest the likelihood of food allergy but may require other testing for confirmation.

The report recommends that physicians use evidence-based, standardized procedures as the basis for food allergy diagnosis. Referral to a physician specialist who can diagnose, comprehensively evaluate, and manage the food allergy is appropriate when a food allergy is suspected.

### THERE IS NO ESTIMATE OF TRUE PREVALENCE OF FOOD ALLERGY IN THE U.S.

Although there is widespread perception among the public and medical professionals that food allergy prevalence is on the rise, no study in the U.S. has been conducted with sufficient sample size, and in various populations to determine the true prevalence of food allergies, and most studies likely overestimate the prevalence.

To prioritize food allergy as a public health concern and ensure that enough resources are directed at the issue, the report recommends that the Centers for Disease Control and Prevention (CDC) obtain prevalence estimates in a systematic and statistically sound manner.

### THE REPORT IDENTIFIES 6 PRIMARY ACTIONS TO CREATE A ROADMAP TO FOOD ALLERGY SAFETY

These 6 actions, performed by a diverse group of stakeholders in a variety of settings, can contribute to greater awareness and public safety regarding food allergy:

1. Obtain accurate prevalence estimates
2. Use proper diagnostic methods and provide evidence-based health care
3. Identify evidence-based prevention approaches
4. Improve education and training
5. Implement improved policies and practices to prevent the occurrence of severe reactions
6. Expand research programs

## **IMPROVED EDUCATION AND TRAINING ABOUT FOOD ALLERGY IS NEEDED**

Medical schools and residency and fellowship programs should include training in the management of food allergy and anaphylaxis, as well as training on approaches to counseling patients and their caregivers. In addition, organizations that provide emergency training to first responders and the public, such as the American Red Cross or National Safety Council, should include food allergy and anaphylaxis emergency management in their curricula.

The committee found deficiencies in the knowledge of food industry personnel about how to manage and communicate about food allergens. Therefore, food industry leaders should work to integrate food allergy training into existing general food safety and customer service training for employees at all levels and stages in the food industry, encompassing processing, retail food and grocery stores, restaurants, and other food service venues.

All state, local, and tribal governmental agencies should adopt the 2013 FDA Food Code, which includes food allergy provisions for food establishments. Working in collaboration with other stakeholders, the agencies should also propose that the next Food Code requires that the person in charge in food establishments pass an accredited food safety certification program that includes basic food allergy management in order to decrease or prevent the risk of food allergen exposure. In addition, agencies should develop guidance on effective approaches to inform consumers with food allergies in food service establishments.

## **ADDITIONAL RESEARCH IS CRITICAL TO IMPROVING FOOD ALLERGY SAFETY**

More research is needed in the areas of underlying biology, better diagnostic tools, effective educational approaches, and evidence-based guidelines for all stakeholders, and prospective and clinical trials to support or refute current hypotheses on the development of food allergies. A key long-term goal is the development of effective and safe therapies.

## **ANAPHYLAXIS CAN OCCUR ANYWHERE, AND PROPER EMERGENCY MANAGEMENT CAN SAVE LIVES**

Within the next year, relevant federal agencies, such as the FDA, CDC, and Federal Aviation Administration, should convene a special task force that includes participants from the medical community, food companies, and advocacy stakeholder groups to establish and implement policy guidelines.

Policy guidelines should ensure that emergency epinephrine capabilities are in place for children and adults in public venues, including schools, early care and education facilities, and airplanes, together with providing food allergy and anaphylaxis first aid training to appropriate school and university health staff, early care and education providers, and on-board flight crews.

## **SOME PREVENTION APPROACHES ARE CHANGING BASED ON EMERGING EVIDENCE; STRONG EVIDENCE IS LACKING IN OTHER AREAS**

Many factors have been proposed as contributing to the onset of food allergy, but strong evidence is lacking. Current evidence is insufficient to associate any of the following behaviors with prevention of food allergy: food allergen avoidance diets for pregnant or lactating women; prolonged allergen avoidance in infancy; vaginal delivery; breastfeeding; use of infant formulas containing partially or extensively hydrolyzed protein; and supplementation with specific nutrients—for example, folate—in children or adults.

Recent studies suggest that the practice of delaying the introduction of foods with common allergens may have contributed to the presumptive rise in food allergy prevalence. For example, there is strong evidence that early introduction of peanut is protective against peanut allergy in infants at high risk. In addition, studies suggest that delaying the introduction of egg, cow milk, and wheat does not decrease the risk of those food allergies. Public health authorities should provide families and health care providers with consistent, clear, and evidence-based advice about the benefits of introducing allergenic foods (e.g., peanut products, egg, dairy, and wheat) in the first year of life to infants when they are developmentally ready—around 6 months of age, and not before 4 months, particularly to those at high risk of allergy.

## **SOME U.S. LABELING POLICIES ARE NOT EFFECTIVE IN INFORMING CONSUMERS ABOUT THE RISKS FROM FOOD ALLERGENS**

During food production or manufacturing, cross-contamination may occur, resulting in the food product having a hidden allergen that does not appear on the label. Voluntary precautionary allergen labels (PALs)—with wording such as “X may be present”—can warn about the presence of unintentional allergens. But currently, PALs bear no relationship to actual risk.

The priority lists of allergens should be based on evidence of regional preference and severity of food allergies. For example, in the U.S., some foods listed by the FDA as tree nuts (such as butternut and coconut) could be removed from the current priority list based on lack of data or low frequency of allergic reactions. On the other hand, evidence of allergy prevalence and reaction severity to sesame seeds may warrant their inclusion on the priority allergen list in the U.S.

Scientific evidence should underlie the efforts of public health authorities, including the Food and Drug Administration (FDA), to regularly update priority lists and replace PAL with a new, risk-based labeling approach. The FDA also should work with other relevant agencies to develop and implement labeling policies specific to prepared and packaged foods that are distributed through venues like airlines and schools.

**To read the full text of the recommendations and download a free copy of the report, please visit [NATIONALACADEMIES.ORG/FOODALLERGIES](https://www.nationalacademies.org/foodallergies)**