Overview

Millions of Americans have an allergy of some kind. You probably know one of those people or are one yourself. Almost 6% of U.S. adults and children have a food allergy.

Food allergy symptoms are most common in babies and children, but they can appear at any age. You can even develop an allergy to foods you have eaten for years with no problems.

Signs of Allergies

The body's immune system keeps you healthy by fighting off infections and other dangers to good health. A food allergy reaction occurs when your immune system overreacts to a food or a substance in a food, identifying it as a danger and triggering a protective response.

While allergies tend to run in families, it is impossible to predict whether a child will inherit a parent's food allergy or whether siblings will have a similar condition. Some research does suggest that the younger siblings of a child with a peanut allergy will also be allergic to peanuts.

Symptoms of a food allergy can range from mild to severe. Just because an initial reaction causes few problems doesn't mean that all reactions will be similar; a food that triggered only mild symptoms on one occasion may cause more severe symptoms at another time.

The most severe allergic reaction is anaphylaxis — a life-threatening whole-body allergic reaction that can impair your breathing, cause a dramatic drop in your blood pressure and affect your heart rate. Anaphylaxis can come on within minutes of exposure to the trigger food. It can be fatal and must be treated promptly with an injection of epinephrine (adrenaline).

While any food can cause an adverse reaction, eight types of food account for about 90 percent of all reactions:

- Egg
- Milk and Dairy
- Peanuts
- Tree nuts
- Fish
- Shellfish
- Wheat
- Soy
- Sesame

Most food-related symptoms occur within two hours of ingestion; often they start within minutes. In some very rare cases, the reaction may be delayed by four to six hours or even longer. Delayed reactions are most typically seen in children who develop eczema as a symptom of food allergy and in people with a rare allergy to red meat caused by the bite of a lone star tick.

Another type of delayed food allergy reaction stems from food protein-induced enterocolitis syndrome (FPIES), a severe gastrointestinal reaction that generally occurs two to six hours after consuming milk, soy, certain grains and some other solid foods. It mostly occurs in young infants who are being exposed to these foods for the first time or who are being weaned. FPIES often involves repetitive vomiting and can lead to dehydration. In some instances, babies will develop bloody diarrhea. Because the symptoms resemble those of a viral illness or bacterial infection, diagnosis of FPIES may be delayed. FPIES is a medical emergency that should be treated with IV rehydration.

Not everyone who experiences symptoms after eating certain foods has a food allergy or needs to avoid that food entirely; for instance, some people experience an itchy mouth and throat after eating a raw or uncooked fruit or vegetable. This may indicate oral allergy syndrome – a reaction to pollen, not to the food itself. The immune system recognizes the pollen and similar proteins in the food and directs an allergic response to it. The allergen is destroyed by heating the food, which can then be consumed with no problem.

Triggers

Once a food allergy is diagnosed, the most effective treatment is to avoid the food. The foods most associated with food allergy in children are:

- Milk
- Eggs
- Peanuts

Children may outgrow their allergic reactions to milk and to eggs. Peanut and tree nut allergies are likely to persist.

The most common food allergens in adults are:

- Fruit and vegetable pollen (oral allergy syndrome)
- Peanuts and tree nuts
- Fish and shellfish

People allergic to a specific food may also potentially have a reaction to related foods. A person allergic to one tree nut may be cross-reactive to others. Those allergic to shrimp may react to crab and lobster. Someone allergic to peanuts – which actually are legumes (beans), not nuts – may have problems with tree nuts, such as pecans, walnuts, almonds and cashews; in very rare circumstances they may have problems with other legumes (excluding soy).

Learning about patterns of cross-reactivity and what must be avoided is one of the reasons why people with food allergies should receive care from a board-certified allergist. Determining if you are cross-reactive is not straightforward. Allergy testing to many items in the same “family” may not be specific enough – many times, these tests are positive, given how similar two food items in a “family” may look to the test. If you have tolerated it well in the past, a food that is theoretically cross-reactive may not have to be avoided at all.

Negative tests may be very useful in ruling out an allergy. In the case of positive tests to foods that you have never eaten but that are related to items to which you've had an allergic reaction, an oral food challenge is the best way to determine whether the food poses a danger.

How to Get Tested

A food allergy will usually cause some sort of reaction every time the trigger food is eaten. Symptoms can vary from person to person, and you may not always experience the same symptoms during every reaction. Allergic reactions to food can affect the skin, respiratory tract, gastrointestinal tract and cardiovascular system. It is impossible to predict how severe the next reaction might be, and all patients with food allergies should be carefully counseled about the risk of anaphylaxis, a potentially fatal reaction that is treated with epinephrine (adrenaline).

While food allergies may develop at any age, most appear in early childhood. If you suspect a food allergy, see an allergist, who will take your family and medical history, decide which tests to perform (if any) and use this information to determine if a food allergy exists.

To make a diagnosis, allergists ask detailed questions about your medical history and your symptoms. Be prepared to answer questions about:

- What and how much you ate
- How long it took for symptoms to develop
- What symptoms you experienced and how long they lasted.

After taking your history, your allergist may order skin tests and/or blood tests, which indicate whether food-specific immunoglobulin E (IgE) antibodies are present in your body:

> Skin-prick tests provide results in about 20 minutes. A liquid containing a tiny amount of the food allergen is placed on the skin of your arm or back. Your skin is pricked with a small, sterile probe, allowing the liquid to seep under the skin. The test, which isn't painful but can be uncomfortable, is considered positive if a wheal (resembling the bump from a mosquito bite) develops at the site where the suspected allergen was placed. As a control, you'll also get a skin prick with a liquid that doesn't contain the allergen; this should not provoke a reaction, allowing comparison between the two test sites.

Blood tests, which are a bit less exact than skin tests, measure the amount of IgE antibody to the specific food(s) being tested. Results are typically available in about a week and are reported as a numerical value.

Your allergist will use the results of these tests in making a diagnosis. A positive result does not necessarily indicate that there is an allergy, though a negative result is useful in ruling one out.

In some cases, an allergist will recommend an oral food challenge, which is considered the most accurate way to make a food allergy diagnosis. During an oral food challenge, which is conducted under strict medical supervision, the patient is fed tiny amounts of the suspected trigger food in increasing doses over a period of time, followed by a few hours of

observation to see if a reaction occurs. This test is helpful when the patient history is unclear or if the skin or blood tests are inconclusive. It also can be used to determine if an allergy has been outgrown.

Because of the possibility of a severe reaction, an oral food challenge should be conducted only by experienced allergists in a doctor's office or at a food challenge center, with emergency medication and equipment on hand.

Management and Treatment

The primary way to manage a food allergy is to avoid consuming the food that causes you problems. Carefully check ingredient labels of food products, and learn whether what you need to avoid is known by other names.

The Food Allergy Labeling and Consumer Protection Act of 2004 (FALCPA) mandates that manufacturers of packaged foods produced in the United States identify, in simple, clear language, the presence of any of the eight most common food allergens – milk, egg, wheat, soy, peanut, tree nut, fish and crustacean shellfish – in their products. The presence of the allergen must be stated even if it is only an incidental ingredient, as in an additive or flavoring.

Some goods also may be labeled with precautionary statements, such as "may contain," "might contain," "made on shared equipment," "made in a shared facility" or some other indication of potential allergen contamination. There are no laws or regulations requiring those advisory warnings and no standards that define what they mean. If you have questions about what foods are safe for you to eat, talk with your allergist.

Be advised that the FALCPA labeling requirements do not apply to items regulated by the U.S. Department of Agriculture (meat, poultry and certain egg products) and those regulated by the Alcohol and Tobacco Tax and Trade Bureau (distilled spirits, wine and beer). The law also does not apply to cosmetics, shampoos and other health and beauty aids, some of which may contain tree nut extracts or wheat proteins.

Avoiding an allergen is easier said than done. While labeling has helped make this process a bit easier, some foods are so common that avoiding them is daunting. A dietitian or a nutritionist may be able to help. These food experts will offer tips for avoiding the foods that trigger your allergies and will ensure that even if you exclude certain foods from your diet, you still will be getting all the nutrients you need. Special cookbooks and support groups, either in person or online, for patients with specific allergies can also provide useful information.

Many people with food allergies wonder whether their condition is permanent. There is no definitive answer. Allergies to milk, eggs, wheat and soy may disappear over time, while allergies to peanuts, tree nuts, fish and shellfish tend to be lifelong.

Eating out

Be extra careful when eating in restaurants. Waiters (and sometimes the kitchen staff) may not always know the ingredients of every dish on the menu. Depending on your sensitivity, even just walking into a kitchen or a restaurant can cause an allergic reaction.

Consider using a “chef card” – available through many websites – that identifies your allergy and what you cannot eat. Always tell your servers about your allergies and ask to speak to the chef, if possible. Stress the need for preparation surfaces, pans, pots and utensils that haven’t been contaminated by your allergen, and clarify with the restaurant staff what dishes on the menu are safe for you.

Anaphylaxis

Symptoms caused by a food allergy can range from mild to life-threatening; the severity of each reaction is unpredictable. People who have previously experienced only mild symptoms may suddenly experience a life-threatening reaction called anaphylaxis, which can, among other things, impair breathing and cause a sudden drop in blood pressure. This is why allergists do not like to classify someone as “mildly” or “severely” food allergic – there is just no way to tell what may happen with the next reaction. In the U.S., food allergy is the leading cause of anaphylaxis outside the hospital setting.

Epinephrine (adrenaline) is the first-line treatment for anaphylaxis, which results when exposure to an allergen triggers a flood of chemicals that can send your body into shock. Anaphylaxis can occur within seconds or minutes of exposure to the allergen, can worsen quickly and can be fatal.

Once you’ve been diagnosed with a food allergy, your allergist should prescribe an epinephrine auto-injector and teach you how to use it. You should also be given a written treatment plan describing what medications you’ve been prescribed and when they should be used. Check the expiration date of your auto-injector, note the expiration date on your calendar and ask your pharmacy about reminder services for prescription renewals.

Anyone with a food allergy should always have his or her auto-injector close at hand. Be sure to have two doses available, as the severe reaction can recur in about 20 percent of individuals. There are no data to help predict who may need a second dose of epinephrine, so this recommendation applies to all patients with a food allergy.

Use epinephrine immediately if you experience severe symptoms such as shortness of breath, repetitive coughing, weak pulse, hives, tightness in your throat, trouble breathing or swallowing, or a combination of symptoms from different body areas, such as hives, rashes or swelling on the skin coupled with vomiting, diarrhea or abdominal pain. Repeated doses may be necessary. You should call for an ambulance (or have someone nearby do so) and inform the dispatcher that epinephrine was administered and more may be needed. You should be taken to the emergency room; policies for monitoring patients who have been given epinephrine vary by hospital.

If you are uncertain whether a reaction warrants epinephrine, use it right away; the benefits of epinephrine far outweigh the risk that a dose may not have been necessary.

Common side effects of epinephrine may include anxiety, restlessness, dizziness and shakiness. In very rare instances, the medication can lead to abnormal heart rate or rhythm, heart attack, a sharp increase in blood pressure and fluid buildup in the lungs. If you have certain pre-existing conditions, such as heart disease or diabetes, you may be at a higher risk for adverse effects from epinephrine. Still, epinephrine is considered very safe and is the most effective medicine to treat severe allergic reactions.

Other medications may be prescribed to treat symptoms of a food allergy, but it is important to note that there is no substitute for epinephrine: It is the only medication that can reverse the life-threatening symptoms of anaphylaxis.

Food Allergies in Children

No parent wants to see their child suffer. Since fatal and near-fatal food allergy reactions can occur at school or other places outside the home, parents of a child with food allergies need to make sure that their child's school has a written emergency action plan. The plan should provide instructions on preventing, recognizing and managing food allergies and should be available in the school and during activities such as sporting events and field trips. If your child has been prescribed an auto-injector, be sure that you and those responsible for supervising your child understand how to use it.

In November 2013, President Barack Obama signed into law the School Access to Emergency Epinephrine Act (PL 113-48), which encourages states to adopt laws requiring schools to have epinephrine auto-injectors on hand. As of late 2014, dozens of states had passed laws that either require schools to have a supply of epinephrine auto-injectors for general use or allow school districts the option of providing a supply of epinephrine. Many of these laws are new, and it is uncertain how well they are being implemented. As a result, ACAAI still recommends that providers caring for food-allergic children in states with such laws maintain at least two units of epinephrine per allergic child attending the school.

FAQs

<u>Can food allergies be prevented?</u>

In 2013, the American Academy of Pediatrics published a study which supported research suggesting that feeding solid foods to very young babies could promote allergies. It recommends against introducing solid foods to babies younger than 17 weeks. It also suggests exclusively breast-feeding "for as long as possible," but stops short of endorsing earlier research supporting six months of exclusive breast-feeding.

Research on the benefits of feeding hypoallergenic formulas to high-risk children – those born into families with a strong history of allergic diseases – is mixed.

In the case of peanut allergy, the National Institute for Allergy and Infectious Disease (NIAID) issued new updated guidelines in 2017 in order to define high, moderate and low-risk infants for developing peanut allergy. The guidelines also address how to proceed with introduction based on risk.

The updated guidelines are a breakthrough for the prevention of peanut allergy. Peanut allergy has become much more prevalent in recent years, and there is now a roadmap to prevent many new cases.

According to the new guidelines, an infant at high risk of developing peanut allergy is one with severe eczema and/or egg allergy. The guidelines recommend introduction of peanut-containing foods as early as 4-6 months for high-risk infants who have already started solid foods, after determining that it is safe to do so. Parents should know that most infants are either moderate- or low-risk for developing peanut allergies, and most can have peanut-containing foods introduced at home. Whole peanuts should never be given to infants because they are a choking hazard.

Are there any treatments for food allergy?

Currently, for most food allergies, avoiding the food you are allergic to is the only way to protect against a reaction. There has been good news in the past few years however, regarding peanut allergy. In January of 2020, the FDA approved the first treatment for peanut allergy for children and teenagers between the ages of 4 and 17 years. The treatment is named Palforzia and is an oral therapy that must be taken every day. It works by modifying the immune system. By exposing the allergic child with small increasing amounts of a purified peanut protein, it makes the risk of an allergic reaction by accidental ingestion less likely to occur or to be less severe. Nevertheless, it is not a cure, and does not remove the peanut allergy. In addition, there is a skin patch for those with peanut allergies that is being reviewed by the FDA for approval. The patch places a small amount of a peanut allergen onto the skin daily, to make you less sensitive to peanuts. Existing research is looking at ways to make you less sensitive to food allergies, and there is a lot of hope for therapies that will manage food allergies in the future.

Do food allergens remain on objects? Can an allergic reaction occur from touching food allergens that remain on things like board games or computer keys?

Yes, food allergens can potentially remain on objects if they are not carefully cleaned. Simply touching an object that contains something you are allergic to would either do nothing, or at worst possibly cause a rash on your skin at the site of contact. Without swallowing any of the allergen, it's highly unlikely you would have any further reaction. If you did, it would be exceptionally rare to develop a severe allergic reaction. In most cases, simply washing the area will stop the rash, and it's like that no medication would be needed. It is a common myth that you can have a severe reaction from simply touching something without eating the food. Many studies have shown that if you wash your hands well with soap and water, as well as thoroughly clean the surface with detergent, you can effectively remove the allergen. Gel-based alcohol hand sanitizers will NOT remove allergens from your skin.

Can food allergies develop as an adult?

Although most food allergies develop when you are a child, they can, rarely, develop as an adult. The most common food allergies for adults are shellfish – both crustaceans and mollusks – as well as tree nuts, peanuts and fish. Most adults with food allergies have had their allergy since they were children. An allergic reaction to a food can sometimes be missed in an adult because symptoms such as vomiting or diarrhea can be mistaken for the flu or food poisoning. Adults don't always pay close attention to symptoms, which can be dangerous since crucial hints can be missed and place the adult at risk if they continue to eat the food.

Oral allergy syndrome is something that can develop in adulthood. Also known as pollen-food syndrome, it is caused by cross-reacting allergens found in both pollen and raw fruits, vegetables, and some tree nuts. This is not a food allergy, though the symptoms occur from food, which can be confusing. This is a pollen allergy. The symptoms of oral allergy syndrome are an itchy mouth or tongue, or swelling of the lips or tongue. Symptoms are generally short-lived because the cross-reacting allergens are quickly digested, and do not involve any other part of the body. These symptoms can help distinguish oral allergy from a true food allergy.

Can you outgrow food allergies?

Yes. This is an important point to emphasize. Children generally, but not always, outgrow allergies to milk, egg, soy and wheat. New research indicates that up to 25 percent of children may outgrow their peanut allergy, with slightly fewer expected to outgrow a tree nut allergy. There is no need to assume your child's food allergy will be lifelong, though for many, this may be the case. If a food allergy develops as an adult, chances are much lower you will outgrow it. Food allergies in adults tend to be lifelong, though there has not been a lot of research in this area.

What are the chances of having a severe reaction to airborne allergens?

Virtually none. No study has ever conclusively proven that allergens become airborne and cause symptoms to develop. Outside of a few case reports involving symptoms from fish allergy appearing when someone cooked fish, those with food allergies only have severe reactions after eating the allergic food. Many people with peanut allergy also worry about the dust from peanuts, particularly on airplanes. Most reactions probably happen after touching peanut dust that may be on tray tables or other surfaces. A recent study showed that wiping the surfaces to remove any dust resulted in fewer people reporting reactions during a flight.

How much does it cost to get tested for food allergies?

Like most medical procedures, there isn't a uniform cost for food allergy testing, and insurance coverage varies. Allergy testing is very often not necessary and cannot be used to screen for food allergy. Food allergy testing confirms a diagnosis if you have a history of allergic reactions to a food, and you should only be tested if you have had a reaction. A positive test itself does not make a diagnosis. For this reason, broad panel testing of a lot

of different foods should not be performed. If testing is done, it should only be to the food you had a reaction to, and not to other "common" foods. Allergists are specially trained to conduct food allergy testing, so see an allergist if you think you have a food allergy.

What is gluten? How common is gluten allergy?

Gluten is a protein found in grains, such as wheat, barley and rye. Some people are allergic to wheat, but that is not the same as a gluten allergy. Gluten allergy is a misleading term commonly confused with wheat allergy, or sometimes celiac disease. There is no such thing as a gluten allergy, but there is a condition called Celiac Disease. Celiac Disease is a digestive condition that is potentially serious if not diagnosed or treated. Symptoms of celiac disease include severe diarrhea after eating gluten-containing products, a rash, severe weight loss or failure to properly gain weight, and abdominal pain. In small children, you may only see poor weight gain and no pain, or other symptoms. Diagnosis of celiac disease can only be made by a board-certified gastroenterologist. It must also be made when the person is eating foods with gluten, as gluten avoidance is the active treatment.

A gluten intolerance is not an allergy, and there are currently no tests for accurate diagnosis. People with certain symptoms might need to be tested for celiac disease, but few people with gluten intolerance have celiac disease. Gluten intolerance is not an indication for allergy testing and is not a condition where an allergist could offer help. There are many people who label themselves as "allergic" to gluten, and unfortunately limit their diet without having seen a specialist. People with gluten intolerance should be seen by their primary care provider or referred to a gastroenterologist if there is concern about celiac disease.