



With a true food allergy, an individual's immune system will overreact to an ordinarily harmless food. This is caused by an allergic antibody called IgE (Immunoglobulin E), which is found in people with allergies. Food allergy often may appear in someone who has family members with allergies, and symptoms may occur after that allergic individual consumes even a tiny amount of the food.

Food intolerance is sometimes confused with food allergy. Food intolerance refers to an abnormal response to a food or food additive that is not an allergic reaction. It differs from an allergy in that it does not involve the immune system. For instance, an individual may have uncomfortable abdominal symptoms after consuming milk. This reaction is most likely caused by a milk sugar (lactose) intolerance, in which the individual lacks the enzymes to break down milk sugar for proper digestion. Your allergist/immunologist can help you determine the difference between intolerance and allergy and help you in establishing a management plan.

Food allergens – those parts of foods that cause allergic reactions – are usually proteins. Most of these allergens can still cause reactions even after they are cooked or have undergone digestion in the intestines. Numerous food proteins have been studied to establish allergen content. The most common food allergens – responsible for up to 90% of all allergic reactions – are the proteins in cow's milk, eggs, peanuts, wheat, soy, fish, shellfish and tree nuts.

All foods come in either a plant or animal source, and foods are grouped into families according to their origin. Peanuts, black-eyed peas, kidney and lima beans, and soybeans are some of the members of the legume family, whereas asparagus, chives, garlic and onion are, surprisingly, members of the lily family.

In some food groups, especially tree nuts and seafood, an allergy to one member of a food family may result in the person being allergic to all the members of the same group. This is known as cross-reactivity. However, some people may be allergic to both peanuts and walnuts, which are different food families; these allergies are called coincidental allergies, because they are not related.

Within animal groups of foods, cross-reactivity is not as common. For example, people allergic to cow's milk can usually eat beef, and patients allergic to eggs can usually eat chicken.

With shellfish, crustaceans (shrimp, crab and lobster) are most likely to cause an allergic reaction. Molluscan shellfish (clam, oysters, abalone, etc.) can be allergenic, but reactions to these shellfish are less common.

SYMPTOMS OF ALLERGIC REACTIONS TO FOODS

The most common allergic skin reaction to a food is hives. Hives are red, very itchy, swollen areas of the skin that may arise suddenly and leave quickly. They often appear in clusters, with new clusters appearing as other areas clear. Hives may occur alone or with other symptoms.

Atopic dermatitis, or eczema, a skin condition characterized by itchy, scaly, red skin, can be triggered by food allergy. This reaction is often chronic, occurring in individuals with personal or family histories of allergies or asthma. Asthma symptoms such as coughing, wheezing, or difficulty breathing due to narrowed airways may be triggered by food allergy, especially in infants and children.



Gastrointestinal symptoms of food allergy include vomiting, diarrhea and abdominal cramping, and sometimes a red rash around the mouth, itching and swelling of the mouth and throat, nausea, abdominal pain, swelling of the stomach and gas.

In infants, non-allergic, temporary reactions to certain foods, especially fruits, are common. For example, a rash around the mouth, due to natural acids in foods like tomatoes and oranges, or diarrhea due to excess sugar in fruit juice or other

beverages, occur with some frequency. However, other reactions are allergic and may be caused by traces of the offending food when eaten again. As they grow older, some children may tolerate foods that previously caused allergic reactions with the exception of peanuts and tree nut allergy.

Only 21% of patients with peanut allergy will outgrow it. Periodic food allergy check-ups with appropriate food challenges should be carried out under the supervision of an allergist/immunologist.

SEVERE ALLERGIC REACTIONS

In severe cases, consuming a food to which one is allergic can cause a life-threatening reactions called anaphylaxis – a systemic allergic reaction that can be severe and sometimes fatal. The first signs of anaphylaxis may be a feeling of warmth, flushing, tingling in the mouth or a red, itchy rash. Other symptoms may include feelings of light-headedness, shortness of breath, severe sneezing, anxiety, stomach or uterine cramps, and/or vomiting and diarrhea. In severe cases, patients experience a drop in blood pressure that results in a loss of consciousness and shock. Without immediate treatment, anaphylaxis may cause death.

Symptoms of anaphylaxis are reversed by treatment with injectable epinephrine, antihistamines, and other emergency measures. It is essential that anyone with symptoms suggesting possible anaphylaxis get emergency treatment immediately.

FOOD INTOLERANCE AND ADDITIVE REACTIONS

Food intolerance reactions are usually caused by factors in the diet other than the proteins that make up food allergens. As mentioned, one of the most common is lactose intolerance. Other food intolerance reactions may be triggered by drug-like chemicals in some foods. Symptoms can include nervousness after consuming caffeine in coffee or soft drinks, headaches triggered by chemicals in cheese and chocolate, or various adverse reactions to chemicals and preservatives added to food, called food additives. These additives may cause adverse reactions in sensitive people. The most common food additives that may cause reactions include benzoates, BHA and BHT, FD & C dyes Yellow No. 5 and Red No. 3, monosodium glutamate (MSG), nitrates/nitrites, parabens and sulfites. However, true allergic reactions to food additives are very rare.

If you suspect you are allergic to a food additive, an allergist/immunologist should be consulted for testing. The best way to handle food additive sensitivity is to know which foods contain certain additives, and to avoid the additives that cause problems for you.



DIAGNOSIS

An allergist/immunologist is the best qualified professional to diagnose food allergy. Diagnosis requires a carefully organized and detailed assessment of the problem. First, the allergist/immunologist will take a thorough medical history, followed by a physical examination. The allergist will inquire about the frequency, seasonality, severity and nature of the symptoms, and will ask about the amount of time that elapses between eating a food and any reaction.

Allergy skin tests may be helpful to determine which foods, if any, are triggering a patient's allergic symptoms. In skin testing, a small amount of liquid extract made from the food is placed on the back or arm. In a test called a prick test, a needle is then passed through the liquid on the top layer of the skin.

If the patient develops a wheal – a raised bump or small hive – within 15 minutes, this positive response indicates a possible allergy. If the patient does not develop a wheal, the test is negative. It is uncommon for someone with a negative skin test to have an IgE-mediated food allergy. Skin tests are not helpful when sensitivity to simple foods such as sugars or chemical food additives is suspected.

Your doctor may also use blood tests, call RAST testing or CAP-RAST, to diagnose food allergies. In certain cases, such as severe eczema all over the body, an allergy skin test cannot be done. Your doctor may recommend a food RAST blood test to obtain the same information that can be found with a skin test. For diagnosis of milk, egg, peanut or fish allergy, the level of the CAP-RAST test may help predict future food allergy reactions to these foods. False positive results may occur with both food allergy skin testing and blood testing. Food challenges, described below, are often required to confirm the diagnosis.

The allergist/immunologist may suggest that the patient keep a food diary, which is a detailed record listing foods eaten, date, time and any symptoms that occurred after eating the food. When an allergy to a single food is suspected, the allergist may recommend eliminating the food for a time. If symptoms are relieved, the allergist/immunologist may add the food to the diet once again to further determine if it causes a reaction (however, this is never done when the patient has a history of anaphylaxis).

If the diagnosis of food allergy remains in doubt, the allergist/immunologist may recommend a “blinded” food and/or food additive challenge test. These tests are conducted in the doctor's office, or at times, in the hospital under close observation. Usually the suspected food or a neutral food, called a placebo, is fed to the patient in colorless capsules, or in a non-allergenic slush or pudding. Neither the patient nor the doctor knows whether the suspected food or the placebo is being eaten. This is called a “double-blind” challenge. When properly performed, these challenges are very reliable in establishing a concrete cause and effect relationship between a food and an allergy symptom.

TREATMENT

1. **Avoid the food.** The best way to treat food allergy is to avoid the specific foods that trigger the allergy.
2. **Ask about the ingredients.** To avoid eating a “hidden” food allergen away from home, food-allergic individuals must always inquire about ingredients when eating at restaurants or others' homes.
3. **Read food labels.** It is important for food-allergic people to read food labels carefully and to become familiar with technical or scientific names for foods. For example, milk may not be listed as an ingredient on a label; rather, the label may list casein (a milk protein), sodium caseinate or



milk solids. Not every food that contains wheat identifies it as such; sometimes wheat is listed as gluten. Similarly, egg white is frequently listed as albumin. Government agencies have been working toward improving food ingredient labeling so food-allergic consumers can more easily determine which foods they may need to avoid.

- 4. Be prepared for emergencies.** Anaphylactic reactions caused by food allergies can be potentially life-threatening. Those who have experienced an anaphylactic reaction to a food must strictly avoid that food. They may need to carry and know how to use injectable epinephrine and antihistamines to treat reactions due to accidental ingestion. People who are commonly around the patient, such as spouses, co-workers, school teachers or daycare workers, should also know to use the injectable epinephrine. Those with food allergies should also wear an identification bracelet that describes the allergy. If you have an anaphylactic reaction after eating a food, it is essential that you have someone take you to the emergency room, even if symptoms subside. For proper diagnosis and treatment, make sure to get follow-up care from an allergist/immunologist.

If you have food allergies, you may also contact the Food Allergy and Anaphylaxis Network (FAAN) for support at 1-800-929-4040 or www.foodallergy.org.