

Adverse Reactions to Foods

While food allergies have always been present, occurrences have increased among the American population. About 8% of children and 2% of adults suffer from some type of food allergy. The cause of the increase is unknown, but different theories are being explored. One theory is that sanitation and better medicine allow the body to be exposed to fewer bacteria. Since the immune system has fewer bacteria to fight off, it has more time to react to allergens that otherwise would be ignored. Other evidence suggests that the introduction of some foods early in childhood may be the cause. No matter the source, food allergies are a serious matter that can affect anyone.

Definition

Food allergy, or hypersensitivity, is an abnormal response to a food that involves the body's immune system. This is not to be confused with a food intolerance or foodborne illness. The immune system is not responsible for the symptoms of food intolerance, even though the symptoms may resemble those of a food allergy. An example of food intolerance is lactase deficiency, where an individual lacks the enzyme lactase, needed to digest the milk sugar lactose. Foodborne illness is caused by eating food contaminated with pathogenic bacteria or toxins, usually resulting in flu-like symptoms.

A food allergen is a food fragment, usually a protein, which is responsible for an allergic reaction. The allergen is not properly digested, and as a result is able to cross the gastrointestinal lining and enter the bloodstream, causing allergic reactions throughout the body.

Problem Foods

Common allergenic foods include:

- Milk
- Tree Nuts
- Fish
- Crustaceans: shrimp, crab, and lobster
- Shellfish: clams, oysters, and scallops
- Legumes: peanuts and soybeans
- Eggs
- Wheat

Children may outgrow allergies.

However, adults usually do not lose their sensitivity to certain foods.

If an individual has a life-threatening reaction to a certain food, similar foods may also trigger the same adverse response. This is known as *cross-reactivity*. As an example, when tested, an individual with a history of allergy to shrimp, may also show an allergic reaction to crab, lobster, and crayfish.



Symptoms

Food allergy causes a wide range of symptoms because different body tissues can be affected by an immune reaction to food. The most common allergic skin reaction to food is *hives*, which are red, very itchy, swollen areas of the skin. They arise suddenly and leave quickly, often appearing in clusters. *Atopic dermatitis* occurs occasionally but is more chronic. The itchy inflammation of the skin often occurs in individuals with a history of allergic rhinitis or asthma. *Nasal allergy or rhinitis* may occasionally be the respiratory tract's reaction to food allergens. Symptoms may include itching of the nose or roof of the mouth, sneezing, and difficulty breathing through the nose. *Asthma*, which is a condition in which the passageways of the lungs narrow, may be related to food allergy. Swelling and itching of the lips, tongue, and inside the mouth may be the first symptom of asthma.

The *gastrointestinal* tract may also react to food quickly. The allergic reaction can cause vomiting, abdominal pain, and diarrhea. As the immune response to food affects other tissues of the body, an individual may develop symptoms including hives (urticaria), swelling (edema), sneezing and a runny nose, and asthma or difficulty breathing.

The most severe food allergy reaction is *anaphylaxis*, which is a systemic, life-threatening shock. It can occur within minutes of eating a food to which the individual is allergic. Anaphylactic shock can lead to trouble breathing, which is caused by the swelling of the throat or bronchi, severe asthma, hives, a drop in blood pressure, loss of consciousness, and death, if not treated immediately.

Diagnosis



An individual who suspects an adverse reaction to food should consult with a medical physician who specializes in allergies for an accurate diagnosis. Assessment usually includes a detailed medical history. The physician must first rule out food intolerance, foodborne illness, or other diseases such as ulcers and cancers of the gastrointestinal tract before determining if an individual has a true food allergy. Assessment can be made utilizing a physical exam, food and symptom diary, and then an elimination diet.

Under a physician's supervision, the individual eliminates the suspected food from the diet. If there is no improvement of symptoms, additional foods may be eliminated. If the symptoms go away, a diagnosis of food allergy can be made. Again, under a physician's supervision, if the individual eats the food again and the symptoms come back, the diagnosis is confirmed. **The elimination technique cannot be used if the reactions are severe or infrequent.**

A more accurate method, the *double-blind test* may also be given, in which the individual does not know what type of food he or she may be ingesting, so the results cannot be influenced.

Direct allergy skin tests may be helpful in determining which foods are causing an allergic response. In skin testing, a small amount of liquid extract made from the food in question is placed on the back or arm. The extract is deposited under the skin with a needle (prick test) or by making small scratches (scratch test). If a bump (wheal) develops within 20 minutes, a positive response is indicated for that food. Skin tests are more useful in diagnosing pollen allergies.

Blood tests (RAST tests) may be helpful for selected individuals, but are generally not as useful as the challenge or elimination tests. The challenge test must be done under medical supervision. Food cytotoxic blood tests and sublingual provocation food testing are not recommended, since these tests are unproven in the diagnosis of food allergies.

Treatment

Avoidance of specific foods is the best treatment method for food allergy, especially if anaphylactic shock has been experienced. An antihistamine such as Benadryl®, can be administered to decrease the discomforts of swelling and itching often caused by a food reaction. Individuals susceptible to anaphylactic shock will be advised by their physician to carry medication such as injectable epinephrine. This allows prompt self-treatment and is an essential precaution for children away from home.



An individual who is allergic to a food must be cautious about all restaurant foods, especially combination foods such as soups, quiches, or casseroles. Ask questions, but do not rely on the information.

Processed foods have hidden food allergens that some would not expect. Reading product labels becomes extremely important to those with food allergies. The Food Allergen Labeling and Consumer Protection Act (2004) made it a requirement to list the presence of any proteins from milk, eggs, fish, crustacean shellfish, tree nuts, peanuts, wheat, or soybeans. Sources must be stated clearly in the ingredient list, or at the end, it should state it "contains",

followed by the source of the potential food allergen.

Caregivers of children should have detailed information about a child's allergy, a description of the reaction, the physician's name and phone number, and recommendations for treatment. Adults should take the same precautions by informing friends and co-workers. Treatment instructions should be carried with you at all times.

Additional Resources

American Academy of Allergy & Immunology
555 East Wells Street
Suite 1100
Milwaukee, WI 53202
<http://www.aaaai.org>

Asthma and Allergy Foundation of America
1233 20th Street, NW
Suite 402
Washington, DC 20036
<http://www.aafa.org>

Food Allergy Network
11781 Lee Jackson Hwy., Suite 160
Fairfax, VA 22033-3309
<http://www.foodallergy.org>

International Life Sciences Institute-Nutrition Foundation
One Thomas Circle, NW 9th Floor
Washington, DC 20005
<http://www.ilsa.org>

Allergy and Asthma Network/Mothers of Asthmatics
2751 Prosperity Avenue, Suite 150
Fairfax, VA 22031
<http://www.aanma.org>

U. S. Food and Drug Administration
5600 Fishers Lane,
Rockville MD 20857-0001
<http://www.fda.gov>

Clip art Microsoft® 2007

**Sandra Bastin, PhD, RD, LD,
Extension Food and Nutrition Specialist**

March 1996; Revised September 2007

Copyright © 2007 for materials developed by University of Kentucky Cooperative Extension. This publication may be reproduced in portions or its entirety for educational or nonprofit purposes only. Permitted users shall give credit to the author(s) and include this copyright notice.

Educational programs of the Kentucky Cooperative Extension Service serve all people regardless of race, color, age, sex, religion, disability, or national origin.