

Dealing with Food Allergies¹

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What is a food allergy?

A food allergy is an acquired hypersensitivity reaction to what is normally considered a safe food. Food allergies occur more often in children than in adults: 5-8% of those age 4 or under and about 1-4% of adults are affected. Together, about 11 million Americans suffer from some degree of food allergy. Those with severe reactions may experience what is known as anaphylaxis or *anaphylactic shock*. Annually, around 30,000 people receive life-saving emergency treatment and 150 fatalities occur.

While most food allergies in adults are caused by a small group of foods or food products, early in life food allergies can be caused by a wider variety of foods. About 90% of reported food allergies in children under the age of four are caused by:

- dairy products,
- tree nuts,
- eggs,
- wheat and wheat products,
- peanuts, or
- soy and soy products.

Dairy, eggs, and soy allergies are commonly outgrown; peanut allergies are almost never outgrown. As an adult, “the big eight” foods (and their products) account for 90% of food allergies:

- cereals containing gluten (wheat, rye, barley, oats, spelt, or their hybridized strains and products),
- crustaceans,
- milk,
- eggs,
- tree nuts,
- fish,
- soybeans, and
- peanuts.

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What causes food allergies?

A true allergy is caused by a person's immune system reacting to a food when first eaten. The body "remembers" that food and, when it is eaten again, the immune system overreacts in an excessive and potentially life-threatening way.

Allergies can also be classic, also known as "atopic." Instead of an individual developing an allergy spontaneously, they inherit a predisposition to develop food or other allergies. Often, these individuals suffer from hay fever (allergic rhinitis), asthma, or rashes (atopic dermatitis) and are more likely to develop a food allergy.

True food allergies may lead to severe allergic reactions or anaphylactic shock caused by rapid release of Immunoglobulin E (IgE). IgE is a natural component of the immune system, normally involved in protecting the body from parasites. However, when over-production of IgE is triggered by a food or other allergen (any material that triggers an allergic response), local or systemic (affecting the whole body) inflammation, severe swelling, or hypersensitivity reactions may occur.

Some food allergies may be attributed to cross-reactions with other allergy causing substances, such as the examples in Table 1. In these cases, a person that already has developed an allergy to a particular substance may be more likely to develop a particular food allergy. For example, people with a known allergy to ragweed pollen are more likely to develop an allergy to bananas or melons (cantaloupe, watermelon, etc.).

Table 1. Allergy cross-reactions

Allergy	Associated Food
Ragweed Pollen	Melons, bananas
Birch Pollen	Apple, carrot, hazelnut, potato, celery, almond group*
Mugwort Pollen	Celery, apples, kiwi fruit
Latex	Banana, kiwi, avocado, chestnut
*Almond group includes pear, plum, nectarine, cherry, and apricot	

Although often misdiagnosed as a food allergy, food intolerance is different. Symptoms of food intolerance usually involve discomfort after eating the causal food, such as bloating, abdominal pain, and sometimes diarrhea. Specifically, food intolerance is due to a problem with a person's metabolism, *not* their immune system. Lactose intolerance, for example, is caused by the inability to produce the digestive enzyme (lactase) that breaks down the sugars found in milk and other dairy products (lactose).

Studies suggest that 10 to 20% of adult Americans incorrectly believe that they or someone in their family has a food allergy. Proper medical authorities should be consulted for confirmation and guidance.

What are the symptoms associated with food allergies?

Allergic reactions to food may cause symptoms within seconds of consumption, or the symptoms may take up to several hours to develop. Symptoms can occur locally, or can be spread over the body or in multiple locations. Redness, itching, and swelling (inflammation) are the most well known and commonly associated symptoms, although several other types of symptoms are possible.

Symptoms associated with the digestive tract may include any one or more of the following:

- itching/tingling of the lips, palate, tongue, or throat;
- hoarseness and sensation of tightness in throat;
- vocal impairment or difficulty speaking;
- swelling of the lips or tongue;
- abdominal pain or cramps;
- nausea and/or vomiting; or
- diarrhea.

The greatest danger of a hypersensitivity reaction, or anaphylactic response, is the possibility that air passageways will swell closed and suffocate the victim, or that the victim will go into

shock, a state of decreased blood flow that is potentially life-threatening.

Symptoms may also affect other areas, or be systemic. Some examples are shown in Table 2.

Table 2. Symptoms and affected areas

Affected Area	Symptom
Skin	<ul style="list-style-type: none"> • Hives • Flushing • Itching
Airways	<ul style="list-style-type: none"> • Chest tightness • Wheezing • Shortness of breath
Throat (pharynx)	<ul style="list-style-type: none"> • Difficulty speaking • Tongue swelling • Vocal cord swelling
Nose	<ul style="list-style-type: none"> • Nasal congestion • Itching • Runny nose • Sneezing
Eyes	<ul style="list-style-type: none"> • Itching • Tearing
Systemic	<ul style="list-style-type: none"> • Decreased blood pressure • Loss of consciousness

Who is at risk?

Food allergies generally develop at an early age, but may appear at any time. People who have had previous allergic reactions to foods or sometimes non-food items (insect bites, latex, etc.), or that have a family history of allergies are most susceptible. It is uncommon for a person to have an allergy to more than four different foods.

Managing food allergies

If a person has an allergy to a particular food, any meal with that food present, even as a flavoring, may cause an allergic response. If a person is allergic to peanuts, they will be sensitive to the consumption of any food that has peanuts or peanut products (peanut butter, peanut oil, chopped or diced peanuts, etc.) as an ingredient. Treatment or processing of a food does not affect its ability to cause an allergic response. **It is**

important to carefully read food labels and ingredient lists if a person has a known food allergy.

In the United States, a child of less than 4 years of age has up to an 8% chance of developing a true allergy to some food product. As an adult, there is about a 1-4% chance that a food allergy from childhood will remain, or that a new one will develop. The ability to out-grow a food allergy is believed to be attributed to the eventual maturation of an infant's initially under-developed immune system.

Almost any food has the potential to cause an allergy or a hypersensitivity reaction in a susceptible person, however, such a possibility is very unlikely. Allergies are only triggered by proteins; sugars and fats, for example, do not cause food allergies. Food additives such as MSG (monosodium glutamate) and dyes may cause allergies, but are uncommon (less than 1 in 100, or 1%, in children and less than 1 in 500, or 0.2%, in adults). Some studies suggest these reactions may not be allergic in nature, but mediate by some other mechanism (Taylor & Hefle, 2001; US Dept. of Health, 1995).

How can a person deal with an attack?

There is no cure for a food allergy. Once diagnosed, a person will most likely have to contend with their condition for life. **If a person has an allergy to a particular food, the only proven therapy is strict avoidance of the food or its products.**

If an attack occurs, the medication of choice is an injection of epinephrine. A person with a known food allergy should always carry a dose of epinephrine in case of an emergency.

A person suffering from an anaphylactic attack should be taken by an ambulance to a hospital. Even if epinephrine is administered to the victim, anaphylactic symptoms may reappear within minutes, or several hours, after treatment. Observation by trained medical personnel is important during this period.

For minor allergic attacks only such as those limited to skin or stomach irritation without inflammation, an oral antihistamine may be effective in providing relief. Use of inhaled medications, such as for asthma attacks, have not been shown to be safe or effective in combating anaphylactic attack from food allergies.

Being Prepared

For children, an emergency action plan should be created. Any caretaker, including family members and teachers, need to be aware of this plan to minimize the chances of a reaction and as a guideline for steps to take in the case of an emergency. The American Academy of Healthcare Physicians has a downloadable emergency health care plan that can be filled out and used for this purpose. Most importantly, the child needs to know the limitations of their menu options and how to help themselves should they require medical treatment.

Resources and Further Information:

The American Academy of Allergy, Asthma and Immunology. The Allergy Report, Volume III: Conditions That May Have an Allergic Component. <http://www.aaaai.org/ar/volume3.pdf> (Accessed 21 June 2005).

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Food Allergy and Anaphylaxis Network: <http://www.foodallergy.org/> (Accessed 21 June 2005).

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