



## **FOOD ALLERGY: FACT AND FICTION**

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### **What is food allergy?**

Allergists are commonly asked to evaluate both children and adults for possible food allergy. It is important to differentiate an allergy caused by an immune reaction to a food versus an intolerance or sensitivity to a food. The vast majority of “true” allergic reactions to foods are caused by the body’s production of Immunoglobulin E (IgE), the allergic antibody. Subsequent ingestion of a food in the presence of specific IgE to the food, triggers the release of allergic chemicals such as histamine. These allergic reactions produce a wide spectrum of symptoms ranging from itching and hives, to swallowing, respiratory or abdominal complaints, or to a profound drop in blood pressure. Many adverse reactions to foods are non-immune mediated such as lactose intolerance in which individuals lack an adequate amount of enzyme to digest cow’s milk resulting in recurrent abdominal discomfort and diarrhea. Another example of a non-allergic food reaction is sensitivity to monosodium glutamate (MSG, a food additive) resulting in headache, warmth and sweating.

### **What are typical food allergy symptoms?**

Allergic reactions to foods result in typical allergic symptoms especially gastrointestinal symptoms including: abdominal pain, diarrhea and vomiting or skin manifestations such as hives, swelling or increase in eczema. Other allergic reactions may also occur particularly in more severe food allergic patients including: swallowing and breathing difficulty, dizziness, a drop in blood pressure and even on rare occasion fatality. Behavioral changes such as hyperactivity or attention disorders are not generally caused directly by a food allergy. Nevertheless, if a child has a predisposition to overactivity or an attention disorder, the development of allergic symptoms associated with nasal allergies, asthma or hives, and food allergy may aggravate that pre-existing tendency. Much more commonly certain foods may aggravate behavioral problems due to the chemical constituents of the food themselves. For example, chocolate contains a chemical which is related to caffeine and can cause stimulation in children. Similarly, cola beverages may likewise be stimulatory due to caffeine content.

### **How common are food allergies?**

Allergic reactions to foods occur in perhaps 2% to 5% of infants and children and 1% to 2% of adults. In order to develop a food allergy, an individual requires both a genetic predisposition (a family history of allergy) and ingestion of a potentially highly allergenic food. Children are thought to be more susceptible to the development of food allergy than adults due in part to differences in absorption of food particles through their digestive tract.

### **What foods cause an allergic reaction?**

Interestingly, the particular type of foods causing food allergy varies according to the eating habits of a specific group of people. In the United States peanut allergy has increasingly become widespread because we eat more peanut products than any other country in the world. In Scandinavia, fish allergy is far more common than in the United States. The most common food allergies in American children include milk, eggs, soy, wheat and peanuts. In older children and adults, allergic reactions to tree nuts, fish and shellfish including lobster, crab, scallops and oysters are common as well.

### **Can food allergies be outgrown?**

Patients and parents often ask if food allergy can be outgrown. Indeed infants and small children with milk, egg and soy allergy may commonly outgrow food sensitivity as they reach school age. However, allergy to peanuts, tree nuts, fish and shellfish rarely disappears. Recent research suggests that some children who have only a history of skin reactions such as hives or swelling to peanuts may lose this sensitivity, and, therefore, further evaluation may be warranted to see if their diet can be liberalized. Such an evaluation could include allergy skin testing, blood testing to quantify the amount of allergic antibody present, or possibly a food challenge in the physician's office. A food challenge consists of a carefully monitored progressive ingestion beginning with a minute amount of the food implicated. Over several hours the quantity of the food is increased until about an ounce of the food is ingested. If there are no objective signs or symptoms of an allergic reaction during the course of the challenge, then clinically significant food allergy is ruled out and the food can thereafter be safely ingested. It is important to note that food challenges must be very closely monitored in a physician's office prepared to treat a severe allergic reaction if it develops.

### **How do you diagnose food allergy?**

The most important aspect is the story obtained by the physician from the patient or family. Generally speaking, immunologic or allergic reactions occur very rapidly with symptoms usually developing within minutes to an hour after ingestion. An exception to this is eczema in which foods may aggravate pre-existing eczema hours to perhaps a day or two after such ingestion. Beyond the rapid onset of an allergic reaction described above, the physician also looks for the typical signs and symptoms of an allergic reaction such as diarrhea, abdominal pain, hives, respiratory or swallowing difficulty indicative of an allergic reaction. A story that would be typical of an allergic reaction is usually confirmed by careful allergy testing. Typically skin testing is done in the physician's office during which a tiny drop of the implicated food is placed on the skin and pricked through the upper layer of the skin surface. A positive reaction would be indicated by a localized hive within fifteen to twenty minutes of the procedure. A negative skin test would generally exclude that particular food as causing an allergic reaction. Alternatively, a blood sample could be obtained and sent to a laboratory to determine the amount of allergic antibody present. This blood test is known as a RAST (radioallergosorbent test).

Children and adults rarely develop an immune reaction to a food that is not IgE-mediated. An example of this would be eosinophilic gastroenteritis in which children and adults may develop an overabundance of allergy cells known as eosinophils in their esophagus, stomach or intestines, resulting in immediate vomiting, gastrointestinal discomfort, or diarrhea. This particular condition cannot be diagnosed by skin testing but can be evaluated by obtaining a sample of tissue from the esophagus or stomach if the situation is suspected.

### **How is food allergy treated?**

The mainstay of treatment of food allergy is avoidance of the offending foods. Avoidance is of paramount importance because at the current time there is no desensitization regimen available to make individuals either less allergic or non-allergic to a food. The Food Allergy & Anaphylaxis Network (FAAN) is an excellent resource with a newsletter and a web site ([www.foodallergy.org](http://www.foodallergy.org)) available to help in the guidance of patients and families in avoidance of allergic foods. If your allergist recommends total food avoidance of a highly allergenic food, it is extremely important to read package inserts carefully to avoid even tiny amounts of ingestion, which could potentially trigger a severe allergic reaction.

Although there is currently no desensitization regimen available to treat food allergy, there is ongoing research into a new type of therapy known as monoclonal antibody to IgE, in which biweekly or monthly injections may be administered to help reduce the total amount of allergic antibody in one's system. This particular technique may show some hope for the future in reducing the severity of food allergy in both children and adults.

Despite avoidance of foods, inadvertent ingestion of allergic foods cannot always be completely avoided. Therefore, an emergency plan for such mistaken ingestions should be developed by the physician and the patient or family. This plan usually involves the availability of Epinephrine or Adrenaline, (EpiPen®), and a rapid-acting antihistamine such as Diphenhydramine, (Benadryl®). The key to success is treating such an allergic reaction promptly, followed by immediate transfer to an emergency facility for further evaluation and treatment. Also, it is oftentimes quite useful to identify the food-allergic person by wearing a MedicAlert bracelet or necklace or carrying a card in the wallet identifying the individual as food sensitive to aid in appropriate treatment by the ambulance or rescue squad.

### **Can food allergies be prevented?**

Prevention of food allergy is an area of ongoing interest and research by the Allergy and Immunology community. Thus far, there are no fool-proof recommendations guiding us in preventing the development of food allergy. In general it may be useful for the mother to avoid highly allergy-provoking foods in her diet such as nuts, peanuts and possibly eggs in the last few months of pregnancy and while breast-feeding. An allergist may also recommend a delay in introducing such foods in the child's diet until perhaps two years of age.

In conclusion, food allergy is common in infants and children and also present in adults as well. Careful evaluation by an allergist followed by identification of the offending food and avoidance, as well as an emergency plan can prevent dangerous reactions from occurring and allow both the child and adult to lead a normal life.