



# CAAC

## Carolina Asthma & Allergy Center

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## DO YOU HAVE FOOD ALLERGIES?

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Food allergies affect approximately 6% of children younger than three years of age and 4% of adults in the United States. An adverse food reaction is a generic term referring to any abnormal reaction after ingestion of food. Adverse food reactions may be secondary to a food allergy or a food intolerance. Food allergy is mediated by the immune system in that specific antibodies, called IgE antibodies, are produced that react against a particular food protein. Food intolerances are due to non-immune mechanisms and comprise the majority of adverse food reactions. An example of food intolerance is lactose intolerance, which is due to a digestive deficiency of the enzyme lactase. The incidence of food allergy is increasing, particular to peanuts, and the cause is a current focus of intense medical research.

Although any food can cause food allergy, only a few are believed to cause >90% of allergy reactions. In children, cow's milk, wheat, soybeans, eggs, and peanuts are the most common offenders. Peanuts, tree nuts, and shellfish are the most common foods involved in food allergies in adults. Although we used to think that childhood food allergy to milk, eggs, and wheat would usually be outgrown by five years of age, new studies suggest that for approximately half of those children resolution may not occur until the teenage years. Strict avoidance of the food from the diet increases the probability that the food allergy will resolve. Some food allergies such as peanuts, tree nuts, and seafood tend to be life-long and can be quite severe. Siblings of a peanut allergic child have a four-fold increased chance of developing their own peanut allergy.



Symptoms of food allergy can include hives, swelling of the throat, breathing difficulties, vomiting, diarrhea, and loss of consciousness and shock. Reactions often start immediately on contact with the food

in the mouth, or within minutes in the case of severe allergy. Symptoms usually begin within 30 minutes but rarely more than two hours after ingestion. Approximately one-third of children with moderate to severe eczema have a food allergy. Chronic hives, migraine headaches, and behavior problems are not likely to be due to food allergy.

Anaphylaxis represents a rapid multi-system IgE-mediated reaction which can be fatal. The foods responsible for a disproportionate percentage of anaphylaxis are peanuts, tree nuts, and seafood. Individuals at increased risk for fatal anaphylaxis include those with underlying asthma, denial of progressing symptoms, delayed treatment with emergency medicine called epinephrine, and a history of prior severe allergic reactions. An estimated 500 deaths annually are due to food allergy.

The diagnosis of food allergy involves a careful history focusing on the food suspected in provoking the reaction, the length of time between ingestion of the food and development of symptoms, and whether similar symptoms have occurred on other occasions when the food was eaten, among other factors.



Further diagnoses include screening tests for evidence of food specific IgE antibodies, and proof of reactivity through elimination diets and oral food challenges. Skin prick tests and blood tests (such as RAST and ImmunoCAP) are performed to document the presence of specific IgE antibodies. These tests, however, can be falsely positive in 50% of the cases, leading people to think they are allergic to a certain food when they really are not. On the other hand, properly performed negative tests are highly suggestive that a person does not have an IgE-mediated food allergy. The oral challenge is considered the gold standard in diagnosing food allergy. This procedure is performed in the

medical office setting, where incremental doses of the food are ingested and the person is monitored closely for development of symptoms. Tolerance to food can develop over time, and follow-up skin and blood tests and oral challenges are often performed to determine whether a food allergy still persists.

Strict avoidance of the implicated food is currently the only proven form of treatment for food allergies. Two doses of self-injectable epinephrine (EpiPen 2-Pack or TwinJect) always need to be available since approximately 25% of food related anaphylactic reactions require a second dose of epinephrine. Antihistamines are used to treat milder reactions and as ancillary treatment with epinephrine. An emergency care plan in writing should be given to schools and caregivers of food-allergic children.

Further information about food allergies is available through the Food Allergy & Anaphylaxis Network at [www.foodallergy.org](http://www.foodallergy.org). Research studies are also in the developmental stage and should provide more definitive treatment for food allergies in the coming years. For further information regarding current research at Duke Children's Hospital and Health Center, contact Pam Steele, CPNP, at 919-668-1333 of the Duke Food Allergy Initiative.

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