

Food allergy in children: a brief information for new parents

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Food allergy is “an adverse health effect arising from a specific immune response that occurs reproducibly on exposure to a given food”. An often quoted line from a poem of Titus Lucretis Cato (98 – 55 BC): “What is food to one, to another is rank poison”.

Food allergy can be categorized into 2 groups, Acute IgE-mediated type I hypersensitivity reactions and Non-IgE-mediated food allergies. This article will focus on IgE-mediated food allergy which is the most common.

How often can food allergy be found?

Food allergy prevalence in the United States ranged from 1- 2% to 10%. The allergy can be found in 1 in 10 children in Australia; 1 in 15 children in U.S.A; and 1 in 20 children in Canada.

How severe are the symptoms of food allergy?

Symptoms of food allergy range from mild, moderate, to severe. The most severe reaction is anaphylaxis, which is an acute reaction affecting 2 or more organ systems that can be life-threatening.

Symptoms associated with food allergy reactions are as follows:

Organ/System	Symptoms
Skin	Pruritis, Erythema/flushing, urticaria, angioedema
Eye	Pruritis, tearing, conjunctival injection, periorbital edema
Upper respiratory	Pruritis, nasal congestion, rhinorrhea, sneezing,

tract	hoarseness, laryngeal edema
Lower respiratory tract	Cough, wheezing, dyspnea, chest tightness/pain
Gastrointestinal	Oral pruritis, oral angioedema (lips, tongue, or palate), pharyngeal pruritis/tightness, colicky abdominal pain, nausea, vomiting, diarrhea
Cardiovascular	Tachycardia, dizziness, loss of consciousness/fainting, hypotension
Miscellaneous	Metallic taste in the mouth, uterine cramping/contractions, sense of impending doom

What foods often cause food allergy?

Foods which have been reported to be the cause of food allergy are egg, milk, peanuts, tree nuts, soybean, and wheat. Other foods include sesame, seeds, seafoods, meats, and fruits.

Risk factors

Several risk factors for food allergy have been identified.

Genetics. If one immediate family member has an allergic disease, the risk of food allergy is increased by 40%. In case that 2 immediate family members have any allergic disease, the risk is increased by 80%.

Race/Ethnicity. Non-Hispanic black ethnicity, Asian ethnicity, and male sex in children have been associated with high risk of food allergy.

Vitamin D. Vitamin D insufficiency has been associated with an increased risk of food allergy.

Food diversity. Increased food diversity effect may have a protective effect on food sensitization as well as clinical food allergy later in childhood.

How soon does food allergy start in children? When will the children outgrow the allergic symptoms? What can parents do, regarding food preparations for these children?

Food allergies from different food allergens develop at various ages in children and adults. The severity of the symptoms for each allergen is different; so is the resolution age. Exposure to foods or food preparations can affect the allergenicity, the extent and the severity of the symptoms and the rate of tolerance acquisition.

Food allergen	Age: developing and outgrowing	Food exposure or food preparations and the effect on the allergenicity.
<p>Egg, one of the most common childhood food allergies, 1.3-1.6%.</p>	<p><u>Allergy-developing age</u> During the first year.</p> <p><u>Allergy-outgrowing age</u> Approximately 9 years old (most children).</p>	<p>--Approximately 38% of the children who do not outgrow the allergy were able to tolerate some baked egg products.</p> <p>--The length and the degree of heating can reduce the allergenicity of egg. Over 70% of the children who react to concentrated egg (lightly heated egg such as French toast or scrambled egg) can tolerate baked egg in the form of muffin or waffle.</p> <p>--Frequent ingestion of baked eggs will accelerate development of concentrated egg tolerance.</p>
<p>Milk, the most common childhood allergy, at 2.5% and about 1/5 of all childhood food allergy.</p>	<p><u>Allergy-developing age</u> Typically in the first year.</p> <p><u>Allergy-outgrowing age</u> Approximately 10 years old (43%)</p>	<p>--The majority of children (75%) can tolerate baked milk but are reactive to uncooked milk.</p> <p>--Ingestion of baked milk for 3 months led to significantly lowered allergic response to milk. The children were more likely to become milk tolerant compared to those children who followed strict avoidance of milk. Ingestion of extensively hydrolyzed</p>

		casein formula instead of rice hydrolyzed formula, soy formula, and amino acid-based formula has also been demonstrated to increase the rate of milk tolerance acquisition.
Peanut, estimated to be around 2% and increasing in North America and Europe. More common in Western-born children than in Asian children.	<u>Allergy-developing age</u> Around 18 months or later in childhood or adulthood. <u>Allergy-outgrowing age</u> --About 21.5% of the patients became tolerant at the age of 4-20 years old. --Usually, peanut allergy is life-long. One needs to be very careful when consuming unfamiliar foods.	--Peanut allergy can occur within minutes, with symptoms including hives, swelling of the skin or vomiting. Reactions can be life threatening, with the most severe reactions, anaphylaxis, which could lead to death. Peanut and tree nuts together account for 70-90% of reported food induced anaphylaxis fatalities. --Around 20-30% of the people with peanut allergy are also allergic to one or more tree nuts. --Long term follow up for peanut allergy is suggested; in rare cases, symptomatic peanut allergy has been found after passing an open challenge, especially in those who do not introduce peanut into their diets after a negative peanut challenge.
Tree nuts	<u>Allergy-developing age</u> In both childhood and adulthood. <u>Allergy-outgrowing age</u> --Only 9% have outgrown tree nut allergy. --No one who was allergic to more than 2 tree nuts outgrow their	--Tree nuts include Almonds, Brazil nuts, Cashew nuts, Hazel nuts, Macadamia nuts, Pecan nuts, Pistachio nuts and Walnuts. --Similar to peanut, the tree nut allergy can occur within minutes, with symptoms including hives, swelling of the skin or vomiting. Reactions can be life-threatening, with the most severe reactions, anaphylaxis, which could lead to death. Peanut and tree nuts together account for

	<p>allergy.</p> <p>--Usually, tree nut allergy is life-long. One needs to be very careful when consuming unfamiliar foods.</p>	<p>70-90% of reported food-induced anaphylaxis fatalities, with tree nuts alone accounting for around 18-40%.</p> <p>--Around 20-30% of the people with peanut allergy are also allergic to one or more tree nuts.</p> <p>--For individuals with tree nut allergy, around 30% will have at least additional tree nut allergy.</p>
<p>Soybean.</p> <p>The allergy is more common in children with concomitant peanut allergy.</p>	<p><u>Allergy-developing age</u></p> <p>Onset typically in infancy. Peak incidence around 2 years old.</p> <p><u>Allergy-outgrowing age</u></p> <p>Allergy was outgrown in 45% of the children by 6 years old.</p>	<p>--Children with soybean allergy and concomitant eczema usually will have a 50% rate of resolution at 1 year of follow-up and 67% rate at 2 years of follow-up.</p>
<p>Wheat, a common childhood food allergen.</p>	<p><u>Allergy-developing age</u></p> <p>Common in children.</p> <p><u>Allergy-outgrowing age</u></p> <p>--20% of the children had resolved allergy by age 4.</p> <p>--52% by age 8.</p> <p>--66% by age 12.</p> <p>--76% by age 18.</p>	<p>--Studies on the prognosis of patients with wheat allergy and concomitant atopic dermatitis suggest that 25-33% of patients become tolerant by follow-up 1 to 2 years later.</p>
<p>Other foods (sesame seeds, seafoods, meats, and fruits)</p>	<p><u>Allergy-developing age</u></p> <p>Both in childhood and adulthood.</p> <p><u>Allergy-outgrowing age</u></p> <p>In children who are allergic to seed,</p>	<p>--Fruits and vegetables: onset at any age. In early childhood, adverse reactions to fruits and vegetables are common and do not last long. In later childhood and into adulthood, the reactions are associated with inhalant allergens.</p>

	seafoods, and meats, only the minority outgrow their food allergies during childhood. In adults, it is persistent.	
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According to the above information, allergic reaction to foods could range from mild, moderate, to severe, life-threatening. Most of the allergy could develop during childhood. Feeding children, with the allergy history in the family, should be carried out with caution, especially peanut and tree nut allergies, from which the reactions could be fatal. If in doubt, the safest policy is to avoid those foods. In ready-to-eat foods or those that come in packages/boxes, the information on the ingredients is usually provided on the labels by responsible manufacturers. In restaurants and at food stalls, an inquiry is necessary to ensure that the foods do not contain particular food allergens. However, it was shown that the addition of baked-milk or egg to the children's diet actually accelerated the development of tolerance to all forms of milk and egg, so these days early introduction of baked milk and egg products has become standard practice. Regular consultation with a doctor specializing in food allergy is highly recommended.

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