

## Introduction to Allergens in Food Microbiology

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### DESCRIPTION

A food allergy is a hypersensitive immune response to a specific food. The allergic reaction's symptoms can range from mild to severe. Symptoms may include itchiness, tongue swelling, vomiting, diarrhea, hives, difficulty breathing, or low blood pressure. This usually happens within minutes to several hours of being exposed. Anaphylaxis occurs when the symptoms are severe. Food intolerance and food poisoning are distinct conditions that are not caused by an immune response. Cow's milk, peanuts, eggs, shellfish, fish, tree nuts, soy, wheat, sesame, rice, and fruit are all common suspects. The most common allergies vary by country. A family history of allergies, a lack of vitamin D, obesity, and a high level of cleanliness are all risk factors. Allergies develop when immunoglobulin E (IgE), a component of the immune system, binds to food molecules. The problem is usually a protein in the food. As a result, inflammatory chemicals such as histamine are released. A medical history, elimination diet, skin prick test, blood tests for food-specific IgE antibodies, or oral food challenge is generally used to make a diagnosis.

Early exposure to allergens may be beneficial. Management primarily entails avoiding the offending food and having a plan in place if exposure occurs. This strategy could include administering adrenaline (epinephrine) and wearing medical alert jewelry. As of 2015, the benefits of allergen immunotherapy for food allergies are unknown, so it is not recommended. In the developed world, approximately 4% to 8% of people have at least one food allergy. They are more common in children than adults and appear to be on the rise. Male children appear to be

affected more frequently than females. Some allergies are more common in childhood, while others appear later in life. A large proportion of people in developed countries believe they have food allergies when they do not. Only in Brazil it is required to declare the presence of trace amounts of allergens in foods. Milk, eggs, peanuts, tree nuts, fish, shellfish, soy, and wheat allergies are the most common, though sensitivity levels vary by country. These are known colloquially as "the big eight". Allergies to seeds, particularly sesame, appear to be on the rise in many countries. Rice allergy is an example of a regional allergy that is more common in East Asia, where rice is a large part of the diet.

Sensitivity to peanuts, a member of the bean family, is one of the most common food allergies. Peanut allergies can be severe, but children who have them often outgrow them. Almonds, Brazil nuts, cashews, coconuts, hazelnuts, macadamia nuts, pecans, pistachios, pine nuts, and walnuts are all common allergens. Egg allergies affect about one in every fifty children, but they are frequently outgrown by the time children reach the age of five. The sensitivity is usually to proteins in the white rather than the yolk. Another common food allergen is milk from cows, goats, or sheep, and many sufferers are also unable to tolerate dairy products such as cheese. A small percentage of children with milk allergies, about 10%, have a reaction to beef because it contains trace amounts of protein that are also found in cow's milk. People may be allergic to proteins found in fish or to different proteins found in shellfish, making seafood one of the most common sources of food allergens (crustaceans and mollusks).

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