

## What is peanut allergy?

Peanut allergies are very similar to other allergies, which are abnormal responses by the body's immune system to otherwise harmless substances. Molecules that can trigger allergic reactions - "allergens" - can arise from peanuts, house dust mite, grass pollen, cats and many other sources. In a peanut allergic (or "sensitized") child, when the immune system detects peanut protein, antibodies known as IgE are produced that trigger an inappropriate immune response.

## Why is peanut allergy a problem?

The prevalence of peanut allergy has doubled over the past 10 years in countries that advocate avoidance of peanuts during pregnancy, lactation and infancy. Peanut allergy now affects approximately 1.5% of young children. While there are many types of food allergies, peanut allergies are particularly troublesome, for a number of reasons. Foremost is the fact that peanut allergy often results in more severe reactions than other food allergies, up to and including sudden death. Importantly, its symptoms can occur following exposure to only very tiny (or 'trace') amounts of peanut protein. Peanuts are used in a wide variety of food products, thus trace amounts of peanut protein can be found in many foods - from chocolate bars to fruit snacks.

## What happens during an allergic reaction to peanut?

The allergic reaction to peanut occurs soon after exposure (usually through ingestion). Typical immediate allergic reactions include the development of hives (itchy bumps) on the face or body; blotching around the mouth (which may spread to the rest of the body); immediate runny nose, sneezing and itchy-watery eyes; coughing; choking or gagging; wheezing and trouble breathing; and cramps, vomiting and diarrhea. The child's behavior may also change during an allergic reaction; for example, children may become uncharacteristically quiet or clingy. Although allergic reactions are usually mild to moderate in severity and usually terminate spontaneously or after the administration of an antihistamine, severe reactions – known as anaphylaxis – can occur. Anaphylaxis is a severe allergic reaction that can be fatal if not treated immediately.

## Dealing with peanut allergy

Because of the risk of anaphylaxis, children who are allergic to peanuts must take great care to be vigilant in avoiding all traces of peanut from their diet. In addition, peanut allergic children often need to wear a Medic-Alert bracelet and, at all times, carry a pre-loaded adrenaline (epinephrine) injection kit with them (e.g. Epipen or Anapen) for use in event of a severe reaction.

## The ITN LEAP Study

LEAP (Learning Early About Peanut allergy) is a randomized controlled trial designed and conducted by the Immune Tolerant Network (ITN) in which children at high risk for peanut allergy were enrolled at Kings College London through the Children's Allergy Service led by Professor Gideon Lack. The ability to prevent peanut allergy was tested in over 600 children between 4 and 11 months of age who were randomly assigned to test consumption of a peanut-containing snack on a regular basis, or to avoid peanut consumption, for 5 years. The prevalence of peanut allergy in the 5-year-old children was then compared between the peanut consumption and the avoidance groups.