Food Allergies (Q&A)

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What's the difference between food allergy and intolerance?

A food allergy occurs when an allergen (a protein in a food, which in the majority of people will not produce an adverse reaction) sets off a chain of reactions involving the immune system.

Food intolerances do not involve the immune system, and are generally less serious than most allergic reactions. They can be due to (i) an enzyme deficiency, e.g. lactase (the enzyme required to digest the milk sugar lactose) which may be produced in low quantities or none at all by people who are lactose intolerant; (ii) pharmacological (e.g. due to amines such as histamine) or (iii) in some cases the mechanism may be undefined.

What is an allergic reaction?

An allergic reaction is the response of the body's immune system to normally harmless substances (known as allergens), such as pollens, foods, and house dust mites. When the immune system encounters these substances for the first time, it produces large numbers of antibodies, called IgE antibodies, which bind to the surface of mast cells (i.e. tissue cells). This is known as sensitisation. The next time the body encounters that particular allergen, the IgE antibodies on the surface of the mast cells are activated, causing the release of chemicals such as histamine, which cause the allergic symptoms.

What are the symptoms?

Allergic symptoms can range from mild (causing discomfort), to life threatening. Common symptoms affect the face, skin, respiratory system and the gut. Symptoms affecting the face or skin include a runny or itchy nose, dry mouth, itchy eyes, sneezing, or a rash (itchy red skin or hives). In the windpipe and lungs allergies can cause wheezing and shortage of breath, and in the gut, symptoms such as abdominal discomfort, nausea, vomiting and diarrhoea may occur.

A severe allergic reaction is known as anaphylaxis, and can be life-threatening. Anaphylaxis causes closing of the throat and difficulty breathing. It may also result in a drop in blood pressure,

abdominal pain and vomiting and unconsciousness. People experiencing anaphylaxis should be treated immediately.

How common are food allergies?

The prevalence of food allergy varies between different ages. In infancy, 8-10% of the population have an allergy, which decreases to around 4% during childhood. By adulthood, only about 1-2% of adults suffer from a food allergy. It is worth noting that the percentage of people who think they are allergic (i.e. are self-diagnosed) is higher than the percentage of people who are actually diagnosed. This discrepancy highlights the need for accurate diagnosis to avoid unnecessary dietary restrictions and to provide reliable prevalence data.

Which are the most common allergy-causing foods?

Although many foods or groups of foods can trigger an allergic reaction, 14 of them have been identified as the most common or serious causes of food hyper-sensitivity in the EU. They are:

- Celery
- Gluten
- Crustaceans
- Egg
- Fish
- Lupin
- Milk
- Molluscs
- Mustard
- Peanut
- Sesame seed
- Soybean
- Sulphur dioxide/sulphites
- Tree nuts

Is it possible to develop or lose an allergy during your lifetime?

Most allergies begin in childhood, or as a teenager, but it is possible to develop an allergy at any point in your life. Childhood allergies can be outgrown later in life, but that is not common for late onset allergies. Mild allergic reactions may become more serious over time, so it is important to see a doctor even for mild reactions.

Does an allergic person always experience the same symptoms?

An allergic person will not always experience the same symptoms on different occasions. There are a range of factors (affecting the food or person) which might have an effect on the severity of the reaction on any day. They include:

- How the food has been processed (fried, baked, boiled etc.)
- The variability of the food (ripeness, season etc.)

- Sleep or menstrual cycle stage
- Psychological factors
- Physical activity
- Cumulative allergen exposure
- Stress
- Infection
- Alcohol usage
- Medication
- Climate

These factors may affect the dose of allergen required to cause a reaction in an individual on different occasions. However, the effect they might have it not yet well known.

How can I find out if I've got an allergy?

Doctors use three main testing methods for diagnosing allergies: blood tests, food challenges or elimination tests.

1. Blood tests are often in the form of skin prick tests, where the skin is pricked with a drop of the allergen on it, to see if IgE antibodies are produced (indicating an allergic reaction). Other blood tests measure levels of specific IgE antibodies to suspected or known allergens. The likelihood of a clinical reaction increases with higher IgE levels.
2. Food challenge tests involve the patient eating suspected allergic foods in gradually increasing amounts to see if allergic symptoms occur. These are always conducted under controlled conditions. Sometimes these tests take the form of double-blind placebo-controlled food challenge tests (DBPCFC).This is where neither the subject nor the investigator knows whether the food contains the allergen under investigation.
3. In an elimination test, the suspected foods are removed from the diet. If allergic symptoms disappear, suspected foods are gradually reintroduced into the diet in very small quantities while the person is closely monitored for any symptoms. Once all the suspected foods have been checked out, foods causing problems can be avoided.

Is there a cure for a food allergy?

There is currently no cure for food allergies. The condition must be managed by the susceptible individual's careful avoidance of the allergen-containing food. However, research is being undertaken to try and prevent the initial sensitisation stage in an allergic reaction.

How do we know if a food contains an allergen?

To alert consumers to the presence of allergens in food products, food companies use allergen labels. There are two types of allergen labels: mandatory and precautionary.

Mandatory labels: A compulsory label to alert consumers to the presence of allergenic ingredients. Under EU law, the fourteen allergens listed above must be declared on the label of the foodstuff if they are used as an ingredient (including those carried over in processing aids, additives and solvents).

Precautionary labels: If a priority allergen is not used as an ingredient, but there is a chance that the allergen may be present (through cross contamination), food companies often choose to use a voluntary precautionary label, for example 'may contain X', or 'created in a factory that handles X'.

What are the problems with the current labelling system?

Precautionary labels are entirely voluntary and policies of different companies vary regarding both the level of risk required to warrant a label, and how to express or phrase that risk on the label. This can result in confusion for consumers, as the exact level of risk to them posed by that product is unclear.

As technology has advanced to detect lower traces of allergen, companies have been using precautionary labels more frequently, resulting in a limited choice of foods for allergic consumers. This can lead to a lower quality of life and a potential nutritional deficiency. Furthermore, consumer frustration with reduced food options may result in disregard of the precautionary labels and risk-taking behaviour.

What work is on-going in Europe relating to precautionary labelling?

Work is ongoing to establish a 'threshold level' for different allergens. The threshold level is the dose of allergen below which a reaction is unlikely to occur in the majority of the allergic population. These thresholds may be useful for informing precautionary labelling, i.e. precautionary labels would only be required on foods that may have been contaminated with the threshold dose of allergen or above. Foods with a possible contamination dose below the threshold level would be exempt from precautionary labelling.

This approach would assist the industry by giving them a clear idea of which levels of allergen are likely to result in risk to the consumer and require labelling. It would also prevent allergic consumers having to avoid foods where the risk of an allergic reaction posed is negligible.

Useful information sources:

ILSI allergens task force

Anaphylaxis Campaign

Allergy UK