

FACTSHEET

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Allergy and allergy tests

What is allergy?

Allergy is when a person's immune system reacts to a substance in the environment. These substances are called allergens. These can be eaten (e.g. food, medication), inhaled (e.g. pollen, house dust mite) or injected (e.g. drug, insect sting).

Atopy is the genetic (inherited) tendency to develop allergic disease.

When atopic people are exposed to allergens they can develop an immune reaction that leads to **allergic inflammation** (redness and swelling).

This can then cause symptoms in the:

- nose and/or eyes - hay fever (allergic rhinitis/conjunctivitis)
- skin - eczema, hives (urticaria)
- lungs - asthma

The likelihood (or risk) of developing allergies is increased if other family members suffer from allergy or asthma.

People with allergy antibodies will develop symptoms following exposure to the allergen, hence confirmation of allergy by a clinical immunology/allergy specialist is required.

What types of things can cause allergic reactions?

Common things that people are allergic to include food (e.g. milk, eggs, wheat, soy, peanuts and tree nuts, fish and shellfish), pollens, grasses, house dust mites, moulds, animals (usually furry or hairy such as cats, dogs, horses, guinea pigs, and rabbits), medicines and insect stings.

What types of allergic reactions can you get?

Allergic rhinitis

Allergic rhinitis is an allergic reaction in the nose when you breathe in something you are allergic to. Allergy to pollens, house dust mites and animal dander usually causes symptoms of allergic rhinitis (runny nose, blocked nose, itchy eyes). They are usually around all year long (e.g. dust mite, animal dander).

Dust mites and animal dander may also cause symptoms (wheeze and cough) in people with asthma.

When allergic rhinitis is caused by seasonal pollens, it is called hay fever.

Eczema

Eczema is an allergic reaction where your skin becomes red, itchy or inflamed. In some people with eczema, their eczema may get worse if they eat a food they are allergic to. This is a delayed type reaction and can't be tested for with skin or blood tests.

Food allergy

Food allergy occurs in around 1 in 20 children and in about 2 in 100 adults. The most common triggers are egg, cow's milk, peanut, tree nuts, seafood, sesame, soy, fish and wheat. The majority of food allergies in children are not severe, and may be 'outgrown' with time.

However, peanut, tree nut, seed and seafood allergies are less likely to be outgrown and tend to be lifelong allergies. Some food allergies can be severe, causing life-threatening reactions known as anaphylaxis. Anaphylaxis is treated with intramuscular injection of adrenaline (epinephrine) e.g. Epipen / Epipen Jr.

Mild to moderate symptoms of food allergy include:

- Swelling of face, lips and/or eyes
- Hives or welts on the skin
- Abdominal pain, vomiting

Signs of a severe allergic reaction (**anaphylaxis**) to foods include:

- Difficult/noisy breathing
- Swelling of tongue
- Swelling/tightness in throat
- Difficulty talking and/or hoarse voice
- Wheeze or persistent cough
- Persistent dizziness and/or collapse
- Pale and floppy (in young children)

Not all adverse reactions to foods are due to allergy?

Adverse reactions to foods that are not allergy include food intolerances, toxic reactions, food poisoning, enzyme deficiencies, food aversion or irritation from skin contact with certain foods. These adverse reactions are often mistaken for food allergy.

Allergy testing

Allergy testing using skin prick tests or blood tests for allergen specific IgE helps your doctor to confirm what substances you are allergic to, so that appropriate advice can be given.

Allergy testing is usually performed on people with suspected allergic rhinitis (hay fever), asthma or allergic reactions to insects or foods. In people with allergic rhinitis or asthma, allergy testing usually includes house dust mite, cat and dog dander (or other animals if contact occurs), mould spores, pollen from relevant grasses, weeds or trees and in some cases, occupational allergens. Testing can also be used to confirm suspected allergies to foods, stinging insects and some medicines.

Allergy test results cannot be used on their own and must be considered together with your clinical history.

What is a skin prick test?

There are different types of skin tests. The most common type of skin test to identify allergies is a skin prick test.

In a skin prick test, a small drop of a protein extract (allergen) is placed on the skin (usually the forearm) and a small prick is made in the skin through the drop. The size of the swelling (wheal) is measured after 10- 15 minutes.

Skin prick tests are slightly uncomfortable (itchy) but are usually well tolerated, even by small children. Local itch and swelling normally subside within 1-2 hours. More

prolonged or severe swelling may be treated with a non-sedating antihistamine, a painkiller tablet and/or a cool compress. Occasionally people will feel dizzy or light-headed and need to lie down. Severe allergic reactions from allergy testing for asthma or allergic rhinitis (hay fever) are very rare.

Antihistamine tablets, syrups or medications with antihistamine-like actions (such as some cold remedies and antidepressants) should not be taken for 3-7 days before testing as these will interfere with the results of testing. You may also be advised to avoid creams and moisturisers on your forearms on the day of the test to reduce the likelihood that allergen extracts will run into each other.

What is an allergy blood test?

Immunoglobulin E (IgE) antibodies directed against specific allergens can be measured with a blood test, formerly referred to as RAST tests (RAST was the abbreviation for the original name of the technology - RadioAllergoSorbent Test). These tests are often performed when skin testing is not easily available, when skin conditions such as severe eczema preclude skin prick testing, or when a person is taking medications (such as antihistamines) that interfere with accurate skin prick testing.

Other skin testing methods?

Scratch testing was used in the past but it is less reliable than skin prick testing, and causes much greater discomfort. Intradermal skin testing may be used to test for allergies to antibiotic drugs or stinging insect venom, when greater sensitivity is needed. Intradermal testing should not be used to test for allergy to inhalants or foods.

My child's skin test was positive, what does that mean?

Skin prick testing should only be performed by a health professional who has been trained in the procedure. A doctor should be present to select the allergens, interpret the results and deal with any generalised allergic reaction that might very rarely occur.

As well as helping to diagnose an allergy if they are positive, skin tests are very useful if they are negative. If a skin test is negative, it is extremely unlikely that your child has an immediate allergy to that food.

Why is it so important to find out for sure whether my child is really allergic? Can I just assume my child will have a reaction to the foods that are positive on their skin tests?

- Allergies, especially food allergies are not just annoying; they do have a large impact on many aspects of life.
- There are a few very important reasons to find out whether your child is allergic:
 - If your child is really allergic, you need to know whether the allergy is potentially life threatening, so that precautions can be taken.
 - Your child may not be allergic! It is a great pity to think you are allergic to a food that actually causes no problems. This may lead to anxiety and restrictions in where your child can eat. In some cases children have been placed on such restrictive diets that they become malnourished.
 - There is some evidence that avoiding foods that your child is not allergic to, may increase their allergies.
 - The diagnosis of allergy also has money and lifestyle affects.

Remember:

- Most allergy is caused by a reaction between IgE and another substance.
- Allergies may cause hay fever, asthma or skin reactions such as hives.
- The most severe type of allergy is called anaphylaxis.
- A positive skin or blood test for foods does not always mean that your child will have an allergic reaction if they eat the food. Sometimes a challenge is needed to diagnose the allergy.

Further information is available on the ASCIA website www.allergy.org.au