

Allergy testing

Avoiding allergic triggers is an important part of allergy and asthma management. Allergy testing using skin prick tests or blood tests for allergen-specific IgE helps your doctor to confirm which substances you are allergic to, so that appropriate avoidance advice can be given.

Which allergens should be tested for?

Allergy testing is usually performed on people with suspected allergic rhinitis (hay fever), asthma or reactions to insects or foods. In people with allergic rhinitis or asthma, allergy testing usually includes house dust mite, cat and dog dander (perhaps 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 or stinging insects.

It is important to note that:

- Allergy test results cannot be used on their own and must be considered together with your medical history.
- Medicare rebates are available for skin prick tests or blood tests for allergen specific IgE (formerly known as RAST) in Australia.
- In some cases, you may be referred to a medical specialist (specialist immunologist and allergist) for further detailed assessment.

Skin prick testing

Skin prick testing is the most convenient method of allergy testing. As results are available within 20 minutes, this allows you to discuss the results with your doctor at the time of testing. Skin prick testing has been shown in clinical studies to improve the accuracy of diagnosis.

Skin prick testing is most commonly performed on the forearm or the back. The skin is first cleaned with alcohol. The skin may be marked with numbers corresponding to the allergens. Using a sterile lancet, a small prick is made into the skin through a drop of allergen extract. This allows a small amount of allergen to enter the skin.

If you are allergic to the tested allergen, a small itchy lump (wheal) surrounded by a red flare will appear within 15-20 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.

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

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.

Skin prick testing has no value in the investigation of suspected reactions to aspirin, food additives, or respiratory irritants like smoke or perfumes.

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.

Blood tests for allergen specific IgE (formerly known as RAST)

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.

Total IgE testing

Measurement of total IgE antibodies can be estimated from a blood sample. Total IgE may be raised in people with allergies. High total IgE antibody levels are also found in people with parasite infections, eczema and some rare medical conditions. High IgE levels do not prove that symptoms are due to allergy, and a normal IgE level does not exclude allergy. Therefore, measuring total IgE levels is not routinely recommended in allergy testing.

Eosinophil counts

Eosinophils are specialised white blood cells that are designed to kill worms and parasites. They can also cause tissue inflammation in allergy. High levels are sometimes seen in blood samples from people with allergic rhinitis (hay fever), asthma and eczema, as well as in a number of less common conditions. However, a high eosinophil count does not prove that symptoms are due to allergy, and a normal eosinophil count does not exclude allergy. Therefore measuring eosinophil counts has a limited role to play in allergy testing.

Patch testing

Patch testing is useful for testing for allergic contact dermatitis, such as that triggered by metal, cosmetic preservatives or various plants. Using hypoallergenic tape, commercial standardised allergen paste is applied to a rash-free area of skin, most commonly the individual's back. The tapes are left in place for 48 hours and kept dry for the entire time. The test site is then read at different time intervals. An eczema-like rash can indicate sensitivity to a particular allergen.

Oral allergen challenge testing

Oral allergen challenge testing may sometimes be required to confirm diagnosis when the cause of a severe allergic reaction has not been confirmed. This will normally only be performed using foods or medications under the supervision of a clinical immunology/allergy specialist with appropriate resuscitation facilities immediately available.

Unproven methods

There are several methods that *claim* to test for allergy. These include cytotoxic food testing, kinesiology, Vega testing, electrodermal testing, pulse testing, reflexology and hair analysis. These tests have not been scientifically validated and may lead to unnecessary, costly and (in the case of some changes in diet) dangerous avoidance strategies. No Medicare rebate is available in Australia for these tests and the use of these methods is not recommended. Further information on these methods is available on the ASCIA website: <http://www.allergy.org.au/patients/allergy-testing/unorthodox-testing-and-treatment>

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The Australasian Society of Clinical Immunology and Allergy (ASCIA) is the peak professional body of clinical immunology and allergy specialists in Australia and New Zealand.

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Content last updated February 2013