



[Authoritative facts](#) about the skin from the [New Zealand Dermatological Society Incorporated](#).

[Home](#) | [Procedures](#)

Skin prick testing

Skin prick testing is an allergy test used to identify allergens responsible for triggering symptoms in allergic diseases. Whilst [patch testing](#) is a useful diagnostic test for patients with [allergic contact dermatitis](#), skin prick testing is useful in the diagnosis of other allergies such as hay fever allergy, food allergy, [latex allergy](#), drug allergy and [bee and wasp venom allergy](#).

Skin prick testing with a battery of routine allergens is still a first and basic procedure in diagnosing allergic diseases. It is simple, carries low risk and is inexpensive to perform.

Indications for doing skin prick testing

Skin prick testing is most often used to demonstrate atopy. Atopy is characterised by an overactive immune response to environmental factors and has a strong genetic component. It usually manifests clinically as one or more of the characteristic disorders of asthma, [eczema](#), or hay fever. The results from skin prick tests can be used to guide the management of patients with asthma and hay fever, e.g. desensitization to a certain allergen, removal of a family pet, removal of carpets, avoidance of certain foods.

Other conditions that may sometimes benefit from skin prick testing include [acute urticaria](#) and [angioedema](#), and bee and wasp stings, especially if immunotherapy is being considered.

Overall, skin prick tests can provide confirmatory evidence for a diagnosis made on the patient's history and clinical condition.

Skin prick testing techniques

Skin prick tests are usually performed on the inner forearm. Any number of allergens can be tested, as few as 3 or 4 or up to about 25 allergens. The following is a brief overview of how the test is performed.

- Clean arm with soap and water or alcohol
- The forearm is coded with a skin marker pen corresponding to the number of allergens being tested. Marks should be at least 2cm apart.
- A drop of allergen solution is placed beside each mark
- A small prick through the drop is made to the skin using a sterile prick lancet. A new lancet must be used for each allergen tested.
- Excess allergen solution is dabbed off with a tissue
- Observe skin reactions – if a reaction occurs it should do so within 20–30 minutes

In addition to the allergens tested, there should be a positive and negative control. The positive control, usually a histamine solution, should become itchy within a few minutes and then become red and swollen with a “wheal” in the centre. The negative control, usually a saline solution should show no response.

Skin prick testing results

Reactions are assessed by the degree of redness and swelling and the size of the wheal produced. The wheal has a white, raised edge that surrounds the swollen red central area of any skin reaction. It usually takes about 15–20 minutes to reach a maximum size, and thereafter fades over a few hours.

Prick tests



Venison blood allergy

There are a couple of grading scales used but the size of the wheal is most accurate. The size of the wheal does not indicate the severity of the symptoms but shows us the degree of sensitivity to the allergen.

Wheal size (mm)	Old "+" scale	Interpretation
<4	0+	Negative
5 - 10	2+	Mildly sensitive
10 - 15	3+	Moderately sensitive
>15	4+	Very sensitive

For skin prick tests to be informative they must be interpreted in conjunction with the patient's history and physical examination. The doctor must also be aware of the many reasons for a false-positive and false-negative reaction to properly interpret test results.

Common problems

One of the common errors in skin prick testing is placing the tests too close together (<2 cm apart) so that spreading of allergen solutions between test sites occurs.

There are many reasons that cause a false-positive or false-negative skin prick test result.

Causes of false-positive result

Positive reaction from one test site may affect the result of a neighboring test site (place test sites at least 2cm apart)

Irritant reaction

Causes of false-negative result

Medications such as antihistamines that block the effect of histamine (advise patients to stop taking medication at least 72 hours prior to skin testing)

Decreased reactivity of the skin in infants and elderly patients

Allergen extract too diluted (especially with foods)

Related information

References:

- Liang A. Skin testing in asthma and hay fever. [NZFP 2002;29\(6\):419-421](#)

On DermNet NZ:

- [Patch tests \(allergy testing\)](#)

Other websites:

- Auckland Allergy Clinic - [Diagnosing Allergic Diseases](#)

Books about skin diseases:

See the [DermNet NZ bookstore](#)

Author: Vanessa Ngan, staff writer

DermNet does not provide an on-line consultation service.

If you have any concerns with your skin or its treatment, see a [dermatologist](#) for advice.

Created 2005. Last updated 26 Dec 2006. © 2007 NZDS. Disclaimer.