

TESTING, TESTING

by JENNIFER VAN EVRA

One of the biggest challenges for people with allergies is unraveling exactly what they are allergic to. Are you sneezing from the dust in your house, or is it from Fifi the cat? Was it the egg in your omelette that made your heart take off like a racehorse, or the shrimp? Head to an allergist to find out, and he or she will likely do some testing. But how do the tests work? And how accurate are they? Here's the low-down, with information courtesy of Ottawa and Vancouver allergist, Dr. Antony Ham Pong.

	What is Done	How It Works	Upsides	Downsides	Reliability	Ouch-o-meter	Of Note
SKIN PRICK TEST	<ul style="list-style-type: none"> Allergist puts a drop of allergen onto the forearm, then lightly pricks it with a needle so it goes slightly under the skin's surface. If a hive forms, it indicates a possible allergy. Usually several allergens are tested at a time. 	<ul style="list-style-type: none"> If you are sensitized to an allergen and it is put under the skin, antibodies attack and create a hive. A positive skin test indicates antibodies to that substance, but doesn't necessarily mean you will react to it. Using the test results combined with the patient's history, the allergist draws conclusions about what the patient should avoid. 	<ul style="list-style-type: none"> Results are seen within 15 minutes. Test is quite safe and inexpensive. Wide range of allergens can be tested. 	<ul style="list-style-type: none"> False positives are common. (False negatives are possible, but rare). If patient has taken antihistamines, the test may not be accurate. Results can vary with factors such as time of day and stress level. Systemic reactions are rare, but can happen. 	<ul style="list-style-type: none"> Half of people who have positive skin tests are allergic. The bigger the hive that forms, the more likely the person is to react. A very large hive means an almost certain allergy. A negative test almost always means there is no allergy. 	<ul style="list-style-type: none"> Pricks can be uncomfortable, but don't hurt much. Some allergists use a device that makes eight pricks at once, reducing the number of times the patient is pricked; helpful for little ones. 	<ul style="list-style-type: none"> The prick test replaced the traditional "scratch test" (a drop of serum on the skin with a scratch through it), because the scratch test put more allergen under the skin and came with a greater risk of a severe reaction.

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INTRADERMAL TEST	<ul style="list-style-type: none"> Allergist uses a needle to put allergen under the skin's surface, then waits to see if a hive forms. Usually used only after a prick test has come up negative. 	<ul style="list-style-type: none"> Same as the prick test, but the serum is more diluted. The allergen is put deeper under the skin, where it's more likely to cause a reaction. Most commonly used for testing insect venom and drugs, starting at a very low concentration, then working up slowly. 	<ul style="list-style-type: none"> Because it is a more sensitive test, it sometimes gives clearer results. Results are seen in minutes. A wide range of allergens can be tested. 	<ul style="list-style-type: none"> As a more sensitive test, it can cause more serious systemic reactions. More false positives than with the prick test. Rarely used for food testing. 	<ul style="list-style-type: none"> Gives more false positives than prick test. If test is negative, it is almost certain there is no allergy. If test shows a large hive, then it is more likely the patient is allergic. 	<ul style="list-style-type: none"> Hurts a little more than the prick test. But usually only a handful of allergens are tested at a time. 	<ul style="list-style-type: none"> Some allergists no longer use intradermal testing, or only use it for certain allergens, because it can cause more serious, systemic reactions.

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SPECIFIC ICE BLOOD TEST (RAST, UniCAP, ImmunoCAP)	<ul style="list-style-type: none"> Patient's blood is taken using a regular blood test, then sent to a laboratory for testing. 	<ul style="list-style-type: none"> At the lab, the blood is introduced to an allergen in a dish. If the patient is sensitized, antibodies in the blood will attach themselves to the allergen. A substance is added that recognizes those allergen-attached (IgE) antibodies and they are counted. The higher the number, the greater the likelihood of a reaction. If the number is very high, it is unlikely the patient will outgrow the allergy. 	<ul style="list-style-type: none"> No risk of systemic reaction. With one blood test, dozens of allergens can be tested. Unlike skin prick test results, blood test results are consistent. With milk, egg, peanut, wheat and soy, allergists are able to give patients a numeric probability of a reaction. 	<ul style="list-style-type: none"> Less sensitive test. More false negatives than with skin prick test. Fewer allergens can be tested at a time. Expensive: roughly \$25 per allergen, often not covered by provincial health plans. Results take a week. 	<ul style="list-style-type: none"> If the test is negative, the patient still has a 15-20 per cent chance of being allergic to that substance, as there are more false negatives than with skin tests. A positive test result doesn't necessarily mean the patient will react, just that he or she is sensitized. If the positive test comes with a very high number, there is a high likelihood that he or she will react. 	<ul style="list-style-type: none"> Only pain is from the blood test. 	<ul style="list-style-type: none"> Although often referred to as a RAST test, the true RAST is no longer done. Short for Radio-allergosorbent Test, it used radioactive materials to show the antibodies that attached to the allergen; now the IgE specific tests use a type of acid that changes colour instead. None of the tests (prick, intradermal, blood) can predict anaphylaxis. According to Ham Pong, some allergists assume the more severe the reaction in the tests, the greater the chance of anaphylaxis – but this is not statistically true.

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CHALLENGE TEST	<ul style="list-style-type: none"> After using a prick, intradermal and/or blood test to determine that there is a low possibility of a reaction, a patient may be given a challenge test to an allergen (usually a food or drug). The person is exposed to a tiny amount of that substance. If there is no reaction, the person is given increasingly larger amounts. 	<ul style="list-style-type: none"> If the patient reacts, the test is stopped and the reaction is treated with antihistamines or epinephrine. Test is often used to see if a child has outgrown a severe food allergy. 	<ul style="list-style-type: none"> Test gives fairly clear answers. Can help patients who are unnecessarily avoiding foods. 	<ul style="list-style-type: none"> Some patients have severe systemic reactions, although deaths are extremely rare because help is close at hand. Some allergists will not do higher-risk challenge tests because of the potential danger. 	<ul style="list-style-type: none"> Considered the most reliable of the tests, called "the gold standard". However, if you pass the challenge, it doesn't always mean you're not allergic – some patients can react again after a period of time or under different circumstances. 	<ul style="list-style-type: none"> If the patient doesn't react, there is no pain – just the joy of eating a new food. If the patient does react, then there is the discomfort, distress from that reaction. 	<ul style="list-style-type: none"> Ham Pong says that if a food challenge is successful, the patient needs to eat that food regularly to avoid re-sensitizing and becoming allergic all over again.