

The Pollen

Issue N°18 - Allergy Testing Types

The goal of this issue of The Pollen is to review the various forms of allergy testing. For allergy testing, there are four primary tests that can be done to determine if a patient is sensitive to a certain allergen or not. Based on a variety of factors, some methods may be preferred over another, but ultimately the provider must evaluate the patient's medical history and determine which test method is best for a particular patient.

Skin (Prick) Test

Skin (prick) testing (SPT) is considered by most as the “gold standard” for allergy testing. A SPT is performed by puncturing the outer layer of skin, at which point, the suspected allergen interacts with the immune system. This method is widely preferred due to its quick response, low adverse reaction rate, and high sensitivity and specificity to allergens.

Intradermal Skin Test

Intradermal Skin Testing (ID) is a widely used method of skin testing, most often performed in an Allergist or Otolaryngologist's office. ID tests are performed by injecting a small amount of allergen into the skin. This method of testing allows the technician to test a wide range of extract strengths to determine the sensitivity of the patient to the particular extract. While ID does have an increased sensitivity over SPT, for standardized extracts, ID has been shown to result in false-positives if an SPT is negative to the same item.

Specific IgE

Specific Immunoglobulin-E testing (sIgE) is an *In Vitro* method, meaning a sample is taken, and all diagnostics are performed in a lab rather than on the patient. Due to this, sIgE's usefulness comes into play primarily when the patient is unable to be tested by conventional methods. Compared to the other methods of allergy testing, sIgE is the least sensitive, often times due to the lack of standardization among commercial extracts. While the sensitivity of sIgE is the lowest compared to other testing methods, the specificity is remarkably high, as any presence of IgE to the suspected allergen will be seen.

Nasal Provocation

Nasal Provocation testing is generally accepted as the generic model for studying human allergic responses. The test is performed by spraying high concentrations of extract into one's nose to elicit an allergic response. The patient is then monitored for physiological changes and symptoms. In the United States, this method of testing is generally used only for research purposes.

Other than nasal provocation, the above tests determine only whether a patient is sensitive to an allergen. Your physician will then use these results in conjunction with an allergy history report to determine what you are actually allergic to.

	Sensitivity	Specificity	Safety
Skin Prick Test	++	++	+++
Intradermal Test	+++/ [†]	+	+
IgE Test	+	+++	++++
Nasal Provocation	++++	++++	++
[†] - Not significant for standardized extracts			

1. Middleton's Allergy. Seventh Edition. 2009.

2. Bernstein LI, Li JT, Bernstein DI, et al. Allergy Diagnostic Testing: An Updated Practice Parameter. Ann Allergy Asthma Immunol 2008; 100: S1-S148.