

# WHAT IS ALLERGY TESTING?

If you are allergic, you are reacting to a particular substance. Any substance that can trigger an allergic reaction is called an *allergen*. To determine which specific substances are triggering your allergies, your allergist will safely and effectively test your skin, or sometimes your blood, using tiny amounts of commonly troublesome allergens.

Allergy tests are designed to gather the most specific information possible so your doctor can determine what you are allergic to and provide the best treatment.

## Who should be tested for allergies?

Adults and children of any age who have symptoms that suggest they have an allergic disease. Allergy symptoms can include:



- *Respiratory symptoms*: itchy eyes, nose, or throat; nasal congestion, runny nose, watery eyes, chest congestion or wheezing
- *Skin symptoms*: hives, generalized itchiness or atopic dermatitis (e.g., eczema)
- *Other symptoms*: anaphylaxis (severe life-threatening allergic reactions), abdominal symptoms (cramping, diarrhea) consistently following particular foods, stinging insect reactions other than large local swelling at the sting site.

Generally, inhaled allergens such as dust mites, tree, grass or weed pollens will produce respiratory symptoms and ingested (food) allergies will produce skin and/or gastrointestinal symptoms or anaphylaxis but both types of allergens (ingested and inhaled) can produce the spectrum of allergy symptoms.

## What are the reasons for undergoing allergy skin testing?

To help you manage your allergy symptoms most effectively, your allergist must first determine what is causing your allergy. For instance, you don't have to get rid of your cat if you are allergic to dust mites but not cats.

Allergy tests provide specific information about what you are and are not allergic to. Once you have identified the specific allergen(s) causing your symptoms, you and your physician can develop a treatment plan aimed at controlling or eliminating your allergy symptoms. With your allergy symptoms under control you should see a considerable improvement in the quality of your life. Improved sleep quality because of less congestion, days without constant sneezing and blowing your nose,

improved ability to exercise, and better control of your atopic dermatitis (eczema) are some of improvements you may gain from your allergy treatment plans.

## Which allergens will I be tested for?

Because your physician has made a diagnosis of allergies, you know that one or more allergens is causing your allergic reaction—itching, swelling, sneezing, wheezing, and other symptoms. Your symptoms are probably caused by one of these common allergens:

- products from dust mites (tiny bugs you can't see) that live in your home;
- proteins from furry pets, which are found in their skin secretions (dander), saliva and urine (it's actually not their hair);
- molds in your home or in the air outside;
- tree, grass and weed pollen; and/or
- cockroach droppings.

More serious allergic reactions can be caused by:

- venoms from the stings of bees, wasps, yellow jackets, fire ants and other stinging insects;
- foods;
- natural rubber latex, such as gloves or balloons; or
- drugs, such as penicillin.

All of these allergens are typically made up of proteins. Allergy tests find which of these proteins you may be reacting to.

The *allergen extracts* or *vaccines* used in allergy tests are made commercially and are standardized according to U.S. Food and Drug Administration (FDA) requirements. Your allergist is able to safely test you for allergies to substances listed above using these allergen extracts.

## TYPES OF ALLERGY TESTS

The most common type of allergy test is called skin prick testing. Skin prick tests can be performed with a single-prick or a multi-test method.

**Multi-Test Technique:** Using disposable, multi-test applicators, the multi-test technique provides a quick and standardized procedure for detecting sensitivity to allergens. The skin prick testing device used at Lone Star Allergy & Asthma Center has 8 prongs, and each prong contains a different allergen solution. The applicators are pressed on to the back with a quick, gentle rocking motion and then removed, leaving small drops of allergen solution on the skin. These multi-test applicators are not needles, and the skin is not pierced, although there may be momentary discomfort.

**Single-Prick Technique:** The single-prick technique involves introducing a small amount of allergen into the skin by making a small puncture through a drop of allergen extract placed on the surface of the skin.

Regardless of the skin prick method used, if you have an allergy, then the specific allergens that you're allergic to will start a chain reaction and this reaction can be measured on your skin.

People with allergies have an allergic antibody called *IgE* (*immunoglobulin E*) in their body. This chemical, which is only found in people with allergies, activates special cells called *mast cells*. These mast cells release chemicals called *mediators*, such as *histamine*, the chemical that causes redness and swelling. With testing, this swelling occurs only in the spots where the tiny amount of allergen to which you are allergic has been introduced. So, if you are allergic to ragweed pollen but not to cats, the spot where the ragweed allergen touched your skin will swell and itch a bit, forming a small dime-sized hive. The spot where the cat allergen scratched your skin will remain normal. This reaction happens quickly within your body.

Test results are available within 20 minutes of testing, so you don't have to wait long to find out what is triggering your allergies. And you won't have any other symptoms besides the slightly swollen, small hives where the test was done; this goes away within 30 minutes.

**Intradermal Technique:** The intradermal technique involves injecting a small amount of allergen under the skin with a syringe. This form of testing is more sensitive than the prick skin test method but is less specific. This form of allergy testing may be used if the prick skin tests are negative.

## OTHER ALLERGY TESTING TECHNIQUES

**Scratch Tests:** The term *scratch test* refers to a technique not commonly used at the present, which involves abrading the skin and then dropping the allergen on the abraded site.

**Challenge Testing:** Involves introducing small amounts of the suspected allergen by oral, inhaled or other routes. With the exception of food and medication, challenges are rarely performed. When they are performed, they must be closely supervised by an allergist.

**Blood (RAST or ImmunoCAP) Test:** Sometimes your allergist will do a blood test, called a *RAST* (*radioallergosorbent*) test. Since this test involves drawing blood, it costs more, and the results are not available as rapidly as skin tests. RAST tests are generally used only in cases in which skin tests can not be performed, such as on patients taking certain medications or those with skin conditions that may interfere with skin test results.

Other types of allergy testing methods the American Academy of Allergy, Asthma & Immunology considers to be unacceptable are: applied kinesiology (allergy testing through muscle relaxation), cytotoxicity testing, urine autoinjection, skin titration (Rinkel method), provocative and neutralization (subcutaneous) testing or sublingual provocation. If your physician plans to conduct any of these tests on you, please see an AAAAI member allergist for appropriate allergy testing.

### Who can be tested for allergies?

Adults and children of any age can be tested for allergies. Because different allergens bother different people, your allergist will take your medical history to determine which test is the best for you. Some medications can interfere with skin testing. Antihistamines, in particular, can inhibit some of the skin test reactions. Use of antihistamines should be stopped one to several days prior to skin testing.

### When to see an allergy/asthma specialist

Allergy testing by an allergist may be helpful in patients with anaphylaxis (systemic allergic reaction), asthma, allergic pneumonia, conjunctivitis, cough, dermatitis, drug allergy, food allergy, insect allergy, rhinitis, sinusitis, urticaria and angioedema.

**Your allergist can provide you with more information on allergy testing.**