



How does immunotherapy work?

During treatment, the immune system is gradually strengthened by building tolerance through injections of small doses of specific allergenic proteins extracted from natural allergen sources: pollens (grasses, trees and weeds), house dust mites, animals, insects and more. Your immune system eventually grows accustomed to the allergens that previously caused an allergic reaction.

Among the wide variety of treatment possibilities available today, allergy immunotherapy is the only treatment that targets the cause of allergy and alters the natural course of the disease. For many patients, immunotherapy leads to an improved quality of life:

- An end to discomfort and feeling ill
- Consuming less symptomatic drugs for allergies
- Freedom to participate in outdoor activities and sports during allergy season
- Fewer problems having pets at home or being around people with pets
- The elimination of the constant fear of being stung in the case of insect allergy

Who could benefit?

Immunotherapy is used for people with respiratory allergies caused by tree pollens, grass pollens, weed pollens, animal dander, molds and house dust mites. It is also very effective protection against allergic reactions to insect stings. Speak with your doctor about your allergies and the treatment options available to you. If you think you may be a candidate for allergy shots, ask your doctor about it today.

You may learn to live with your allergies—but you don't have to! See an Allergy Specialist to learn more about your allergies and to find out if immunotherapy is right for you.

Risks and warnings for immunotherapy

Although immunotherapy has been shown to be highly effective in treating the underlying cause of allergies, patients being treated may have side effects. You may experience one or more of these common reactions:

Local reactions

Although these local reactions may produce discomfort, they are not serious:

- During immunotherapy, some individuals may experience pain, swelling and/or redness at the site of the injection.
- Others may experience local swelling and soreness 8-12 hours after injection.

Systemic reactions

Any of these reactions can be a sign of a more severe reaction known as anaphylaxis, and medical attention should be sought immediately:

- Itching at palms and ears
- Swelling in throat
- Coughing, wheezing, chest tightness or trouble breathing
- Nausea or dizziness

Rarely, these severe systemic reactions—also known as anaphylaxis—may result in death.

Most serious reactions including anaphylaxis occur within 30 minutes of an immunotherapy treatment. For this reason, patients should be observed for 30 minutes following each treatment in a facility where emergency measures and equipment—and personnel trained in their use—are immediately available. Today the risk of death from immunotherapy is very rare and can be attributed to the post-treatment observation period.

Severely allergic patients should consider talking to their doctor about the possibility of being prescribed an emergency epinephrine auto-injector during the course of treatment.

References:

1. American College of Allergy, Asthma, and Immunology. Allergy Facts. <http://acaai.org/news/facts-statistics/allergies>
2. Togias A. *Allergy*. 1999; 54. Suppl 57, 94-105.
3. Simons FE. *J Allergy Clin Immunol*. 1999 Sep; 104(3 Pt 1):534-40
4. Vinuya R, et al. *Ann Allergy Asthma Immunol*. 2002 Apr; 88(4 Suppl 1):8-15.
5. Serrano C, et al. *Arch Bronconeumol*. 2005 Oct; 41(10):569-78.
6. Krouse J, et al. *Otolaryngol Head Neck Surg*. 2007 May; 136(5 Suppl):S75-106.
7. Bousquet J. *J Allergy Clin Immunol*. 1998 Oct; 102(4 Pt 1):558-62
8. Pajno GB, et al. *Clin Exp Allergy*. 2001 Sep; 31(9):1392-7.
9. Möller C, et al. *J Allergy Clin Immunol*. 2002 Feb; 109(2):251-6.
10. Niggemann B, et al. *Allergy*. 2006 Jul; 61(7):855-9.
11. Jacobsen L, et al. *Allergy*. 1997 Sep; 52(9):914-20.
12. Durham SR, et al. *N Engl J Med*. 1999 Aug 12; 341(7):468-75.
13. Hedlin G, et al. *J Allergy Clin Immunol*. 1995 Dec; 96(6 Pt 1):879-85.
14. Mosbech H, et al. *Allergy*. 1988 Oct; 43(7):523-9.

Understanding Allergies



What are the types of allergies?

► There are four types of allergies: respiratory allergy, skin-related allergy, food allergy and insect allergy.

RESPIRATORY ALLERGY



Respiratory allergies are the most common allergies. Symptoms include sneezing, itchy and watery eyes and nose, and wheezing. Hay fever (also known as rhinitis) and/or asthma are the most common ways for respiratory allergies to manifest themselves. The respiratory system is usually affected if you're allergic to tree pollens, grass pollens, animals, molds and house dust mites.



SKIN-RELATED ALLERGY

Eczema, also called contact allergy or contact dermatitis, is the term used for an over-reaction in the skin caused by direct contact with certain substances (allergens) in our environment. It can be either allergic or non-allergic in nature. The two reactions often look the same. The only way to distinguish between the two is to perform an allergy test.

FOOD ALLERGY



Eczema, diarrhea, nausea, swelling of the throat, hypotension and, in extreme cases, anaphylaxis are all signs of a food allergy. (Signs of an anaphylactic reaction can include itching at palms and ears, swelling in throat, difficulty breathing, coughing, wheezing, chest tightness, nausea or dizziness. Medical attention should be sought immediately.) The most common foods that cause allergies are cow's milk, egg proteins, soy, peanuts and fish.



INSECT ALLERGY

Allergy to insect stings occurs as a severe local skin reaction, exhaustion, dizziness, swelling of the throat and, in extreme cases, anaphylaxis.



Did you know?

More than 60 million people in the U.S. population suffer from allergies.¹ That's enough people to classify allergy as an epidemic, but most of the people who have allergies are never actually diagnosed.

Some people don't even recognize the symptoms:

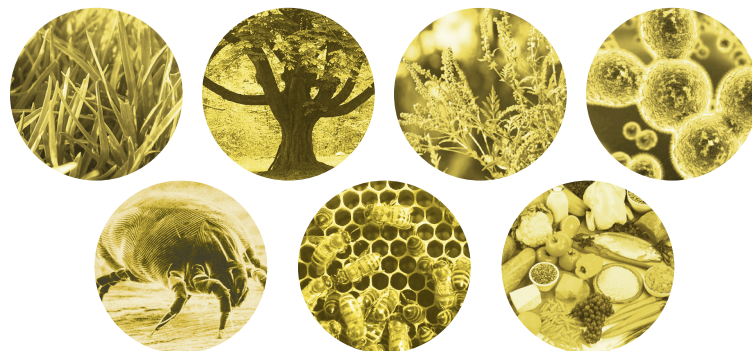
- Runny nose
- Headaches
- Difficulty concentrating
- Coughing
- Loss of taste or smell
- Sleep disturbances

However, most people do know that something is interfering with their daily activities.

What causes allergies?

Allergies happen when your body's immune system reacts to substances that wouldn't cause a reaction in most people. The immune system's function is to help your body fight intruders such as parasites, bacteria or viruses. If you're allergic, your immune system reacts toward natural substances the same way it would react toward something harmful. Your immune system "misreads" something that is otherwise completely harmless. The top sources of allergic reactions are:

- Grasses
- Trees
- Weeds
- Molds
- Dust mites
- Stinging insects
- Foods



Allergies are a leading cause of chronic illness in the U.S. costing over **\$18 billion** annually.¹



Can allergies develop into asthma?

- Studies have shown that children who suffer from hay fever are more likely to develop asthma.
- Allergic rhinitis and asthma are part of the same condition that can co-exist in up to 80% of patients.²⁻⁶ This means that by treating the cause of your allergies, you may prevent progression of allergies to asthma or reduce asthma attacks.

What are my treatment options?

There are a number of treatment options available that may offer some relief from allergy symptoms. These options include avoidance, prescription and over-the-counter medications, and allergy immunotherapy.⁷

How do I know what's right?

- The first step is to see an Allergy Specialist for proper diagnosis. The doctor will start by asking you questions about your symptoms, history of allergy, exposure, family history and other related health issues.

What is allergy testing like?

To help determine whether an allergy is involved, the doctor may perform a skin test and/or a blood test.

Skin testing

A skin test involves either a gentle prick with a drop of allergen extract on the surface of your arm (or back), or an injection of a small amount of allergen extract into the skin. This method may result in mild swelling and a reddening of the skin, which tells the doctor that you have an allergy. For most patients, this method requires about one hour and is not very painful.

Blood testing

A blood test—also called *in vitro* testing—can be used on its own to confirm skin test results. If specific antibodies toward one or more allergens are found in the blood, it means that you may be allergic and would have an allergic reaction if exposed to those substances.

WHAT IS ALLERGY IMMUNOTHERAPY?

Allergy immunotherapy is a clinically documented treatment that considerably reduces or completely removes your allergy symptoms and the need for traditional, symptom-relieving medication. Until your immune system has had time to adjust, you may still need the medication you are already using. After three to six months, your need for drugs may decrease and your symptoms may become less severe. An additional effect of allergy shots is that it may prevent the onset of other allergies and the development of asthma. Studies have shown that children who were at an increased risk of developing asthma were able to resist the onset of asthma and see their existing allergic symptoms decrease after completing treatment.⁸⁻¹⁰

Also, the treatment has a long-standing effect after it is discontinued. Scientific studies show that results are maintained for 5 to 10 years after the course of treatment has been completed.¹¹⁻¹⁴

