



Overview

By Mayo Clinic Staff

Allergies occur when your immune system reacts to *a* foreign substance — such as pollen, bee venom or pet dander — or to a food that doesn't cause a reaction in most people.

Your immune system produces substances known as antibodies. When you have allergies, your immune system makes antibodies that identify a particular allergen as harmful, even though it isn't. When you come into contact with the allergen, your immune system's reaction can inflame your skin, sinuses, airways or digestive system.

The severity of allergies varies from person to person and can range from minor irritation to anaphylaxis — a potentially life-threatening emergency. While most allergies can't be cured, treatments can help relieve your allergy symptoms.

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Allergies

Symptoms and causes

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Symptoms

Allergy symptoms depend on the substance involved and can affect the airways, sinuses and nasal passages, skin, and digestive system. Allergic reactions can range from mild to severe. In some severe cases, allergies can trigger a life-threatening reaction known as anaphylaxis.

Hay fever, also called allergic rhinitis, may cause:

- Sneezing
- Itching of the nose, eyes or roof of the mouth
- Runny, stuffy nose
- Watery, red or swollen eyes (conjunctivitis)

A food allergy may cause:

- Tingling mouth
- Swelling of the lips, tongue, face or throat
- Hives
- Anaphylaxis

An insect sting allergy may cause:

- A large area of swelling (edema) at the sting site
- Itching or hives all over the body
- Cough, chest tightness, wheezing or shortness of breath
- Anaphylaxis

A drug allergy may cause:

- Hives
- Itchy skin

- Rash
- Facial swelling
- Wheezing
- Anaphylaxis

Atopic dermatitis, an allergic skin condition also called eczema, may cause skin to:

- Itch
- Redden
- Flake or peel

Anaphylaxis

Some types of allergies, including allergies to foods and insect stings, have the potential to trigger a severe reaction known as anaphylaxis. A life-threatening medical emergency, anaphylaxis can cause you to go into shock. Signs and symptoms of anaphylaxis include:

- Loss of consciousness
- A drop in blood pressure
- Severe shortness of breath
- Skin rash
- Lightheadedness
- A rapid, weak pulse
- Nausea and vomiting

When to see a doctor

You might see a doctor if you have symptoms you think may be caused by an allergy, especially if you notice something that seems to trigger your symptoms. If you have symptoms after starting a new medication, call the doctor who prescribed it right away.

For a severe allergic reaction (anaphylaxis), call 911 or your local emergency number or seek emergency medical help. If you carry an epinephrine auto-injector (such as EpiPen, others), give yourself a shot right away.

Even if your symptoms improve after an epinephrine injection, you should go to the emergency department to make sure symptoms don't return when the effects of the injection wear off.

If you've had a severe allergy attack or any signs and symptoms of anaphylaxis in the past, make an appointment to see your doctor. Evaluation, diagnosis and long-term management of anaphylaxis are complicated, so you'll probably need to see a doctor who specializes in allergies and immunology.

Causes

An allergy starts when your immune system mistakes a normally harmless substance for a dangerous invader. The immune system then produces antibodies that remain on the alert for that particular allergen. When you're exposed to the allergen again, these antibodies can release a number of immune system chemicals, such as histamine, that cause allergy symptoms.

Common allergy triggers include:

- **Airborne allergens**, such as pollen, animal dander, dust mites and mold
- **Certain foods**, particularly peanuts, tree nuts, wheat, soy, fish, shellfish, eggs and milk
- **Insect stings**, such as bee stings or wasp stings
- **Medications**, particularly penicillin or penicillin-based antibiotics
- **Latex or other substances you touch**, which can cause allergic skin reactions

Risk factors

You may be at increased risk of developing an allergy if you:

- **Have a family history of asthma or allergies.** You're at increased risk of allergies if you have family members with asthma or allergies such as hay fever, hives or eczema.
- **Are a child.** Children are more likely to develop an allergy than are adults. Children

sometimes outgrow allergic conditions as they get older.

- **Have asthma or another allergic condition.** Having asthma increases your risk of developing an allergy, and vice versa. Also, having one type of allergic condition makes you more likely to be allergic to something else.

Complications

Having an allergy increases your risk of certain other medical problems, including:

- **Anaphylaxis.** If you have severe allergies, you're at increased risk of this serious allergy-induced reaction. Foods, medications and insect stings are the most common triggers of anaphylaxis.
- * **Asthma.** If you have an allergy, you're more likely to have asthma — an immune system reaction that affects the airways and breathing. In many cases, asthma is triggered by exposure to an allergen in the environment (allergy-induced asthma).
- * **Sinusitis and infections of the ears or lungs.** Your risk of getting these conditions is higher if you have hay fever or asthma.
- * **Fungal complications of your sinuses or your lungs.** You're at increased risk of getting these conditions, known as allergic fungal sinusitis and allergic bronchopulmonary aspergillosis, if you have an allergy.

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Diagnosis

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To evaluate whether you have an allergy, your doctor may:

- Ask detailed questions about signs and symptoms
- Perform a physical exam
- Have you keep a detailed diary of symptoms and possible triggers

If you have a food allergy, your doctor may:

- Ask you to keep a detailed diary of the foods you eat
- Have you eliminate a food from your diet (elimination diet) — and then have you eat the food in question again to see if it causes a reaction

Your doctor may also recommend one or both of the following tests. However, a positive reaction does not necessarily mean you are allergic to the substance.

- **Skin test.** A doctor or nurse will prick your skin and expose you to small amounts of the proteins found in potential allergens. If you're allergic, you'll likely develop a raised bump (hive) at the test location on your skin.
- **Blood test.** Specific IgE (sIgE) Blood Testing (commonly called RAST or ImmunoCAP testing) measures the amount of allergy-causing antibodies in your bloodstream, known as immunoglobulin E (IgE) antibodies. A blood sample is sent to a medical laboratory, where it can be tested for evidence of sensitivity to possible allergens.

If your doctor suspects your problems are caused by something other than an allergy, you may need other tests to identify — or rule out — other medical problems.

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Treatment

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Allergy treatments include:

- **Allergen avoidance.** Your doctor will help you take steps to identify and avoid your allergy triggers. This is generally the most important step in preventing allergic reactions and reducing symptoms.
- **Medications.** Depending on your allergy, medications can help reduce your immune system reaction and ease symptoms. Your doctor may suggest over-the-counter or prescription medication in the form of pills or liquid, nasal sprays or eyedrops.
- **Immunotherapy.** For severe allergies or allergies not completely relieved by other treatment, your doctor may recommend allergen immunotherapy. This treatment involves a series of injections of purified allergen extracts, usually given over a period of a few years.

Another form of immunotherapy is a tablet that's placed under the tongue (sublingual) until it dissolves. Sublingual drugs are used to treat some pollen allergies.

- **Emergency epinephrine.** If you have a severe allergy, your doctor may give you an emergency epinephrine shot to carry with you at all times. Given for severe allergic reactions, an epinephrine shot (EpiPen, others) can reduce symptoms until you get emergency treatment.

Alternative medicine

- Clinical practice guidelines suggest that some people with allergic rhinitis may benefit from acupuncture.

Researchers are investigating using dietary supplements, fish oil, and prebiotics and probiotics for pregnant women to help prevent food allergies and eczema in their children

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Self-management

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Lifestyle and home remedies

Some allergy symptoms improve with home treatment.

- **Sinus congestion and hay fever symptoms.** These symptoms often improve with saline nasal irrigation — rinsing out the sinuses with a salt and water solution. You can use a neti pot or a specially designed squeeze bottle to flush out thickened mucus and irritants from your nose. However, improper use of a neti pot or other device can lead to infection.
- **Household airborne allergy symptoms.** Reduce your exposure to dust mites or pet dander by frequently washing bedding and stuffed toys in hot water, maintaining low humidity, regularly using a vacuum with a fine filter such as a high-efficiency particulate air (HEPA) filter and replacing carpeting with hard flooring.
- **Mold allergy symptoms.** Reduce moisture in damp areas, such as your bath and kitchen, by using ventilation fans and dehumidifiers. Fix leaks inside and outside your home.

Prevention

Preventing allergic reactions depends on the type of allergy you have. General measures include the following:

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Avoid known triggers. Even if you're treating your allergy symptoms, try to avoid triggers. If, for instance, you're allergic to pollen, stay inside with windows and doors closed during periods when pollen is high. If you're allergic to dust mites, dust and vacuum and wash bedding often.

Keep a diary. When trying to identify what causes or worsens your allergic symptoms, track your activities and what you eat, when symptoms occur and what seems to help. This may help you and your doctor identify triggers.

Wear a medical alert bracelet. If you've ever had a severe allergic reaction, a medical alert bracelet (or necklace) lets others know that you have a serious allergy in case you have a reaction and you're unable to communicate.

Continue to eat normally if you are pregnant or breastfeeding. Guidelines no longer recommend avoiding highly allergenic foods when you are pregnant or breastfeeding. In fact, studies now suggest this exposure may protect children against future allergies.

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