

# ALLERGIES



An allergy is an acquired, abnormal response of the body's immune system to a substance (allergen) that does not normally cause a reaction. Most allergens are harmless (as in foods) and are sometimes beneficial by producing antibodies to defend against disease. The most common allergens that cause allergies and reactions are:

Inhalants – pollens, dusts, molds, danders

Foods – eggs, milk, soy, peanuts

Drugs – aspirin, antibiotics, serums



## ABOUT ALLERGIES

Not everyone has allergies. Inherited genes increase the risk of developing allergies. People with allergies are commonly allergic to more than one thing. This is because allergies have one root cause: a hyperactive immune system that looks at common substances as an unwanted invader.

The key factors in the defense against allergies are white blood cells, known as lymphocytes, which are manufactured in enormous quantities and produce cells, which in turn produce the antibodies that fight the allergens.

The immune system does not attack everything foreign that enters the body. Most foods, drinks, and drugs taken do not trigger an immune response. However, the immune system does respond to germs, viruses, and infections. Occasionally, the immune system does react to harmless invaders and this reaction is known as an allergy. These invaders may be inhaled or swallowed, or they may come into direct contact with the eyes or skin and provoke allergic responses such as hay fever, asthma, or skin rashes. The result of an allergic reaction can cause a host of symptoms that vary in intensity, for example:

- ◆ Lungs are affected with a production of mucus secretions with narrowing and swelling in the lining of the airways. This leads to wheezing, coughing, and shortness of breath.
- ◆ The nose and sinuses are affected with a runny, itchy nose and stuffiness; eyes become teary, red, and itchy; and itching occurs in the throat and roof of the mouth. The skin reacts with uncomfortable hives and other rashes.
- ◆ The digestive tract is affected with stomach cramps and/or occasional diarrhea.
- ◆ The entire system may be affected with a response known as anaphylactic shock in which blood vessels dilate and the air passages narrow. This causes a slowing of the pulse, breathing difficulties, and other symptoms that when severe, can be very serious and require immediate medical attention.

The intensity of the allergic reaction varies in each person. Some respond with only mild sniffles during a ragweed season; others react violently with an attack of asthma. The number of antibodies present in the system controls the severity of symptoms. The more antibodies present, the stronger the reaction.



## COMMON ALLERGIES

**Bee Stings** Stings from bees, wasps, and hornets can cause severe local reactions, such as itching and swelling. (See Accidents chapter.) People who are allergic to the venom of insects develop a more pronounced and immediate reaction (eg, hives, swelling, or anaphylactic shock). Appropriate emergency treatment must be given.

**Cats and Dogs** Cats and dogs shed dried skin (dander) that contains various proteins. As the animals groom themselves, they spread the dander from their skin to their fur, where it is released into the air. When the dander gets in the air and is inhaled, it provokes an allergic response. Although some cats and dogs are not always fond of a weekly bath, it might help reduce the amount of airborne dander.

**Drug Allergies** Some drugs can act as allergens. After a susceptible person is exposed and reacts to a drug, an allergic reaction will occur if the person is ever exposed to it again. The reactions can be a rash, hives, or anaphylaxis. Allergies to penicillin and sulfa are the most common. A person experiencing a drug side effect should contact a physician and the use of that drug should be avoided.

**Dust and Molds** In dust allergies, the allergen prompting the symptoms is not the dust itself but tiny dust mites that live in the dust. Dust mites thrive in carpets, pillows, and upholstery. In mold allergies, the cause is exposure to mold spores.

**Food Allergies** Many people think their reactions from eating certain foods are caused by allergies. Actually, less than one percent of the adult population suffers from food allergies. Those who do, usually have other allergic problems, such as asthma or eczema (a skin condition). Foods that most commonly cause severe allergic reactions in adults are peanuts, tree nuts, and shellfish. They usually result in itching in the mouth and around the lips within an hour of eating. Cooking these foods changes the protein structure of the allergen and may help eliminate the reaction. Other symptoms from food include skin rashes, abdominal cramps, pain, and diarrhea. The most serious reactions are hives, asthma, and anaphylaxis.

Some people who have cramps and diarrhea may have food intolerance rather than an allergy. This occurs when the body cannot digest the food, often because of a lack of a vital enzyme. Specific food allergies and/or intolerances can obviously be avoided by eliminating the offending foods from the diet.

**Hay Fever** Hay fever is the most common allergy and affects 40 million people in the United States. People with other allergic conditions, such as asthma or dermatitis, are particularly susceptible. There are two types of hay fever: seasonal and perennial. Seasonal hay fever occurs only when allergens, such as pollen, are in the air. Perennial hay fever occurs all year because it is caused by allergens that always exist (eg, animal dander and house dust mites). The most common symptoms of hay fever are frequent sneezing and a runny nose. Some people suffer with red, itchy, watery eyes (rubbing them seems to make the condition worse), or may wheeze and have a dry throat.



## ALLERGIC REACTIONS

Allergic reactions are categorized in the four types listed below.

### TYPE I (IMMEDIATE)

Reactions that are local (limited to one place or part) or systemic (to the whole body) and have extremely rapid inflammatory responses are:

#### ■ HIVES

##### SIGNS AND SYMPTOMS

Slightly raised white or pink bumps; swelling of the skin that is extremely itchy (mostly on the chest, arms, and trunk).

##### CAUSE

Can be triggered by food, medications, viral illnesses, and sometimes by histamine that is released due to vigorous exercise or emotional stress. Many episodes of hives have no identifiable cause.

#### ■ ANGIOEDEMA

##### SIGNS AND SYMPTOMS

Swelling occurring episodically in the face, throat, hands, feet, and genitals.

##### CAUSE

May be caused by an allergy or a specific allergen that cannot be identified.

#### ■ ASTHMA

##### SIGNS AND SYMPTOMS

Wheezing and breathlessness.

##### CAUSE

Constriction of the bronchial airway. (See Asthma in the Respiratory chapter.)



## SYSTEMIC RESPONSES

### ■ ANAPHYLAXIS

#### SIGNS AND SYMPTOMS

Fainting; loss of consciousness; swelling of the throat, larynx, or vocal cords; spasms in the bronchial tubes; an appearance of panic and distress.

#### CAUSE

A reaction to the combination of certain body chemicals producing a shock reaction, often from bee stings, penicillin, nuts, and fish. A rare form is triggered by physical exercise. This can be life-threatening and requires immediate medical treatment.

### TYPE II (CYTOTOXIC)

This type may cause adverse reactions to a blood transfusion and to many drugs.

### TYPE III (IMMUNE COMPLEX)

These reactions occur from antibodies combined with antigens circulating in the blood.

#### SIGNS AND SYMPTOMS

Fever; joint and muscle pain; swollen lymph nodes; hives.

#### CAUSE

Administration of penicillin or antitoxins developed from animals (eg, tetanus, snake venom, rabies).

### TYPE IV (CELL MEDIATED)

These reactions are a result of sensitized white blood cells, not antibodies.



## ALLERGY TREATMENT

Avoiding a known allergen, such as poison ivy, penicillin, or certain foods should not be a big problem. However, hay fever allergens are constantly in the air during certain months of the year, and allergies to normal house dust occur year round.

### DRUG TREATMENT

Antihistamines counteract histamine (the chemical released in the body for allergic reactions). They come in pill form, eye drops, and come in short or long-acting doses. Short-acting antihistamines are useful against immediate effects (eg, hives and itching). A drawback is that drowsiness may occur. Long-acting antihistamines do not cause drowsiness. They are a good choice when daily relief is needed, as with hay fever. They may be taken once or twice a day.

Decongestants constrict blood vessels and shrink swollen membranes to clear passages in the nose and sinuses. They come in pill form, nasal sprays, or eye drops. Because they are related to epinephrine (a hormone that reacts to the central nervous system), they may stimulate the heart, raise the blood pressure, or cause insomnia. A person with high blood pressure, heart disease, overactive thyroid, or diabetes should only use this medication on the advice and monitoring of a physician.

### IMMUNOTHERAPY (Allergy Injections)

Immunotherapy desensitizes the patient to an allergen. It is most effective in fighting some types of hay fever and involves injecting a small amount of known allergens to produce antibodies. Shots are given on a timed basis. People with seasonal allergies may not feel the need for immunotherapy. On the other hand, someone with year-round allergies might be motivated to invest in this treatment.

### CORTICOSTEROID DRUGS

Corticosteroids are used only for severe symptoms and come in various forms (eg, injections, pills, nasal sprays, and topical creams). They are available by prescription only, except for mild topical creams. They do have side effects that should be considered and weighed against the seriousness of the symptoms. The side effects of nasal sprays and inhalants are minimal compared to those from oral or injected corticosteroids.



## ALLERGISTS

Allergists focus on diagnosing and treating allergies. They are specialists in internal medicine or pediatrics who have advanced training and certification in the field of allergy and immunology. It is important to find a qualified allergist because the field attracts practitioners other than Board Certified Allergists who may use unproven diagnostic testing and treatments that may be harmful and unnecessarily costly.






### ON THE HORIZON

Hikers will soon slather on cream to shield their skin from the resin of poison oak and ivy. The lotion is a claylike mineral that provides good protection and should be available soon.



## WHAT TO DO

SEVERITY LEVEL	SYMPTOM	POSSIBLE DIAGNOSIS
 <p>Seek Medical Help Immediately!</p>	<p>Loss of consciousness, swelling of the throat, larynx, or vocal cords; spasms in the bronchial tubes, an appearance of panic and distress</p> <p>Wheezing, coughing, shortness of breath</p>	<p>Anaphylaxis (shock)</p> <p>Asthma</p>
 <p>Make an appointment to see your doctor</p>	<p>Raised white or pink bumps, swelling and extreme itching of the skin</p> <p>Swelling episodically in the face, throat, hands, feet, and genitals</p> <p>Wheezing, coughing, shortness of breath</p>	<p>Hives</p> <p>Angioedema</p> <p>Allergy, hay fever, asthma</p>
 <p>Try the home treatment outlined in this chapter</p>	<p>Tearing, redness, itching in eyes</p> <p>Runny, itchy, or stuffy nose</p> <p>Itching in throat and roof of mouth</p> <p>Sore throat</p> <p>Hives and other rashes</p> <p>Skin redness, swelling, itching, scaling</p>	<p>Allergy, hay fever</p> <p>Allergy, hay fever</p> <p>Allergy, hay fever</p> <p>Allergy, hay fever, cold, flu</p> <p>Allergy, contact dermatitis, excessive exertion</p> <p>Contact dermatitis</p>