



## All About Allergies

Did you know that children’s allergies account for the loss of an estimated two million school days per year? Whether it’s peanuts, cats or pollen – seasonal or year-round – up to 50 million Americans, including 2 million children, suffer from allergies.

### What Are Allergies?

An allergy is an overreaction of the immune system to a substance that is typically harmless to most people. With allergies, the body’s immune system treats the substance, called an allergen, as an invader and reacts inappropriately – resulting in harm to the person.

For most people with allergies, the first exposure to an allergen prompts their immune system to produce an antibody called immunoglobulin E (IgE). With each subsequent exposure, their body produces more IgE, which attaches itself to two types of cells in the body – mast cells and basophils. When the allergen attaches to the IgE, the mast cells and basophils are activated to release histamine and other chemicals to defend against the allergen “invader.” The release of these chemicals causes allergic reactions, as the person’s body attempts to rid itself of the allergen “invader.”

Common allergies include those to food and airborne allergens such as pollen, mold, dust mites and animal dander, urine and saliva. Allergies can be seasonal, like pollen or certain molds, or year-round, like dust mites.

Different types of allergens are more prevalent in different parts of the country or the world.

### Who Gets Allergies?

Children inherit allergic tendencies from their parents. If one parent has allergies, there is a one in four chance that their child will too, with the risk increasing if both parents have allergies. In a few cases, a child may develop allergies in spite of no family member having them.

Many times, if a child is allergic to one substance, it is likely that he or she will be allergic to others. Some children may suffer from cross-reactions as well. For example, children allergic to birch pollen might have reactions when they eat an apple because that apple is a protein similar to the pollen. Likewise, children allergic to latex are more likely to be allergic to kiwi fruit or bananas for this same reason.

## Types and Symptoms of Allergies

### Airborne Allergies

Airborne allergies can range from seasonal annoyances to year-round problems in the form of allergic rhinitis (symptoms of the nose and throat) and/or allergic conjunctivitis (symptoms of the eyes). If your child experiences wheezing and shortness of breath, their allergy may have progressed to asthma, which can be a serious condition.

Airborne allergy symptoms:

- Sneezing
- Itchy nose/throat

- Nasal congestion
- Coughing
- Itchy, watery and/or red eyes
- Dark circles around eyes

Common airborne allergies:

- Dust
- Pollen
- Mold
- Pet dander, saliva and urine

### Food Allergies

Severity and development of food allergies depend on the quantity of the food eaten, the amount of exposure the child has had, and the child’s sensitivity to the food. Food allergies are usually not lifelong, with the exception of certain peanut, tree nut and seafood allergies. In rare instances, a child may develop a life-threatening condition called anaphylactic shock. Severe symptoms or reactions to any allergen require immediate medical attention.

Food allergy symptoms:

- Itchy mouth and throat
- Rash
- Cramping
- Nausea
- Vomiting
- Diarrhea
- Hives
- Runny/itchy nose
- Shortness of breath

Common food allergies:

- Cow’s milk
- Soy
- Egg
- Wheat
- Seafood
- Tree nuts (eg. walnuts and pistachios)
- Peanuts

The type and severity of allergy symptoms can vary from minor to severe. Likewise some allergies are easy to identify but others can be less obvious, masquerading as other conditions. If your child has cold-like symptoms lasting longer than a week or develops a “cold” at the same time every year, consult your child’s doctor. Based on the nature of your child’s symptoms and a physical exam, your child’s doctor may be able to make a diagnosis and prescribe medication, or may refer you to an allergist for allergy skin tests and more extensive therapy.

### Allergy skin tests

To determine the cause of an allergy, an allergist will likely perform skin tests for the most common environmental and food allergens. In the test, a drop of a purified liquid form of the allergen is either placed onto the skin and the area pinched with a small pricking device, or a small amount of allergen is injected just under the skin. After about 15 minutes, if a lump surrounded by a reddish area appears at the injection site, the test is positive.

A child must also have symptoms for a definitive diagnosis. For example, a toddler who has a positive test for dust mites and sneezes frequently while playing on the floor would be considered allergic to dust mites. Skin tests are less expensive and more accurate than blood tests for allergies. But blood tests may be required in children with skin conditions or those who are extremely sensitive to a particular allergen. Blood tests are also helpful in deciding whether a child has outgrown a food allergy.

## How Are Allergies Treated?

While there is no cure for allergies, relief of symptoms is possible. Reducing or eliminating exposure to allergens is usually the most effective. In addition, some over-the-counter antihistamines and inhaled or nasal spray steroids may help alleviate allergy symptoms as well. In some cases, an allergist may recommend immunotherapy (allergy shots) to help desensitize your child.

With food allergies, avoiding the food is the only way to prevent symptoms while the sensitivity persists. If a child is extremely sensitive to a particular food, or if the child has asthma in addition to the food allergy, his or her doctor will probably recommend that you carry injectable epinephrine or adrenaline to counteract the allergic reaction in the event of an inadvertent exposure.

## More Information on Airborne Allergens

Those who react to airborne allergens usually have allergic rhinitis and/or allergic conjunctivitis. Allergic rhinitis occurs in about 15-20% of Americans. It typically develops by age 10 and reaches its peak in the early 20s, with symptoms often dissipating between the ages of 40 and 60.

### Dust

Dust is made up of many particles and can contain things such as fabric fibers and bacteria, animal allergens, and dust mites. Dust mites are one of the most common causes of allergies. The dust mite is the main allergic component of house dust. Dust mites live in bedding, upholstery and carpets. Cockroach body parts and waste products are also a major household allergen, especially in inner cities. Asthma rates of inner city children are high, probably due to air pollution and also cockroach exposure in overcrowded buildings.

### Pollen

Pollen is another important cause of allergies. Trees, weeds and grasses release these tiny particles into the air to fertilize other plants. Most people know pollen allergy as hay fever or rose fever. Pollen allergies are seasonal, and the type of pollen a child is allergic to determines when he or she will be symptomatic.

### Mold

Molds are fungi that thrive both indoors and out in warm, moist environments. As with pollen, mold spores are released into the air to reproduce. Outdoors, molds may be found in poor drainage areas, such as in piles of rotting leaves or compost piles; indoors they thrive in dark, poorly ventilated places, such as bathrooms and closets. Mold buildup may

be found in damp basements or basements with water leaks. A musty odor suggests mold growth. Although molds can be seasonal, many thrive year round, especially those indoors.

### Animal allergens

All warm-blooded, furry animals, such as the average household pet, can cause allergic reactions, usually because of proteins in their saliva, dander and urine. When the animal licks itself, the saliva gets on the fur. As the saliva dries, protein particles become airborne and work their way into fabrics in the home. Cats are the “worst offenders” because their salivary protein is extremely tiny and they tend to lick themselves as part of grooming more than other animals.

Please visit [Nemours.org](http://Nemours.org) for up-to-date information on a variety of issues affecting the health and well-being of children.

Updated and reviewed by: Stephen McGeedy, MD Date reviewed: September 2001 Originally reviewed by: Denise DiPrimio-Kalman and Kathy Trzcinski, MSN, RN, CRNP This information is provided by the Nemours/Alfred I. duPont Hospital for Children.

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