

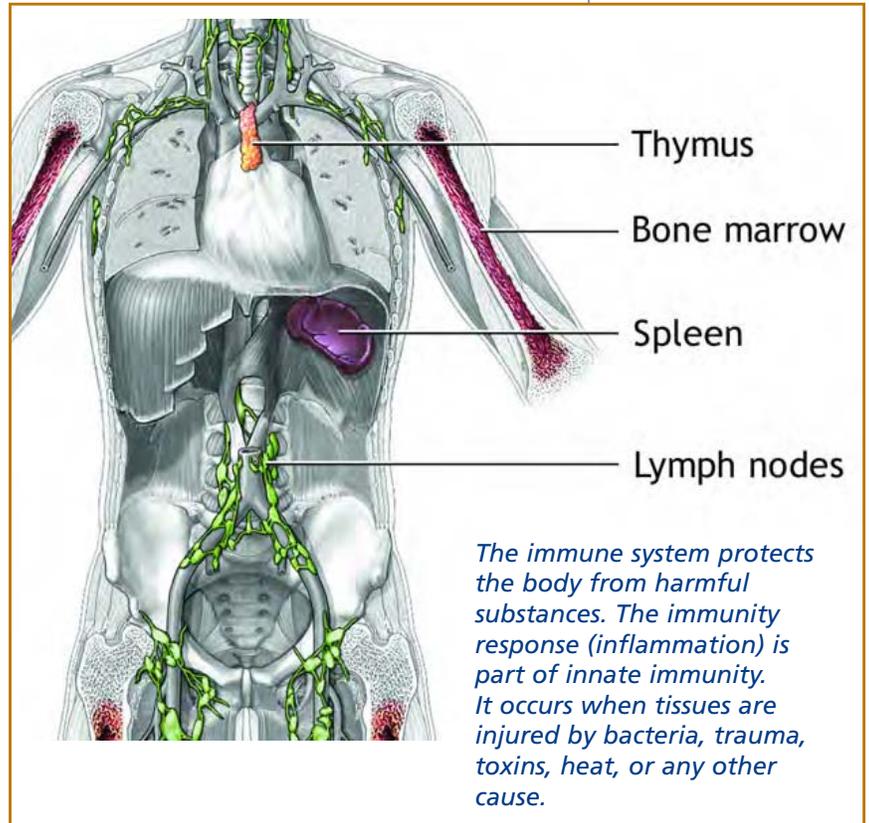
Part 2: What Are Allergies?

Healthy immune system

The immune system is so complex that some of the way it works is not yet understood. What scientists do know is that a healthy immune system battles infectious agents in an effort to keep the body free of disease. When a disease-producing organism invades the body, the white blood cells (called **leukocytes**) form a kind of army that gathers together to prevent infection. Leukocytes also work to repair any damage done by an invader.

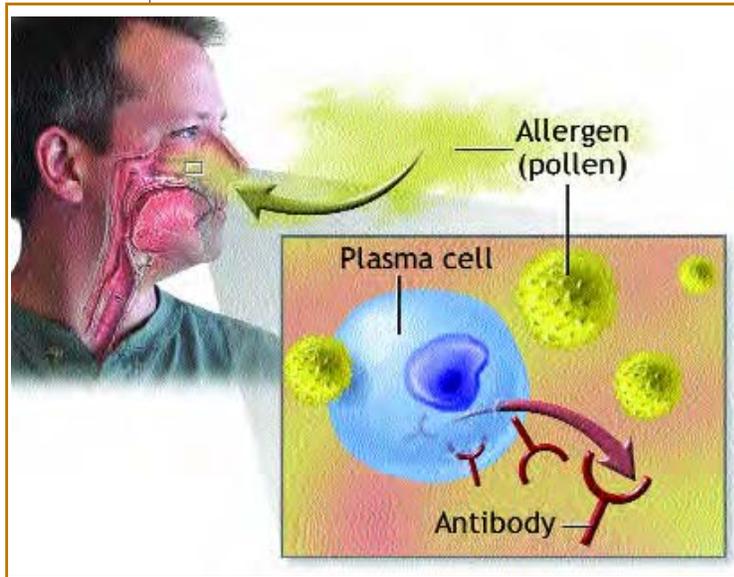
Just as there are a variety of foreign materials that act as invaders (viruses, bacteria, parasites, and fungi), there are many types of white blood cells. Different ones have different functions. One type, called **neutrophils**, ingests bacterial invaders and produces the chemicals that destroy them. Whatever the type, white blood cells work together to help produce the body's immune response.

White blood cells are assisted by **lymphocytes**—cells that play the



most prominent role in helping the body create a natural resistance to disease. There are two types of lymphocytes: B cells and T cells. **B lymphocytes** produce **antibodies** that do battle with **antigens**, the foreign substances that are created by an invader. When an invader enters the body, its antigens alert the immune system to the invader's presence.

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When antibodies target the invader, they also send messages to white blood cells to join the battle. **T lymphocytes** attack cells that are foreign or that are infected by a virus. They do this by generating antibodies that fight off the foreign particles found in invading cells. Their attack also includes digesting the invaders or releasing chemicals that can destroy them. Another job of the T cells is to help the body accept—without overreacting to—the chemicals that are found in allergy shots.

Among the substances that the immune system encounters are allergens, which can trigger allergic reactions in many people. Some of the most common allergens are pollen, mold, and animal dander, as well as cockroach and

house dust mite droppings. Scientists do not know why some substances are allergens for some people and harmless for others.

The body has two main ways of protecting itself. **Innate immunity** is the body's first line of defense. It includes the barriers that keep antigens from entering your body, such as the skin, mucus, stomach acid, the cough reflex, and enzymes in tears and skin oils. An antigen that gets past these barriers then has to face other parts of the immune system, such as certain white blood cells that “eat” microorganisms and dead or damaged cells. Inflammation, or swelling, is also part of innate immunity. Blood vessels leak fluid into damaged tissues. This swelling keeps foreign substances away from other body tissues.

Active (acquired) immunity is slightly different, occurring when the body responds to a foreign invader such as a virus. In active immunity, the body responds to an antigen and builds a defense that is specific to that antigen. In other words, the first time the body comes in contact with a foreign invader, it creates antibodies that attack only that invader. The next time the same antigen enters the body, the

immune system is already prepared to fight it. In a sense, the immune system “remembers” the antigen.

When a body has a healthy immune system, some invaders can be conquered before they create the condition that leads to disease. The damage from other invaders that succeed at first can be minimized and repaired. When an immune system is not healthy, it is not able to work as well in fighting off these invaders. In some cases, an immune system becomes so compromised that it shuts down and is unable to fight off or contain any disease-producing organisms.

Problems associated with allergies

A person with allergies has an immune system that overreacts to substances that do not produce symptoms in most people. Substances that are otherwise harmless, such as animal dander or dust, can trigger a severe allergic reaction in a person who is sensitive to them. For these people, animal dander and dust become allergens. A person with allergies might experience sneezing, wheezing, coughing, or an itchy feeling in the throat.

Allergic rhinitis (hay fever)

is an inflammation of the mucous membranes of the nose. It is caused by the same types of substances that trigger allergies.

Outdoor triggers include grasses, trees, and weeds. Indoor triggers include mold, animal dander, and cockroach droppings. Treatments such as allergen immunotherapy, medications, and, of course, avoiding the triggers can provide some relief. If not properly treated, a person with rhinitis can develop sinusitis.

There are two forms of sinusitis, a condition characterized by an inflammation of the sinuses, a plugged-up nose, a feeling that the face is swollen, toothache, tiredness, and fever. One type is called **chronic sinusitis**. This condition is often caused by bacterial infections and can be a cause of chronic cough. Another

The animal dander from pets can trigger an allergic reaction in a person who is sensitive to it.



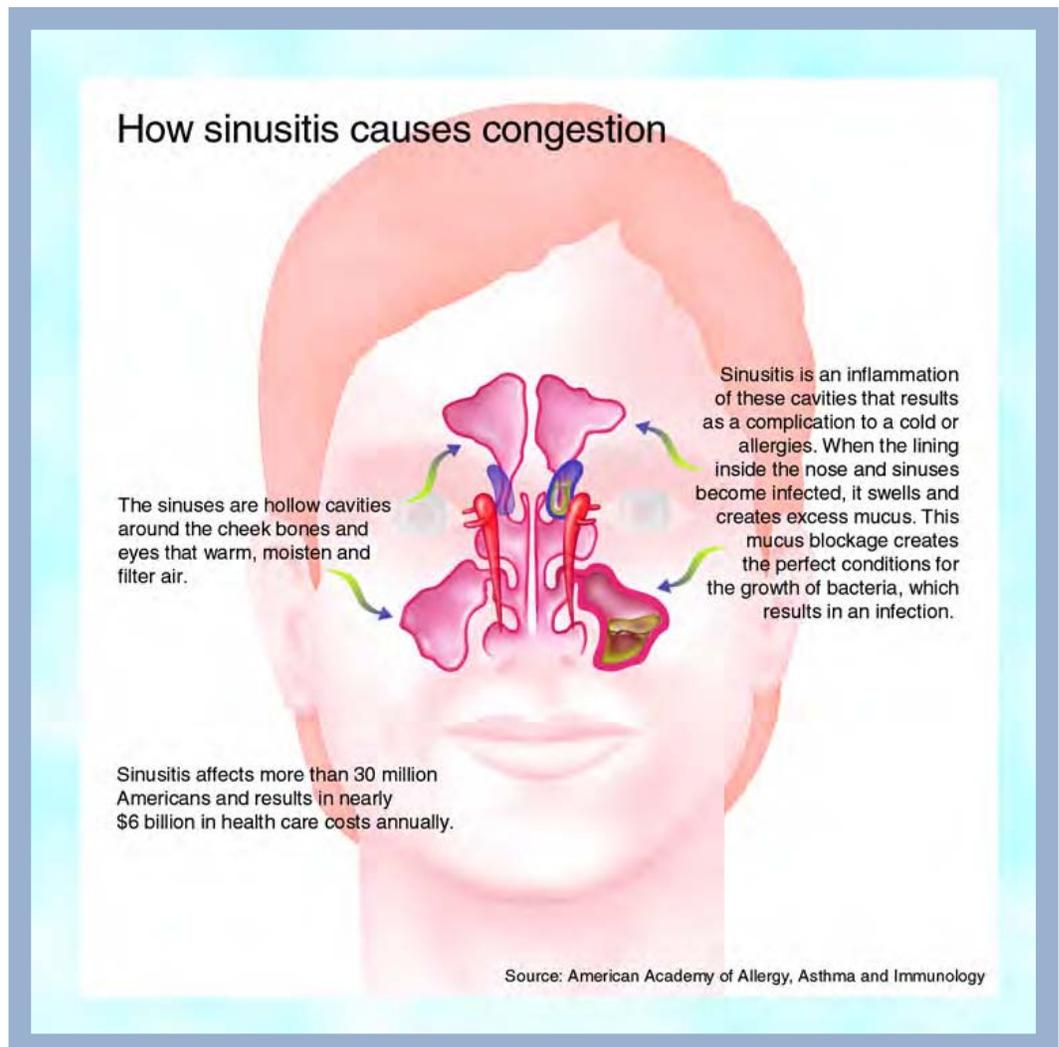
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type is called **acute sinusitis**. Also caused by bacterial infections, acute sinusitis can appear several days after the first sign of a cold. Exposure to tobacco smoke and chemical odors can make symptoms worse. People with allergies seem to be predisposed to developing acute sinusitis, perhaps because allergies tend to lead to inflammation of the sinuses and nasal linings. The inflammation can prevent bacteria from getting

cleared from nasal cavities. Long-term treatment for allergies can sometimes help prevent acute sinusitis from developing.

The symptoms of allergies

The symptoms that an allergic person experiences are determined by the type of allergen that triggers the reaction, the site where the reaction occurs, and the immune system's response. Some



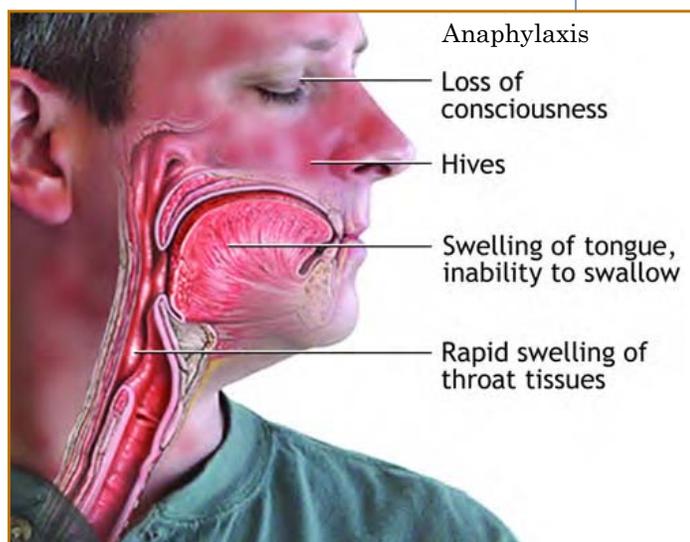
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people suffer from symptoms that are mainly consistent with hay fever: runny nose, congestion, and sneezing. Others experience a reaction that is more typical of a response to a food allergy: swelling of the throat, difficulty breathing, and dizziness. Still others break out in hives, an itchy skin rash that forms in clusters, when exposed to a medication such as penicillin.

Allergic reactions can be quite different and can range from merely annoying to fatal. The milder, more annoying symptoms can begin with watery, swollen eyes; an itchy, irritated nose and throat; and hoarseness in the voice. The nasal passages can drain profusely, through the front of the nose or down the back of the throat. The symptoms can grow more irritating as they start to reduce the person's ability to be active. Thick **phlegm** (mucous secretions in the respiratory passages) can occur as the chest becomes more congested. Coughing and sneezing can be so severe that the person becomes exhausted from the effort both require. The skin can become one red, itchy, swollen rash. Abdominal cramps, vomiting, and diarrhea can make it impossible for a person to leave home. Still, however awful these symptoms sound, none is as bad as those suffered during anaphylaxis.

Anaphylaxis is a sudden, severe allergic reaction that can have a variety of symptoms. It is important to learn about these symptoms, because anaphylaxis can be fatal if it is not properly treated. This allergic reaction can involve major areas of the body at the same time, such as the skin, the respiratory system, the gastrointestinal tract, and the cardiovascular system. Symptoms can occur within minutes of an exposure to a trigger (for example, after receiving an insect sting). It is important to remember, though, that sometimes symptoms do not appear for several hours (for example, after taking a medication).

Symptoms associated with various forms of anaphylaxis include fever, swelling throughout the body or in one area, difficulty swallowing or breathing, nausea,



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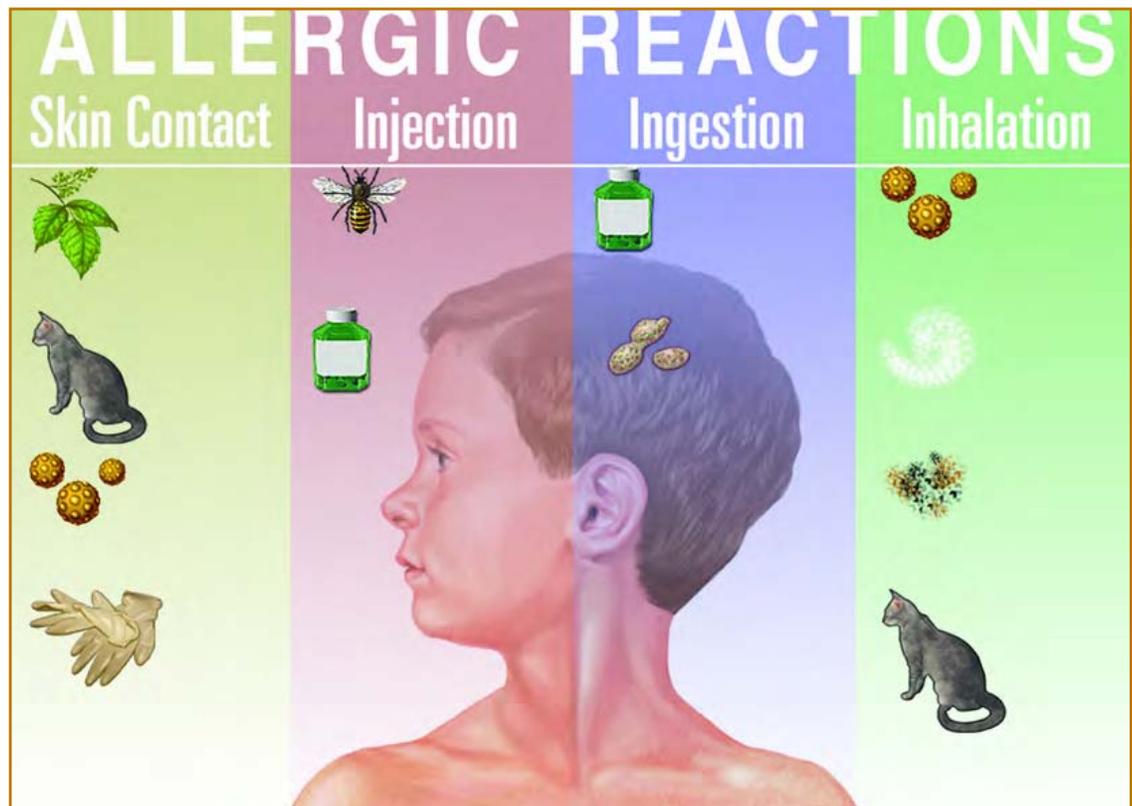
vomiting, diarrhea, abdominal or uterine cramping, congestion, a feeling of having to urinate, hives, swelling of the lips and joints, severe anxiety, headache, itching, sneezing, coughing, and wheezing. The most dangerous symptoms of anaphylaxis are low blood pressure, breathing difficulties, shock, and loss of consciousness. Sometimes anaphylactic symptoms are misdiagnosed as hyperventilation, anxiety attacks, low blood sugar, or drug and alcohol intoxication. A misdiagnosis can be deadly.

There are no cures for this variety of allergic reaction, but many

promising treatments can prevent or control the symptoms. (See pages 56–57 for information about treatments.)

The causes of allergies

The exact cause of allergic reactions is not known. However, there appears to be a hereditary component to the more common forms of the condition. If one parent has allergies, a child's risk of developing the condition is 48%. If both parents suffer from allergic reactions, the child is 70% likely to develop allergies. When it comes to allergies, the important question to ask is not *why*, but *what*. If a person can determine—



through experience that is confirmed by testing—*what* it is that triggers symptoms, treatment can begin.

There is an extensive list of known or suspected allergens. Each person with allergies reacts to specific substances. Someone for whom pollen is a problem might have no allergic reaction to mold. People who are allergic to cats are not necessarily sensitive to dogs. Some foods and medications trigger reactions in people; others do not. Some people can work in an environment in which they are exposed to a chemical that triggers an allergic reaction within days of their first exposure. For other people, this reaction might take years to appear.

Anaphylaxis can be caused by exposure to some common substances, such as foods, medications, insect bites, and certain material, such as latex. Exercise can also produce anaphylactic symptoms, but not consistently. Allergens that induce anaphylaxis include the following:

- **Foods and additives:** A trace amount of peanuts, tree nuts (for example, walnuts or almonds), shellfish, fish, milk, or eggs can trigger an allergic reaction in some people. This reaction can occur quickly. Additives such as sulfides—found in beer, dried fruit, pickles, and potato products—can also cause anaphylaxis, especially in asthmatics.
- **Medication:** There is an increased chance of developing an allergy to medication if the medicine is given frequently, in large doses, or by injection. This reaction usually occurs within hours of exposure.
- **Insect stings:** Honeybees, bumblebees, yellow jackets, hornets, wasps, fire ants, and harvester ants are the insects that cause most anaphylactic symptoms, which occur within minutes of the sting or bite.
- **Latex:** Those who work in the health care or rubber industries are exposed to latex so often that some develop allergic reactions to the material. Children who have congenital diseases like spina bifida often have many early exposures during their numerous surgeries. They, too, can develop an allergy to latex. Certain foods that cross-react with latex can trigger allergic reactions in these same people. These foods include bananas, kiwi, avocados, European chestnuts, potatoes, tomatoes, peaches, plums,

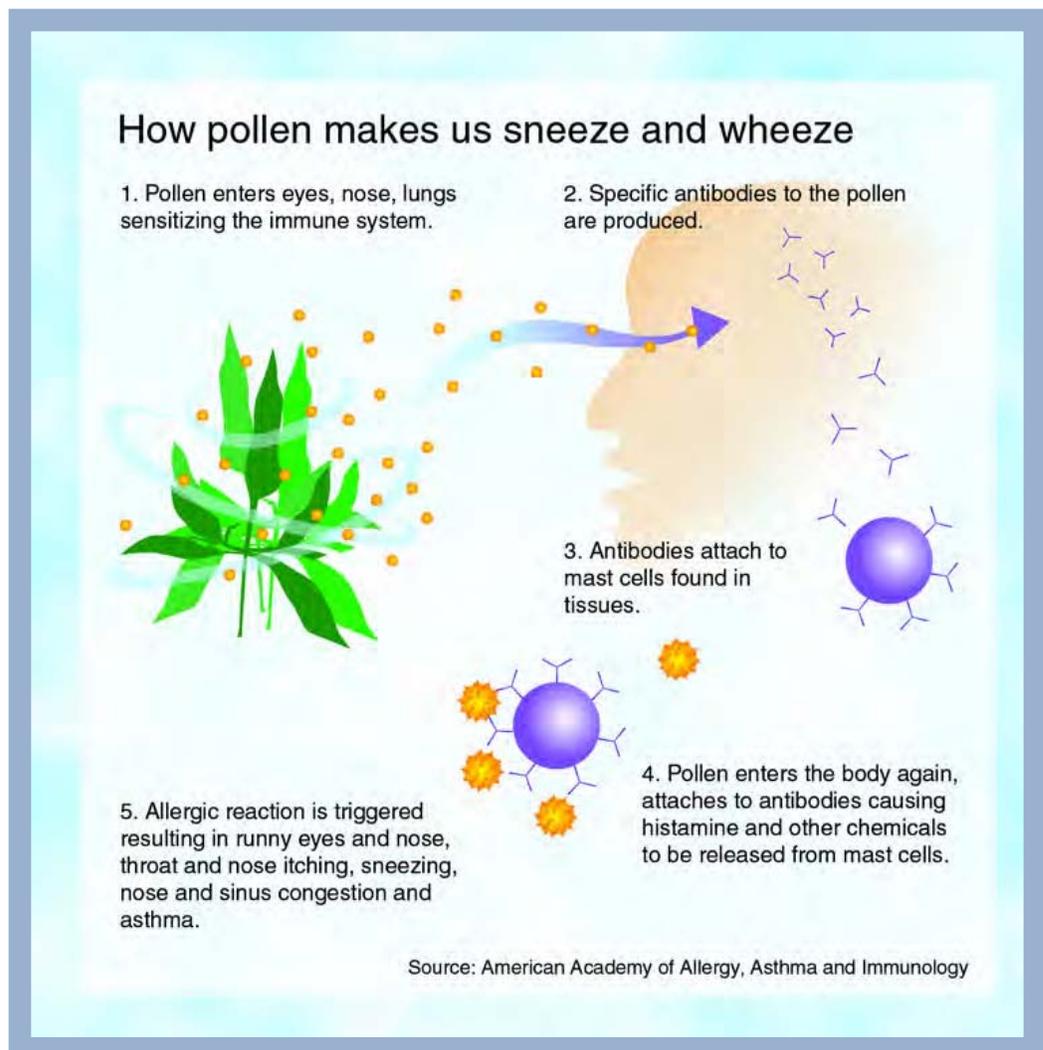
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cherries, and other fruits with pits.

A less common type of allergic reaction is called **food-dependent exercise-induced anaphylaxis**. Symptoms occur after a person exercises within 3 or 4 hours of eating a certain food. The foods that have been known to cause this reaction are wheat, shellfish, fruit, milk, cereal, and fish. Usually, those who experience the reaction already have asthma as well

as other allergies.

In some cases, a person can experience what is called a **biphasic reaction**. This happens when an anaphylactic reaction occurs. After the reaction, the symptoms go away, only to return hours later. For this and other reasons, it is important for a person having these symptoms to stay at a hospital for several hours following the first signs of trouble. Even if medical staff indicate that a person is



free to go home, it is best to sit in the hospital lobby for a few hours just to make sure that the symptoms do not return. Doing so could save the person's life.

How allergies affect the body

A person can be allergic only to something to which he or she has already been exposed. In other words, an allergic response occurs after an initial exposure to a substance to which the person's immune system is sensitive. It is reexposure to the substance that produces the allergic reaction.

The first time an allergen enters the body of a person who is likely to develop allergies, a certain type of allergen-specific antibody is produced. This antibody, called **immunoglobulin E (IgE)**, travels to mast cells in many areas of the body. **Mast cells** are commonly found in the nose, eyes, lungs, and gastrointestinal tract. IgE antibodies attach themselves to the surfaces of these mast cells. Each IgE antibody is waiting for an invasion by a particular allergen.

Let's say that a person is predisposed to developing an allergy to cat dander. The IgE antibody for that allergen can be found on the surface of that person's mast

cells. He or she might develop an allergy to cat dander only. This means that the person's allergies will not be triggered by dog or horse allergens, unless, of course, those allergen-specific IgE antibodies are present as well.

Therefore, the IgE antibodies to cat dander have "set up camp" on the mast cells. The very next time that the person comes into contact with cat dander, this allergen will enter the body. The waiting IgE antibodies will capture these cat dander allergens. Once this happens, chemicals such as **histamine** are released from the mast cells. These chemicals, often called mediators, are responsible for producing the symptoms of an allergic reaction, such as sneezing and coughing. As the person continues to be exposed to the cat dander allergen, the reaction continues. Already inflamed tissues might grow more inflamed as these chemicals draw other swollen cells to the area.

The reaction that the person has depends upon the location of the mast cells to which the IgE antibodies have attached. For example, if an allergen such as pollen touches the lining of the nose, as is common in allergic rhinitis (hay fever), the mucous membranes that line the nose will

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Children have allergic reactions to food more often than adults have. As they grow older, they may outgrow some of these allergies.

become inflamed and congested. The person will experience a dripping nose and watery, itchy eyes. If the person continues to be exposed to the allergen that triggered the reaction, the symptoms will continue the same way.

A person with a very different trigger—for example, a food that produces **eczema**—will experience symptoms that affect the skin. For 80% of those with eczema, this condition—itchy, reddening, flaking, and peeling skin—begins in childhood. Another skin-specific allergic reaction can occur from an infection, eating a certain food, or taking a certain medication.

Hives can cover the skin with small or large clusters of itchy, red bumps. Children experience allergic reactions to food more frequently than adults do. Over time, a child can become less sensitive to foods that were once allergy triggers.

Food can also be a trigger for anaphylaxis. A person who is in immediate danger from this severe allergic reaction should be given an injection of epinephrine (adrenaline) as soon as possible.

Otherwise, the episode could be fatal. **Epinephrine** is a body chemical that is produced naturally by the adrenal glands. Used in injections, a synthetic form of the chemical fights allergic reactions in several ways. Epinephrine opens constricted air passages, constricts dilated blood vessels, elevates low blood pressure, and halts the swelling that is common with hives.

How allergies affect lifestyle

People with allergies suffer from symptoms whenever they are exposed to the provoking allergens. In some cases, a person can avoid the trigger. If shellfish provokes an

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allergic reaction, a person could simply avoid exposure to any form of this food.

With other allergy sufferers, avoiding the allergen is not as easy. If the trigger is airborne, how can a person avoid exposure if the trees, grasses, weeds, and molds that thrive from January to December each year are the culprits? Even if allergies are seasonal, this still means that for months each year, the person must avoid the outdoors. If a person working as a nurse develops an allergic reaction to latex, what can be done? There are latex-free gloves available, but latex in various forms can be found everywhere within the environment in which the person must work. A food allergy can be so severe that simply avoiding direct contact with the food is not sufficient.

Peanut allergies are among the most common allergies in the United States. Children rarely outgrow peanut allergies. People who are allergic to peanuts find it difficult to avoid the many forms of the nut that are triggers. A child with a peanut allergy must avoid exposure to ground nuts, mixed nuts, peanut butter, peanut oil, and peanut flour. All utensils and surfaces that are

used to prepare foods containing nuts must be avoided as well. The protein that causes an allergic reaction to peanuts can become airborne. Therefore, a child with a peanut allergy can have a reaction from sitting in an environment in which peanuts or peanut products are cooked or consumed—for example, in a cafeteria in which other children are eating peanut butter or in a Chinese restaurant where egg rolls are being prepared.

Allergies of all types have driven people to significantly restrict their activities. Many people with severe allergies feel as if every environment holds potential dangers. Especially if a child is suffering from allergies, it is important to create an environment in which there is little fear of symptoms and an expectation exists that the child can meet the challenges of daily living. Usually, a



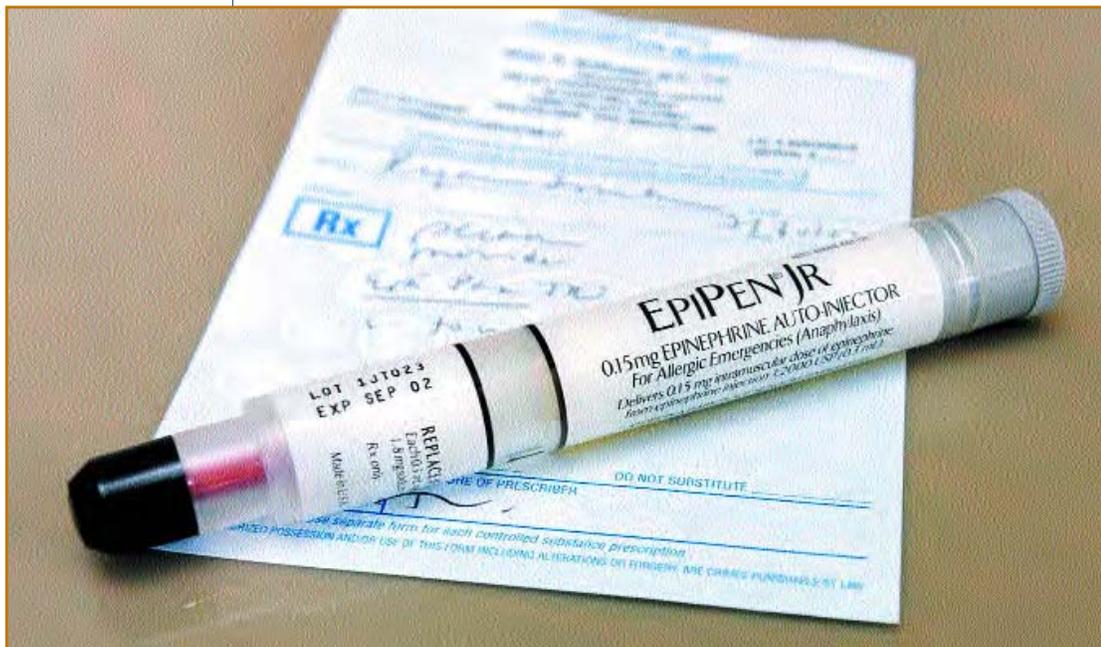
Peanut allergies are among the most common allergies in the U.S.

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combination of avoidance, allergen immunotherapy, and medication is needed to give an allergy sufferer more freedom to live a normal life. Many with allergies have had to endure the difficult side effects of medications that were used to treat their symptoms. At one time, **antihistamines** caused so much drowsiness that an allergy patient had to decide whether to suffer the effects of the allergy and remain alert or suffer the drowsiness brought on by the medication. Today, many formulas that do not produce drowsiness are available.

Newer medications allow people who have suffered life-threatening

allergic reactions to live more normal lives. There was a time when a person who had suffered from anaphylaxis could not travel to any area of the world where a certain level of medical care might not be available. Some people were so concerned about the availability of treatment that they lived closer to hospitals and ate dinner at restaurants that were minutes away from an emergency room. Now that epinephrine injections are portable and easy to administer, a dangerous insect sting or food allergy can be treated immediately. Still, medical help should be sought immediately after epinephrine is used.



Epinephrine injections are more portable now. This makes it easier for people with life-threatening allergies to lead normal lives.



Out from the Shadow of Asthma

At first, Gavin Huntley-Fenner's asthma came on slowly. While training with his high school wrestling team, he grew short of breath whenever he ran laps outside in the cold. Huntley-Fenner didn't worry too much, though, because his symptoms were never severe, and they disappeared in warm weather. A few years later, things grew much worse.

By then, his asthma attacks were so severe and frequent that he ended up in a hospital emergency room twice in one month. When he was near cats, his symptoms worsened. At times, it was impossible for him to climb a short flight of steps without stopping to rest. Huntley-Fenner decided he needed to find a way to manage his disease for a lifetime.

When Huntley-Fenner puts his mind to something, the results are often impressive. He earned his doctoral degree from the prestigious Massachusetts Institute of Technology and began a research career studying how children learn to speak and to grasp the concepts of numbers and counting. His broad range of skills has made him a sought-after business consultant in Southern California, where he now lives with his wife and two children.

He approached his struggle with asthma with the same deliberate and careful study.

"My key challenge right now as an asthmatic is that I'm on a lot of medication at high doses," he says. "As I grow older and my disease worsens, I'm concerned that there will be less and less flexibility to treat flare-ups."

So, with his doctor's blessing, Huntley-Fenner tries to cut down on medications whenever possible, all the while being careful not to jeopardize his health. "Finding a doctor open to thinking through the problem with you is important," he recommends.

Huntley-Fenner, continued on next page

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His approach seems to be working. For now, Huntley-Fenner's asthma doesn't seem to be worsening. To keep his body strong, he seeks out ways to exercise that won't cause an attack. "I have to be more creative in finding ways to keep fit," he says matter-of-factly. "I can't run around as much as I would like with my kids, but we ride bikes. There are neighborhood soccer games that would be fun for me to join in, but I can't. We're managing well, though. I can run on a treadmill. I can cycle. I can swim."

For Huntley-Fenner, trying to minimize the impact his asthma has on his family is a main concern. He has worked to reduce the amount of dust and allergens in his home, which can aggravate his asthma. "We no longer have a dog, we've covered our mattresses and pillows [with special coverings to reduce allergens], and we've put in wood flooring instead of carpets," he explains.

At the same time, he is concerned that creating such a sterile environment could prevent his three-year-old son and eight-year-old daughter from building their own resistance to things that cause allergies. It's a careful balancing act.

"If you're allergic or asthmatic and you're a parent, you might worry, 'What is the impact of this disease on my children?'" he says. Though he is concerned that his children may develop asthma or allergies, he doesn't let those thoughts get the best of him.

With the care of a good doctor, proper medicine, and a healthy outlook, Huntley-Fenner has dealt with asthma head-on—and instead of anxiously awaiting another attack, he has pushed it into the background of his busy, fulfilling life.

"I know that asthma poses certain risks for me and my family," he says, "but I won't let it overshadow my life."



Part 5: How Can Allergies Be Treated and Prevented?

Diagnosing and treating allergies

When a physician is evaluating a person for allergies, there are several steps involved. First, the patient's history is taken. Then, the patient is examined. Depending on the patient's symptoms, several tests might be done. Since some medications (especially antihistamines) can affect test results, a person should ask the health care provider which medications should be stopped days before the testing is to take place.

Skin (scratch or puncture) testing. In this test, a variety of substances that are common to the region in which the person lives are evaluated. Tiny amounts of fluids containing allergens such as pollen, animal dander, dust mites, and molds are placed just under the surface of the skin. Within 15–20 minutes, swelling occurs at the site of any substance to which the person has an allergy. The severity of the reaction can indicate the person's level of sensitivity.

Virtually painless, this form of testing offers immediate results and almost no risk of serious allergic reaction. This test is usually used to assess reactions to respiratory allergens.

Intradermal testing. These tests are similar to scratch or puncture tests, but are slightly more involved. Tiny amounts of allergens are injected under the skin. Intradermal tests are often done if the scratch or puncture test results are not complete or useful.



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Blood (RAST) testing. In these tests, a person's blood is combined with an allergen to determine whether any IgE antibodies react. If there is a reaction, there is likely an allergy to the tested substance. Although slightly more expensive than skin tests, this test is relatively painless, offers fast results, and provides almost no risk of serious allergic reaction. Blood testing is often used to evaluate reactions to insects and medications in people for whom skin testing is not an option.

the physician both the nature of and the severity of the symptoms. Provocative testing can be uncomfortable. Severe allergic reactions can occur.

An infant's sensitivity to a food or even a food allergy might be diagnosed at home first. If a parent knows that there is a family history of food allergies, there is a way to avoid having an infant experience full-blown symptoms. By gradually introducing small amounts of new foods—one at a time—parents can isolate a reaction. If a few foods are grouped together in a single meal, it is far more difficult to figure out which one is causing the reaction. If, however, a parent already suspects that a child has a food allergy, it is best not to test this suspicion any further at home. Safer testing can be done in an allergist's office.

A person can be treated for allergies, but not cured. The range of treatment options provides some relief for most people. As mentioned earlier, one common form of treatment involves ongoing allergen immunotherapy (also called allergy desensitization injections). Those who suffer from reactions to airborne allergens and insect stings find this form of treatment quite beneficial. Over time, a series of injections containing the offending allergens is given in an effort to build



Patch testing.

For this type of test, allergen-specific adhesive patches are placed on a person's skin and left for 72 hours. The sites that show swelling or redness indicate an allergic response. This form of testing is commonly used to assess reactions to metals and cosmetic additives.

Provocative testing. This type of testing is also called challenge testing. Usually, the substance in question is administered in an effort to provoke symptoms gradually. A trace amount of the allergen might be administered in an aerosol spray. The person's reaction to the allergen indicates to

the immune system's defenses against them.

When a person first begins allergen immunotherapy, a very diluted form of the allergen compound is given. Gradually, more of the substance is added to the injection. Eventually, the allergist determines that the optimal dose has been reached. The allergist could also determine that the person is at risk of developing an allergic reaction if the injections continue. Whatever the determination is, at this point the therapy ends.

The entire process of allergen immunotherapy can last for years. There is some evidence that this type of therapy works by tricking the immune system. As increased amounts of the allergen are injected, the immune system starts to produce a blocking antibody (IgG). The IgG antibody competes with the allergy antibodies (IgE) for the allergen, takes it over, and then does two things that halt an allergic reaction: It prevents the mast cells from activating and it stops the release of histamines.

Most of the oral medications that are used to treat allergies fall into two categories: antihistamines and decongestants. **Antihistamines** prevent a



histamine—a chemical that the body produces during an allergic reaction—from taking effect. Antihistamines are available over-the-counter in tablet and liquid form; they are also available as tablets, liquids, and injections with a prescription. **Decongestants** work by shrinking blood vessels and decreasing fluid leakage so that nasal congestion is reduced. Both liquid and tablet forms are available as over-the-counter and prescribed medications. Often, antihistamines and decongestants are combined in a single medication to address a greater number of symptoms.

For an acute allergic reaction that involves a great deal of congestion, a physician might recommend a decongestant in the form of drops or a nose spray. The over-the-counter form of medication should not be used for more than three or four consecutive days. Otherwise, it can actually increase nasal congestion. A prescription form of this medication

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can be used for a longer period without producing this side effect.

Nasal steroid inhalers or sprays can offer fast relief by reducing inflammation and swelling, as well as by slowing the rate at which histamines are released. These sprays deliver a very fine mist directly into the lining of the nose. They temporarily constrict the blood vessels in the swollen tissues within the nose. They also temporarily open a larger passage to allow for the free flow of air. When the effects of the spray wear off, the swelling returns. Sometimes, the swelling has grown worse. When this happens, most people just reuse the spray. Unfortunately, a series of brief periods of relief can lead to longer bouts of congestion. It is important to note that decongestant nasal sprays can be overused. If a person does overuse these sprays, his or her heart rate can increase and blood pressure can rise.

The good news is that most allergy symptoms can be treated easily and safely. The bad news is that, on rare occasions, an allergic reaction can be deadly. As we discussed earlier, anaphylaxis is a severe, sometimes fatal, allergic reaction. It is usually treated with an injection of epinephrine, and antihistamines and steroids are also given. The sooner the allergic person gets treatment, the less severe the

symptoms will be. Epinephrine can stop the progression of anaphylaxis; antihistamines and steroids cannot. Antihistamines and steroids should never be given *instead of* epinephrine, because, while they can help recovery, they cannot reverse the symptoms of anaphylaxis.

Often, a person who has a severe food allergy learns about it only after exposure to the trigger. Such exposure can happen as a result of breathing in or eating the substance. After the symptoms are treated, contact an allergist for follow-up care. The allergist can help determine what trigger caused the reaction. This is very important in preventing anaphylaxis from happening again.

Although triggers that are foods may be easy to avoid, it might be trickier when the allergen is a food additive. This is why it is crucial to be under a doctor's care. If anaphylaxis happens again, the person might already have an injection of epinephrine handy. Using this medicine will keep symptoms under control until the person can be taken to a hospital. An allergist can even offer treatments that can help build immunity to some triggers. For example, if anaphylaxis is triggered by insect stings, ongoing allergy shots can help build tolerance to the venom.

Here are some suggestions for what can be done to assist someone who is experiencing anaphylaxis:

1. Ahead of time, learn enough about the symptoms to recognize when the reaction is occurring.
2. Get medical help as soon as possible.
3. Do not allow a person who is undergoing this type of reaction to drive.
4. Even if the person receives treatment at the location where the reaction occurred, it is vital that he or she go to an emergency room, where the condition can be monitored.
5. Make a note of what could have caused the reaction and what amount of time elapsed between exposure and reaction. Having this information could help to prevent a future reaction.

Preventing and controlling allergies

For most allergies, preventing or controlling symptoms requires a few simple steps. Depending on the severity and frequency of the reaction, almost all symptoms can be minimized by changes in environment and the person's behavior. Once the triggers are known,

they should be avoided. Changes to the home, school, and work environments can significantly reduce the person's exposure to a variety of allergens.

The most important behavioral change that a person can make to help prevent and control allergies is to use all available methods of treatment. Allergen immunotherapy can help build tolerance against specific allergens. Other medications can help prevent or control symptoms that do recur. A person who suffers from allergies can also improve his or her general health by eating nutritious foods, exercising regularly, and getting enough rest.

At the very beginning of life and during early childhood, measures can be taken to help prevent some allergies.

Researchers have known for some time that breast milk is far more nutritious for infants than formula, cow's milk, or soy milk. Studies show that infants who are breast-fed are less likely to develop allergies to a variety of substances. The lower incidence of allergy in children who were breast-fed might result from the mother's immunities being transferred to the child through the breast milk.



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Another way to help lower the risk of allergy—specifically, peanut or nut allergy—involves not exposing children under the age of three to peanut products. Allergists believe that one reason that there are so many children in the United States with peanut allergies might be the extensive early exposure they have to peanuts. Many young American children regularly eat foods that contain peanuts or peanut products.

In the case of life-threatening allergic reactions, prevention is possible only if the trigger can be completely avoided. This is difficult to do, so additional measures must be taken to control symptoms. If a person has had an anaphylactic allergic reaction in the past, a physician might suggest carrying a supply of epinephrine at all times.

Regardless of whether the trigger is or is not known, the symptoms certainly are. Having a supply of a medication that can offer immediate relief will help get the symptoms under control until the person can be taken to a hospital. Since this medication is given in the form of an injection, the person who carries it must know how to administer it. However, because there is a possibility that the person having the reaction might be incapable of completing the injection, a companion should also know how to administer it. Another measure that can help save the life of a person known to have anaphylactic reactions is even easier to do: Have the person wear a medical bracelet that indicates to medical personnel and others the nature of the person's allergic condition and any possible triggers.



A Little Bit of Discomfort Brings Relief

Every day when Erminia Cardenas goes to work, she performs a simple test that can change the lives of her patients.

Cardenas, who is a licensed vocational nurse in Houston, uses tiny prongs to prick the skin on her patients' backs. There are 80 prongs in all, and each contains something different—from grass pollen to mold to cat dander.



The procedure is often the first step in unlocking the mystery of what is causing her patients' unexplained sneezing fits, watery eyes, and even difficulty in breathing—all symptoms of allergies. For Cardenas's patients, the test is fascinating: Could the cause of all their problems be something as simple as the goose-feather-stuffed comforter on their bed, or could the culprit be a type of tree that lines the streets in their neighborhood?

If one or more of the pricks begin to itch, swell, or turn red, Cardenas has the answer. Even though the prong pricks cause a bit of discomfort, finally learning the cause of their difficulties can be a huge relief to patients.

"We have one patient, a young man who works on the golf course at a country club, who came to us because he had started sneezing every time he went out on the course," says Cardenas. "When we tested him, he was allergic to all the grasses and tree pollens that surrounded him on the golf course—he was a mess, poor thing! He said, 'I can't give up my job,' so we put him on shots and he's doing very well."

Cardenas, whose ancestors are Mexican, considers herself lucky because she doesn't have any allergies. Neither did her parents, which was fortunate, since they were migrant workers who spent a lot of time outdoors in the cotton fields. As a baby, Cardenas traveled with her parents to the fields. "If they ever had allergies, it wasn't severe—not like what the patients I see have," she says.

Cardenas, continued on next page

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But her son suffers from watery eyes and sneezing when the season changes every year from summer to fall. The good news is that, with treatment, even people who suffer from severe allergies can control their symptoms.

“Some of our patients can even give themselves shots at home, if their symptoms are milder,” says Cardenas.

Cardenas, a mother of three who returned to nursing after taking time off to raise her children, sounds positively maternal when she talks about her patients. She worries that many of the patients she sees—who range from airline pilots to lawyers to fellow nurses—have such demanding jobs that their symptoms can worsen because of the pressure. “Sometimes because they’re so stressed at work, they don’t take care of themselves,” she says. “I think stress can aggravate allergies.”

So can the change of seasons—and Cardenas, who talked about her job on a beautiful March day when the spring’s first flowers were pushing through the ground, knew she would be in for a busy time at work.

That’s just fine for Cardenas. After all, she knows that after patients come to her office and receive a proper diagnosis and treatment, they might actually be able to sit outside and take in nature’s beauty—without suffering from a sneezing fit.