

## **Rhinitis**

Allergies, including allergic rhinitis, affect an estimated 40 million to 50 million people in the United States. Some allergies may interfere with day-to-day activities or lessen the quality of life.

The allergist-immunologist, with his or her specialized training and expertise in managing allergies, allergic rhinitis and asthma, can develop a treatment plan for your individual condition. The goal will be to enable you to lead a life that is as normal and symptom-free as possible.

### **What Is Rhinitis?**

Rhinitis is a term describing the symptoms produced by nasal irritation or inflammation. Symptoms of rhinitis include runny nose, itching, sneezing and stuffy nose due to blockage or congestion. These symptoms are the nose's natural response to inflammation and irritation, and they are often associated with itching of the eyes.

Arbitrarily, rhinitis lasting less than six weeks is called acute rhinitis, and persistent symptoms are called chronic rhinitis. Acute rhinitis is usually caused by infections or chemical irritation. Chronic rhinitis may be caused by allergy or a variety of other factors.

The nose normally produces mucus, which traps substances like dust, pollen, pollution and germs, such as bacteria and viruses. Mucus flows from the front of the nose and drains down the back of the throat. When mucus production is excessive, it can flow from the front, as a runny nose, or become noticeable from the back, as post-nasal drip. Nasal mucus, normally a thin, clear liquid, can become thick or colored, perhaps due to dryness, infection or pollution. When post-nasal drip is excessive, thick or contains irritating substances, cough is the natural response for clearing the throat.

Itching and sneezing are also natural responses to irritation caused by allergic reactions, chemical exposures including cigarette smoke, temperature changes, infections and other factors.

The nasal tissues congest and decongest periodically. In most people, nasal congestion switches back and forth from side to side of the nose in a cycle several hours long. Some people, especially those with narrow nasal passages, notice this nasal cycle more than others. Strenuous exercise or changes in head position can affect nasal congestion. Severe congestion can result in facial pressure and pain, as well as dark circles under the eyes.

### **What Is Sinusitis?**

Sinusitis is inflammation or infection of any of the four groups of sinus cavities in the skull, which open into the nasal passages. Sinusitis is not the same as rhinitis, although the two may be associated, and their symptoms may be similar. The terms "sinus trouble" or "sinus congestion" are sometimes wrongly used to mean

congestion of the nasal passage itself. Most cases of nasal congestion, though, are not associated with sinusitis.

### **What Is Allergic Rhinitis?**

Known to most people as hay fever, allergic rhinitis is a very common medical problem affecting more than 15 percent of the population, both adults and children.

Allergic rhinitis takes two different forms: seasonal and perennial. Symptoms of seasonal allergic rhinitis occur in spring, summer and/or early fall and are usually caused by allergic sensitivity to pollens from trees, grasses or weeds, or to airborne mold spores. Other people experience symptoms year-round, a condition called "perennial allergic rhinitis". It's generally caused by sensitivity to house dust mites, animal dander and/or mold spores. Underlying or hidden food allergies are sometimes a cause of perennial nasal symptoms.

Some people may experience both types of rhinitis, with perennial symptoms worsening during specific pollen seasons. As will be discussed later, there are also other causes for rhinitis.

### **What Causes the Sneezing, Itchy Eyes and Other Symptoms?**

When a sensitive person inhales an allergen (allergy-causing substance) like ragweed pollen, the body's immune system reacts abnormally with the allergen. The allergen binds to allergic antibodies (immunoglobulin E) that are attached to cells that produce histamine and other chemicals. The pollen "triggers" these cells in the nasal membranes, causing them to release histamine and the other chemicals. Histamine dilates the small blood vessels of the nose and fluids leak out into the surrounding tissues, causing runny noses, watery eyes, itching, swelling and other allergy symptoms.

Antibodies circulate in the blood stream, but localize in the tissues of the nose and in the skin. This makes it possible to show the presence of these antibodies by skin testing, or less commonly, by a special IgE allergy blood test. A positive skin test mirrors the type of reaction going on in the nose.

### **No Hay, No Fever, so Why "Hay Fever"?**

"Hay fever" is a turn-of-the-century term that has come to describe the symptoms of allergic rhinitis, especially when it occurs in the late summer. However, the symptoms are not caused by hay (ragweed is one of the main culprits) and are not accompanied by fever. So, the term "allergic rhinitis" is more accurate. Similarly, springtime symptoms are sometimes called "rose fever," but it's just coincidental that roses are in full-bloom during the grass-pollinating season. Roses and other sweet-smelling, showy flowers rely on bees, not the wind, for pollination, so not much of their pollen gets into the air to cause allergies.

### **Is There Any Escape?**

A common question from allergic rhinitis sufferers is: Can I move someplace where my allergies will go away? Some allergens are tough to escape. Ragweed, which

affects 75 percent of allergic rhinitis sufferers, blankets most of the United States. Less ragweed is found in a band along the West Coast, the southern-most tip of Florida and northern Maine, but it is still present. Even parts of Alaska and Hawaii have a little ragweed.

Allergist-immunologists seldom recommend moving to another locale as a cure for allergies. A move may be of questionable value because a person may escape one allergy to ragweed, for example, only to develop sensitivity to grasses or other allergens in the new location. Since moving can have a disrupting effect on a family financially and emotionally, relocation should be considered only in an extreme situation and only after consultation with an allergist-immunologist.

### **Is Allergic Rhinitis Ever the Cause of Other Problems?**

Some known complications include ear infections, sinusitis, recurrent sore throats, cough, headache, altered sleep patterns, fatigue, irritability and poor school performance. Occasionally, children may develop altered facial growth and orthodontic problems. Allergy treatment can eliminate or alleviate most of these problems.

### **Are All Cases of Rhinitis Caused by Allergies?**

Rhinitis may result from many causes other than allergy. Not all rhinitis symptoms are the result of allergies. Below are listed the three most common causes of rhinitis with some of their characteristics.

<b>Rhinitis Type</b>	<b>Common Name</b>	<b>Allergic Sensitivity</b>	<b>Causes</b>	<b>Duration of Symptoms</b>
Allergic	Hay fever	Yes	Dust mites, animals, pollens, molds, foods	Perennial and/or seasonal
Infectious	Colds or flu	No	Viruses	Three to seven days, sometimes longer
Non-allergic	Irritant	No	Smoke, air pollution, exhaust fumes, aerosol sprays, fragrance, paint fumes, etc.	Perennial and/or following exposure

The most common condition causing rhinitis is the common cold, an example of infectious rhinitis. Most infections are relatively short-lived, with symptoms improving at three to seven days. Colds can be caused by any one of more than 200 viruses. Children, particularly young children in school or day care centers, may have from eight to 12 colds each year. Fortunately, the frequency of colds lessens after immunity has been produced from exposure to many viruses.

Colds usually begin with a sensation of congestion, rapidly followed by runny nose and sneezing. Over the next few days, congestion becomes more prominent, the nasal mucus may become colored, and there may be a slight fever and cough. Cold

symptoms resolve within a couple of weeks, although a cough may sometimes persist. Cold symptoms that last longer may be due to other causes, such as chronic rhinitis or sinusitis.

What are other causes of rhinitis? Not all symptoms in the nasal passage are caused by allergy or infection. Similar symptoms can be caused by mechanical blockage, use of certain medications, irritants, temperature changes or other physical factors. Rhinitis can also be a feature of other diseases and medical conditions.

Drug-induced nasal congestion can be caused by birth control pills and other female hormone preparations, certain blood pressure medications, and prolonged use of decongestant nasal sprays.

Decongestant nasal sprays work quickly and effectively, but they alter how the nasal passages normally work. After a few weeks of use, nasal tissues swell after the medication wears off. The only thing that seems to relieve the obstruction is more of the medicine, and the medication's effect lasts shorter lengths of time. Permanent damage to the nasal tissues may result. Consultation with a physician to "get off" the medication is often necessary.

Cocaine also alters how the nasal passages normally work, causing a condition identical to, or even more severe than that produced by decongestant nasal sprays. If you use cocaine, it is important to tell your physician so that appropriate therapy can be prescribed.

Irritant rhinitis, or "vasomotor rhinitis" describes a group of other causes of rhinitis, with symptoms not caused by infection or allergy. Many people have recurrent or chronic nasal congestion, excess mucus production, itching, and other nasal symptoms similar to those of allergic rhinitis, but the disorder is not caused by allergy.

### **What Triggers Vasomotor Rhinitis?**

Irritants that can trigger vasomotor rhinitis include cigarette smoke, strong odors and fumes, including perfume, hair spray, other cosmetics, laundry detergents, cleaning solutions, pool chlorine, car exhaust and other air pollution. Other irritants are spices used in cooking, alcoholic beverages (particularly beer and wine), aspirin and certain blood pressure medications. Some people are very sensitive to abrupt changes in weather or temperature. Skiers often develop a runny nose, but in some people any cold exposure may cause a runny nose. Others start sneezing when leaving a cold, air-conditioned room. These agents are not allergens, do not induce formation of allergic antibodies, and do not produce positive skin test reactions. Occasionally, one or two positive skin tests may be observed, but they do not match with the history and are not relevant or significant.

The cause of vasomotor rhinitis is not well understood. In a sufficiently high concentration, many odors will cause nasal irritation in almost anyone. Some people are unusually sensitive to irritation and will have significant nasal symptoms even when exposed to low concentrations of irritants. Thus, vasomotor rhinitis seems to be an exaggeration of the normal nasal response to irritation, occurring at levels of exposure that don't bother most people. It occurs more often in smokers and older individuals.

As is the case with allergic rhinitis, vasomotor rhinitis often can't be cured. Fortunately, symptoms can be kept under control by limiting exposure to substances that cause symptoms and by taking medication when needed. Patients with vasomotor rhinitis should not smoke or permit smoking in their homes.

Dryness of the nasal tissues can be a normal effect of aging, or a characteristic of a nasal condition associated with a foul smelling nasal discharge. Rhinitis also can be a feature of endocrine disease, like hypothyroidism, or can occur during pregnancy. Rhinitis can be made worse or even improved during pregnancy. Alcoholic beverages can cause the blood vessels in the nose to enlarge temporarily and produce significant nasal congestion.

### **How Do You Know What Kind of Rhinitis You Have?**

Consult your physician. Sometimes several conditions can coexist in the same person. In a single individual, allergic rhinitis could be complicated by vasomotor rhinitis, septal deviation (curvature of the bone separating the two sides of the nose) or nasal polyps. Use of spray decongestants for chronic sinusitis, septal deviation or vasomotor rhinitis may cause rhinitis medicamentosa. Any of these conditions will be made worse by catching a cold. Nasal symptoms caused by more than one problem can be difficult to treat, often requiring the cooperation of an allergist-immunologist and an otolaryngologist (a physician specializing in the ear, nose and throat).

### **How Is Allergic Rhinitis Diagnosed?**

Your allergist-immunologist may begin by taking a detailed history, looking for clues in your lifestyle that will help pinpoint the cause of your symptoms. You'll be asked about your work and home environments, your eating habits, your family's medical history, the frequency and severity of your symptoms, and miscellaneous matters, such as if you have pets. Then, you may require some tests. Your allergist-immunologist may employ skin testing, in which small amounts of suspected allergen are introduced into the skin. Skin-testing is the easiest, most sensitive and generally least expensive way of making the diagnosis. Another advantage is that results are available immediately. In rare cases, it also may be necessary to do a special IgE allergy blood test for specific allergens.

### **How Is Rhinitis Treated?**

When no specific cure is available, options include ignoring your symptoms, avoiding or decreasing exposure to irritants or allergens to the extent practical, and taking medications for symptom relief.

Once allergic rhinitis is diagnosed, treatment options include avoidance, medication and immunotherapy (allergy shots).

**Avoidance** - A single ragweed plant may release 1 million pollen grains in just one day. The pollen from ragweed, grasses and trees is so small and buoyant that the wind may carry it miles from its source. Mold spores, which grow outdoors in fields and on dead leaves, also are everywhere and may outnumber pollen grains in the air even when the pollen season is at its worst.

While it's difficult to escape pollen and molds, here are some ways to lessen exposure.

- Keep windows closed and use air-conditioning in the summer, if possible. A HEPA (High Energy Particulate Air) filter or an electrostatic precipitator may help clean pollen and mold from the indoor air. Automobile air conditioners help, too.
- Don't hang clothing outdoors to dry. Pollen may cling to towels and sheets.
- The outdoor air is most heavily saturated with pollen and mold between 5 a.m. and 10 a.m., so early morning is a good time to limit outdoor activities.
- Wear a dust mask when mowing the lawn, raking leaves or gardening, and take appropriate medication beforehand.

**Medication** - When avoidance measures don't control symptoms, medication may be the answer. Antihistamines and decongestants are the most commonly used medications for allergic rhinitis. Other medications, such as cromolyn (Nasal crom<sup>®</sup>), inhibit the release of chemicals that cause allergic reactions. Nasal corticosteroid sprays reduce the inflammation from the allergic trigger. Medications help to alleviate nasal congestion, runny nose, sneezing and itching. They are available in many forms, including tablets, nasal sprays, eye drops and liquids. Some medications may cause side effects, so it is best to consult your allergist-immunologist if there's a problem.

**Immunotherapy** - Allergen immunotherapy, known as "allergy shots", may be recommended for persons who don't respond well to treatment with medications, experience side-effects from medications, or have allergen exposure that is unavoidable. Immunotherapy can be very effective in controlling allergic symptoms. Allergy injections are usually given at variable intervals over a period of three to five years.

An immunotherapy treatment program consists of injections of a diluted allergy extract, administered frequently in increasing doses until a maintenance dose is reached. Then, the injection schedule is changed so that the same dose is given with longer intervals between injections. Immunotherapy helps the body build resistance to the effects of the allergen, reduces the intensity of symptoms caused by allergen exposure, and sometimes can actually make skin test reactions disappear. As resistance develops, symptoms should improve, but the improvement from immunotherapy will take several months to occur. Immunotherapy does not help the symptoms produced by non-allergic rhinitis.

There are many ways of treating allergies, and each person's treatment must be individualized based on the frequency, severity and duration of symptoms and on the degree of allergic sensitivity. If you have more questions, your allergist-immunologist will be happy to answer them.

### **About Antihistamines**

Antihistamines are the most inexpensive and commonly used treatment for rhinitis. These medications counter the effects of histamine, the irritating chemical released within your body when an allergic reaction takes place. Although other chemicals are involved, histamine is primarily responsible for causing the symptoms.

Antihistamines do not cure, but help relieve: nasal allergy symptoms such as sneezing, itching and runny nose; eye symptoms such as itching, burning, tearing and clear discharge; skin conditions such as hives, eczema, itching and some rashes; and certain other allergic conditions.

There are dozens of different antihistamines and wide variations in how patients respond to them. Some are available over-the-counter and others require a prescription.

Generally, they work well, and the prescription products produce only minor side effects. Some people tend to build up resistance to some antihistamines over time. This tendency varies widely from individual to individual. If you find that an antihistamine loses its "strength," notify your physician, who may then recommend an antihistamine of a different class or strength. Persons with nasal dryness or thick nasal mucus should avoid taking antihistamines without consulting a physician. Contact your physician for advice if an antihistamine causes drowsiness or other side effects.

### **Proper Use**

Short-acting antihistamines can be taken every four to six hours, while timed-release antihistamines are taken every 12 to 24 hours. The short-acting antihistamines are often most helpful taken 30 minutes before anticipated allergic exposure (picnic during ragweed season). Timed-release antihistamines are better suited to chronic (long-term) use for those who need daily medications.

Proper use of these drugs is just as important as their selection. The most effective way to use them is before symptoms develop. A dose taken early can eliminate the need for many later doses to reduce established symptoms. Many times a patient will say that he "took one, and it didn't work." If he or she had taken the antihistamine regularly for three to four days, and built up blood levels, it might have been effective.

### **Side Effects**

The most common side effect is sedation or drowsiness. For this reason, it is important that you do not drive a car or work with dangerous machinery the first time you take potentially sedating antihistamine. You should take the antihistamine for the first time at home, several hours before bedtime. When you are sure that the medicine will not cause sedation, you then can take it any time as prescribed during the day. In persons who experience drowsiness, the sedation effect usually lessens over time, but there could still be performance impairment. Some of the newer antihistamines have no drowsiness side effects.

Another frequently encountered side effect is excessive dryness of the mouth, nose and eyes. Less common side effects include restlessness, nervousness, over excitability, insomnia, dizziness, headaches, euphoria, fainting, visual disturbances, decreased appetite, nausea, vomiting, abdominal distress, constipation, diarrhea, increased or decreased urination, high or low blood pressure, nightmares (especially in children), sore throat, unusual bleeding or bruising, chest tightness or palpitations. Consult your allergist-immunologist should these reactions occur.

Alcohol and tranquilizers increase the sedation side effects of antihistamines.

Important precautions:

- Never take anyone else's medication.
- Do not use more than one antihistamine at a time, unless prescribed.
- Keep these medications out of the reach of children.
- Know the effect of the medication on you before working with heavy machinery, driving or doing other performance-intensive tasks; some products can slow your "reaction time."
- Follow your physician's instructions.

There have not been enough studies to determine absolute safety of antihistamines in pregnancy. Again, consult your allergist-immunologist or obstetrician if antihistamines must be taken.

While antihistamines have been taken safely by millions of people in the last 50 years, don't take antihistamines before telling your allergist-immunologist if you are allergic to or intolerant of any medicine; are pregnant or intend to become pregnant while using this medication; are breast feeding; have glaucoma or enlarged prostate; or have any medical illness.

### **What Other Medications Are Effective in Treating Rhinitis?**

**Decongestants** help relieve the stuffiness and pressure caused by swollen nasal tissue. They do not contain antihistamines, so they do not cause antihistamine side effects. They do not relieve the other symptoms of allergic rhinitis, such as runny nose, post-nasal drip and sneezing. Decongestants are available as prescription and non-prescription medications and are often seen in combination with antihistamines or other medications. It is not uncommon for patients using decongestants to experience insomnia if taking the medication in the afternoon or evening. If this occurs, a dose reduction may be needed.

At times, men with prostate enlargement may encounter urinary problems while on decongestants. Patients using medications for the management of emotional or behavioral problems should discuss this with their physicians before using decongestants. Pregnant patients should also check with their physician before starting decongestants.

**Non-prescription decongestant nasal sprays** work within minutes and last for hours, but should not be used for more than a few days at a time without a physician's order.

**Oral decongestants** are found in many over-the-counter and prescription medications, and may be the treatment of choice for nasal congestion. They don't cause rhinitis medicamentosa but need to be avoided by some patients with high blood pressure. If you have high blood pressure, you should check with your physician before using them.

**Non-prescription saline nasal sprays** will help counteract symptoms of dry nasal passages or thick nasal mucus. Unlike decongestant nose sprays, a saline nose spray

can be used as often as needed. Sometimes, your physician may recommend washing (douching) of the nasal passage.

**Corticosteroids** counteract the inflammation caused by the body's release of allergy-causing substances, as well as that caused by other non-allergic factors. Thus, they generally work for many causes of rhinitis symptoms and are sometimes useful for chronic sinusitis. Corticosteroids are sometimes injected or taken orally but usually on a short-term basis for extremely severe symptoms. Physicians warn that injected or oral steroids may produce severe side effects when used for long periods or used repeatedly and, for this reason, they should be used with caution. In rhinitis, a corticosteroid is much safer when used by spraying it into the nose. Side effects are less common but may include nasal ulceration, nasal fungal infection or bleeding.

**Cromolyn** is a medication that blocks the body's release of allergy-causing substances. It does not work in all patients. The full dosage is four times daily, and improvement may take several weeks to occur.

**Atropine** and the related drug ipratropium bromide are sometimes used to relieve the runny nose of rhinitis; in fact, most antihistamines have a slight atropine-like effect. Atropine can be taken orally and as a nasal spray. It is a component of some antihistamine-decongestant preparations.

**Antibiotics** are for the treatment of bacterial infections. They do not affect the course of uncomplicated common colds and are of no benefit for non-infectious rhinitis, including allergic rhinitis. In chronic sinusitis, antibiotics may help only temporarily, and surgery may be needed.

**Eye allergy preparations** are used when the eyes are affected by the same allergens that trigger rhinitis, causing redness, watery eyes and itching. Eye preparations are available as prescription and non-prescription medications. Check with your physician or pharmacist about these medications.

**Nasal surgery** will usually cure or improve symptoms caused by mechanical blockage or chronic sinusitis not responsive to prolonged antibiotics and nasal steroid sprays. Stopping the use of offending medications will cure rhinitis medicamentosa, providing that there is no underlying disorder.

Check with your physician or pharmacist if you are unsure about a specific drug or formula.