

## Allergic Diseases and Cognitive Impairment

Sneezing, wheezing, watery eyes and runny nose aren't the only symptoms of allergic diseases. Many people with allergic rhinitis also report feeling "slower" and drowsy. When their allergies are acting up, they have trouble concentrating and remembering.

For instance, allergic rhinitis can be associated with:

- Decreased ability to concentrate and function
- Activity limitation
- Decreased decision-making capacity
- Impaired hand-eye coordination
- Problems remembering things
- Irritability
- Sleep disorders
- Fatigue
- Missed days at work or school
- More motor vehicle accidents
- More school or work injuries

Many parents of children with allergic rhinitis observe increased bad moods and irritability in their child's behavior during the allergy season. Since children cannot always express their uncomfortable or painful symptoms verbally, they may express their discomfort by acting up at school and at home. In addition, some kids feel that having an allergic disease is a stigma that separates them from other kids.

It is important that the irritability or other symptoms caused by ear, nose or throat trouble are not mistaken for attention deficit disorder. With proper treatment, symptoms can be kept under control and disruptions in learning and behavior can be avoided.

### Causes

Experts believe the top two culprits contributing to cognitive impairment of people with allergic rhinitis are sleep interruptions and sedating antihistamine (OTC) medications.

Secondary factors, such as blockage of the Eustachian tube (ear canal), also can cause hearing problems that have a negative impact on learning and comprehension. Constant nose blowing and coughing can interrupt concentration and the learning process, and allergy-related absences can cause people to miss school or work and subsequently fall behind.

### Sleep Disruption

Chronic nasal congestion can cause difficulty in breathing, especially at night. Waking is a hard-wired reflex to make you start breathing again. If you had bad allergic rhinitis, you may waken a dozen times a night. Falling back asleep can be difficult, cutting your total number of sleep hours short.

The average person needs about eight hours of sleep per night to function normally the next day. Losing just a few hours of sleep can lead to a significant decrease in your ability to function. Prolonged loss of sleep can cause difficulty in concentration, inability to remember things, and can contribute to automotive accidents. Night after night of interrupted sleep can cause serious decreases in learning ability and performance in school or on the job.

## **Over-the-Counter Medications**

Most allergy therapies don't take into account the effects of allergic rhinitis on mental functioning – they treat the more obvious physical symptoms. Some allergy therapies may even cause some cognitive or mental impairment.

In a recent poll in which allergy sufferers were asked how they treat their symptoms, about 50 percent responded that they use over-the-counter (OTC) medications. The most commonly used OTC medications for allergy symptoms are decongestants and first generation antihistamines, such as diphenhydramine (Benadryl) – both of which can cause sleep disturbances.

## **Decongestants**

Decongestants constrict small blood vessel in the nose. This opens the nasal passageways and lets you breathe easier. Some decongestants are available over-the-counter, while higher strength formulas are available with a prescription. In some people, oral decongestants can cause problems with getting to sleep, appetite loss and irritability, which can contribute to allergy problems. If you have any of these symptoms, discuss them with your doctor.

## **Antihistamines**

Antihistamines block the effects of histamine, a chemical produced by the body in response to allergens. Histamine is responsible for the symptoms of allergic rhinitis, including an itchy runny nose, sneezing, and itchy eyes. First generation OTC antihistamines available in the United States also can cause drowsiness. Regularly taking OTC antihistamines can lead to a feeling of constant sluggishness, affecting learning, memory and performance.

Newer second generation antihistamines such as Claritin (loratadine) and Zyrtec (cetirizine), which are OTC, and Clarinex (desloratadine), Allegra (fexofenadine), Xyzal (levocetirizine) by prescription, are non or low sedating, designed to minimize drowsiness while still blocking the effects of histamine.

## **Solutions**

With all the allergic diseases, the best way to control your symptoms is to avoid coming in to contact with your triggers – the substances that cause you to have an allergic reaction. This is often easier said than done. Sometimes it is impossible to avoid the substances that cause symptoms, especially when you are not in control of your environment.

If your allergens can't be avoided, your doctor can help you to create an allergy treatment plan. People who are allergic to indoor things like dust mites or animal dander may need medication on a daily basis, while people who have seasonal symptoms may only need treatment at certain times during the year. An allergist-immunologist can help you determine to which substances you are allergic.

Several types of non-sedating medications are available to help control allergies. One non-sedating nasal spray, NasalCrom (cromolyn), is available without a prescription. Your doctor may also prescribe nasal steroid sprays to treat nasal inflammation. Nasal steroid sprays are highly effective in treating allergy symptoms. The most common side effect associated with nasal sprays is headache.

If medications are not effective or cause unwanted side effects, your doctor may suggest immunotherapy, or "allergy shots". Immunotherapy is used to treat allergy to pollen, ragweed, dust mites, animal dander and other allergens. This process gradually desensitizes you to these substances by changing the way that your body's immune system responds to them. For example, if you are allergic to ragweed, immunotherapy treatments would involve injecting a tiny amount of ragweed pollen extract under your skin every week. Immunotherapy treatments usually last three to five years or longer. Once your body is able to tolerate the substance without producing the symptoms of an allergy, immunotherapy can be stopped, and the need for oral medications should be gone or greatly reduced.

## Allergy Testing

More than 50 million people in the United States have allergies. Finding out what you are allergic to is an important first step to effective allergy treatment. Today allergy tests are more convenient and accurate than ever before. When combined with a detailed medical history, allergy testing can identify the specific things that trigger your allergic reactions.

### Are there any allergy testing side effects?

Any medical test involves some risk. The risk with allergy skin tests is that allergy symptoms might occur during the test. The most common symptoms are itching and swelling of the skin where the tests are. In rare cases, a more serious reaction can occur. That is why skin tests should be done by a specialist. The risk with allergy blood tests is pain or bleeding at the needle mark. Also, a few people may faint during blood testing.

### What about allergy testing in children? Who can be tested for allergies?

Adults and children of any age can be tested for allergies.

### How is allergy testing done?

Allergy testing can be done as skin tests or as blood tests. Usually, allergy tests are done under the guidance of an allergy specialist. These specialists are trained in the best methods for testing and treating allergies.

### How do allergy skin tests work?

There are two types of skin tests. During the first type of skin test, a drop of a suspected allergen is pricked or scratched on the surface of the skin. The test is performed on the back or forearm. Many suspected allergens are tested at the same time. If you are allergic to one of the tests, you will have redness and swelling at the test spot. Sometimes the doctor will recommend a second type of test. In this type, a small amount of the suspected allergen is injected into the skin of the arm or forearm. Several suspected allergens are tested at the same time.

### How long does it take to get skin test results?

Skin testing is fast. For both types of skin tests, positive reactions usually appear within 20 minutes. Sometimes redness and swelling can occur several hours after skin testing. The delayed reaction usually disappears in 24 to 48 hours, but should be reported to the allergy doctor or nurse.

### Is skin testing painful?

Both types of skin testing have little or no pain. However, positive reactions cause annoying itching red bumps which look and feel like mosquito bites. The itching and bumps are gone usually in a few short minutes or hours.

### Does medicine interfere with allergy skin tests?

Some medicines do interfere with allergy skin tests. The allergist will tell you if you have to change your medicine before allergy skin testing.

### When are allergy blood tests used?

An allergy blood test is often used because:

- The patient is taking a medicine that can interfere with skin testing, but cannot be stopped for a few days
- The patient suffers from a severe skin condition such as eczema or psoriasis
- Testing with a strong allergen might cause an extra large positive reaction
- For babies and very young children, a single needle stick for allergy blood testing may be better than several skin tests

### **How long does it take to get blood test results?**

Because the blood sample must be sent to a lab for testing, it takes many days to get the results.

### **Which test method is best?**

Skin tests give fast results. They usually cost less than allergy blood tests. What are the negatives? Young children do not like this type of test. Some medicines can interfere with the tests. In addition, in some people with dark skin it may be hard to read the tests. Also, the skill of the tester may affect the results. The test should be done by a person with lots of training.

Blood tests are helpful because they involve a single needle prick. Medicine does not interfere with the results. However, it takes a long time to get the results. Blood tests cost more than skin tests. There are many of types of allergy blood tests. Some types are more helpful than others.

Each test method has pluses and minuses. The test results alone do not diagnose allergies. All test results, from either type of test, must be interpreted together with the medical history.

### **What allergies can allergy testing find?**

A blood test for allergies can help find allergies to pollen, molds, dust mites, animal dander, insect stings, foods and some medicines.

## Allergic Rhinitis (Hay Fever)

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. An allergist has specialized training and expertise in managing allergies, allergic rhinitis and asthma. They can develop a plan for rhinitis treatment. The goal will be to enable you to lead a life that is as normal and symptom-free as possible.

### Rhinitis symptoms

Rhinitis is a term describing the symptoms produced by nasal irritation or inflammation. Symptoms of rhinitis are due to blockage or congestion. They include:

- Runny nose
- Itching
- Sneezing
- Stuffy nose due to blockage or congestion

These symptoms are the nose's natural response to inflammation and irritation. They are often associated with itching of the eyes.

The nose normally produces mucus to trap substances (like dust, pollen and pollution) and germs (bacteria and viruses). Mucus flows from the front of the nose and drains down the back of the throat. When too much mucus is made, it can cause a runny nose from the front or post-nasal drip from the back. Cough is the natural response to clearing the throat from post-nasal drip.

Itching, sneezing, and other symptoms can be responses to:

- Allergic reactions
- Chemical exposures including cigarette smoke
- Temperature changes
- Infections
- Other factors

In most people, nasal congestion goes from side to side of the nose in a cycle several hours long. Some people may notice this nasal cycle more than others, especially if their nasal passages are narrow. 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.

### Rhinitis treatment

When no specific cure is available for your chronic rhinitis, 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 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. Automobile air conditioners help, too.
- Don't hang clothing outdoors to dry. Pollen may cling to towels and sheets.

- The outdoor air usually 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 pollen mask (such as a NIOSH rated 95 filter 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. Medications help reduce 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 if there's a problem.

### **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.

### **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 adults and children.

Allergic rhinitis takes two different forms:

- **Seasonal:** Symptoms of seasonal allergic rhinitis occur in spring, summer and/or early fall. They are usually caused by allergic sensitivity to pollens from trees, grasses or weeds, or to airborne mold spores.
- **Perennial:** People with perennial allergic rhinitis experience symptoms year-round. It is generally caused by sensitivity to house dust mites, animal dander, cockroaches and/or mold spores. Underlying or hidden food allergies rarely caused perennial nasal symptoms.

Some people may experience both types of rhinitis, with perennial symptoms getting worse during specific pollen seasons. There are also non-allergic 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. The allergen binds to allergic antibodies (immunoglobulin E, or IgE) 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 making fluids leak out into other tissues. This causes runny noses, watery eyes, itching, swelling and other allergy symptoms.

Antibodies circulate in the blood stream, and collect 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 century-old 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. 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. Allergists seldom recommend moving to another locale as a cure for allergies. 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.

### Can allergic rhinitis cause 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.

### Are all cases of rhinitis caused by allergy?

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

Rhinitis Type	Common Name	Allergic Sensitivity	Causes	Duration of Symptoms
Allergic	Hay Fever	Yes	Dust Mites, Animals, Pollens, Molds, Roaches	Perennial and/or seasonal
Infectious	Cold or Flu	No	Viruses	3-7 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 twelve 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 worse, the nasal mucus may become colored, and there may be a slight fever and cough. Cold symptoms go away within a couple of weeks, although a cough may sometimes persist. Cold symptoms that last longer may be due to other causes, such as non-infectious rhinitis or sinusitis.

### What are other causes of rhinitis?

Not all hay fever 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. In fact, one third or more of people who have year-round nose symptoms do not have allergies. 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 over-the-counter decongestant nasal sprays. Decongestant nasal sprays work quickly and effectively, but they change 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, but the medication's effect lasts shorter lengths of time. Permanent damage to the nasal tissues may result. The medical term for this condition is rhinitis medicamentosa. Consultation with a physician and prescription medication to "get off" the decongestant nasal sprays 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.

### **What triggers non-allergic rhinitis?**

Non-allergic 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.

Triggers of non-allergic rhinitis include:

- Irritants such as cigarette smoke, strong odors and fumes, including perfume, hair spray, other cosmetics, laundry detergents, cleaning solutions, pool chlorine, car exhaust and other air pollution.
- Spices used in cooking, alcoholic beverages (particularly beer and wine), aspirin and certain blood pressure medications.
- In some people, eating any foods (whether or not they are spicy) can cause nasal drainage because of a non-allergic nerve reflex. The medical term for this is gustatory rhinitis.
- Some people are very sensitive to sudden 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 factors 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 causes of non-allergic rhinitis are not well understood. In high enough concentrations, many odors will cause nasal irritation in almost anyone. Some people are unusually sensitive to irritation and will develop nasal symptoms even when exposed to low concentrations of irritants that do not bother most people.

As is the case with allergic rhinitis, non-allergic 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 non-allergic 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 can also result from some hormonal factors, such as under-active thyroid or hormone changes during pregnancy. However, pregnancy can either make rhinitis worse or better, or have no effect. 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 non-allergic rhinitis, septal deviation (curvature of the bone and cartilage that separate the two sides of the nose) or nasal polyps (abnormal growths inside the nose and sinuses). 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 and an otolaryngologist (a surgeon specializing in the ear, nose and throat).



## How is allergic rhinitis diagnosed?

Your allergist 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 may use 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.

## Hay Fever Treatment

When allergy symptoms are not well controlled with avoidance measures, allergy medications can help to reduce nasal congestion, runny nose, sneezing and itching. They are available in many forms, including oral tablets, liquid medication, nasal sprays, and eye drops. Some medications may cause side effects, so it is best to consult your allergist if there's a problem.

**Intranasal Corticosteroids:** Intranasal corticosteroids are the single most effective drug class for allergic rhinitis treatment. They can significantly reduce nasal congestion as well as sneezing, itching and runny nose. These drugs are frequently prescribed, and are of particular value when rhinitis symptoms are more severe.

They are most effective when taken daily, as directed by your health care provider, but may have some benefit when taken as needed.

These medications are safe when used under physician supervision. They are designed to avoid the side effects that may occur from steroids when they are taken by mouth or injection. However, care must be taken not to spray them against the center portion of the nose (the nasal septum). The most common side effects are local irritation and nasal bleeding. Some older preparations have been shown to have some effect on children's growth, but data about some newer nasal steroids have not shown an effect on growth.

**Antihistamines:** Antihistamines are inexpensive and commonly used to treat allergic 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, itchy, and runny nose
- Eye itching, burning, tearing and redness
- Itchy skin, hives, and eczema
- 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, the newer (second generation) products work well and produce only minor side effects. Some people find that an antihistamine becomes less effective as the allergy season worsens or their allergies change over time. If an antihistamine loses its "strength", notify your physician, who may then recommend an antihistamine of a different class or strength. Persons with excessive 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 an anticipated allergic exposure (such as a 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:** Older (first generation) antihistamines may cause drowsiness and/or performance impairment, which can lead to accidents and personal injury. Even when these medications are taken only at bedtime, they can still cause considerable impairment the following day. Impairment can occur even in people who do not feel drowsy. For this reason, it is important that you do not drive a car or work with dangerous machinery when you take a potentially sedating antihistamine. Some of the newer antihistamines do not cause drowsiness.

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, urinary retention, high or low blood pressure, nightmares (especially in children), sore throat, unusual bleeding or bruising, chest tightness or palpitations. Men with prostate enlargement may encounter urinary problems while on antihistamines. Consult your allergist should these reactions occur.

Alcohol and tranquilizers increase the sedation side effects on 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 instruction.

Some antihistamines appear to be safe, but there have not been enough studies to determine absolute safety of antihistamines in pregnancy. Again, consult your allergist 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 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.

**Decongestants:** Decongestants help relieve the stuffiness and pressure caused by swollen nasal tissue. They do not contain antihistamines, so they do not cause antihistaminic 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 medication 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. Prolonged use can cause rhinitis medicamentosa, or rebound swelling of the nasal tissue. Stopping the use of the decongestant nasal spray will cure rhinitis medicamentosa, providing that there is no underlying disorder.

**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. There are many over the counter preparations for saline rinses, including neti-pots and saline rinse bottles.

**Nasal 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. Nasal cromolyn can help prevent allergic nasal reactions if taken prior to an allergen exposure.

**Nasal ipratropium bromide spray (Atrovent)** can help reduce nasal drainage from allergic rhinitis or some forms of non-allergic rhinitis.

**Montelukast** is a tablet medication approved for treatment of allergic rhinitis, as well as asthma. It works against substances called leukotrienes that can cause symptoms of allergic rhinitis.

**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.

**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, who have allergen exposure that is unavoidable, or desire a more permanent solution to their allergic problem.

Immunotherapy can be very effective in controlling allergic symptoms. Immunotherapy does not help the symptoms produced by non-allergic rhinitis.

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.

**Nasal surgery** is of no benefit in allergic rhinitis, but it may help if patients have nasal polyps or chronic sinusitis not responsive to prolonged antibiotics and nasal steroid sprays.

**Eye allergy preparations** are used when the eyes are affected by the same allergens that trigger rhinitis, causing redness, watery eyes and itching. Over-the-counter (OTC) eye drops and oral medications are commonly used for

short-term relief of some eye allergy symptoms. However, they may not relieve all symptoms, and prolonged use of some OTC eye drops may actually cause your condition to become worse.

Prescription eye drops and oral medications also are used to treat eye allergies. Prescription eye drops provide both short- and long-term targeted relief of eye allergy symptoms, and they can be used to manage eye allergy symptoms.

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

## Allergy Headaches

Headache is one of the top health complaints of Americans. We're bombarded with advertisements and we pay many millions of dollars for pain relievers. Headache also is one of the most common reasons people see physicians.

Three types of headaches may possibly be related to allergic disease – “sinus headaches” (facial pain), migraines and cluster headaches.

### **What is the connection between allergies and headaches?**

Years of published data and clinical experience suggest that food allergy may be a trigger of recurrent, persistent migraine headaches in a few, but by no means all patients. In such cases, only a few foods trigger migraines and, by limiting or avoiding them, you can experience complete or marked relief without medication. If you have a firm diagnosis of migraine made by a physician expert in the diagnosis and treatment of migraine headaches, you may want to keep a diary of foods eaten and their relation to your headaches, and then request consultation with an allergist for evaluation and possible allergy testing. On a non-allergic basis, some migraines are provoked by food additives or naturally occurring food chemicals such as monosodium glutamate (often added to oriental food and packaged foods), tyramine (found in many cheeses), phenylethylamine (found in chocolate) or alcohol. The artificial sweetener aspartame has also been reported as a trigger migraine in some people.

### **Everybody gets headaches. How do you know when you should see your doctor about them?**

Because each of us is different in how we handle pain, you must decide yourself. However, here are some conditions that might call for a visit with your physician:

- The recent onset of frequent, moderate to severe headaches, associated with other symptoms such as nausea or vomiting.
- Headaches that occur on a daily or weekly basis.
- Headaches that make it impossible for you to think, do your work, go to school or enjoy life.
- Headaches that respond only to a great deal of over-the-counter pain-relief medication.
- Headaches with fever that last more than a day or two.

### **How are headaches diagnosed?**

Your doctor will ask you to describe how severe your pain is, where it's strongest, how you obtain relief, if other symptoms accompany your headaches and if you've found that some things make your headache worse. A physical examination will reveal the causes of some headaches. If necessary, your doctor will order laboratory tests, x-rays and brain-wave tests. Often these tests are ordered after consultation with a neurologist, a physician who specializes in nerve and brain problems.

- Some types of headaches have an allergic basis, but most do not. Before you see an allergist-immunologist for evaluation and treatment of your headaches, you should first visit your primary care physician to rule out the other more common causes of your headaches.
- In some cases, a careful allergy evaluation may pinpoint the allergen (allergy-causing substance) causing a headache.

### **What are the symptoms of “sinus headache”?**

- The four groups of sinus cavities in the head are hollow air spaces with openings into the nose for exchange of air and mucus. They're located inside each cheekbone, behind the eyes, behind the bridge of the nose and in the forehead. Secretions from the sinus cavities normally drain into the nose.
- Sinus headaches and pain occur when the sinuses are swollen and their openings into the nasal passages are obstructed, stopping normal drainage and causing pressure to build up. Often the pain is localized over the affected sinus, perhaps causing facial pain rather than a headache.

## **Allergy-Immunology Glossary**

Here are definitions of some of the words frequently encountered in literature on allergy and asthma.

### **Allergy**

Allergies are inappropriate or exaggerated reactions of the immune system to substances that, in the majority of people, cause no symptoms. Symptoms of the allergic diseases may be caused by exposure of the skin to a chemical, of the respiratory system to particles of dust or pollen (or other substances), or of the stomach and intestines to a particular food.

### **Anaphylaxis**

Anaphylaxis, or anaphylactic shock, is a severe, frightening and life-threatening allergic reaction. The reaction, although rare, can occur after an insect sting or as a reaction to an injected drug – for example, penicillin or antitetanus (horse) serum. Less commonly, the reaction occurs after a particular food or drug has been taken by mouth.

### **Antibody**

An antibody is a protein (also called an immunoglobulin) that is manufactured by lymphocytes (a type of white blood cell) to neutralize an antigen or foreign protein. Bacteria, viruses and other microorganisms commonly contain many antigens, as do pollens, dust mites, molds, foods, and other substances. Although many types of antibodies are protective, inappropriate or excessive formation of antibodies may lead to illness. When the body forms a type of antibody called IgE (immunoglobulin E), allergic rhinitis, asthma or eczema may result when the patient is again exposed to the substance which caused IgE antibody formation (allergen).

### **Antigen**

An antigen is a substance that can trigger an immune response, resulting in production of an antibody as part of the body's defense against infection and disease. Many antigens are foreign proteins (those not found naturally in the body). An allergen is a special type of antigen which causes an IgE antibody response.

### **Antihistamine drugs**

Antihistamines are a group of drugs that block the effects of histamine, a chemical released in body fluids during an allergic reaction. In rhinitis, antihistamines reduce itching, sneezing, and runny nose.

### **Anti-inflammatory drugs**

Anti-inflammatory drugs reduce the symptoms and signs of inflammation. Although not a drug, immunotherapy ("allergy shots") reduces inflammation in both allergic rhinitis and allergic asthma.

### **Asthma**

Asthma is a chronic, inflammatory lung disease characterized by recurrent breathing problems. People with asthma have acute episodes or when the air passages in their lungs get narrower and breathing becomes more difficult. Sometimes episodes of asthma are triggered by allergens, although infection, exercise, cold air and other factors are also important triggers.

### **Bronchitis**

Bronchitis is an inflammation of the bronchi (lung airways), resulting in persistent cough that produces considerable quantities of sputum (phlegm). Bronchitis is more common in smokers and in areas with high atmospheric pollution.

### **Bronchodilator drugs**

Bronchodilators are a group of drugs that widen the airways in the lungs.

### **Bronchus**

Any of the larger air passages that connect the trachea, (windpipe), to the lungs. The plural form of “bronchus” is “bronchi”.

### **Contact dermatitis**

Contact dermatitis is an inflammation of the skin or a rash caused by contact with various substances of a chemical, animal or vegetable nature. The reaction may be an immunologic response or a direct toxic effect of the substance. Among the more common causes of a contact dermatitis reaction are detergents left on washed clothes, nickel (in watch straps, bracelets and necklaces, and the fastening on underclothes), chemicals in rubber gloves and condoms, certain cosmetics, plants such as poison ivy, and topical medications.

### **Corticosteroid drugs**

Corticosteroids are a group of anti-inflammatory drugs similar to the natural corticosteroid hormones produced by the cortex of the adrenal glands. Among the disorders that often improve with corticosteroid treatment include asthma, allergic rhinitis, eczema and rheumatoid arthritis.

### **Digestive system**

The digestive system is the group of organs that breaks down food into chemical components that the body can absorb and use for energy and for building and repairing cells and tissues.

### **Eczema**

An inflammation of the skin, usually causing itching and sometimes accompanied by crusting, scaling, or blisters. A type of eczema often made worse by allergen exposure is termed “atop dermatitis”.

### **Epinephrine**

Epinephrine is a naturally occurring hormone, also called adrenaline. It is one of two chemicals (the other is norepinephrine) released by the adrenal gland. Epinephrine increases the speed and force of heart beats and thereby the work that can be done by the heart. It dilates the airways to improve breathing and narrows blood vessels in the skin and intestine so that an increased flow of blood reaches the muscles and allows them to cope with the demands of exercise. Epinephrine has been produced synthetically as a drug since 1900. It remains the drug of choice for treatment of anaphylaxis.

### **Extrinsic asthma**

Extrinsic asthma is asthma that is triggered by an allergic reaction, usually something that is inhaled.

### **Hay fever**

See Rhinitis.

### **Histamine**

Histamine is a chemical present in cells throughout the body that is released during an allergic reaction. Histamine is one of the substances responsible for the symptoms on inflammation and is the major reason for running of the nose, sneezing, and itching in allergic rhinitis. It also stimulates production of acid by the stomach and narrows the bronchi or airways in the lungs.

### **Hives**

See Urticaria.

### **Immune system**

The immune system is a collection of cells and proteins that works to protect the body from potentially harmful, infectious microorganisms (microscopic life-forms), such as bacteria, viruses and fungi. The immune system plays a role in the control of cancer and other diseases, but also is the culprit in the phenomena of allergies, hypersensitivity and the rejection of transplanted organs, tissues and medical implants.

### **Immunoglobulins**

Immunoglobulins, also known as antibodies, are proteins found in blood and in tissue fluids. Immunoglobulins are produced by cells of the immune system called B-lymphocytes. Their function is to bind to substances in the body that are recognized as foreign antigens (often proteins on the surface of bacteria and viruses). This binding is a crucial event in the destruction of the microorganisms that bear the antigens. Immunoglobulins also play a central role in allergies when they bind to antigens that are not necessarily a threat to health and provoke an inflammatory reaction.

### **Immunotherapy**

Immunotherapy (“allergy shots”) is a form of preventive and anti-inflammatory treatment of allergy to substances such as pollens, house dust mites, fungi, and stinging insect venom. Immunotherapy involves giving gradually increasing doses of the substance, or allergen, to which the person is allergic. The incremental increases of the allergen cause the immune system to become less sensitive to the substance, perhaps by causing production of a particular “blocking” antibody, which reduces the symptoms of allergy when the substances are encountered in the future.

### **Inflammation**

Inflammation is the redness, swelling, heat and pain in a tissue due to chemical or physical injury, or to infection. It is a characteristic of allergic reactions in the nose, lungs, and skin.

### **Intrinsic asthma**

Intrinsic asthma is asthma that has no apparent external cause.

### **Lymphocyte**

A lymphocyte is any of a group of white blood cells of crucial importance to the adaptive part of the body’s immune system. The adaptive portion of the immune system mounts a tailor-made defense when dangerous invading organisms penetrate the body’s general defenses.

### **Mast cell**

Mast cells play an important role in the body’s allergic response. Mast cells are present in most body tissues, but are particularly numerous in connective tissue, such as the dermis (innermost layer) of skin. In an allergic response, an allergen stimulates the release of antibodies, which attach themselves to mast cells. Following subsequent allergen exposure, the mast cells release substances such as histamine (a chemical responsible for allergic symptoms) into the tissue.

### **RAST**

RAST is an abbreviation for RadioAllergoSorbent Test, a trademark of Pharmacia Diagnostics, which originated the test. RAST is a laboratory test used to detect IgE antibodies to specific allergens.

### **Respiratory system**

The respiratory system is the group of organs responsible for carrying oxygen from the air to the bloodstream and for expelling the waste product carbon dioxide.

### **Rhinitis**

Rhinitis is an inflammation of the mucous membrane that lines the nose, often due to an allergy to pollen, dust or other airborne substances. Seasonal allergic rhinitis also is known as “hay fever,” a disorder which causes sneezing, itching, a runny nose and nasal congestion.

### **Sinus**

The sinuses (paranasal sinuses) are air cavities within the facial bones. They are lined by mucous membranes similar to those in other parts of the airways.



**Sinusitis**

Sinusitis is inflammation of the membrane lining the facial sinuses, often caused by bacterial or viral infection.

**Theophylline**

Theophylline is a bronchodilator drug, given by mouth, that widens the airways to the lung. It also is used to prevent attacks of apnea (cessation of breathing) in premature infants and to treat heart failure because it stimulates heart rate and increases urine excretion.

**Urticaria**

Urticaria is a skin condition, commonly known as hives, characterized by the development of itchy, raised white lumps surrounded by an area of red inflammation.

## **Anaphylaxis**

Anaphylaxis is a rare but severe allergic reaction. It can occur suddenly, can worsen quickly and can be deadly.

### **Overview**

In most cases, people with allergies develop mild to moderate symptoms, such as watery eyes, a runny nose or a rash. But sometimes, exposure to an allergen can cause a life-threatening allergic reaction known as anaphylaxis. This severe reaction happens when an over-release of chemicals puts the person into shock. Allergies to food, insect stings, medications and latex are most frequently associated with anaphylaxis.

A second anaphylactic reaction, known as a biphasic reaction, can occur as long as 12 hours after the initial reaction.

Call 911 and get to the nearest emergency facility at the first sign of anaphylaxis, even if you have already administered epinephrine, the drug used to treat severe allergic reactions. Just because an allergic person has never had an anaphylactic reaction in the past to an offending allergen, doesn't mean that one won't occur in the future. If you have had an anaphylactic reaction in the past, you are at risk of future reactions.

### **Symptoms**

Anaphylaxis symptoms occur suddenly and can progress quickly. The early symptoms may be mild, such as a runny nose, a skin rash or a "strange feeling." These symptoms can quickly lead to more serious problems, including:

- Trouble breathing
- Hives or swelling
- Tightness of the throat
- Hoarse voice
- Nausea
- Vomiting
- Abdominal pain
- Diarrhea
- Dizziness
- Fainting
- Low blood pressure
- Rapid heart beat
- Feeling of doom
- Cardiac arrest

People who have had a severe allergic reaction are at risk for future reactions. Even if your first reaction is mild, future reactions might be more severe. That's why it's important to carry self-injectable epinephrine if you are at risk, and 911 should be dialed in the event of a very serious reaction.

Understanding anaphylaxis and the things that can trigger this severe allergic reaction will help you manage your condition.

### **Diagnosis**

If you have a history of allergies and/or asthma and have previously had a severe reaction, you are at greater risk for anaphylaxis.

Allergists have the training and expertise to review your history of allergic reactions, conduct diagnostic tests (such as skin-prick tests, blood tests and oral food challenges) to determine your triggers, review treatment options and teach avoidance techniques. Consultation with an allergist is recommended if:

- You're unsure whether you have had an anaphylactic reaction.
- Your symptoms are recurring or are difficult to control.
- You're having trouble managing your condition.
- More tests are needed to determine the cause of your reactions.
- Desensitization or immunotherapy could be helpful in your case.
- Daily medication is needed.
- You need intensive education on avoidance and anaphylaxis management.
- Other medical conditions complicate your treatment.

### **Management and Treatment**

An anaphylactic reaction should be treated immediately with an injection of epinephrine (adrenaline). Doses, available by prescription, come in an auto-injector that should be kept with you at all times. Two injections may be necessary to control symptoms. Here are some tips for reducing the risk of anaphylaxis:

- Know your trigger. If you've had anaphylaxis, it's very important to know what triggered the reaction. An allergist can review your medical history and, if necessary, conduct diagnostic tests. The most common triggers are:
  - Food: including peanuts, tree nuts such as walnuts and pecans, fish, shellfish, cow's milk and eggs.
  - Latex: found in disposable gloves, intravenous tubes, syringes, adhesive tapes and catheters. Health care workers, children with spina bifida and genitourinary abnormalities and people who work with natural latex are at higher-risk for latex-induced anaphylaxis.
  - Medication: including penicillin, aspirin and non-steroidal anti-inflammatory drugs such as ibuprofen, and anesthesia.
  - Insect sting: with bees, wasps, hornets, yellow jackets and fire ants being the most likely to trigger anaphylaxis.
- Avoid your trigger. Avoidance is the most effective way to prevent anaphylaxis. An allergist can work with you to develop specific avoidance measures tailored specifically for your age, activities, occupation, hobbies, home environment and access to medical care. Here are some general avoidance techniques for common triggers:
  - Food allergies. Be a label detective and make sure you review all food ingredient labels carefully to uncover potential allergens. When eating out, ask the restaurant how food is prepared and what ingredients are used. If you have a child with a history of anaphylaxis, it's imperative to make sure that school personnel are informed of the child's condition and a treatment plan is provided. Including the administration of epinephrine.
  - Medications. Make sure all of your doctors are aware of any reactions you've had to medications so that they can prescribe safe alternatives and alert you to other medications you may need to avoid. If there are no alternative medications, you may be a candidate for desensitization, a treatment that introduces a small dose of the medication you are allergic to. As your body becomes more tolerant to the medication, the dosage can be increased over time. While the treatment is effective, it's only temporary and must be repeated if the medication is needed again in the future.
  - Insect stings. To help prevent stinging insects, avoid walking barefoot in grass, drinking from open soft drink cans, wearing bright colored clothing with flowery patterns, sweet smelling perfumes, hairsprays and lotion during active insect season in late summer and early fall. An allergist can also provide a preventative treatment called venom immunotherapy (or venom allergy shots) for insect sting allergy. The treatment works by introducing gradually increasing doses of purified insect venom, and has been shown to be 90 to 90 percent effective in preventing future allergic reactions to insect stings.
- Be prepared. Prompt recognition of the signs and symptoms of anaphylaxis is critical. If you unexpectedly come into contact with your trigger, you should immediately follow the emergency plan outlined by your doctor including the self-administration of epinephrine. If there is any doubt about the reaction, it is

generally better to administer the epinephrine. Teachers and other caregivers should be informed of children who are at risk for anaphylaxis and know what to do in an allergic emergency.

- Seek treatment. If a severe reaction does occur and epinephrine is administered, you should be transported to the nearest emergency facility by ambulance for additional monitoring.
- Tell family and friends. Family and friends should be aware of your condition, your triggers and know how to recognize anaphylactic symptoms. If you carry epinephrine, alert them to where you keep it and how to use it.
- Wear identification. Wear and/or carry identification or jewelry (bracelet or necklace) noting condition and offending allergens.
- See a specialist. Allergists have the training and expertise to review your allergy history, conduct diagnostic tests, review treatment options and teach avoidance steps.
- Seek additional resources. Additional information on allergies and anaphylaxis is available on the ACAAI Web site or the Food Allergy Research & Education (FARE) at [www.foodallergy.org](http://www.foodallergy.org).

### **Be S.A.F.E. Action Guide**

Allergists and emergency physicians have teamed up to create the Be S.A.F.E. action guide to help you remember steps to take during and after an allergic emergency.

#### **S**

**Seek immediate medical help.** Call 911 and get to the nearest emergency facility at the first sign of anaphylaxis, even if you have already administered epinephrine, the drug used to treat severe allergic reactions. If you have had an anaphylactic reaction in the past, you are at risk of future reactions.

#### **A**

**Identify the Allergen.** Think about what you might have eaten or come in contact with – food, insect sting, medication, latex – to trigger an allergic reaction. It is particularly important to identify the cause because the best way to prevent anaphylaxis is to avoid its trigger.

#### **F**

**Follow up with a specialist.** Ask your doctor for a referral to an allergist/immunologist, a physician who specializes in treating asthma and allergies. It is important that you consult an allergist for testing, diagnosis and ongoing management of your allergic disease.

#### **E**

**Carry Epinephrine for emergencies.** Kits containing fast-acting, self-administered epinephrine are commonly prescribed for people who are at risk of anaphylaxis. Make sure that you carry an epinephrine kit with you at all times, and that family and friends know of your condition, your triggers and how to use epinephrine. Consider wearing an emergency medical bracelet or necklace identifying yourself as a person at risk of anaphylaxis. Teachers and other caregivers should be informed of children who are at risk for anaphylaxis and know what to do in an allergic emergency.

## Children's Allergies

An estimated 50 million Americans have some type of allergy. In most people, allergies first appear during infancy or childhood. Allergic disorders rank first among children's chronic diseases.

Any child may become allergic, but children from families with a history of allergy are more likely to be allergic. Children may inherit the tendency to become allergic from their parents, but only some of them will develop an active allergic disease. Children's allergies can show up in different ways including:

- Skin rashes (atopic dermatitis or eczema)
- Asthma
- Allergic rhinitis (also known as "hay fever")
- Food allergies

Allergic rhinitis is the most common of childhood allergies. It causes runny, itchy nose, sneezing, postnasal drip and nasal congestion (blockage). The child with allergies may also have itchy, watery and red eyes and chronic ear problems. Despite its common name, "hay fever", these allergy problems can occur at any time of the year – seasonally or year-round, and do not cause fever.

The following are just a few points on potential problems for children with allergic rhinitis. Early identification of allergy problems in your child will improve their quality of life, decrease missed school days and keep you at work.

### Nasal congestion

Allergies are the most common cause of chronic nasal congestion in children. Sometimes a child's nose is congested (blocked) to the point that he or she breathes through the mouth, especially while sleeping. This may also cause the child to not get a restful night's sleep and then be tired the next day. If the congestion and mouth breathing are left untreated, they can cause abnormal changes to the way the teeth and the bones of the face grow. Early treatment of the allergies causing the nasal congestion may prevent these problems.

### Allergy and ear infections

Allergies lead to inflammation in the ear and may cause fluid accumulation that can promote ear infections and decreased hearing. If this happens when the child is learning to talk, poor speech development may result. Allergies can cause earaches as well as ear itching, popping and fullness ("stopped up ears"). Anyone with these symptoms should be considered for testing and treatment.

### Allergies at school

Fall means going back to school. For children with allergies, that may mean absences due to problems related to allergic rhinitis. The following are suggestions for helping the allergic child and problems to look for so that allergy can be properly diagnosed and treated.

- School pets: Furry animals in school may cause problems for allergic children. If your child has more problems while at school, it could be the class pet.
- Asthma and physical education: Physical education and sports are a big part of the school day for many children. Having asthma does not mean eliminating these activities. Children with asthma and other allergic diseases should be able to participate in any sport the child chooses, provided the doctor's advice is followed. Asthma symptoms during exercise may indicate poorly controlled asthma. Be sure that your child is taking controller asthma medications on a regular basis. Often medication administered by an inhaler is prescribed before exercise to control their symptoms.
- Dust irritation: At school, children with allergic problems may need to sit away from the blackboards to avoid irritation from chalk dust.

### Allergy or asthma action plan for emergencies

If your child has asthma or severe allergy, provide your child's action plan to the school nurse or administrative office. Also discuss your child's access to medication in case of an emergency.

## **Food allergic infants**

The best food for a newborn is mother's milk. However, some especially sensitive babies can have allergic reactions to foods their mothers eat. Babies can be tested for allergies. Eliminating these foods from the mother's diet may provide relief for the child.

As infants grow, their nutritional needs continue to change and your physician will advise when it is time for solid foods.

Cow's milk can cause allergies in children, but it is a good source of protein and calcium. Milk should be eliminated from a child's diet only if you are sure the child is allergic to it. Parents may suspect allergy if the child exhibits hives after the ingestion of milk or other dairy products. If you suspect your child may be allergic to milk, consult your physician, who may conduct appropriate tests to verify the allergy and prescribe the proper course of treatment for children allergies.

Just remember:

- Allergies in children are common.
- Many childhood problems are made worse by allergies.
- Treatment of your child's allergies will make them happier and healthier.

## **Pet Allergies Information**

Nearly half of U.S. households have a dog or cat. Pets provide companionship, security, and a sense of comfort. Children often learn responsibility and lessons about life and death from pets. However, people with allergies should be cautious in deciding what type of pet they can safely bring into their home.

### **Pet exposure may cause sneezing and wheezing.**

An estimated 10 percent of the population may be allergic to animals. A higher rate of 20 to 30 percent of individuals with asthma has pet allergy symptoms.

Pets can cause problems to allergic patients in several ways. Their dander, or skin flakes, as well as their saliva and urine, can cause an allergic reaction. The animal hair is not considered to be a very significant allergen. However, the hair or fur can collect pollen, dust, mold and other allergens.

### **What are the most common pets?**

The most common household pets are dogs, cats, birds, hamsters, rabbits, mice, gerbils, rats and guinea pigs. Larger animals such as horses, goats, cows, chickens, ducks and geese, even though kept outdoors, can also cause problems as pets.

The number of pets in the United States is estimated at more than 100,000,000. This large number also increases the likelihood of accidental exposure to animals by the allergic patient when visiting homes, farms, etc.

Both feathers and the droppings from birds, another common pet, can increase the allergen exposure. The allergic patient should not use feather pillows or down comforters. If a feather pillow is used, it should be encased in plastic. An encasing with a zipper is recommended, so none of the feathers can escape.

Bird droppings can be a source of bacteria, dust, fungi and mold. This also applies to the droppings of other caged pets, such as gerbils, hamsters and mice.

### **What do allergists recommend?**

The best types of pets for an allergic patient are pets that don't have hair or fur, shed dander, or produce excrement that creates allergic problems. Tropical fish are ideal, but very large aquariums could add to the humidity in the room, which could result in an increase of molds and house dust mites.

A frequent misconception is that shorthaired animals cause fewer problems. It is the dander (skin scales) that causes the most significant allergic reactions – not the length or amount of hair on the pet. As stated previously, allergens are also found in the pet's saliva and urine. In addition, dogs have been reported to cause acute symptoms of allergic conjunctivitis or inflammation of the eye, and hay fever after running through fields and then coming back into contact with their owners.

Those pets that are known to cause significant allergic reactions should be removed from the home of the allergic patient to avoid possible progression of symptoms. A "trial" removal of a pet for a few days or even weeks may be of little value since an average of 20 weeks is required for allergen levels to reach levels found in homes without pets.

### **What can I do when visiting people with pets if I am allergic?**

The approach to visiting households with pets for someone with pet allergies is to take appropriate precautions including administration of medications prior to visitation. Your allergist-immunologist can provide information on medications for your animal allergy, such as antihistamines, nasal sprays, decongestants or appropriate asthma medications.

For patients who have severe symptoms on animal dander exposure, the pet should be removed from the house at least a day before the visit, and the host household should be cleansed of animal allergen to the extent practical.

## Dust Allergy Management

For millions of Americans, “allergy season” never ends. Colder temperatures that eliminate the problems of grass and tree pollens also drive people indoors where they meet troublesome dust mites, animal dander, and mold spores. Most indoor environments actually trap airborne allergens where they can pose a risk to respiratory health.

Many people with allergic rhinitis also can be at risk of developing allergic asthma. Symptoms to watch for are a persistent cough or wheezing.

An allergist can evaluate asthma and allergy symptoms, perform tests to determine the precise cause of the symptoms and, together with you, develop a treatment plan that brings allergic reactions under control. Sometimes allergy shots, also known as immunotherapy, can improve natural resistance and decrease sensitivity to specific allergens. Allergy shots also can prevent the development of allergic asthma.

If you suspect that indoor allergies are causing upper or lower respiratory symptoms, see your doctor. If tests show that a specific allergen is causing your symptoms, there are steps you can take to limit your exposure to such allergens. You should not try these tedious and complex measures without first being tested to see if you actually are allergic.

### What can I do to relieve house dust allergy symptoms?

If you are tested and found to be allergic to a component of house dust, specific avoidance measures can be undertaken. Your allergist can give you expert advice on which avoidance measure are right for you. The three basic treatments for indoor allergy are:

- Avoidance, or limit exposure
- Medications
- Allergy shots (immunotherapy)

### How do I avoid house dust?

Avoidance measures work best to relieve symptoms, but it’s not possible to avoid all exposure to all types of house dust. Some of these procedures are difficult, and you may not need to do them all. Ask your allergist which ones will be most helpful for your situation. If you’re found to be allergic to furry pets, well, there needs to be a family meeting to decide what is going to be done. In general, finding another home for an allergenic pet followed by a thorough housecleaning is the best solution for symptom control.

If you live in a dust mite area, you can not eradicate them completely. First line steps to limit dust mite exposure focus on the bedroom because, on average, people spend one-third of their lives in the bedroom. Of all the rooms in the home, the bedroom often contains the most dust mites. Special zip-up covers can seal particles, and should reduce your allergy symptoms. Most extreme measures, such as pulling up carpets and buying expensive dehumidifiers, should only be undertaken in consultation with your allergist.

### House dust allergy

House dust is present even in clean homes. Allergenic components of house dust are a major cause of year-round runny or stuffy nose, itchy, watery eyes and sneezing for allergy sufferers. Dust allergy can also make people with asthma experience wheezing, coughing and shortness of breath.



### **Is house dust allergy seasonal?**

Yes. In the United States, dust mite populations tend to peak in July and August, and their allergen levels stay high through December. Mite allergen levels are lowest in late spring. Some dust mite-sensitive people report that their symptoms get worse during the winter. That's because mite fecal particles and pieces of dead mites, both of which trigger dust mite allergy, are still present. Mold levels tend to peak during the summer months depending on where you live since some tropical areas have molds year-round. There is also evidence that cockroaches have a seasonal pattern, peaking in the late summer.

Forced-air heating systems tend to blow dust particles into the air. As they dry out over time, even more of the particles become airborne. This does not account for the seasonal pattern, however, since air blows through the same ducts during the summer when air conditioning is used. People may have fewer symptoms from house-dust exposure during the summer because they spend more time outdoors.

For these reasons, the terms "seasonal allergy" and "perennial allergy" are being used less frequently. It is better to classify symptoms as "intermittent" or "persistent".

## Eye Allergies

If your eyes itch, are red, tearing or burning, pay attention to what they may be telling you. You may have eye allergies, or allergic conjunctivitis, a condition that affects millions of Americans. It is a condition that can occur alone, but often accompanies nasal allergy symptoms, such as sneezing, sniffing and a stuffy nose. And, while most people treat nasal allergy symptoms, they often ignore their itchy, red, watery eyes. Here you will find answers to common questions and information on eye allergy treatment.

### Eye allergy triggers

Allergens that may be present indoors or outdoors can cause eye allergies. The most common outdoor airborne allergens are grass, tree and weed pollens. People who are sensitive to these allergens suffer from seasonal allergic conjunctivitis, the most common type of eye allergy.

Pet hair or dander, dust mites and molds are the most common indoor allergens. These indoor allergens can trigger symptoms for some people throughout the year, resulting in perennial allergic conjunctivitis.

Cigarette smoke, perfume and diesel exhaust may inflame your eyes. They can act as irritants that cause non-allergic symptoms, or they can make your allergic response worse.

### Eye allergy causes

Just like hay fever and skin rashes, eye allergies develop when the body's immune system becomes sensitized and overreacts to something that is ordinarily harmless. An allergic reaction can occur whenever that "something" – called an allergen – comes into contact with your eyes. The allergen causes certain cells in the eye (called mast cells) to release histamine and other substances or chemicals that cause blood vessels in the eyes to swell, and the eyes to become itchy, red and watery.

### Can eye allergies harm my eyesight?

Eye allergies, specifically allergic conjunctivitis, can be extremely annoying and uncomfortable, and they may disrupt your day-to-day activities, but they usually do not harm your eyes. However, there are rare conditions that are associated with atopic dermatitis (eczema) and other diseases can cause inflammation that may affect the eyesight. Chronic forms of eye allergy may also be caused by application of eye drops and creams, or even cosmetics.

### Eye Allergy Treatment

As with any allergy, the first approach for successful management of seasonal or perennial forms of eye allergy should be prevention or avoidance of the allergens that trigger your symptoms. Here are some avoidance tips to reduce exposure to allergens that affect your eyes.

- Stay indoors as much as possible when pollen counts are at their peak, usually during the mid-morning and early evening, and when wind is blowing pollens around.
- Keep windows closed and use air conditioning in your car and home. Air conditioning units should be kept clean. Avoid using window fans that can draw pollens and molds into the house.
- Wear glasses or sunglasses when outdoors to minimize pollen getting into your eyes.
- Avoid rubbing eyes, which will only irritate them or make your condition worse.
- Reduce dust mite exposure in your home, especially in the bedroom. Bedding, particularly pillows, should be encased in "mite-proof" covers. Wash bedding often in hot water (at least 130°F). Keep humidity in your home low (between 30 percent and 50 percent).
- Clean floors with a damp rag or mop rather than dry dusting or sweeping.
- Wash your hands immediately after petting any animals. Remove and wash clothing after visiting friends with pets.
- If you have a pet to which you are allergic, keep it out of your house as much as possible. If the pet must be in the house, keep it out of the bedroom so you are not exposed to animal allergens while you sleep.

## **Prescription eye drops and medications**

- **Antihistamines:** Eye drops that contain antihistamines can reduce the itching, redness and swelling associated with eye allergies. Although antihistamine eye drops provide quick relief, the effect may last only a few hours, and some of these drops need to be used four times a day.
- **Mast Cell Stabilizers:** Mast cell stabilizers are eye drops that prevent the release of histamine and other substances that cause allergy symptoms. The drops must be taken before exposure to an allergen to prevent itching.
- **Antihistamine/Mast Cell Stabilizers:** Some of the newest eye drops have both an antihistamine and a mast cell stabilizing actions to treat and prevent eye allergies. They are used twice a day and provide quick and long-lasting relief of itching, redness, tearing and burning.
- **NSAIDS:** Nonsteroidal anti-inflammatory eye drops also are available to relieve itching. These drops may cause stinging or burning when applied and may need to be used four times a day.
- **Corticosteroids:** Steroid eye drops can help treat chronic and severe eye allergy symptoms such as itching, redness and swelling, but continued use of the drops can have side effects, such as a risk of infection, glaucoma and cataracts. Long term treatment with steroids (more than two weeks) should be done only with the supervision of an ophthalmologist.
- **Non-sedating Oral Antihistamines:** Like OTC oral antihistamines, prescription antihistamines can be mildly effective in relieving the itching associated with eye allergies. They do not have the same sedating side effects as OTC antihistamines, but they still can cause dry eyes and worsen symptoms.

## Adult & Pediatric Allergy & Asthma of CT

---

**KEVIN P. McGRATH, M.D.**  
(860) 257-3535  
912 Silas Deane Highway, #100  
Wethersfield, CT 06109

### **MOLD DIET AVOIDANCE**

#### **Foods to be Avoided:**

All cheeses, including Cottage Cheese, Sour Cream, Sour Milk & Buttermilk

Beer & Wine

Cider & Homemade Root Beer

Pickled and Smoked Meats & Fishes – Sausage, Hot Dogs, Corned Beef, and Pastrami

Vinegar & Vinegar containing foods – Mayonnaise, Salad Dressings, Ketchup, Chili Peppers, Shrimp

Sauce, Pickles, Pickled Vegetables, Relish, Olives & Sauerkraut

Sour Breads (Pumpernickel), Fresh Rolls, Coffee Cakes & other foods made with yeast

All dried & candied Fruits, including Raisins, Apricots, Dates, Prunes, & Figs

Melons, especially Cantaloupes

Mushrooms

Soy Sauce

Canned Tomatoes, unless homemade

#### **In Addition:**

Eat only freshly opened canned foods.

Leftovers, particularly meat and fish over 24 hours old should be avoided.

Hamburgers, if eaten should be fresh ground meat.

Canned and Frozen juices should also be restricted.

## **Patient Support Organizations**

### **Allergy and Asthma Network/Mothers of Asthmatics (AANMA)**

AANMA is dedicated to helping people affected by allergies and asthma through education, advocacy, community outreach and research.

### **American Latex Allergy Association (ALAA)**

The mission of the American Latex Allergy Association (Alert Inc.) is to create awareness of latex allergy through education and to provide support to individuals who have been diagnosed with latex allergy.

### **American Lung Association (ALA)**

The American Lung Association works to save lives by improving lung health and preventing lung disease through Education, Advocacy and Research. For more than 100 years, the American Lung Association has been leading the fight for healthy lungs and healthy air. The American Lung Association was among the first to tackle smoking as the nation's greatest preventable health risk, and to make the connection between air pollution and lung disease.

### **Asthma & Allergy Foundation of America (AAFA)**

The Asthma and Allergy Foundation of America is a not-for-profit, voluntary health organization dedicated to improving the quality of life for people with asthma and allergies and their caregivers through education, research and advocacy.

### **Food Allergy & Anaphylaxis Network (FAAN)**

The Food Allergy & Anaphylaxis Network (FAAN) is the world leader in information about food allergy. A non-profit organization, it is dedicated to increasing public awareness of food allergy and its consequences, to educating people about the condition and to advancing research on behalf of all those affected by it. FAAN provides information and educational resources about food allergy to patients, their families, schools, health professionals, pharmaceutical companies, the food industry and government officials.

### **Food Allergy Initiative (FAI)**

The FAI mission is to raise public awareness about the seriousness of food allergies. Through effective educational programs and public information, FAI heightens awareness of food allergies and anaphylaxis among the media, healthcare workers, and education and childcare professionals, while also working with the nation's policy makers to create a safer environment and improve care for the food allergic population.

### **Immune Deficiency Foundation (IDF)**

The Immune Deficiency Foundation (IDF), founded in 1980, is the national patient organization dedicated to improving the diagnosis, treatment and quality of life of persons with primary immunodeficiency disease through advocacy, education and research. On behalf of those with primary immunodeficiency diseases, IDF offers educational programs and materials that offer medical information, important life management and patient care resources, and support for patients and family members. IDF supports advocacy to promote healthcare legislation and policies that positively affect the primary immune deficiency community; and research and medical programs that improve diagnosis and treatment of primary immunodeficiency diseases.

## Sinusitis Information (Sinus Infection)

Sinus disease is a major health problem. It afflicts 31 million people in the United States. Americans spend more than \$1 billion each year on over-the-counter medications to treat it. Sinus disease is responsible for 16 million doctor visits and \$150 million spent on prescription medications. People who have allergies, asthma, structural blockages in the nose or sinuses, or people with weak immune systems are at greater risk.

### What is sinusitis?

Sinusitis is an inflammation of the sinuses. It is often caused by bacterial (germ) infection. Sometimes, viruses and fungi (molds) cause it. People with weak immune systems are more likely to develop bacterial or fungal sinusitis. Some people with allergies can have "allergic fungal sinusitis." Acute sinus disease lasts three to eight weeks. Sinus disease lasting longer than eight weeks is considered chronic.

The sinuses are air-filled cavities. They are located:

- Within the bony structure of the cheeks
- Behind the forehead and eyebrows
- On either side of the bridge of the nose
- Behind the nose directly in front of the brain

An infection of the sinus cavity close to the brain can be life threatening, if not treated. In rare cases, it can spread to the brain.

Normal sinuses are lined with a thin layer of mucus that traps dust, germs and other particles in the air. Tiny hair-like projections in the sinuses sweep the mucus (and whatever is trapped in it) towards openings that lead to the back of the throat. From there, it slides down to the stomach. This continual process is a normal body function.

Sinus disease stops the normal flow of mucus from the sinuses to the back of the throat. The tiny hair-like "sweepers" become blocked when infections or allergies cause tiny nasal tissues to swell. The swelling traps mucus in the sinuses.

### What Are the Symptoms of Sinusitis?

#### Common symptoms of sinusitis include:

- Postnasal drip
- Discolored nasal discharge (greenish in color)
- Nasal stuffiness or congestion
- Tenderness of the face (particularly under the eyes or at the bridge of the nose)
- Frontal headaches
- Pain in the teeth
- Coughing
- Fever
- Fatigue
- Bad breath

Sinus disease is often confused with rhinitis, a medical term used to describe the symptoms that accompany nasal inflammation and irritation. Rhinitis only involves the nasal passages. It could be caused by a cold or allergies.

Allergies can play an important role in chronic (long-lasting) or seasonal rhinitis episodes. Nasal and sinus passages become swollen, congested, and inflamed in an attempt to flush out offending inhaled particles that trigger allergies.

Overuse and abuse of antibiotics have been causing a major increase in antibiotic resistance. Therefore, patients with sinus symptoms should consider taking an antibiotic only if symptoms (including discolored nasal discharge) persist beyond 7-10 days.

#### **Nasal decongestant sprays**

Topical nasal decongestants can be helpful if used for no more than one to two days. These medications shrink swollen nasal passages, facilitating the flow of drainage from the sinuses. Overuse of topical nasal decongestants can result in a dependent condition which the nasal passages swell shut, called rebound phenomenon.

#### **Antihistamines**

Antihistamines block inflammation caused by an allergic reaction so they can help to fight symptoms of allergies that can lead to swollen nasal and sinus passages.

#### **Nasal decongestants and antihistamines**

Over-the-counter combination drugs should be used with caution. Some of these drugs contain drying agents that can thicken mucus. Only use them when prescribed by your doctor.

#### **Topical nasal corticosteroids**

These prescription nasal sprays prevent and reverse inflammation and swelling in the nasal passages and sinus openings, addressing the biggest problem associated with sinusitis. Topical nasal corticosteroid sprays are also effective in shrinking and preventing the return of nasal polyps. These sprays at the normal dose are not absorbed into the blood stream and could be used over long periods of time without developing "addiction."

#### **Nasal saline washes**

Nasal rinses can help clear thickened secretions from the nasal passages.

#### **Surgery**

If drug therapies have failed, surgery may be recommended as a last resort. It is usually performed by an otolaryngologist. Anatomical defects are the most common target of surgery. Your surgeon can fix defects in the bone separating the nasal passages, remove nasal polyps, and open up closed passages. Sinus surgery is performed under either local or general anesthesia, and patients often can go home on the same day.