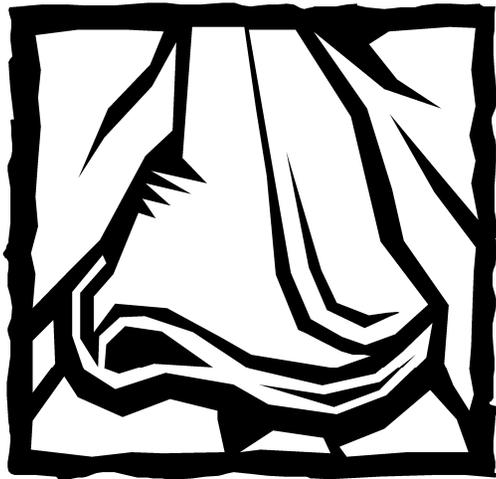


This booklet has been posted by the Author. One copy may be printed for educational use by patients and those requesting the booklet. The booklet is copyrighted. Downloading to file, duplicate copies and/or mass distribution are not allowed.

Cold, Allergy & Sinus

By Kevin T. Kavanagh, M.D.

Copyright 1997, 2001



Warning!!!

You cannot properly apply information in this pamphlet, unless you know what your problem (or diagnosis) is. This is the role of a trained medical professional, such as a medical doctor. Many illnesses which are thought by the patient to be a simple problem may actually be a sign of a more serious illness or lead to serious problems if not treated appropriately. **ALWAYS consult your doctor** to make sure of your diagnosis and to make sure you can safely follow any treatment. In addition, you should check the validity of all information contained in this guide with your doctor.

Many of the medications listed in this booklet may have over-the-counter generic counterparts which are less expensive and may be equally effective. **Please consult your pharmacist regarding generic substitutions.**

Table Of Contents

<u>BEFORE YOU GO TO THE DOCTOR</u>	3
<u>“COLDS” AND “SINUS”</u>	3
TYPES OF OVER-THE-COUNTER DRUGS USED IN THE TREATMENT OF COLDS	4
OVER-THE-COUNTER MEDICATIONS FOR COLDS	5
<u>ALLERGIES</u>	7
TYPES OF OVER-THE-COUNTER ALLERGY DRUGS	8
OVER-THE-COUNTER ALLERGY MEDICATIONS	10
NASAL ALLERGIES & NASAL INFECTIONS	12
MEDICATION AND TREATMENTS THAT CAN BE PROVIDED BY YOUR DOCTOR	12
<u>PREVENTION OF ALLERGIES</u>	14
<u>NOSE BLEEDS</u>	15
<u>SMOKING</u>	16

Before You Go To The Doctor

Before you visit the doctor, there are several things that you need to do to prepare for the visit.

First, you should bring a list of all your medications, dosages and when you are supposed to take them. Even better, bring the medications with you. Remember, medications are not just prescription drugs but also eye drops, ointments and medications you buy over-the-counter. Some eye drops can cause serious reactions during allergy testing and many over-the-counter medications were prescription drugs just a few years ago.

In addition, know your prescription and over-the-counter drug allergies. This is very important. Many medications may cross-react and lead to dangerous complications if used together.

Next, know about your other medical conditions. Many allergy medications can aggravate certain illnesses. For example: Decongestants may worsen high-blood pressure and may cause severe reactions in diabetics. Antihistamines may cause urinary retention (unable to void) in patients with large prostates.

Bring all X-rays and results of all recent laboratory tests to the office. If you are allergic and have had recent sinus X-rays, blood tests or allergy tests bring the results and X-rays to the office. This information will be needed in evaluating and treating your case. If the doctor has to get this information after your visit, it may delay the beginning of treatment and may be an added expense to your visit.

“Colds” and “Sinus”

Almost all discomforts of the head and neck have been blamed on “Sinus” at one time or another. The term “Sinus” means a bony cavity next to the nose. It is a location not a medical condition. A “Cold” refers to an infection of the nose and throat. It is usually viral but may also be caused by a bacteria. Usually, a person with a cold, feels sick all over and may run a fever.

You cannot properly apply information in this pamphlet, unless you know what your problem (or diagnosis) is. This is the role of a trained medical professional, such as a medical doctor. The problem with treating a “Cold” is it may not be a

cold at all. A simple sore or scratchy throat may be caused by a bacteria often referred to as “Strep” and if not treated can lead to a condition called rheumatic fever which can cause serious damage to the heart. Colds can also spread to the sinuses and sometimes can cause an acute sinus infection which if not treated can also lead to serious consequences.

If your “Cold” is associated with throat discomfort your doctor may obtain a throat culture or screen for “Strep”. If you have “Strep” you should be placed on an antibiotic. Often your “Cold” is caused by a virus. If so, the best treatment is often fluids, rest, and supportive over-the-counter medications. If your symptoms last for more than 2 weeks, a more serious condition may be present and you should reconsult your doctor.

Types of over-the-counter drugs used in the treatment of colds

(To be used under the guidance of your doctor.)

#1. Decongestant: These medications open the nasal passages. They do so by constricting blood vessels. These medications can relieve airway obstruction, pressure symptoms and help the sinuses to drain. Unfortunately they all may elevate blood pressure, cause a more rapid heart beat, cause more irregular heartbeats and cause insomnia. They should not be taken if you have high blood pressure, a heart condition, diabetes or insomnia. Decongestants can raise blood pressure and increase the heart rate. In diabetics, they can decrease insulin requirements which can lead to life threatening low blood sugar. In addition, these drugs may cause dangerous reactions if you are on MAO inhibitors or anti-Parkinson medications.

Decongestant nose sprays are also available and should only be used for 3 days and only 2 to 4 times a day or addiction can occur. When addicted, a condition called rhinitis medicamentosa occurs. This condition produces only a short period of relief with use of the nose spray and severe nasal symptoms when the nose spray is not use. It is very difficult to treat and difficult to withdraw the patient from the nose spray.

Most common over-the-counter nose sprays are: Afrin (Oxymetazoline HCL), Neosynephrine (Phenylephrine HCL) and Dristan (Phenylephrine HCL and Pheniramine Maleate).

Alert!! Decongestants containing phenylpropanolamine have been recalled by the FDA because of potential adverse effects on the cardio-vascular

system, with the potential to cause heart attacks, high blood pressure and strokes. Common over-the-counter medications which contain phenylpropanolamine are : Travist-D, Triaminic Products, Dimetapp Products, Alka-Seltzer “Cold” products and Contact Products. Note: Not all dimetapp and triaminic products contain phenylpropanolamine.

#2. Cough Medication: Contained in some of the “Cold” preparations. Some may be addicting and cause drowsiness.

#3. Pain Medication: Most products with an analgesic or pain medication use Acetaminophen or Tylenol. These medications not only relieve pain but also will help reduce a fever. A few use Ibuprofen (Advil Cold and Sinus) which is a drug similar to aspirin, and should not be used in aspirin sensitive patients. Many “Cold” and “Sinus” medications contain acetaminophen and if used together an overdose may occur which can cause damage to the liver. Acetaminophen can also cause kidney damage if used for a prolonged period. And of course you should not mix these medications with other pain medications such as regular “Tylenol”.

#4. Moisturizer: One of the body’s defenses in a cold is to wash out the sinuses with fluids. This is why you develop a runny nose. A moisturizer will often help in this process. It is important not to reduce the nose’s secretions because it helps to prevent sinus infections. Antihistamines which are contained in many cold medications dry secretions and thus may not be the drug of choice.

Over-The-Counter Medications for Colds

Decongestants and No Other Medications

Sudafed Nasal Decongestant

Decongestant and Pain Medication:

Advil Cold & Sinus (has Ibuprofen—similar to aspirin) Sinutab Sinus (acetaminophen)

Sudafed Cold & Sinus (acetaminophen)

Tylenol Sinus Non-Drowsy (acetaminophen)

Decongestant and Moisturizer:

Robitussin PE* (100 mg Guaifenesin per teaspoon)

Sudafed Non-Drying Sinus* (200 mg Guaifenesin)

Decongestant, Cough Suppressant and Pain Medication (Acetaminophen):

Sudafed Cold & Cough

Sudafed Severe Cold Formula

Tylenol Cold
 Vicks Dayquil Cold/Flu Relief*
 Theraflu-Non-Drowsy Formula Flu, Cold and Cough

Moisturizer and Cough Suppressant:

Robitussin DM*

Moisturizer:

Robitussin* (100 mg Guaifenesin per teaspoon)

Decongestant Nose Sprays:

Afrin
 Dristan
 Neosynephrine
 Triaminic Infant
 Vicks Sinex

Decongestant and Cough Suppressant

Robitussin Pediatric Cough & Cold*
 Vicks 44D Cough & Head Congestion Relief*

Decongestant, Cough Suppressant, Pain Medication (Acetaminophen)
 and Moisturizer.

Sudafed Cold & Cough

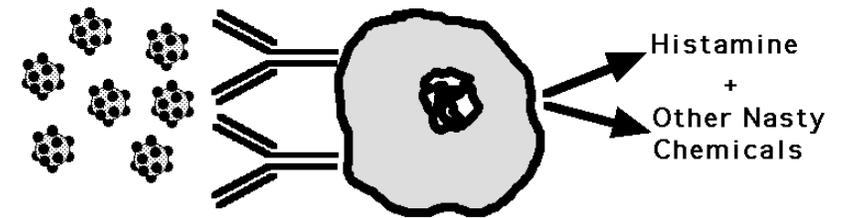
* Denotes Elixir or Liquid Medication

NOTE: Many "Cold" & "Sinus" medications contain acetaminophen. If used together, liver damage can occur from an overdose.

Allergies

Allergy refers to a medical condition where the body's immune system is reacting to a foreign substance (antigen) which should be regarded as harmless to the body. There are six major types of allergic reactions. Of these, three are common and will be discussed in the text below:

The first type of allergic reaction is a Type I reaction. This reaction is caused when an antigen attaches to an IgE antibody which then stimulates a "Mast Cell" to release histamine along with a number of other chemical mediators of allergy. (Note: This is why drugs which treat this type of allergy are called antihistamines.)



Antigens + IgE Activates Mast Cell

This type of reaction causes sneezing, itching, hives, welts, wheezing (asthma) and a runny nose. Usually, an allergy does not cause the individual to feel sick all over and does not cause a fever. More severe cases can cause nasal obstruction, facial pressure and facial pain. This type of allergy commonly causes nose and sinus symptoms along with asthma. Some food allergies, such as allergy to shell fish, are mediated by IgE. The symptoms include itching, hives, wheezing and rarely death.

The second type of allergy is a Type III reaction it is mediated by IgG and occurs many days after exposure to the foreign substance. Some "Food Allergies" are thought to be this type of allergy.

The third type of allergy is a Type IV delayed hypersensitivity reaction. It is mediated by white blood cells (lymphocytes) and occurs 2 to 5 days after exposure and lasts for up to 21 days. There is a skin rash with deep blisters and intense itching. Poison ivy is a common cause of a delayed hypersensitivity reaction.

Treatment of Type I Reactions:

Today almost all the prescription “Allergy” drugs available to doctors 5 years ago are now over the counter and directly available to the patient. There are many brands of medications with many trade names. Most are marketed as Allergy, Cold and or Sinus Medications.

Types of over-the-counter allergy drugs

(To be used under the guidance of your doctor.)

#1. Antihistamine: These medications relieve symptoms of allergy such as sneezing, itchy-watery eyes and nasal drainage. However, they also dry secretions in the mouth and lungs and can cause drowsiness. Other side effects are urinary retention, especially in patients with prostate hypertrophy, and worsening of glaucoma, and rarely impotence. Because of their drying effect, antihistamines are not indicated in “Colds” and may cause worsening of asthma. New longer acting antihistamines are available from your doctor which will not cause as much sedation or drying, and also have less complication. Of the over-the-counter antihistamines, Diphenhydramine (Benedryl) is the most likely to cause drowsiness and Chlor-Trimeton (Chlorpheniramine) is the least. If drowsiness occurs, one should not operate motor vehicles when taking antihistamines.

Antihistamines are broken down in the liver. Over time a patient will become resistant to the drug, as the liver increases its ability to metabolize the drug. Rotating antihistamines or different classes may help to prevent this. (Benedryl Allergy & Travist-1 are in the same class and can be rotated with Chlor-Trimeton Allergy.)

#2 Nasalcrom. This medication takes a long time to work and prevents the “Mast Cell” from releasing mediators when stimulated by IgE. This medication takes a long time to work and usually has to be applied four to six times a day for up to 4 weeks before an improvement is noted.

#3 Decongestant. See above description.

#4 Pain Medication. See above description.

Decongestant Nose Sprays Should Seldom Be Used To Treat

Allergies. Allergies are usually a long term condition and will not be helped by

a three day course of a nose spray. Longer periods of use, will cause addiction and worsening of symptoms.

If you have a heart condition, high blood pressure or diabetes there are only a few over-the-counter medications you can take for an allergy, since almost all medications contain decongestants.

There are four medications that contain an antihistamine and not a decongestant:

Benedryl Allergy—Antihistamine (diphenhydramine HCL)
 Chlor-Trimeton—Antihistamine (chlorpheniramine maleate)
 Travist-1--Antihistamine (clemastine fumarate)
 Tylenol Severe Allergy—Antihistamine (diphenhydramine)and Pain Medication (acetaminophen).

In addition, Nasalcrom nose spray can also be used since it is not a decongestant and is not addictive.

Over-The-Counter Allergy Medications

Many of these drug combinations are also available for children in the form of an elixir. Always read the directions carefully and consult your doctor regarding dosage and indications for usage.

Antihistamines and No Other Medications:

- Antihist-1 (Clemastine Fumarate)
- Benadryl Allergy (Diphenhydramine)
- Chlor-Trimeton Allergy (Chlorpheniramine)
- Ffidac 24 (Chlorpheniramine)
- Gen-Allerate (Chlorpheniramine)
- Travist-1 (Clemastine Fumarate)

Decongestant and No Other Medications:

- Sudafed Nasal Decongestant

Antihistamines and Decongestants:

- Actifed Cold and Allergy (Triprolidine)
- Benadryl Allergy Congestion (diphenhydramine)
- Chlor-Trimeton Allergy & Decongestant (chlorpheniramine)
- Drixoral Cold & Allergy (dextbrompheninamine)
- Sudafed Cold & Allergy (chlorpheniramine)

Antihistamines, Decongestants and Pain Medication (Acetaminophen):

- Actifed Cold and Sinus (chlorpheniramine)
- Benadryl Allergy Sinus & Headache (diphenhydramine)
- Benadryl Allergy Cold (diphenhydramine)
- Dimetapp Cold & Fever* (brompheniramine)
- Drixoral Allergy & Sinus (dextbrompheniramine)
- Sinutab Sinus Allergy (chlorpheniramine)
- Theraflu Flu and Cold (chlorpheniramine)
- Tylenol Allergy Sinus (chlorpheniramine)
- Tylenol Allergy Sinus Night Time (diphenhydramine)

Antihistamine & Pain Medication (Acetaminophen):

- Tylenol Severe Allergy (diphenhydramine)

Decongestant Nose Spray and Antihistamine:

Dristan (Phenylephrine HCL and Pheniramine Maleate)

Antihistamines, Decongestants and Cough Medication*

Triaminic Nighttime* (chlorpheniramine)

Vicks 44M Cough & Cold Relief* (chlorpheniramine)

Antihistamines, Decongestants, Pain Medication (Acetaminophen)
and Cough Medication **

Comtrex Multisymptom cold & Cough Relief (also in elixir)*
(chlorpheniramine)

Contact Severe Cold & Flu Maximum Strength (chlorpheniramine)

Theraflu Flu, Cold & Cough (chlorpheniramine)

Tylenol Cold (chlorpheniramine)

Mast Cell Stabilizer Nose Sprays

Nasal crom

Many “Cold” & “Sinus” medications contain acetaminophen. If used together, liver damage can occur from an overdose.

* Denotes Elixir or Liquid Medication

** Note: This drug combination should be used carefully since you will probably not want to take a cough medication if you have an allergy and you will probably not want the drying effect of an antihistamine if you have a “Cold”.

Nasal Allergies & Nasal Infections

Most cases of nasal allergies start with swelling and fluid production from the main nasal passages only. If the swelling becomes severe, the sinuses can also be blocked, producing pressure and discomfort. Blocked sinuses can become chronically infected. Thus, you can have a nasal allergy and a bacterial sinusitis at the same time. This is not an uncommon situation and a chronic or long standing infection may develop. In this case, your doctor may also elect to treat you with an antibiotic usually for as long as three weeks.

Medication and Treatments That Can Be Provided By Your Doctor

There are several medications and treatments which can be provided by your doctor. These include drug therapies, allergy testing and in severe cases surgery.

Steroidal Nasal Sprays—Non-addicting, little systemic effects as compared to oral steroids, some approved down to age 6 years. Prolonged use can sometimes cause nose bleeding and thinning of the lining of the nose. Patients taking these medications should be checked by a physician every few months.

Non-Sedative Antihistamines—These may soon be available over-the-counter. These medications have less sedative effects, less drying and less complications of urinary retention and impotence. Some doctors are even starting to use some of these drugs in asthmatic patients. However, they are often very expensive. “Allegra” is said to have little anti-cholinergic effects and should have less problems with drying, urinary retention and impotence.

Antihistamine Nose Spray—Astilene—A new drug. Because the antihistamine is applied topically it should have less systemic complications and increased nasal symptom relief.

Oral Steroids—Oral (or injectable) steroids should only be taken to suppress severe symptoms and only for a short period of time. Steroids have many complications including elevation of blood pressure, worsening of diabetes, elevation of cholesterol. Prolonged use may even be precipitating factor for strokes, heart attacks, and the formation of blood clots. **ONLY USE UNDER THE GUIDANCE OF A DOCTOR.**

Allergy Testing—Two types of allergy testing are available, skin testing and blood testing, or RAST. The goal of skin testing is to lower the circulating IgE level and increase the circulating blocking antibody (IgG4) which will prevent IgE’s interaction with the “Mast Cell”.

Both types of tests measure IgE. These tests are not as accurate in evaluating for food allergies. Remember food allergy is either a severe IgE reaction, in which case allergy testing may be contraindicated or possibly a delayed IgG reaction in which case you may not be testing for the proper antibody. Also, foods are digested by the body and there is little knowledge about the end product that the patient is reacting to.

Skin Testing: We currently use prick testing and then titrate the positive allergens to obtain an accurate starting level for desensitization. This type of testing is less expensive, more accurate, and will allow the patient to start at a higher antigen level for desensitization than a RAST blood test. Thus, one will reach maintenance dosage sooner. However, it has more discomfort and rarely a patient can develop a serious reaction.

RAST testing is indicated for children, patients that are at risk for developing a severe reaction, such as asthmatics or patients on Beta Blockers. However, since you start desensitization at a lower dose than skin testing (RAST minus 1) it will take 10 weeks longer to reach a maintenance dose.

Once the maintenance dose is reached, allergy shots are usually given for 3 to 5 years. They are then stopped. After several years, many patients will experience a recurrence of their symptoms. If this happens, allergy testing should be repeated and allergy shots restarted.

Surgery: This is reserved as a last resort and is usually performed to relieve sinus blockage or increase nasal airway. If the patient is allergic to bacteria or fungi in the sinuses, the operation may result in marked improvement. However, the surgery will often only relieve the symptoms associated with the blocked sinus and not improve the underlying allergy. Thus, after surgery the patient may be improved but will still have to take sinus medications or shots.

Sinus surgery is often performed with scopes through the nose and is usually done in an outpatient surgery center (“in-and-out surgery”). Because the sinuses are fixed and the operated tissue does not move, post-operative pain is usually minimal. Surgery is not without risks, injury to the eye and lining of the brain can occur. However, these structures can also be damaged by untreated sinus disease.

Prevention of Allergies

The key to preventing your allergies is to know what you are allergic to and avoid the allergens. Key allergens are identified not only by testing but by the history provided by the patient. If you are allergic during particular seasons, then it is likely you are allergic to pollens. Tree pollen is produced the earliest in the year often from Feb. to April, then grasses in late spring and summer and finally weeds in the summer and fall. Spores from outdoor molds are also produced throughout the year, and will often be worse 3 to 4 days after a rainstorm. Pollens, on the other hand, are often cleared by rain thus improving allergic symptoms. If you are allergic to outdoor antigens, keep the windows of your house down and install furnace filters, or a free-standing air filter, which will clean the allergens from your house.

If you are allergic year round, you may be sensitive to animals (cats, dogs, horses, feathers, etc.), molds, dust mites (house dust) or cockroaches. Cats by far produce the most powerful allergen. The allergen can be present over 6 months after the cat is removed from the house and can easily be brought into the house on visitor's clothing. Allergens from horses and feathers are commonly found in the upholstery of furniture. Indoor molds grow anywhere it is wet. This includes, basements, bathrooms, garages, kitchens and around all plants. Getting a dehumidifier and replacing real plants with plastic plants will often help. A house dust allergy is actually an allergy to fecal material to the dust mite. Taking out carpets and installing wooden or linoleum floors will help, especially in the bedroom where you spend the most time. A plastic cover over bedroom pillows and mattress will help to reduce exposure. Bed sheets and linens should be washed in hot water.

Nose Bleeds

One of the most common problems an individual may develop is nose bleeding. In the child it is usually the result of nasal drying but in the adult it may be a warning sign of high blood pressure. Rarely, it may be the presenting sign of a bleeding problem, a nasal growth or cancer, or even leukemia. Thus, any nasal bleeding which persists, recurs, or is severe needs to be evaluated by your doctor.

Nasal drying is common in the winter during cold dry weather and in the summer with air-conditioning. If due to nasal drying, nose bleeds can sometimes be prevented by placing KY Jelly about 0.5 inches into the nose using a Q-tip. This should be done two to four times a day. Placing a humidifier in the home will also help. However, this will also promote the growth of molds and other allergens. Do not use vaseline. Vaseline is petroleum-based and thus will dry, not moisten the nose.

If the nose is actively bleeding, pinch the nostrils and lean forward. If you do not have hypertension or diabetes you may want to try to use a nasal decongestant nose spray. These nose sprays constrict blood vessels and will sometimes stop bleeding. Since, nose bleeding in children often occurs in the front part of the nose, moistening a piece of cotton with a decongestant nose spray and placing it in the front part of the nose may also stop the bleeding.

In adults, nose bleeding may be severe. Often caused by high-blood pressure. Decongestants should not be used since it may aggravate the high-blood pressure.

Prescription steroidal nose sprays can over time thin the lining of the nose and cause nose bleeding. These medications should be discontinued if bleeding develops. Oral antihistamines or Nasalcrom should then be used to control the allergic symptoms.

Smoking

Smoker's Rhinitis: Tobacco smoke contains hundreds of chemicals, at least twenty of which have been implicated in cancer. Smoking irritates the lining of the nose, increasing nasal secretions and swelling. The nose becomes less able to cleanse itself and more susceptible to allergens. If you smoke, all the treatments in this section are less likely to be effective. In my experience, decongestants, antihistamines and nasal steroids are of little help. In my practice, I have not had a single allergic patient who smokes improve with allergy shots. Some doctors will not even allergy test patients that smoke, and for the most part I follow this practice. Unfortunately, most patients have caused irreversible damage to the lining of their nose and quitting smoking does not improve their symptoms. In fact, many patients experience a worsening of their symptoms since goblet cell hypertrophy takes place which increases nasal secretions. Because ciliary function (micro hair structures which clean the nose) is often permanently damaged, these secretions are not cleared and the patient experiences worsening over many months of his/her symptoms. The best treatment is to quit smoking and use hypertonic saline nasal irrigations (ENTsol Spray -- Over-The-Counter buffered hypertonic nasal spray) in combination with the use of nasal steroids. However, as with patients with chronic lung disease from smoking, patients with smoker's rhinitis, seldom return to a completely normal state.

IF YOU SMOKE....QUIT!!