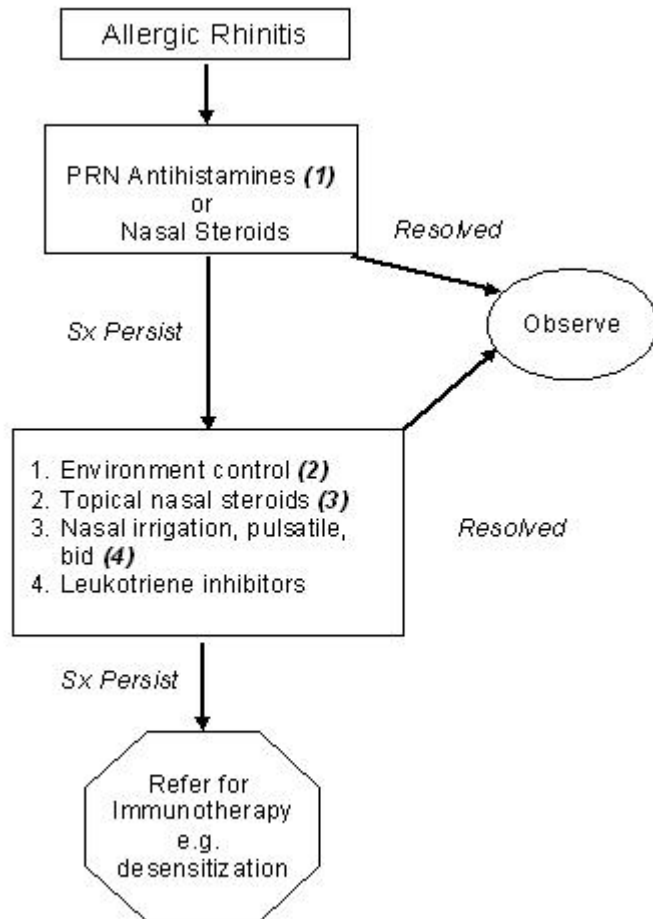




*Ambulatory Healthcare Pathways for Ear, Nose, and Throat Disorders*

**NOSE**

**ALLERGIC RHINITIS**



- A. Simple allergic rhinitis is traditionally managed with antihistamines. Non specific antihistamines are available over the counter and are most often combined with a nasal decongestant such as pseudoephedrine, in part to enhance their efficacy and in part to counteract the side effect of drowsiness. H1 specific antihistamines are less likely to cause drowsiness. Different individuals respond differently to the different antihistamines. There does not seem to be a single “best” antihistamine for all.
- B. Environmental control is complex. There are excellent free patient handouts provided by companies that benefit from the sale of the equipment. The following are our

general recommendations.

#### House Dust:

House dust is partially composed of the breakdown products of natural plant and animal fibers. If the fibers or materials that makeup a large part of the home furnishings (rugs, curtains, stuffed furniture, bedding, etc.) are replaced with synthetic materials (nylon, acetate, polyester, etc.), which are nonbiodegradable, many of the sources of house dust will be eliminated.

#### Bedroom:

Since a large part of each 24-hour day is spent in the bedroom, dust control in this area should be more vigorous.

1. Remove stuffed or upholstered furniture.
2. Furniture should have smooth plastic, metal, or wood finishes.
3. Remove from the room and the adjoining closet all stored books, toys, clothing, bedding, etc. which collect and produce dust. Such articles that must be stored in the bedroom should be placed in plastic bags and sealed.
4. Bare wood or tile floors are best; if a rug seems necessary, washable throw rugs are best. Any rug should be 100 percent synthetic and the pad should be foam or rubber.
5. Curtains or drapes should be easily washable and made of synthetic material, although cotton is permissible.
6. Forced-air heater ducts leading to the bedroom should be closed off or a polyester filter should be replaced often during the winter months.
7. Bedding must be of synthetic material and laundered frequently. Avoid feather or kapok filled pillows. Mattresses and box springs should be covered by zippered, vinyl mattress covers. These may be purchased at most large department stores.
8. Windows and doors leading to the bedroom should remain closed as much as possible.
9. Walls, ceilings, and floors should be washed. Daily cleaning with a damp mop and a damp cloth is important.
10. Vacuums disperse large amounts of dust particles into the air; therefore, it's best to have the allergic person outside the home during and for at least two hours after running the vacuum. If the allergic individual does the vacuuming, a mask should be worn.

#### Special Items:

1. Pets, furry or feathered, should not be allowed in the home at any time.
2. House plants should not be placed in the bedroom; the soil contains mold and

biodegradable material which can be extremely allergenic.

3. Mold (mildew, fungi) are associated with damp places and can be eliminated or retarded by lowering the humidity via vents, fans, heaters, etc. and by using mold retardants such as Captan® (Orthofungicide), (can be purchased at a local nursery). Zephiran® (benzalkonium chloride) 1:750, found in pharmacies. Other commercially available mold retardants such as Lysol® can also be used. Captan®, is nonpoisonous to humans, and may be sprayed through a garden spray; use eight tablespoons of 25% solution or four tablespoons of 50% powder per gallon of water. Zephiran® (full strength) may be sprayed on walls, etc.
4. Air cleaners or air purifiers are very helpful. Portable units should be placed in the bedroom at a location where the clean airflow is across the head of the bed. Larger units are also available which are incorporated with your existing forced air heating system. There are two basic types of air cleaners in the market, a HEPA filter or an electronic air cleaner (electronic precipitator). Both appear to work well, but the HEPA filter is thought to be the most efficient. Air cleaners may be rented to assess usefulness. Rental fees are usually applicable to sale price.
5. Tobacco smoke is an irritant to the respiratory system and smoking should not be allowed in the home.

#### Environmental Control Products:

1. Allergy Control Products: <http://www.allergycontrol.com/>
2. National Allergy Supply Incorporated: <http://www.natlallergy.com/>

- C. Nasal steroids provide impressive treatment for allergic rhinitis. They should be used daily, as their benefit derives from suppressing both the short and the long-term inflammatory allergic response. All the nasal steroids have similar efficacy. The newer nasal steroids have seemingly fewer side effects, i.e. nasal irritation and bleeding and require only once a day administration.
- D. Nasal irrigation. There are three commercially available nasal irrigation systems. The first is produced by [Hydro Med](#) and is called the Grossan Hydro Pulse Nasal/Sinus Irrigation System. Ethicare also makes a nasal irrigation system. [Ethicare](#) makes a nasal irrigator that attach to a Teledyne Water Pik. All three irrigation systems are equally effective. As the Grossan and the Ethicare systems are designed exclusively for nasal irrigation, it may be easier to obtain medical insurance reimbursement. Which system you use is a matter of personal preference. Grossan and Kenwood both provide premade additives. I have found that commercially available table salt is effective and inexpensive. Some patients, however, have preferred the pre-mixed solutions.

The following instructions are the same for any of the nasal irrigation systems. Assemble the nasal irrigator as instructed in the materials. Turn the water control to the lowest setting. Select and attach the nasal irrigator. The nose is best washed with diluted salt water. No salt or too much salt will cause irritation or a burning sensation. Most people use 1 level teaspoon of common table salt in 500 milliliters (1 pint) of water. Tap water is generally sterile and is excellent for nasal irrigation. The water temperature is controversial. Some like cold water and some like it hot. 98.6° Fahrenheit, (37° centigrade) is the body temperature ideal for nasal irrigation. The coolest water that should be irrigated through the nose is 72° Fahrenheit and the warmest 102° Fahrenheit.

If you select the Grossan or the Ethicare Nasal Irrigation systems, they come with a nasal adaptor. If you select the Teledyne irrigation system, these are sold in drug stores. You will require an adjustable model. You will need to obtain a special nasal adaptor. These are available from Ethicare.

1. The first is Hydro Med [<http://www.hydromedonline.com/>] which provides the Grossan Nasal Irrigator, telephone number (800) 560-9007.
2. The second is the Ethicare [<http://www.ethicare.com>] nasal irrigator, telephone number 800) 253-3599.

Some of these companies produce their own water delivery system. The pulsatile irrigation is the key to success. Non-pulsatile systems are considered less effective, but better than no irrigation.

Fill your nasal irrigator with the chosen water temperature and salt concentration. Turn the unit on and lean over the sink. Place the irrigator up to your nose. Let the water run into your nose. It will run out the opposite side or out your mouth. Tilt and twist the irrigator side to side and up and down directing the water flow into all portions of the nasal cavity. When the first nostril feels clean, switch to the opposite side. You can irrigate with one quarter of the bowl, one half of the bowl or the entire bowl. You irrigate until your nose feels clean. This can be repeated once twice or even 3 times during the day. As you get accustomed to the water cleaning your nose, you can increase the water pressure.

#### *Tobramycin*

In some cases, patients will be advised to irrigate with an antibiotic called Tobramycin. The Tobramycin bottles will require prescriptions, typically as Tobramycin 80 mg./2cc., dispense 10 vials. Appropriate syringes will be provided by the pharmacy or physician's office. Using a syringe, draw up to 1/2 cc. (20 mg.) of Tobramycin. This is added to the last 30-50 cc (2 oz.) of fluid in the irrigation bowl. Irrigate the first half of this through your right nostril, and the second half through your left nostril. Stronger

concentrations may cause nasal irritation. Weaker concentrations may not deliver as much antibiotic as would be ideal.

Tap water is generally sterile, and so infection has not been a problem. By the same token, the Tobramycin in the syringes will keep the syringes sterile, so they can be reused for up to ten treatments.

If Tobramycin is not covered by your insurance company or is not available to you, Gentamicin can be used. The same final concentration, namely 20 mg in 30-50 cc of nasal irrigant is recommended.

## **Overview of Allergic Rhinitis**

Allergic rhinitis affects 30–40 percent of Americans. It is a very common illness. Inhalant allergens typically include dust mites, molds, animal dander, (cats more than dogs), and botanical pollens, typically trees and grasses.

The symptoms of allergic rhinitis are itchy nose, itchy eyes, and sneezing. Symptoms of obstruction and rhinorrhea are caused by allergic rhinitis, but are also caused by bacterial sinusitis and are not normally helpful in the differential. The occasional “attack” of allergy is well treated with an antihistamine. H1 specific antihistamines are less sedating and for those who take them on a regular basis, seem superior to the over-the-counter antihistamines or antihistamine/decongestant combinations.

For the patient with allergic rhinitis who does not obtain adequate relief with antihistamines, treatment with nasal steroids is recommended. Leukotriene inhibitors may provide additional benefit.

The key to the treatment of allergic rhinitis is environmental control.

Most allergy product companies have educational materials with appropriate product information. These can be obtained easily by the primary care physician. In fact, many of the companies who provide the products for environmental control have very nice brochures with excellent information available at no charge. They are more than willing to send 50 or 100 at a time.

Environmental control combined with nasal steroids will successfully manage a large percentage of individuals with allergic rhinitis. Those with other underlying illness such as anatomic nasal obstruction or chronic sinusitis may benefit from ENT consultation and surgery. The individual with unrelenting allergic rhinitis may benefit from desensitization.

While I am a proponent of desensitization, it is a tremendous undertaking. The underlying allergies are identified and then a special desensitization serum is custom made and

administered to the patient 3 times a week for the first six to twelve months and once a week for a long time thereafter. This is expensive and a major time commitment.

Nasal irrigation is an ancillary procedure, which we at the [UCSD Nasal Dysfunction Clinic](#) have found to provide substantial benefit to those with allergic rhinitis. Irrigating the nasal cavity once or twice a day either washes away enough of the allergen laden mucus or by some other mechanism provides sufficient benefit that many patients report tremendous relief.