Seasonal Allergies

`ALLERGIC RHINITIS OVERVIEW — Rhinitis refers to inflammation of the nasal passages. This inflammation can cause a variety of annoying symptoms, including sneezing, itching, nasal congestion, runny nose, and post-nasal drip (the sensation that mucus is draining from the sinuses down the back of the throat).

Brief episodes of rhinitis are usually caused by respiratory tract infections with viruses (eg, the common cold). Chronic rhinitis is usually caused by allergies, but it can also occur from overuse of certain drugs, some medical conditions, and other unidentifiable factors.

For many people, rhinitis is a lifelong condition that waxes and wanes over time. Fortunately, the symptoms of rhinitis can usually be controlled with a combination of environmental measures, medications, and immunotherapy (also called allergy shots).

Nonallergic rhinitis is discussed separately. (See "Patient information: Nonallergic rhinitis (runny or stuffy nose)".)

WHO GETS ALLERGIC RHINITIS? — Allergic rhinitis, also known as hay fever, affects approximately 20 percent of people of all ages. The risk of developing allergic rhinitis is much higher in people with asthma or eczema and in people who have a family history of asthma or rhinitis.

Allergic rhinitis can begin at any age, although most people first develop symptoms in childhood or young adulthood. The symptoms are often at their worst in children and in people in their 30s and 40s. However, the severity of symptoms tends to vary throughout life; many people experience periods when they have no symptoms at all.

ALLERGIC RHINITIS CAUSES — Allergic rhinitis is caused by a nasal reaction to small airborne particles called allergens (substances that provoke an allergic reaction). In some people, these particles also cause reactions in the lungs (asthma) and eyes (allergic conjunctivitis).

The allergic reaction is characterized by activation of two types of inflammatory cells, called mast cells and basophils. These cells produce inflammatory substances, including histamine, that cause fluid to build up in the nasal tissues (congestion), itching, sneezing, and runny nose. Over several hours, these substances activate other inflammatory cells that can cause persistent symptoms.

Seasonal versus perennial allergic rhinitis — Allergic rhinitis can be seasonal (occurring during specific seasons) or perennial (occurring year round). The allergens that most commonly cause **seasonal allergic rhinitis** include pollens from trees, grasses, and weeds, as well as spores from fungi and molds (figure 1).

The allergens that most commonly cause **perennial allergic rhinitis** are dust mites, cockroaches, animal dander, and fungi or molds. Perennial allergic rhinitis tends to be more difficult to treat.

ALLERGIC RHINITIS SYMPTOMS — The symptoms of allergic rhinitis vary from person to person. Although the term "rhinitis" refers only to the nasal symptoms, many patients also experience problems with their eyes, throat, ears, and sleep, so it is helpful to consider the entire spectrum of symptoms.

- Nose: watery nasal discharge, blocked nasal passages, sneezing, nasal itching, post-nasal drip, loss of taste, facial pressure or pain
- Eyes: itchy, red eyes, feeling of grittiness in the eyes, swelling and blueness of the skin below the eyes (called allergic shiners) (see "Patient information: Allergic conjunctivitis").
- Throat and ears: sore throat, hoarse voice, congestion or popping of the ears, itching of the throat or ears
- Sleep: mouth breathing, frequent awakening, daytime fatigue, difficulty performing work

When an allergen is present year round, the predominant symptoms include post-nasal drip, persistent nasal congestion, and poor-quality sleep.

ALLERGIC RHINITIS DIAGNOSIS — The diagnosis of allergic rhinitis is based upon a physical examination and the symptoms described above. Medical tests can confirm the diagnosis and identify the offending allergens.

Identify allergens and other triggers — It is often possible to identify the allergens and other triggers that provoke allergic rhinitis by:

- Recalling the factors that precede symptoms
- Noting the time at which symptoms begin
- Identifying potential allergens in a person's home, work, and school environments

Skin tests may be useful for people whose symptoms are not well controlled with medications or in whom the offending allergen is not obvious.

ALLERGIC RHINITIS TREATMENT — The treatment of allergic rhinitis includes reducing exposure to allergens and other triggers, in combination with medication therapy. In most people, these measures effectively control the symptoms.

Reduce exposure to triggers — Some simple measures can reduce a person's exposure to allergens and triggers that provoke allergic rhinitis. These measures are discussed in detail in a separate topic review. (See "Patient information: Trigger avoidance in allergic rhinitis".)

Several different classes of drugs counter the inflammation that causes symptoms of allergic rhinitis. The severity of symptoms and personal preferences usually guide the selection of specific drugs.

Nasal irrigation and saline sprays — Rinsing the nose with a salt-water (saline) solution is called nasal irrigation or nasal lavage. Saline is also available in a standard nasal spray, although this is not as effective as using larger amounts of water in an irrigation.

Nasal irrigation is particularly useful for treating drainage down the back of the throat, sneezing, nasal dryness, and congestion. The treatment helps by rinsing out allergens and irritants from the nose. Saline rinses also clean the nasal lining and can be used before applying sprays containing medications, to get a better effect from the medication.

Nasal lavage with warmed saline can be performed as needed, once per day, or twice daily for increased symptoms. Nasal lavage carries few risks when performed correctly. Saline nasal sprays and irrigation kits

can be purchased over-the-counter. Saline mixes can also be purchased or patients can make their own solution.

A variety of devices, including bulb syringes, Neti pots, and bottle sprayers, may be used to perform nasal lavage; instructions for nasal lavage are provided in the table (table 1). At least 200 mL (about 3/4 cup) of fluid is recommended for each nostril.

Nasal glucocorticoids — Nasal glucocorticoids (steroids delivered by a nasal spray) are the first-line treatment for the symptoms of allergic rhinitis. These drugs have few side effects and dramatically relieve symptoms in most people. Studies have shown that nasal glucocorticoids are more effective than oral antihistamines for symptom relief [1].

There are a number of nasal glucocorticoids available by prescription. Specific medications include fluticasone, mometasone, budesonide, flunisolide, triamcinolone, beclomethasone, fluticasone furoate, and ciclesonide. These drugs differ with regard to the frequency of doses, the spray device, and cost, but all are similarly effective for treating all the symptoms of allergic rhinitis.

People with severe rhinitis may need to use a nasal decongestant for a few days before starting a nasal glucocorticoids to reduce nasal swelling, which will allow the nasal spray to reach more areas of the nasal passages (see 'Decongestants' below).

Some symptom relief may occur on the first day of therapy with nasal glucocorticoids, although their maximal effectiveness may not be noticeable for days to weeks. For this reason, nasal glucocorticoids are most effective when used regularly. Some people are able to use lower doses when symptoms are less severe.

How to use a nasal spray — Nasal sprays work best when they are used properly and the medication remains in the nose rather than draining down the back of the throat. If the nose is crusted or contains mucus, it should be cleaned with a saline nasal spray before a nasal spray that contains medication.

The head should be positioned normally or with the chin slightly tucked. The spray should be directed away from the nasal septum (the cartilage that divides the two sides of the nose). The spray is dispensed and then sniffed in slightly to pull it into the higher parts of the nose. Sniffing too hard will result in the medicine draining down the throat, and should be avoided.

Some people find that holding one nostril closed with a finger improves their ability to draw the spray into the upper nose. Medicine that drains into the throat may be spit out.

Side effects — The side effects of nasal steroids are mild and may include a mildly unpleasant smell or taste or drying of the nasal lining. In some people, nasal steroids cause irritation, crusting, and bleeding of the nasal septum, especially during the winter. These problems can be minimized by reducing the dose of the nasal steroid, applying a moisturizing nasal gel or spray to the septum before using the spray, or switching to a water-based (rather than an alcohol-based) spray.

Studies suggest that nasal steroids are generally safe when used for many years. However, people who use these drugs for years should have periodic nasal examinations to check for rare side effects, such as nasal infection.

Steroids taken as a pill or inhaled into the lungs can have side effects, especially when taken for long periods of time. However, the doses used in nasal steroids are low and are NOT associated with these side effects. However, clinicians usually recommend using the lowest effective dose.

Antihistamines — Antihistamines relieve the itching, sneezing, and runny nose of allergic rhinitis, but they do not relieve nasal congestion. Combined treatment with nasal steroids or decongestants may provide greater symptom relief than use of either alone.

Oral medications — Several antihistamines have been available for many years without a prescription, including brompheniramine (Dimetapp allergy®, Nasahist B®), chlorpheniramine (Chlor-Trimeton®), diphenhydramine (Benadryl®), and clemastine (Tavist®). These drugs often cause sedation and should not be used before driving or operating machinery. Even if the person does not feel excessively drowsy, these drugs can have a sedating effect. Thus, patients should use caution.

Less-sedating oral antihistamines include Loratadine (Claritin®, Alavert®), desloratadine (Clarinex®), cetirizine (Zyrtec®), levocetirizine (Xyzal®), and fexofenadine (Allegra®). Loratadine and cetirizine are available without a prescription. These drugs work as well as the sedating antihistamines for rhinitis, but they are less sedating and are available in long-acting formulas. However, they may be more expensive.

Nasal sprays — Azelastine (Astelin®) and olopatadine (Patanase®) are prescription nasal antihistamine sprays that can be used daily or when needed to relieve symptoms of post-nasal drip, congestion, and sneezing. These sprays start to work within minutes after use. The most common side effect with azelastine is a bad taste in the mouth immediately after use. This can be minimized by keeping the head tilted forward while spraying, to prevent the medicine from draining down the throat (see 'How to use a nasal spray' above).

Decongestants — Decongestants (like pseudoephedrine or phenylephrine [Sudafed®, Actifed®, Drixoral®]) are often combined with antihistamines in oral, over-the-counter allergy drugs. In the United States, pseudoephedrine has been used to make illegal drugs, which caused many companies to substitute phenylephrine for pseudoephedrine. However, phenylephrine is not effective for treating allergic rhinitis.

Oral decongestants elevate blood pressure and are not appropriate for people with high blood pressure or certain cardiovascular conditions. Men with an enlarged prostate who have difficulty urinating may notice a worsening of this symptom when they take decongestants. (See "Patient information: Benign prostatic hyperplasia (BPH)".)

Decongestants in the form of nasal sprays are also available, including oxymetazoline (Afrin®) and phenylephrine (Neo-synephrine®). Nasal decongestant sprays should not be used for more than two to three days at a time because they may cause a type of rhinitis called rhinitis medicamentosa, which causes the nose to be congested constantly UNLESS the medication is used repeatedly. This condition can be difficult to treat. To avoid it, do not use decongestant sprays for more than 3 days. (See "Patient information: Nonallergic rhinitis (runny or stuffy nose)".)

Cromolyn sodium — Cromolyn sodium (Nasalcrom®) prevents the symptoms of allergic rhinitis by interfering with the ability of allergy cells to release natural chemicals that cause inflammation. This drug

is available as an over-the-counter nasal spray that must be used three to four times per day, preferably before symptoms have begun, to effectively prevent the symptoms of allergic rhinitis.

Allergy shots — Allergy shots, also known as allergen immunotherapy, are injections given to reduce a person's sensitivity to allergens. Allergy shots are only available for common allergens, such as pollens, cat and dog dander, dust mites, and molds. These shots contain solutions of the allergens to which a specific person is allergic, and are made up individually for each person. The process of immunotherapy changes the person's immune response to the allergens over time. As a result, being exposed to the allergen causes fewer or even no symptoms.

Immunotherapy can help many people with allergic rhinitis. In children, immunotherapy can help prevent developing allergic asthma later in life. However, immunotherapy is relatively time-consuming and is often reserved for people who have a poor response to medication, or want to avoid taking medications long-term. Immunotherapy can be expensive, but many insurance plans cover the therapy because long-term use of allergy medications is also costly.

Immunotherapy is usually started by an allergist. Treatment begins with several months of weekly injections of gradually increasing doses, followed by monthly maintenance injections. The maintenance injections can be given by a primary care provider.

Immunotherapy is usually a long-term therapy, and the benefits of this therapy may lessen when it is discontinued. However, one study in people with allergies to grass pollen found that the benefits of three to four years of immunotherapy persisted when the injections were stopped [2].

Immunotherapy injections carry a small risk of a severe allergic reaction. These reactions occur with a frequency of 6 of every 10,000 injections. The symptoms usually begin within 30 minutes of the injection. For this reason, patients are required to remain in the office after routine injections so that such a reaction could be quickly treated. Because drugs called beta-blockers may interfere with the ability to treat these reactions, people who take beta-blockers are often advised to avoid immunotherapy.

Other treatments — Other drugs may be recommended for some people with allergic rhinitis.

- Ipratropium — Nasal atropine is effective for the treatment of severe runny nose. This drug, available as ipratropium bromide (Atrovent®), is not generally recommended for people with glaucoma or men with an enlarged prostate.
- Leukotriene modifiers — Release of substances called leukotrienes may contribute to the symptoms of allergic rhinitis. Drugs that block the actions of leukotrienes, called leukotriene modifiers, can be very useful in patients with asthma and allergic rhinitis. However, nasal steroids are more effective than leukotriene modifiers for treating allergic rhinitis; thus, leukotriene modifiers are generally reserved for patients who cannot tolerate nasal sprays (due to nose bleeds) or azelastine (see 'Antihistamines' above).