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CHRONIC RHINITIS & POST-NASAL DRIP

WHAT IS THE FUNCTION OF THE NOSE?

The purpose of the nose is to warm, clean, and humidify the air you breath. In addition, it helps you to smell and taste. A normal person will produce about two quarts of fluid each day (mucus), which aids in keeping the respiratory tract clean and moist. Tiny microscopic hairs (cilia) line the surfaces helping to brush away particles. Eventually this mucus blanket is moved to the back of the throat where it is unconsciously swallowed. This entire process is closely regulated by several body systems.

The nose is divided into two passage ways by a partition called the septum. Protruding into each breathing passage are bony projections, called turbinates, which help to provide surface area to the inside of the nose. There are three turbinates on each side of the nose (inferior, middle, superior). The sinuses are four paired air filled chambers which empty into the nasal cavity. Their purpose is not really known.

WHAT IS RHINITIS & POST-NASAL DRIP?

Rhinitis is usually either allergic or non-allergic. An itchy/runny nose, sneezing, and nasal congestion characterize allergic rhinitis. Other allergic symptoms include itchy ears and throat, Eustachian tube problems, red/watery eyes, cough, fatigue/loss of concentration/lack of energy from loss of sleep, and headaches or facial tenderness. Rhinitis can be either acute or chronic. Seasonal allergic rhinitis (also called hay fever) is usually caused by pollen in the air, and sensitive patients have symptoms during peak times during the year. Perennial allergic rhinitis, a type of chronic rhinitis is a year-around problem, and is often caused by indoor allergens, such as dust and animal dander. Symptoms tend to occur regardless of the time of the year. Non-allergic rhinitis (also called vasomotor rhinitis) occurs in those patients in whom an allergic cause cannot be identified. Vasomotor rhinitis is thought to occur because of abnormal regulation of nasal blood flow (physiologic problem).

Persistent irritation and inflammation of the lining tissues of the nose characterize chronic rhinitis. One of the most common characteristics of chronic rhinitis is post-nasal drip. Post-nasal drip is a mucous accumulation in the back of the nose and throat leading to or giving the sensation of mucus dripping downward from the back of the nose. Post-nasal drip may lead to chronic sore throat. **Post-nasal drip can be caused by excessive or thick secretions or an impairment in the normal clearance of mucus from the nose or throat.**

WHAT CONDITIONS CAUSE AN ABNORMAL PRODUCTION OF NASAL SECRETIONS?

The following conditions are often associated with increased nasal drainage. It would not be unusual for a patient to have more than one factor involved in their situation.

The following may cause an increase in thin secretions:

- viruses
- allergies
- cold temperatures
- certain foods or spices
- pregnancy or hormonal changes
- drug side-effects (high blood pressure medications)
- structural problems (deviated septum, large turbinates)
- Vasomotor rhinitis (an abnormal regulatory problem with the nose).

The following may cause thicken secretions: Decreasing the fluid content of the mucus usually thickens the secretions leading to the impression of increased mucus.

- low humidity
- sinus or nasal infections
- foreign bodies: (especially if the drainage is from one side)
- environmental irritants: (tobacco smoke, smog)
- structural problems: (deviated septum, enlarged turbinates, enlarged adenoids).
- advanced age: Mucus membrane become atrophic and the volume of secretions may decrease and thicken.
- hormonal problems
- drug side-effects: (antihistamines)

WHAT CONDITIONS CAUSE IMPAIRMENT IN THE NORMAL CLEARENCE OF NASAL SECRETIONS?

Swallowing problems can make it difficult to clear normal secretions. This may result in the accumulation of material in the throat, which can spill into the voice box causing hoarseness, throat clearing, or cough. The following factors can contribute to swallowing problems:

- Advancing age: This will lead to decreased strength and coordination in swallowing.
- Stress: Muscle spasm or lump in throat. Also a nervous habit of frequent throat clearing will make the situation worse.
- Narrowing of the throat or tumors: This will impair the passage of food.
- Gastroesophageal reflux: It may interfere with normal swallowing.

HOW CAN CHRONIC RHINITIS & POST-NASAL DRIP BE TREATED?

Treatment of chronic rhinitis and post-nasal drip depends on the underlying condition causing the problem. A complete history and examination must be done to determine if the problem is caused by either impairment in the normal production of mucus or in its normal clearance from the nose.

Treatment options consists of one of more of the following options.

- **AVOIDANCE OF ALLERGENS**

An allergy is an exaggerated "normal body" inflammatory response to an outside substance. These substances that cause allergies are called allergens, and typically include pollen, mold, animal dander, house dust, and even some foods. The best treatment is avoidance of these allergens, but in many cases this may be impossible. Some helpful suggestions include: Use a pollen mask when mowing the grass or cleaning the house; install an air purifier or at least change the air filters monthly; use cotton or synthetic materials such as Dacron in pillows and bedding; enclose mattress in plastic; consider using a humidifier; keep windows closed during high pollen times; eliminate house plants; and bathe frequently or even give away dander producing pets.

- **AVOIDANCE OF NASAL IRRITANTS**

Nasal irritants usually don't elicit the typical immune response seen with classical allergies, but nevertheless they can mimic or make allergies worse. Examples of these irritants include cigarette smoke, perfume, aerosol sprays, smoke, and smog & car exhaust.

- **WASH THE NOSE AND SINUSES WITH SALT WATER**

Nasal irrigation's utilizing buffered hypertonic saline solution helps to reduce swollen and congested nasal and sinus tissues. In addition, it washes out thicken nasal secretions, irritants (smog, pollens, etc.), bacteria, and crusts from the nose and sinuses. Non-prescription nasal sprays (Ocean spray, Ayr, Nasal) can be used frequently, and are very convenient.

Nasal irrigation can be done several times per day, and is frequently performed with a syringe or a Water Pik device (the attachment is purchased separately). The irrigating solution can be made by adding 2-3 heaping teaspoons of salt. It is best to use Morton Coarse Kosher Salt or Springfield plain salt because table salt may have unwanted additives. To this solution, add 1 teaspoon of baking soda. Store at room temperature, and always mix solution before each use. If the solution stings, use less salt. In the beginning, or for children, it is best to start with a weaker salt mixture. It is not unusual to initially have a mild burning sensation the first few times you irrigate.

While irrigating the nose, it is best to stand over the sink and irrigate each side of your nose. Aim the stream toward the back of your head, not at the top of your head. For young children, the salt water can be put into a small spray container, which can be squirted many times into each side of the nose.

- **TREATMENT OF INFECTION**

The most common nasal infection is a viral infection known as "a cold". The virus causes swelling of the nasal membranes and the production of thick clear mucus. Symptoms usually last several days. If "a cold" goes on for many days and is associated with yellow or green drainage, bacteria have probably secondarily infected it.

Sinus blockage can lead to acute or chronic sinusitis, which can be characterized by nasal congestion, thick mucus, and facial pain. Prompt and aggressive treatment of infection with antibiotics, along with supplemental medications, or in some case surgery, helps to re-establishment the normal drainage pathways.

- **ALLERGY MEDICATIONS & TREATMENTS**

Antihistamines: Histamines are naturally occurring chemicals released in response to an exposure to an allergen, and they are responsible for the congestion, sneezing, and runny nose typical of an allergic reaction. Antihistamines are drugs that block the histamine reaction. These medications work best when given prior to exposure. Antihistamines can be divided into two groups: 1) Sedating (Benadryl, Chlor Trimetron, Tavist), 2) Non-Sedating (Claritin, Hismanil). Sedating antihistamines should be avoided in those patients who need to drive or use dangerous equipment. Non-sedating antihistamines can have serious drug interactions.

Decongestants: These drugs temporarily reduce swelling of sinus and nasal tissues leading to an improvement of breathings and a decrease in obstruction. They may also stimulate the heart and raise the blood pressure and should therefore be avoided by patients who have high blood pressure, heart irregularity, glaucoma, thyroid problems, or difficulty in urination. The two most common decongestants are phenylpropanolamine (Entex) and pseudoephedrine (Sudafed).

Combinations: These drugs are made up of one or more anti-allergy medications. They are usually a combination of an antihistamine and a decongestant. Other common combinations include mucus thinning agents, anti-cough agents, aspirin, Advil, or Tylenol. They help to simplify dosing and often will work either synergistically or have side effects that cancel each other out.

Allergy Shots (Immunotherapy): Allergy shots interfere with the allergic response. After identification of an allergen, a small amount of it is given back to the sensitive patient. Overtime the patient will develop blocking antibodies to the allergen, and they become less sensitive.

Steroids: These drugs (prednisone, medrol, and hydrocortisone) are highly effective in allergic patients, however there is a potential for serious side effects when used over time. They are best used for the short-term management of allergic problems, and must always be monitored by a physician.

- **NASAL SPRAYS**

Steroid nasal sprays: (Vancenase, Beconase, Flonase, Nasacort, and Rhinocort) They reduce allergic or inflammatory inflammation, but do not have the side-effects of oral (systemic) steroids.

Nasalcrom: This spray helps to stabilize allergy cells (mast cells) by preventing release of allergy mediators, like histamine.

Decongestant sprays: (Afrin, Neosynpherine**) They** quickly reduce swelling of nasal tissues by shrinking the blood vessels. They will improve breathing and drainage over the short term, unfortunately if they are used for more than a few days they can become highly addictive (rhinitis metamentosa). Long term use can lead to serious damage.

Antihistamine sprays: It works like oral antihistamines but applied topically to the nasal membranes (Astelin).

Atrovent: It helps to control nasal drainage mediated by neural pathways. It will not treat an allergy, but it does decrease nasal drainage.

- **MUCUS THINNING AGENTS**

Mucus thinning agents are utilized to make secretions more thin and less sticky. They help to prevent pooling of secretions in the back of the nose and throat where they often cause choking. The thinner secretions pass more easily. Guaifenesin (Humibid, Fenesin) and organic Iodine (Organidin) are commonly used formulations. If a rash develops or there is swelling of the salivary glands they should be discontinued. Inadequate fluid intake will also thicken secretions. Increasing the amount of water consumed, and eliminating caffeine from the diet and the use of diuretics are also helpful.

- **REFLUX MEDICATIONS**

Antacids (Maalox, Mylanta) help to neutralize acid contents, whereas other medications (Tagament, Pepcid, Prolosec) decrease stomach acid production. Non-pharmacological treatments include avoiding late evening meals and snacks and the elimination of alcohol and caffeine. Elevating the head of the bed may help to decrease reflux during sleep.

- **SURGERY**

Structural problems with the nose and sinuses may ultimately require surgical correction. Obviously this should be done only after more conservative measures have been tried. Surgery is not a replacement for good allergy control and treatment. Septal deviation, septal spurs, septal perforation, enlargement of the turbinates, and nasal/sinus polyps can lead to pooling of or overproduction of secretions, blockage of the normal pathways leading to chronic sinusitis, and chronic irritation.

TERMINOLOGY

Acute Rhinitis: Inflammation of the nose that occurs for only a few days. Typically a virus ("a cold") causes this; if it goes on beyond a week then it is probably bacterial.
Allergens: Normally harmless substances that cause an exaggerated inflammatory response in sensitive people.
Allergic Rhinitis: An exaggerated "allergic" inflammatory condition of the nose.
Chronic Rhinitis: inflammation of the nose that goes on for weeks to months which is different from "a cold", and may be caused by allergy, nasal irritants, structural, or physiological problems.
Hay Fever: A seasonal allergy to airborne particles characterized by runny/itchy nose and eyes, sneezing, itchy throat, excess mucus, and nasal congestion. It is a misnomer because it is not caused by hay and it does not produce a fever.
Non-Allergic Rhinitis: Inflammatory condition of the nose without an obvious allergy cause.
Post Nasal Drip: Mucous accumulation in the back of the nose and throat leading to or giving the sensation of mucus dripping downward from the back of the nose.
Summer Cold: Similar to hay fever. Also a misnomer because it is not caused by a virus.
Vasomotor Rhinitis: Similar to non-allergic rhinitis thought to be mediated by an abnormal neuronal control of the blood vessels supplying the nose.