

## **What is Post-Nasal Drip**

Post-nasal discharge, also called post-nasal drip (PND), describes the sensation of mucous accumulation in the throat or a feeling that mucus is dripping downward from the back of the nose. PND can be caused by excessive or thick secretions or throat muscle and swallowing disorders.

Normally, the glands lining the nose and sinuses produce one to two quarts of thin mucus a day. On the surface of this mucous membrane lining, the rhythmic beat of invisible cilia (which look like tiny hairs under the microscope) thrust the mucus backward. Then it is swallowed unconsciously. This mucus lubricates and cleanses the nasal membranes, humidifies air, traps and clears inhaled foreign matter, and fights infection. Mucus production and clearance is regulated by a complex interaction of nerves, blood vessels, glands, muscles, hormones, and cilia.

### **Abnormal Secretions**

Increased thin clear secretions can be due to colds and flu (upper respiratory viruses), allergies, cold temperatures, bright lights, certain foods and spices, pregnancy and hormonal changes, various drugs (including birth control pills and especially high blood pressure medications), and structural abnormalities, such as a deviated or irregular nasal septum, (the septum is the cartilage and bony partition which divides the nose into its two sides, beginning at the nostrils and extending to the back of the nasal cavity.)

Vasomotor rhinitis describes a nonallergic "hyperirritable nose," which may feel congested, blocked or wet. Increased thick secretions are frequently caused by wintertime low humidity in homes and buildings heated without adding moisture to the air. They can also result from sinus or nose infections and some allergies, especially to certain foods such as dairy products. If the secretions of a common cold become thick and green or yellow it is likely that a bacterial sinus infection is developing. Also, particularly in children, they can signify a foreign body in the nose (such as a bean, wadded paper, piece of toy, etc.).

Decreased secretions may be caused by any of the following:

- Long-term exposure to environmental irritants (such as cigarette smoke, industrial pollutants, and automobile fumes), which can dry and damage nasal mucous membranes. When secretions are reduced, they are usually thicker than normal and produce the false sensation of increased mucus.
- Structural abnormalities (such as nasal septal irregularities) which alter air currents may then dry surrounding membranes. (Thus, depending on their type, structural problems can increase or decrease secretions.)
- Age. Mucous membranes commonly shrink and dry with age, causing reduced mucus that is thicker than normal which the elderly perceive as PND.
- Other less common disorders of the tissues lining the nose and sinuses can alter mucous production or flow.

## **Swallowing Problems**

Swallowing is a complicated process by which food and fluid go from the mouth into the esophagus (tube connecting the throat to the stomach). It requires coordinated nerve and muscle interaction in the mouth, throat, and esophagus. Swallowing problems may result in accumulation of solids or liquids in the throat, which can spill into the voice box (larynx) and breathing passages (trachea and bronchi) causing hoarseness, throat clearing, or cough.

Several factors contribute to swallowing problems:

- With age, swallowing muscles often lose strength and coordination. Thus, even normal secretions may not pass smoothly into the stomach.
- During sleep, swallowing occurs much less frequently, and secretions may accumulate. Coughing and vigorous throat clearing are often needed when awakening.
- At any age, nervous tension or stress can trigger throat muscle spasms, resulting in a sensation of a lump in the throat. Frequent throat clearing, which usually produces little or no mucus, can make the problem worse by increasing irritation.
- Growths or swellings in the food passages may slow or prevent the passage of liquids and/or solids.
- Swallowing dysfunction may be caused by gastroesophageal reflux, which is a return of stomach contents and acid into the esophagus or into the throat. Heartburn, indigestion, and sore throat are common symptoms, which may be aggravated while lying down (especially following eating.). Hiatal hernia, a pouch-like structure at the junction of the esophagus and stomach, often contributes to the reflux.

## **Chronic Sore Throat**

Post-nasal drip often leads to a sore, irritated throat. Usually, throat cultures will not show strep

or other infections, but the tonsils and other glandular tissues in the throat may swell, causing discomfort or a feeling of a throat lump. Successful treatment of the post nasal drip will usually clear up these throat symptoms.

Before treatment is started, a diagnosis must be made. This requires a detailed ear, nose, and throat exam and possible laboratory, endoscopic, and x-ray studies.

## **Treatment**

Bacterial infection is treated with antibiotics, but these drugs may provide only temporary relief. In cases of chronic sinusitis, surgery to open the blocked sinuses or drainage pathways may be required.

**Allergy** is managed by avoiding the cause where possible. Antihistamines and decongestants, cromolyn and steroid (cortisone type) nasal sprays, various other forms of steroids, and hyposensitization (allergy shots) may be used. However, some anti-histamines may dry and thicken secretions even more; decongestants can aggravate high blood pressure, heart, and thyroid disease (these drugs commonly are found in nonprescription medications for colds). Steroid sprays generally may be used safely for years under medical supervision. Oral and

injectable steroids rarely produce serious complications in short term use. Because significant side effects can occur, they must be monitored very carefully if used for prolonged periods.

**Gastroesophageal reflux** is treated by elevating the head of the bed six to eight inches, avoiding late evening meals and snacks and eliminating alcohol and caffeine. Antacids (e.g. Maalox, Mylanta, Gaviscon, ) and drugs that block stomach acid production (e.g. Zantac, Tagamet, Pepcid ) may be prescribed. A trial of treatment may be suggested before x-rays and other diagnostic studies are performed.

**Structural abnormalities** may require surgical correction. A septal deviation can prevent normal drainage from the sinuses and contribute to the development of chronic sinusitis. A septal spur (sharp projection) can cause irritation and abnormal secretions. A septal perforation (hole) can cause crusting. Enlarged or deformed nasal turbinates (the structures on the side walls of the nasal cavity which regulate and humidify airflow) and/or polyps (i.e. outgrowths of nasal membrane resulting from infection, allergy or irritants) may cause similar problems.

It is not always possible to determine whether an existing structural abnormality is causing the post-nasal drip or if some other condition is to blame. If medical treatment fails, the patient must then decide whether to undergo surgery in an attempt to relieve the problem.

In some cases, no specific cause can be found for PND. When no correctable disease is present, attention is usually directed to thinning secretions so they can pass more easily. This is particularly true for the elderly, who often have inadequate fluid intake. These patients should drink eight glasses of water a day, eliminate caffeine, and avoid diuretics (fluid pills) if possible. Mucous thinning agents such as guaifenesin or organic iodine may be employed. Guaifenesin (e.g. Humibid, Robitussin ) rarely produces significant side effects. In the rare instances when organic iodine (Organidin ) causes swelling of the salivary glands or a rash, the drug must be discontinued.

Nasal irrigations may alleviate thickened or reduced secretions. These can be performed two to six times a day either with a nasal douche device or a Water Pik equipped with a special nasal irrigation nozzle (purchased separately). Warm water with baking soda or salt (1/2 tsp. to the pint) or Alkalol, a non-prescription irrigating solution (full strength or diluted by half with warm water), may be helpful. Finally, use of simple saline non-prescription nasal sprays (e.g. Ocean, Ayr, Nasal ) to moisten the nose is often very helpful.