



NOSE AND SINUS PROBLEMS

Sinusitis

The sinuses also called paranasal sinuses are 4 pairs of air-containing spaces in the head (maxillary, ethmoid, frontal, and sphenoid). They extend from the nasal passages like expansions or balloons into the bones of the face and skull with their small-mouthed necks opening into the nasal passage. The sinus openings into the nasal passage are called ostia. Inflammation of the nasal passages is called rhinitis. Inflammation of the sinuses is called sinusitis. Most commonly inflammation occurs in both the nasal passages and sinuses, therefore sinusitis is more correctly called rhinosinusitis. However, there are some types of inflammation confined only to the nasal passage. In addition, there are some non-inflammatory causes of nasal and sinus symptoms. Therefore, a short, clear, all-encompassing definition of rhinosinusitis is not possible.

What causes rhinosinusitis?

Rhinosinusitis is commonly thought of as an infection. Both viral and bacterial infections can cause sinusitis. Fungus is also an unusual cause that is very rare in the Northwest. However, many people have non-infectious sinusitis. The most common is allergy. Environmental irritants, often an increased sensitivity to inhaled irritants is thought to be a common cause of nasal and sinus symptoms. Some medications (overuse of nasal spray decongestants such as Afrin, and side effects of some medications including some anti-hypertensive medications and aspirin) can cause non-infectious rhinosinusitis. Structural abnormalities of the nasal passage or growths can block nasal airflow and reduce the efficiency of nasal and sinus function thus predispose to infection. Other unusual and rare causes include hormonal changes such as occur during pregnancy, cold temperature (skier's nose), eating, non-allergic rhinitis with eosinophilia (NARES), immune deficiency, and autoimmune disorders. This brief discussion will cover only the most common causes of infectious rhinosinusitis, the type that is commonly treated with antibiotics.

Infectious Rhinosinusitis

Infectious rhinosinusitis symptoms can be classified as acute meaning less than 4 weeks duration, or chronic meaning more than 12 weeks duration. Infectious sinusitis will be discussed in this way because most people can relate well to duration of symptoms.

What causes infectious rhinosinusitis?

Acute infection or infection lasting less than 1 month.

The most common cause of acute rhinosinusitis is a viral infection that leads to a self-limited period of upper respiratory infection symptoms. Children have 6 - 8 upper respiratory infections (viral rhinosinusitis) per year and adults have 2 - 3 upper respiratory infections per year or a total of about 1 billion cases per year in the US. On occasion, about 0.5 - 2% of the time, there is a secondary bacterial infection that requires specific antibiotic treatment. This is important to remember when considering treatment for sinusitis that will be discussed below.

Chronic infection or infection/inflammation lasting longer than 3 months.

The incidence of chronic sinusitis is difficult to estimate. Interestingly, the role of bacteria in chronic rhinosinusitis in both adults and children is not well known. In some cases colonies of bacteria may produce a film (biofilm) that protects them against antibiotics and other harmful elements in the environment. Other immune system and inflammatory processes may be at least as important in its cause. For example, immune system reactions such as those caused by allergies, inflammation caused by toxins produced by bacteria and substances that are highly reactive with the immune system (super antigens), bone inflammation, and even fungal infection or allergy to fungus may play an important role. As you would expect, and acute infection caused by viruses and bacteria can cause an exacerbation of symptoms of underlying chronic sinusitis

Are there factors that predispose to the development of sinusitis?

Cigarette smoking causes damage to the nasal lining reducing efficiency of nasal and sinus function. Perennial allergies cause swelling and some nasal lining damage that may reduce efficiency of nasal function as well as obstruct the ostia or openings of the sinuses into the nasal passage. Nasal polyps, or a significant nasal septal deviation may cause a mechanical obstruction of sinus ostia. The nasal septum is the tissue wall that separates the two sides of the nasal passage. Polyps are berry-like growths in the nasal passage and occasionally in the sinuses that are associated with chronic inflammation. Aspirin-associated respiratory disease, an unusual cause of rhinosinusitis, also increases the probability of rhinosinusitis. Other much less common abnormalities in the immune response, and acid reflux into the nose, often not associated with heart burn, can be associated with sinusitis.

What are the symptoms of sinusitis?

Acute sinusitis

Symptoms associated with rhinosinusitis include cloudy nasal drainage (yellow, green drainage), reduced sense of smell, nasal obstruction, facial pressure or pain, fever (acute only), headache, bad breath, dental pain, cough, ear pain pressure of fullness, and fatigue. Of course, all these symptoms rarely occur in one individual. The difficulty in diagnosis is that these symptoms regularly occur with a common cold (upper respiratory infection or URI). When do they indicate the presence of acute or chronic sinusitis? The best, but less than satisfactory answer lies in the duration of symptoms. Typically common URI symptoms will last from 7 -10 days. If symptoms last longer or worsen, an acute bacterial sinusitis is more likely.

Chronic sinusitis is a different animal. There are a wide range of symptoms. Typically symptoms are more subtle and low grade than in acute sinusitis unless an acute exacerbation occurs. Commonly there may be only chronic nasal congestion or low grade facial pressure. In other cases there may be more severe and multiple symptoms including fatigue, and generalized air passage involvement with associated asthma, and sometimes nasal polyps.

An examination by your doctor is important in determining the cause and extent of sinusitis.

A typical headache is often described as a sinus headache. However, sinusitis is the cause of less than 10% of headaches. Tension, migraine, cluster, and rebound headaches as well as TMJ (temporomandibular joint syndrome) , and eye diseases cause headaches similar to rhinosinusitis.

How is the exam done?

The doctor will use a nasal speculum to see into the nasal passage. A decongestant spray such as neosynephrine may be used to reduce the size of the structures within the nasal passage in order to see better. It is also very helpful in many cases to use a small flexible fiberoptic scope to see areas within the nasal passage that are not visible using only the nasal speculum. The exam is not painful, but is more comfortable after using a topical anesthetic spray in the nose such as lidocaine. A culture of nasal drainage may be helpful in some cases. Cultures of nasal drainage in children are generally unreliable.

What other tests are used to diagnose sinusitis?

Sinus xrays and CT scans (computerized tomography) are sometimes very useful to confirm the presence and extent of sinusitis. However in the typical case of sinusitis there is more value in the history of symptoms and in the examination. This is because

radiologic or imaging studies are usually not helpful in regard to determining the cause or duration of sinusitis. For example an acute viral sinusitis looks very similar to chronic bacterial sinusitis. In addition, about 40% of adults and 60% of children who have no symptoms of sinusitis will have an abnormal sinus CT scan. Routine sinus xrays are often misleading because they do not show adequate detail. The images of the sinuses created by a CT are very detailed. They are most helpful when there is a history of recurrent sinusitis, chronic sinusitis, or when sinus surgery is planned. A sinus CT shows if there is obstruction of the sinus ostia, an important detail that helps confirm that sinus surgery may be necessary. It is usually best to get a sinus CT scan when you are feeling that sinus symptoms are at a low ebb because the images show the degree of underlying inflammation that is likely always present.

How is sinusitis treated?

If typical upper respiratory infection symptoms last over 7 - 10 days or are progressive, an acute bacterial sinus infection is more likely. Antibiotics as well as medications for discomfort and nasal congestion are used if needed. Antibiotics are often prescribed for 14 days, longer than the standard 10 days. These antibiotics are directed toward the types of bacteria that typically cause sinusitis.

In the case of chronic sinusitis, antibiotics are typically prescribed for 3 to 4 weeks and are directed toward bacteria that are more likely found in chronic sinusitis. A short course (about 1 week) of the steroid prednisone, a potent anti-inflammatory medication, in conjunction with the antibiotic can be helpful as well. Nasal steroid sprays such as Nasarel and Flonase, and frequent saline nasal irrigation are helpful. As noted above, the role of bacteria in chronic sinusitis is unclear and there may be a combination of other factors that contribute to the condition. Therefore, even a prolonged course of antibiotic may not clear up the inflammation. It is also important to try to identify as far as possible other underlying problems and treat them as well.

If the best medical treatment fails to solve the problem of chronic sinusitis, then surgery is considered. As with most surgery, a visible underlying anatomic problem is removed or corrected. For chronic sinusitis, endoscopic sinus surgery is done. Endoscopic sinus surgery is done to enlarge the sinus ostia and remove as much disease as possible in order to enhance the function of the sinuses. A discussion of the details of this surgery is part of another printout. In many cases the surgery is successful in greatly reducing or eliminating chronic symptoms as well as reducing the duration of sinusitis symptoms when they do occur.

What are possible complications of sinusitis?

Complications of sinusitis are very unusual. They occur when infection extends through the bony structures housing the sinuses and into surrounding tissues. Infection in the frontal sinus can extend into the brain causing a brain abscess or meningitis. Infection in the ethmoid sinuses can extend into tissues around the eye causing severe swelling of the eyelids and occasionally impairment of vision. A rare and very serious infection

occurs when infection extends outside the boundaries of the sphenoid sinus into the brain.

There is excellent information about sinusitis and children on the web site of the American Academy of Otolaryngology.

<http://www.entnet.org/KidsENT/>

Sinusitis in Children

Pediatric Sinusitis

Your child's sinuses are not fully developed until age 20. Although small, the maxillary (behind the cheek) and ethmoid (between the eyes) sinuses are present at birth. Unlike in adults, pediatric sinusitis is difficult to diagnose because symptoms can be subtle and the causes complex.

How Do I Know When My Child Has Sinusitis?

The following symptoms may indicate a sinus infection in your child:

- < a cold lasting more than 10 to 14 days, sometimes with a low-grade fever
- < thick yellow-green nasal drainage
- < post-nasal drip, sometimes leading to or exhibited as sore throat, cough, bad breath, nausea and/or vomiting
- < headache, usually in children age six or older
- < irritability or fatigue
- < swelling around the eyes

Young children have immature immune systems and are more prone to infections of the nose, sinus, and ears, especially in the first several years of life. These are most frequently caused by viral infections (colds), and they may be aggravated by allergies. However, when your child remains ill beyond the usual week to ten days, a serious sinus infection is likely. You can reduce the risk of sinus infections for your child by reducing exposure to known environmental allergies and pollutants such as tobacco smoke, reducing his/her time at day care, and treating stomach acid reflux disease.

How Will the Doctor Treat Sinusitis?

Acute sinusitis:

Most children respond very well to antibiotic therapy. Nasal decongestants or topical nasal sprays may also be prescribed for short-term relief of stuffiness. Nasal saline (saltwater) drops or gentle spray can be helpful in thinning secretions and improving mucous membrane function.

If your child has acute sinusitis, symptoms should improve within the first few days. Even if your child improves dramatically within the first week of treatment, it is important that you continue therapy until all the antibiotics have been taken. Your doctor may decide to treat your child with additional medicines if he/she has allergies or other conditions that make the sinus infection worse.

Chronic sinusitis:

If your child suffers from one or more symptoms of sinusitis for at least twelve weeks, he or she may have chronic sinusitis. Chronic sinusitis or recurrent episodes of acute sinusitis numbering more than four to six per year, are indications that you should seek consultation with an ear, nose, and throat (ENT) specialist. The ENT may recommend medical or surgical treatment of the sinuses.

Diagnosis of sinusitis:

If your child sees an ENT specialist, the doctor will examine his/her ears, nose, and throat. A thorough history and examination usually leads to the correct diagnosis. Occasionally, special instruments will be used to look into the nose during the office visit. An x-ray called a CT scan may help to determine how your child's sinuses are formed, where the blockage has occurred, and the reliability of a sinusitis diagnosis.

When Is Surgery Necessary For Sinusitis?

Surgery is considered for the small percentage of children with severe or persistent sinusitis symptoms despite medical therapy. Using an instrument called an endoscope, the ENT surgeon opens the natural drainage pathways of your child's sinuses and makes the narrow passages wider. This also allows for culturing so that antibiotics can be directed specifically against your child's sinus infection. Opening up the sinuses and allowing air to circulate usually results in a reduction in the number and severity of sinus infections. Also, your doctor may advise removing adenoid tissue from behind the nose as part of the treatment for sinusitis. Although the adenoid tissue does not directly block the sinuses, infection of the adenoid tissue, called adenoiditis, or obstruction of the back of the nose, can cause many of the symptoms that are similar to sinusitis, namely, runny nose, stuffy nose, post-nasal drip, bad breath, cough, and headache.

Summary

Sinusitis in children is different than sinusitis in adults. Children more often demonstrate a cough, bad breath, crankiness, low energy, and swelling around the eyes along with a thick yellow-green nasal or post-nasal drip. Once the diagnosis of sinusitis has been made, children are successfully treated with antibiotic therapy in most cases. If medical therapy fails, surgical therapy can be used as a safe and effective method of treating sinus disease in children.

www.entnet.org/healthinformation/

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Nasal Irrigation

Saltwater washes (nasal saline spray, lavage, or irrigation)

Saltwater washes (saline spray, lavage or irrigation) helps keep the nasal passages open by washing out thick or dried mucus; it can also help improve the function of cilia that help clear the sinuses. This can help prevent the spread of infection to the other sinuses and reduce postnasal drip. It also can make the nose feel more comfortable keeping the mucous membranes moist. It can reduce bleeding by moistening the nasal lining.

There are multiple ready-made brands of saline nasal spray (NeilMed NasoGEL, Ocean Spray, Ayr, NaSal, Sea Mist, Simply Saline, and generic normal saline). Simply Saline is in a pressurized dispenser that produces a very fine mist. You can purchase at any drug store or pharmacy including Group Health. They are inexpensive. There is a recipe below if you prefer to brew your own.

NeilMed Pharmaceuticals makes a Sinus Rinse kit that comes with a spray bottle and mixture packets of sodium chloride (salt) and sodium bicarbonate (baking soda). The kit is especially helpful for those with chronic sinusitis who require more irrigation than the standard saline sprays can provide. This kit is available at Group Health or any pharmacy.

To apply homemade saline solution you can use one of the following methods. You can use the saline solution as a spray for moisturization or as a lavage or irrigation for washing out the nose.

1. Empty and thoroughly wash a spray bottle that contained saline or 12 hour decongestant nasal spray. Fill the bottle with saline nasal irrigation for use. Spray 2 or 3 times in each nostril and blow nose lightly. Repeat at least twice each day. You may spray more or repeat more frequently if you like.
2. Fill a bulb syringe with the saline solution, insert the tip into your nostril, and squeeze gently. This may be done several times each day.
3. Pour some saline solution into the palm of your hand and sniff it into your nose, one nostril at a time. This may be done several times each day.

If using a saline lavage or irrigation, the saline solution should go through the nose and out the mouth. Neti pots can be used for this purpose
Blow your nose gently after the saline wash.
Repeat several times every day. Consider using this before you try other nasal medications.

Saline nasal irrigation recipe:

1/3 tsp baking soda

1/3 tsp salt

1 pint distilled water

Boil 15 minutes, cool until warm.

Irrigate as directed by doctor

Fact Sheet about Over-the-Counter Medications and Sinus Pain

Why Do We Suffer From Nasal And Sinus Discomfort?

The body's nasal and sinus membranes have similar responses to viruses, allergic insults, and common bacterial infections. Membranes become swollen and congested. This congestion causes pain and pressure; mucus production increases during inflammation, resulting in a drippy, runny nose. These secretions may thicken over time, may slow in their drainage, and may predispose to future bacterial infection of the sinuses.

Congestion of the nasal membranes may even block the Eustachian tube leading to the ear, resulting in a feeling of blockage in the ear or fluid behind the eardrum. Additionally, nasal airway congestion causes the individual to breathe through the mouth.

Each year, more than 37 million Americans suffer from sinusitis, which typically includes nasal congestion, thick yellow-green nasal discharge, facial pain, and pressure. Many do not understand the nature of their illness or what produces their symptoms. Consequently, before visiting a physician, they seek relief for their nasal and sinus discomfort by taking non-prescription or over-the-counter (OTC) medications.

What Is The Role Of OTC Medication For Sinus Pain?

There are many different OTC medications available to relieve the common complaints of sinus pain and pressure, allergy problems, and nasal congestion. Most of these medications are combination products that associate either a pain reliever such as acetaminophen with a decongestant or an antihistamine. Knowledge of these products and of the probable cause of symptoms will help the consumer to decide which product is best suited to relieve the common symptoms associated with nasal or sinus inflammation.

OTC nasal medications are designed to reduce symptoms produced by the inflammation of nasal membranes and sinuses. The goals of OTC medications are to: (1) reopen to nasal passages; (2) reduce nasal congestion; (3) relieve pain and pressure symptoms; and (4) reduce potential for complications. The medications come in several forms.

Nasal Saline Sprays: Non-Medicated Nasal Sprays

Nasal saline is an invaluable addition to the list of over-the-counter medications. It is ideal for all types of nasal problems. The added moisture produced by the saline reduces thick secretions and assists in the removal of infectious agents. There is no risk of becoming addicted to nasal saline. It should be applied as a mist to the nose up to six times per day. Nasal saline can also be made at home: contact your otolaryngologist for details.

Nasal Decongestant Sprays:

Medicated Nasal Sprays Afrin nasal spray, Neo-Synephrine, Otrivin, Dristan nasal spray, and other brands decongest the swollen nasal membranes. They clear nasal passages almost immediately and are useful in treating the initial stages of a common cold or viral infection. Nasal decongestant sprays are safe to use, especially appropriate for preventing Eustachian tube problems when flying, and to halt progression of sinus infections following colds. However, they should only be utilized for 3-5 days because prolonged use leads to rebound congestion or getting hooked on nasal sprays. The patient with nasal swelling caused by seasonal allergy problems should use a cromolyn

sodium nasal spray. The spray must be used frequently (four times a day) during allergy season to prevent the release of histamine from the tissues, which starts the allergic reaction. It works best before symptoms become established by stabilizing the nasal membranes and has few side effects.

Decongestant Medications :

Pressure and congestion are common symptoms of nasal passage swelling. Decongestant medications are OTC products that relieve nasal swelling, pressure, and congestion but do not treat the cause of the inflammation. They reduce blood flow to the nasal membranes leading to improved airflow, less breathing through the mouth, decreased pressure in the sinuses and head, and subsequently less discomfort. Decongestants do not relieve drippy noses. Their side effects may include light headedness or giddiness and increased blood pressure and heart rate. (Patients with high blood pressure or heart problems should consult a physician before use.) In addition, other medications may interact with oral decongestants causing side effects. Both of these are available as single products or in combination with a pain reliever or an antihistamine. They are labeled as non-drowsy due to a side effect of stimulation of the nervous system.

Decongestant-Combination Products:

Some medications are combined to reduce the number of pills. Tylenol® Sinus or Advil Cold and Sinus® exemplify products that join a pain reliever (acetaminophen or ibuprofen) with a decongestant (pseudoephedrine). These products relieve both sinus and cold/flu symptoms yet retain all the attributes of the individual drug including side effects.

Antihistamine Medications:

Antihistamines combat allergic problems leading to nasal congestion. OTC antihistamines such as diphenhydramine (Benadryl®), or clemastine (Tavist®) may be used for relieving allergic symptoms of itching, sneezing, and nasal congestion. They relieve the drainage associated with the allergic inflammation but not obstruction or congestion. Antihistamines have a potential for sedation causing grogginess and dryness after use. Newer non-sedating antihistamines are available.

Antihistamine-Decongestant Combination Products:

Antihistamines and decongestant products are often combined to relieve multiple symptoms of congestion and drainage and reduce the side effects of both products. Antihistamines produce sedation; decongestants are added to make them non-drowsy. The combined allergy product then relieves congestion and a runny nose.

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Fact Sheet About Sinus Surgery

The ear, nose, and throat specialist will prescribe many medications (antibiotics, decongestants, nasal steroid sprays, antihistamines) and procedures (flushing) for treating acute sinusitis. There are occasions when physician and patient find that the infections are recurrent and/or non-responsive to the medication. When this occurs, surgery to enlarge the openings that drain the sinuses is an option.

A recommendation for sinus surgery in the early 20th century would easily alarm the patient. In that era, the surgeon would have to perform an invasive procedure, reaching the sinuses by entering through the cheek area, often resulting in scarring and possible disfigurement. Today, these concerns have been eradicated with the latest advances in medicine. A trained surgeon can now treat sinusitis with minimal discomfort, a brief convalescence, and few complications.

A clinical history of the patient will be created before any surgery is performed. A careful diagnostic workup is necessary to identify the underlying cause of acute or chronic sinusitis, which is often found in the anterior ethmoid area, where the maxillary and frontal sinuses connect with the nose. This may necessitate a sinus computed tomography (CT) scan (without contrast), nasal physiology (rhinomanometry and nasal cytology), smell testing, and selected blood tests to determine an operative strategy. Note: Sinus X-rays have limited utility in the diagnosis of acute sinusitis and are of no value in the evaluation of chronic sinusitis.

Sinus Surgical Options Include:

Functional endoscopic sinus surgery (FESS):

Developed in the 1950s, the nasal endoscope has revolutionized sinusitis surgery. In the past, the surgical strategy was to remove all sinus mucosa from the major sinuses. The use of an endoscope is linked to the theory that the best way to obtain normal healthy sinuses is to open the natural pathways to the sinuses. Once an improved drainage system is achieved, the diseased sinus mucosa has an opportunity to return to normal.

FESS involves the insertion of the endoscope, a very thin fiber-optic tube, into the nose for a direct visual examination of the openings into the sinuses. With state of the art micro-telescopes and instruments, abnormal and obstructive tissues are then removed. In the majority of cases, the surgical procedure is performed entirely through the nostrils, leaving no external scars. There is little swelling and only mild discomfort.

The advantage of the procedure is that the surgery is less extensive, there is often less removal of normal tissues, and can frequently be performed on an outpatient basis. After the operation, the patient will sometimes have nasal packing. Ten days after the procedure, nasal irrigation may be recommended to prevent crusting.

Image guided surgery:

The sinuses are physically close to the brain, the eye, and major arteries, always areas of concern when a fiber optic tube is inserted into the sinus region. The growing use of a new technology, image guided endoscopic surgery, is alleviating that concern. This type of surgery may be recommended for severe forms of chronic sinusitis, in cases when previous sinus surgery has altered anatomical landmarks, or where a patient's sinus anatomy is very unusual, making typical surgery difficult.

Image guidance is a near-three-dimensional mapping system that combines computed tomography (CT) scans and real-time information about the exact position of surgical instruments using infrared signals. In this way, surgeons can navigate their surgical instruments through complex sinus passages and provide surgical relief more precisely. Image guidance uses some of the same stealth principles used by the United States armed forces to guide bombs to their target.

Caldwell Luc operation:

Another option is the Caldwell-Luc operation, which relieves chronic sinusitis by improving the drainage of the maxillary sinus, one of the cavities beneath the eye. The maxillary sinus is entered through the upper jaw above one of the second molar teeth. A window is created to connect the maxillary sinus with the nose, thus improving drainage. The operation is named after American physician George Caldwell and French laryngologist Henry Luc and is most often performed when a malignancy is present in the sinus cavity.

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Nose Bleeds



Nose bleeds are common in both children and adults. The medical term for nose bleeding is epistaxis.

What causes nose bleeds?

There is a plentiful blood supply to the tissues of the nose. The blood vessels supplying blood to the nose start as medium size arteries that carry oxygen and nutrients from the heart. They branch multiple times until the vessels become very small. These very small vessels are called capillaries. The capillaries then in turn join together multiple times until they form medium sized veins that eventually drain into larger veins channeling blood back into the heart. The blood vessels in the nose, both arteries and veins, join together many times from many directions or sources forming what is called a plexus of vessels. These plexuses are common throughout the nasal lining and create a rich blood supply. In this way the nasal tissues receive the nutrients they need to function properly in humidifying, warming, and filtering the air as it passes through the nasal passage.

Blood vessels are close to the surface inside the nose. The capillaries are closest to the surface. When the nasal lining is injured vessels bleed freely. More commonly, the nasal lining dries out, cracks open, and exposes the fragile wall of capillaries that break open. Capillary or small vessel bleeding is the most common kind of nose bleed. Larger veins and sometimes arteries can also bleed causing more vigorous bleeding, but this is less common. It is surprising how much the nose can bleed from capillaries or small vessels.

The most common location for nasal bleeding is the nasal septum close to the nasal openings or nostrils called the anterior nasal septum. The septum is the wall of tissue that separates the two nasal passages. Small capillaries form a plexus on both sides of the anterior septum. Sometimes larger blood vessels can angle or loop very close to the surface of the nasal lining and bleed easily when they are injured or dry out. On occasion, vessels close to the surface dilate to a larger diameter creating a fragile, thin walled vessel that also bleeds with the slightest injury. Bleeding that originates further back in the nose on the more posterior portion of the nasal septum and other parts of the nasal lining is less common in adults and rare in children.

Other factors that contribute to nasal bleeding in addition to injury and dryness are medications that dry the nasal lining such as antihistamines (allergy medications) and diuretics (commonly used for high blood pressure). Medications such as aspirin, warfarin, and plavix (clopidogrel) used to thin the blood so it does not clot as readily, prolong nasal bleeding once it starts. Non-steroidal anti-inflammatory medications such as motrin or naproxen can also prolong bleeding to a lesser degree than blood thinners. Nasal infection will increase blood flow to the nose. This coupled with vigorous nose blowing will often cause mucous to be blood tinged or contain streaks of blood as well as occasionally bleed more vigorously. Nose bleeds are rarely caused by hereditary blood vessel diseases, blood coagulation disorders, or by tumors.

A common misconception is that high blood pressure causes nasal bleeding in the same way that over-pressurizing a hose can cause it to burst. This may be perpetuated by the fact that blood pressure is commonly elevated in individuals with noses. Blood pressure is elevated because of anxiety that accompanies worry about blood loss, what is going to happen, and the visit to the doctor's office or emergency room. In addition, severe nose bleeds are more common in elderly individuals who are more prone to have underlying chronic high blood pressure that will likely be even more elevated in the doctor's office or emergency room. In reality, the hemodynamics of blood pressure are very complex because of the variable expandability of blood vessels, variable pressures seen in the heart, complex flow patterns, tremendous variation in the diameter of vessels, and their control by the nervous system.

How are nose bleeds treated?

There are a number of home remedies that you can use. These are discussed below. The basis for these treatments is control of bleeding with local pressure, constriction of blood vessels with topical medications, and then prevention of injury and drying of the nasal lining.

When in the doctor's office, after sitting comfortably in a chair and possibly putting on a protective bib or gown, the doctor can more easily examine the nose. A nasal speculum and sometimes a fiberoptic scope can be used for examination. Blowing out old blood clots, suctioning, topical decongestants and topical anesthetics are other helpful measures that can be used for examination.

The key to stopping a nose bleed is to identify its source. Ideally the doctor would like to see active bleeding. When this is not possible, the doctor may be able to see a crust of old blood or a vessel close to or protruding from the surface of the nasal lining that may indicate the likely source of bleeding. A light abrasion of the nasal lining with a Q-tip may reveal a hidden or difficult to see site of bleeding.

Once the source or presumed source of bleeding is identified, there are a few different means of treatment that are used based on the location and the amount of bleeding. Topical and injectable medications that constrict blood vessels can be used to control bleeding from smaller vessels temporarily. When the source of bleeding is found anteriorly or in the front part of the nose where it can be easily seen, treatment is generally easier. Topical cauterization with the chemical silver nitrate is relatively effective in permanently controlling bleeding from smaller vessels. The silver nitrate stick typically looks like a long match stick with the solid chemical on one end. When bleeding persists, or an exposed blood vessel is seen, electrical cautery is necessary. After effectively numbing the lining of the nose with topical and/or injectable anesthetic, cauterization can be done. After cauterization, apply bacitracin, triple antibiotic, A and D ointment or Vaseline to the inside of the nose at the cautery site with a clean finger or Q-tip several times each day for 2 weeks.

When the location of the bleeding is in the back part of the nose where its source is more difficult to identify, treatment is more complex. In some cases it is necessary to use nasal packing that applies pressure directly to the bleeding vessel or to an area that is in close proximity to the bleeding vessel. When all these methods fail or severe bleeding is recurrent, the medium sized blood vessels that send blood to the site of bleeding can be accurately identified by x-ray and blocked off with small beads. The process is called embolization.

What are possible complications from nose bleeding?

Complications from nose bleeding are rare despite the fact that nose bleeds are often messy and there is the appearance of significant blood loss. However, if bleeding is vigorous or frequent, enough blood loss can occur to cause anemia, or even low blood volume in rare cases. Individuals who are frail and have unstable cardiovascular problems are at increased risk for complications due to blood loss that could include low blood pressure, heart failure, or shock.

Home treatment

Use 12 hour decongestant nasal spray (Afrin, oxymetazoline) 4 times each day for 4 days. Spray twice in each nostril with each application. This spray can be purchased over the counter at Group Health or any drug store. It may have a different brand name and is most frequently labeled 12 hour nasal spray. If bleeding occurs, blow out blood

clots then use Afrin nasal spray generously. After a few minutes, repeat the process until bleeding stops. If bleeding does not stop, call your doctor or go to Urgent Care.

Lubricate your nose with oil based nontoxic lotion (such as Trader Joes, Nutrogena) two to three times a day as needed for dry nose.

Avoid lifting or straining for 5 days after last nosebleed.

Apply antibiotic ointment (polysporin, neosporin, etc.) to a cotton ball and place it in the nasal passage that was previously bleeding. Keep it in place for 3-4 days after last nose bleed. Change it several times each day as needed.

If nose bleeding is a chronic problem, consider using humidification in your bedroom at night, particularly when using the heater or air conditioning.

Frequent use of normal saline nasal spray may also be helpful. Spray 2 or 3 times in each nostril and blow nose lightly. Repeat 2 to 3 times each day. You may spray more or repeat more frequently if you like. There are multiple ready-made brands of saline nasal spray (NeilMed NasoGEL, Ocean Spray, Ayr, NaSal, Sea Mist, generic normal saline) you can purchase at any drug store or pharmacy including Group Health. There is a recipe below if you prefer to brew your own.

Saline nasal irrigation recipe:

1/3 tsp baking soda

1/3 tsp salt

1 pint distilled water

Boil 15 minutes, cool until warm.

Irrigate as directed by doctor

Dry nose

Lubricate your nose with oil based nontoxic ointments. Trader Joes, Nutrogena, Eucerin, A & D ointment, Rose ointment, cloverine are among the products that you can

try. Apply a judicious amount to the inside of your nose with a clean finger or Q-tip two to three times a day as needed for dry nose.