



## Woodside & Woodside North Equine Clinic Equine Health Times

### Quick Links

#### [WEC Website](#)

[Keeping Your Horse Hydrated This Winter](#)

### What's going on at Woodside Equine Clinic?

Dr. Burke & Dr. Stanford attended a day long continuing education event at the Virginia Maryland Regional College of Veterinary Medicine in January.

WEC is holding an educational Wine, Dine, and Wellness night at the James River Winery. Sponsored by Zoetis and SmartPak on January 30th.

Dr. True, Dr. Hammond & Dr. Bowers will be attending a dental continuing education seminar in Charlottesville on February 1st.

## Basic Types of Nasal Discharge

by Nora Grenager, VMD, DACVIM

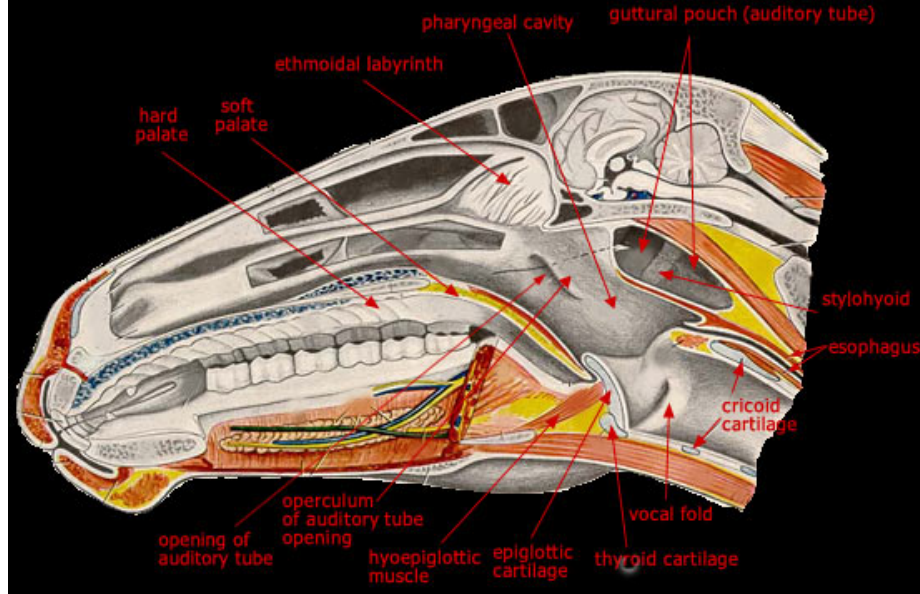
Nasal discharge can vary in significance, from being innocuous to being indicative of a serious problem. It is important to have an understanding about which types of nasal discharge signify a problem worthy of an immediate call to your veterinarian, and how best to describe the discharge to your veterinarian. It is important to note that if your horse is having difficulty breathing, making any noise while breathing, has feed material coming from the nose, or is very ill, you need to call your veterinarian immediately.

The respiratory tract can be divided into upper and lower parts; upper includes the nasal passages, paranasal sinuses, guttural pouches (air-filled outpouchings of the Eustachian tubes unique to horses), pharynx (area where the entrance to trachea and esophagus meet at the larynx (voice box) at the back of the nasal passage and mouth), and upper trachea. The lower respiratory tract includes the lower trachea and lungs. Please see the diagram below.

Read about the lives of our veterinary interns in their blog

### Diaries of a Veterinary Intern

by:  
Dr. Courtney Bowers  
and  
Dr. Candice Lorandean



Equine upper airway. Image courtesy of [www.vet.upenn.edu](http://www.vet.upenn.edu)

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There are many different types of nasal discharge. Defining some of the characteristics can help you better describe it to your veterinarian, who will use this information, along with the exam, to discern the cause. Discharge can be serous (clear, watery), mucoid (yellow and mucous-like), purulent (green-yellow, thick, looks like pus), sanguineous (bloody), or contain feed material and saliva. Nasal discharge can be unilateral (only ever from one nostril) or bilateral (has come from both nostrils at some point in time), which helps identify the source of the discharge. Discharge that is unilateral typically comes from the nasal passage, the sinus, or occasionally the guttural pouch. Discharge that is bilateral can arise from the guttural pouches, the pharynx, or the lower respiratory tract (trachea and lungs). Discharge can be constant, intermittent, or only associated with certain activities like eating or exercise. Discharge can be acute in onset (within hours to a couple days) or chronic (lasting more than 2-3 days). Nasal discharge may be the only clinical sign (symptom) or there may be other clinical signs such as ocular discharge, enlarged lymph nodes (which is nonspecific and present with many types of nasal discharge), fever, cough, facial deformity, abnormal noise when breathing or exercising, exercise intolerance or poor performance, poor appetite, difficulty eating, lethargy, or weight loss. Sometimes nasal discharge can have a foul odor, which can be specific to certain types of bacterial infections, tissue damage, or sinus infections secondary to tooth root infections.

There are other historical factors that are important in helping diagnose a cause of nasal discharge. Does only one horse have clinical signs and nasal discharge or do many horses at the stable have clinical signs? Has the horse recently been to a show or clinic or been exposed to new horses in the barn? Have there been any recent management changes, travel, or other illnesses? When and for what has the horse been vaccinated? How old is the horse? A typical workup for nasal discharge will include a complete history and physical examination, and may include a rebreathing lung examination, blood work, nasal swab evaluation, upper airway endoscopy, skull radiographs (x-rays), thoracic ultrasound or radiographs, and possibly sampling of the guttural

pouch or airway for laboratory evaluation. The physical examination will probably include taking the rectal temperature, heart rate, evaluation for facial swelling, symmetry of the airflow from the nostrils, breathing depth and rate, palpation of lymph nodes, and possibly sinus percussion. Since we cannot ask your horse to take a deep breath to hear the lungs better, a rebreathing exam involves briefly placing a bag over the horse's nose to encourage deeper breathing so lung sounds can be heard better. Blood work may be useful to identify infection, inflammation, or other systemic disease. A nasal swab can be evaluated at the laboratory for some of the more common viruses and bacteria that cause upper respiratory tract infections. Endoscopy of the upper airway is when a small camera is passed into the upper airway to evaluate the nasal passages, pharynx, guttural pouches, and entrances to the sinuses. This is useful to visualize where the discharge is coming from, to see masses in the nasal passages, to look in the guttural pouches, to evaluate the larynx, and to look down into the trachea. Radiographs of the skull would be used to evaluate for disorders of the sinuses or nasal passages not identified with endoscopy. Radiographs can sometimes be done in the field, and endoscopy can be done in the field or at a veterinary hospital, depending on your veterinarian's setup. Oral examination may be performed if a tooth root infection is suspected. Thoracic ultrasound can be performed in the field or at a veterinary hospital and is useful for evaluating the lungs when lower respiratory tract disease (such as pneumonia) is suspected. Airway sampling can be performed in a variety of ways - through the endoscope, through a small hole in the trachea, or directly through the chest wall in cases of pneumonia; this is done to evaluate the type of cells present, and sometimes to culture if there is an infection.

Serous (clear or watery) to mucoserous (mixed mucoid and serous) nasal discharge can be benign due to wind or dust irritation, can be due to allergies, can be indicative of an upper respiratory tract viral infection, or can be the early stages of a more serious infection. Wind or dust can cause mild upper airway irritation and serous nasal discharge that is usually mild, bilateral, intermittent, and not associated with any clinical signs of systemic disease. Allergic upper airway disease can have serous nasal and ocular (from the eyes) discharge that is mild, bilateral, intermittent, and not associated with any clinical signs of systemic disease, and is more common in young performance horses. Both could have an intermittent dry cough. Horses that have "heaves," or recurrent airway obstruction, which is similar to asthma in people, can have mucoid nasal discharge, cough, increased respiratory rate at rest, or other signs of lower airway disease. This is typically a more chronic condition, and is more common in older horses. Horses with viral infections of the upper respiratory tract typically have a high fever, are depressed, inappetent, and may have other systemic signs of disease. The most common upper respiratory tract viruses are equine influenza virus, equine herpes virus, equine adenovirus, and equine arteritis virus.

Purulent or mucopurulent (mixed mucoid and purulent) nasal discharge occurs when there is a bacterial infection in the respiratory tract. Unilateral purulent nasal discharge is most common with a sinus infection, guttural pouch empyema (bacterial infection), or infected nasal passage mass. Bilateral purulent nasal discharge can also be due to guttural pouch empyema,

Strangles (an upper respiratory tract infection caused by *Streptococcus equi* subspecies *equi*), or lower respiratory tract disease such as pneumonia. Sinus infections are most often secondary to a tooth root infection because the cheek teeth in horses protrude into the paranasal sinuses; this is particularly common in older horses. Sinus infections can also be primary (no underlying cause), or secondary to a sinus cyst (benign mass), progressive ethmoid hematoma in the sinus (benign mass), or neoplasia. Guttural pouch empyema most often occurs weeks to months after a Strangles infection, but can occur without any previously noted clinical signs of upper respiratory tract infection. Masses in the nasal passage can be benign (cysts or progressive ethmoid hematomas or foreign bodies) or malignant (neoplasia such as adenocarcinoma). Sinus cysts are benign fluid-filled masses that can get very large and even cause deformation of the facial bones (so the face looks swollen on one side). Progressive ethmoid hematomas are benign blood-filled masses that most often cause an intermittent bloody unilateral nasal discharge, but can get secondarily infected and cause mixed bloody-mucopurulent unilateral intermittent nasal discharge. Foreign bodies, other types of masses (such as fungi), or neoplasia in the nasal passages or sinuses are not very common, but could also cause unilateral mucopurulent nasal discharge if secondarily infected. Strangles is an upper respiratory tract infection that causes fever, bilateral mucopurulent nasal discharge, enlarged lymph nodes, and is most common in younger horses. Pneumonia, or infection of the lungs, typically causes fever, increased respiratory rate, cough, lethargy, poor appetite, and sometimes bilateral mucopurulent nasal discharge. Horses with pneumonia are quite ill and generally require extensive treatment.

Unilateral bloody nasal discharge can occur with progressive ethmoid hematoma, nasal foreign body, trauma, fungal infection of the guttural pouch, or exercise induced pulmonary hemorrhage (EIPH) (the latter two can cause bilateral discharge also). Bilateral bloody nasal discharge can occur with fungal infection of the guttural pouch, EIPH, blood-clotting abnormalities, or occasionally with severe pneumonia. Fungi can grow on the arteries that course through the guttural pouch and these fungi can eat through the arteries and cause potentially fatal bleeding. Typically there is initially a small amount of bloody nasal discharge, followed by possibly fatal severe bleeding episode. EIPH is a condition that most often happens in performance horses that work at high speeds; a small amount of blood can be seen coming from the nostrils after intense exercise. In EIPH the small blood vessels in the lungs, called capillaries, burst under the pressure of high-intensity exercise and cause mild bleeding. Horses with bilateral bloody nasal discharge can have abnormalities of blood clotting secondary to eating a toxin, to systemic disease, to infection, or can rarely be born with a bleeding abnormality. Horses with severe pneumonia can occasionally have blood-tinged mucopurulent nasal discharge if the infection damages blood vessels in the lungs.

Feed or saliva coming from the nose is indicative of acute esophageal obstruction (known as "choke"), swallowing disorders, or uncommonly seen with congenital abnormalities of the upper airway. Acute obstruction of the esophagus can happen in horses that eat too fast, have poor teeth, or for a variety of other conditions that prevent the esophagus from functioning

normally. Horses with acute esophageal obstruction are stressed, can be seen to gag or cough, and often have feed or saliva coming from the nose and mouth. This is an emergency situation that requires immediate removal of food from the horse's surroundings and a phone call to your veterinarian. Laryngeal or upper airway or esophageal dysfunction can also cause feed and saliva to come from the nose. Swallowing is a complex reflex that involves many nerves and muscles to work in coordination. Discussion of the numerous disorders that can cause dysfunction of swallowing and abnormal nasal discharge secondary to that is beyond the scope of this article. This is again an emergency situation because horses can get severe pneumonia if any feed goes down the trachea instead of the esophagus.

Depending on the history and physical examination findings, your veterinarian will decide on what, if any, further diagnostic procedures need to be performed. Treatment will vary depending on the suspected cause. Hopefully this brief discussion on nasal discharge will help you be better prepared to talk about your horse's nasal discharge with your veterinarian.

## Blog: Diaries of a Veterinary Intern

### Fever of Unknown Origin

Tis the season for snotty noses and fevers, in both humans and horses. In our practice we see many horses with an elevated body temperature, but one of the most frequently frustrating syndromes is a fever of unknown origin. Normal temperature for adult horses averages in at 100.5 degrees Fahrenheit, and a temperature greater than 101.5 is considered abnormal. Normal temperature for foals on the other hand can range from 100 to 102.0 degrees.

Factors which can cause body temperature to elevate but aren't technically a fever include: exercise, heat stroke, anhidrosis, nervous system disorders, and reaction to a toxin or drug. When a true fever occurs, biologic substances called pyrogens within the horse's blood stream travel to the central nervous system and cause the set point for core body temperature to increase.

Basically, the body resets its internal thermostat to a higher temperature. This process can be set off by an inflammatory, immunologic, or neoplastic (cancerous) condition. It is a defensive mechanism by the body to try and squash possible infection. When a fever is prolonged, with no other specific signs pointing to a possible infection or source, we then term it a fever of unknown origin.

[\(Read more\)](#)

Our practice devotes its charitable giving efforts to the AAEP foundation. The foundation is committed to supporting education, research and benevolent efforts for horses and their caretakers. If you'd like more information or to donate to the Foundation you can visit the website at [AAEP Foundation](#).

**Sincerely,**

