



# WALNUT GROVE VETERINARY SERVICE

# .. Update

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### **Office Hours:**

Monday through Friday:  
9 AM to 5 PM  
Saturday : 9 AM to 12 PM

### **Emergency Service:**

Available 24 Hours  
Holidays and Weekends

*Ambulatory and  
Haul-In Service by  
Appointment*

### **Services Include:**

#### **Health Maintenance**

Vaccination  
De-Worming  
Nutritional Advice

#### **Dentistry**

Power-assisted floating  
Bite Alignment  
Molar extraction

#### **Diagnostic Imaging**

Endoscopy  
Radiology (X-Ray)  
Ultrasound ( Tendons,  
Ligaments, Abdominal  
and Reproductive)

#### **Lameness**

Complete Examinations  
Diagnostic Blocking  
Shock Wave Therapy

#### **Pre-purchase Evaluations**

#### **Reproduction**

Pregnancy checks  
Artificial Insemination  
Semen Collection &  
Evaluation

#### **Surgery**

Gas anesthesia  
Dedicated Surgery Suite

## Winter Update

It's hard to believe that Thanksgiving is long gone and Christmas is almost here. It's been too long since we published a newsletter, and we are glad to be back. 2008 was an eventful and rewarding year for all of us. We'd especially like to congratulate Dr. Rhiannon Kauffeld and her husband, Bryan on the birth of their daughter Ashlyn. She sure is cute.

As I write this, we are in the process of acquiring a thermographic imaging device. A thermography 'camera' measures the surface body temperature with great precision on each of millions of points at once. After processing all this data, a thermal image is produced. By comparing this image to known equine normals, and by comparing left and right sides of the body, it is possible to identify areas that are inflamed (e.g. sore). Although a relatively new tool for the practicing veterinarian, over the past 15 years or so a body of research has been developed that allows us to

have confidence in the clinical usefulness of the information provided by the thermographic image. In fact, the FEI and USDA have recently begun using this modality in their respective enforcement activities.

Adding thermography to our existing diagnostic tools, including digital radiography, ultrasound and endoscopy expands our capabilities in the field of lameness diagnosis and sports medicine. It is most useful when diagnosing lameness, especially that caused by pain originating in the upper limb or back. Thermography is also useful when evaluating saddle fit or tracking sub-clinical inflammation (that not causing lameness) in young performance horses. We will also be upgrading our computed radiography system, and adding digital archiving capability for tendon and ligament ultrasound examinations.

Once again, I am thankful to all of you for your trust in our practice. We hope to earn that trust again in the coming year.

## Overeating...

It is not uncommon to forget to close a gate or not latch a door when leaving the barn. Sometimes there is no consequence other than cleaning up a mess or catching a loose horse. When the escapee gets into the grain stored outside the stall you may have a problem. Many horses are even capable of opening doors and releasing snaps with their mouths, so you can't always blame someone for leaving a door open. Once they've escaped, the first place most horses go is to the grain bin or feed room, where the offender tends to consume 'mass quantities' of concentrated feed (sweet feed, corn, oats etc). Unfortunately over-eating like this can have serious and sometimes deadly consequences that are almost always preventable.



As we've already pointed out, most horses will eat grain until it is gone regardless of how much there is or how full they are. Horses are hindgut fermenters, meaning they ferment the grains and hay that they eat in the large colon to obtain most of the energy in a typical diet. When horses over-eat grain (sweet feed or feeds high in carbohydrates), the bacterial composition and pH of the cecum and colon changes. The over-growth of some kinds of bacteria leads to an increase in gas and toxin production in the colon. This process leads to serious illness in horses including colic, laminitis (a bad case of which is also called 'foundering') or endotoxemia. There is no set amount required for a horse to eat to exhibit these problems and what affects one horse may not affect another (even on the same farm).

This problem is most easily avoidable by storing feed in such a way as to keep loose horses out of it. This can be done several different ways. One way is to keep feed in a separate room/stall in your barn with a closed/locked door. This will prevent any horse that has escaped his/her stall from gaining access. This is only an effective solution if you remember to keep the door closed to the feed storage area. If the door is open, the horse will find a way in. I have seen some big horses crammed into little spaces eating grain. Now you have two problems, a horse that ate too much grain and a horse stuck in your feed room.

Another way to prevent problems is to store your feed in a container horses cannot get into. It is common to see plastic or metal trash cans used for grain storage. Problems occur when horses knock the lids off or knock the cans over if the trash cans are not secured, or if those used

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## Gastric Ulcer Disease



Whether you own a high level performance horse or a sweet old gelding that mows your lawn, all horses are capable of being affected by gastric ulcers. Certain stressors (i.e. showing, training, travel, illness) can make a horse more prone to the disease, but even dietary management, feed changes and some medication can have the same effect on the horse's digestive system. In some cases, the cause of the stress involved is not clear. In people, dogs, cats and cattle and swine, gastric ulceration can be caused by a specific type of bacterial infection of the stomach lining. This has not, however, been proven to occur in the horse. It is also important to understand that the horse has a unique stomach, the 'top' half of which is lined with the same tissue as the esophagus is (e.g. it is not 'true' stomach lining). Equine gastric ulcers commonly occur where this 'squamous epithelial' lining and the 'true' stomach lining ('glandular mucosa') meet, and it is believed that this area is sensitive to the effects of increased gastric acid production caused by stress. In summary, stress plays a major role (probably the major role) in the development of gastric ulcers in the horse, and the role of specific types of bacterial infection that can cause or contribute to the development of ulcers in other species is unproven and unclear.

There are many nonspecific signs that horses exhibit when affected by ulcers. They may act colicky (lifting their lip, stretching, pawing or wanting to lie down), may have a change in attitude, poor hair coat or tucked up abdomen. They may resent being saddled or having the girth tightened (e.g. suddenly becoming 'cold-backed'). Often a horse affected by gastric ulcer disease will continue to graze and eat hay, but decrease his/her consumption of water and grain. These individuals may act interested in feed (even nicker for it), but take one or two bites and back away from it, often with a 'glazed over' facial expression and/or grind their teeth. It is important to understand that any individual horse may exhibit only one or two of these signs or several.

The only way ulcers can be definitively diagnosed is to visually examine the surface of the stomach with an endoscope. The scope must be long enough to enter the stomach and visualize the surface. Most veterinarians that carry an endoscope (for respiratory exams and examination of the guttural pouches) don't have one that is long enough to enter the stomach. This means that a visit to a referral institution, such as the OSU teaching hospital or Rood and Riddle is generally required to confirm a presumptive diagnosis of gastric ulcer disease.

In many cases, if we suspect ulcers due to the horse's presentation or history, we can initiate therapy without further diagnostics. There are a several different medications commonly used to treat gastric ulcers. While they all have different modes of action, they are all useful in correcting the problem.

One drug that we use has a local effect rather than a systemic one. Sucralfate is available in a 1 gram tablet and when given, reacts with the hydrochloric acid in the stomach to form a paste-like substance. This actually forms a barrier, binding to the exposed surface proteins present within the ulcer bed and protects the ulcerated area from further damage. It is best to give this medication on an empty stomach and it should be given 3-4 times a day for maximum effect, although for maintenance purposes it may sometimes be administered twice daily.

In addition, we may also use ranitidine (or Zantac) which acts by inhibiting histamine (H1) receptors, therefore greatly reducing the strength of the primary signal that "tells" special cells in the stomach lining to produce acid. Ranitidine is in the same family (works the same way) as cimetidine (Tagamet) and famotidine (Pepcid). Studies have shown Zantac to be the most effective and practical drug in the class for equine use. We sometimes use this drug along with Sucralfate but is imperative to give these at separate times (2 hours apart) because Sucralfate may decrease the absorption of the ranitidine. This drug is administered orally and can be given 2 or 3 times daily (every 8 to 12 hours).

Finally, a relatively newer anti-ulcer drug, omeprazole, is being used to treat gastric ulcers. The human equivalent medication is Prilosec, and Nexium is a closely related compound that works the same way. Gastro-guard and Ulcerguard are the trade names for the omeprazole paste that is approved to treat ulcers in horses. It acts as a gastric acid (proton) pump inhibitor, actually preventing the cells responsible for making acid from doing so. Since they don't rely on the inhibition of a signaling mechanism but actually physiologically shut down acid production, these drugs are more reliably effective than ranitidine and its cousins. While it is widely used prophylactically in race and show horses, omeprazole is the best treatment available for ulcers that are already present. This course of treatment is quite a bit more costly, but with very good results. Because it does not always produce immediate results we sometimes will use it concurrently (for a few days) with Sucralfate or Ranitidine.

Whichever drug is chosen, the patient must be treated for a fairly long period in order to actually heal an existing ulcer. Gastro-guard, for example is labeled to be given at a 'full dose' for 30 days, then a 'half dose' for 2-4 weeks. This is often prohibitively expensive, so we may recommend using a combination of drugs in sequence (one after another) for 30 to 60 days. It is also important to address identifiable causes of stress (e.g. increase turnout time, offer more hay, change pasture-mates, etc.) if possible.

Many supplements are available that claim to prevent or treat ulcers, and some of these offer pretty impressive testimonials in their advertisements. The available science, however, indicates that antacids are actually bad for a horse, human, etc w/

ulcers, because a 'rebound' increase in acid production follows a fairly brief period of relief. On the other hand, complex carbohydrates, like psyllium fiber, actually do have a beneficial effect of the health of the gut lining that has been scientifically established in general terms. The same could probably be said of Omega-3 fatty acid complexes. As to the effectiveness of specific supplements, especially those that won't tell you what is in them, it boils down to a case of 'you pay your money and take your chances'.

Although gastric ulcers may initially present themselves in many forms, a careful examination of your horse's history often provides the clues necessary to provide a working diagnosis and allows us to initiate effective treatment. Your horse's gut is a very important part of their overall health and well being. Current management of gastric ulcer disease is an example of how the combination of modern medicine and common sense horsemanship can keep your equine partner happy and healthy.

## Fever

With the arrival of cold weather, comes the cold and flu season. In any given year, many of us will have the unpleasant, but common experience of a short bout of muscle soreness, or gastro-intestinal 'distress' accompanied by a fever that keeps us in bed for a day or two. Our horses can also develop passing, mild viral infections that cause them to feel lethargic, depressed and 'feverish'. In addition, a variety of more serious infections may initially present themselves as a case of the 'flu'. As such, it may be helpful to understand a little bit about what causes a fever and what can or should be done about it.

The first sign that there is anything wrong with your equine friend is likely going to be loss of appetite. Maybe he didn't come running to his grain or just picked at his hay this morning. This is a valid reason to call your veterinarian. An inappetent horse is not a normal horse, no matter what the circumstances. If you notice that your horse is behaving differently, take his temperature, if it can be done safely. A digital thermometer can be purchased for very little money at any local store. A normal rectal temperature is 99-101.5 degrees. Although 101.5 is within the normal range, it can be an indication that your horse is 'getting sick', mildly ill, or overheated. If you aren't sure, it never hurts to call and talk it over with your veterinarian.

Fever is the body's attempt to respond (usually appropriately) to an infection. A fever in and of itself is not dangerous so long as it doesn't exceed the point at which the brain and other vital tissues suffer 'thermal' damage. In the horse, 105 F or greater is considered dangerous in and of itself to the health of the animal. Additionally, it should be understood that the general inflammatory response that includes fever can cause lami-



nititis to develop, among other undesirable effects, so anti-inflammatory medication is generally used to control any fever, especially one greater than 102.5 F.

Controlling a fever is usually accomplished by administering one of the Non-steroidal anti-inflammatory (NSAIDs). Depending on the patient, and the suspected disease process underlying the fever, we may recommend the use of Bute, Banamine or Ketofen. Each of these has advantages and disadvantages. Bute offers the most reliable and longest lasting control of the fever per se. Banamine has the additional benefit of binding to endotoxin in cases where certain types of bacterial infection or compromise of the bowel wall are suspected. Ketofen is the least likely to cause gastric ulcers and is therefore often used to control fever in foals and very sick geriatric patients. Occasionally DMSO is used as a supplemental means of controlling inflammation when NSAIDs fail to bring the horse's temperature down or keep it down for very long.

As with any disease, or any bad case of the 'flu', if the patient starts out 'really sick' recovery may take several days. It therefore may be necessary to use Bute or one of its cousins for several days while your horse fights off the infection causing the fever, and the inflammatory response subsides. It should take lower doses administered farther apart to control the fever as the recovery progresses. As this last indicates, monitoring the patient's temperature is a good way to judge the effectiveness of the treatment plan being pursued (e.g. is the fever coming down soon after antibiotics are started, or is the fever coming down over time if a viral infection is suspected). If the fever isn't going away, we need to find out why and pursue a different treatment plan.

Although any bacterial or viral infection can cause a fever, in most cases something else is obviously wrong that provides a clue about what is causing it. For example a cough and snotty nose accompanied by a fever is compatible with a bacterial or viral respiratory disease. A mare that has foaled within the past week that suddenly becomes febrile (runs a fever) probably has a uterine infection. Some diseases, notably some viral infections, Potomac Horse Fever, Lyme Disease, and leptospirosis, can cause only depression and fever in early or mild cases. A physical examination and complete blood count are very helpful in determining if the cause is most likely bacterial (most often requiring treatment with antibiotics) or viral (best treated with only with anti-inflammatory medication to control the fever until the viral infection runs its course).

It is important to understand, then, that a high fever may be caused by something other than a virus that will 'pass'. A prolonged uncontrolled inflammatory response as indicated by a high fever, can contribute to the development of potentially serious complications, including laminitis. It also means that your horse is quite possibly pretty sick and may get 'sicker'. For all of these reasons, we strongly recommend that you consult your veterinarian immediately if you find that your horse has a more than 101.5 F.



**WALNUT GROVE**  
VETERINARY SERVICE

From all of us,

To all of

you

*Merry Christmas  
& Happy Holidays*

*Dr. Chuck Savin*  
*Dr. Zac King*  
*Beverly*  
*DR. Rhiannon Kauffeld*  
*alice*  
*Patti*



*Continued from Front Page* are not strong enough to keep a horse out. Another container, one that works well, is a pickup truck tool box. They have a lower center of gravity, are usually sturdy and many latch or lock for security. Some of our clients have used old refrigerators and chest freezers for storage. These are extremely secure as long as a latch is added to the door (horses will lift chest freezer lids with their noses and eat). If you choose this for your feed storage, make sure children and small furry animals are kept out of them. Many freezers, even old ones, are air tight and can easily suffocate a child or barn cat.

Even when the best strategies are in place to prevent it, some horses still find a way to get at the grain. Often someone forgets to shut the feed room door, or to put away feed just purchased or delivered. In other cases a horse discovers a talent for picking locks that he didn't know he had. However the horse gets to the feed bin, once you know he or she has 'pigged out', it is best that we see the horse **before** any signs of a problem are noticeable. This is really a case where an ounce of prevention is worth a pound (or in some cases a ton) of cure. Most of the time we can prevent serious illnesses before they occur, because a simple gallon of mineral oil or a pound of activated charcoal (or both) can reliably prevent the 'bad bacteria' from taking over the fermentation process. **Once the horse is rolling, resistant to walk or depressed and sick, the situation in the colon is well out of control, and the toxins released may have caused serious damage to the horse's feet or internal organs.** When this happens, the patient's prognosis is worse (no matter what is done) and the expense involved can be much greater (often much, much greater). The best advice we can give is that if you have any doubt about how much was eaten by which horse, please call us. We'd be much happier to hear from you while we can still prevent problems that may be very difficult to treat once your horse appears to be sick, colicky or lame.