



U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

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Heaves

By: K. Searcy, DVM and E. Van Arsdale, DVM, U of M Class of 2012

Heaves, or Recurrent Airway Obstruction (RAO), is a chronic allergic and inflammatory lung disease of horses. Heaves can affect any age of horse, but sport horses in their prime (over 7 years old) or older horses are most often affected, and some horses may be genetically predisposed.

RAO develops due to contaminants in the air. It is not infectious and cannot be passed from horse to horse. Stabled horses fed hay are more prone to the disease as this environment increases the amount of dust and irritants inhaled by the horses. The dust causes irritation and an allergic response in the airway which decreases the airway diameter. Breathing through these narrowed airways causes discomfort and makes it impossible for affected horses to breathe easily.

Exercise intolerance is often one of the first signs observed. Due to the difficulty when breathing, horses can't maintain oxygen levels when exercising. Signs may include listlessness, flaring nostrils, and inability to perform at a previous level of activity. Some horses will have a cough or nasal discharge, and symptoms can come and go. Some horses have a change in muscle definition known as a "heave" line; a distinct line that outlines the bottom of a horse's abdomen.

A full respiratory evaluation is needed to determine if your horse has RAO or a different lung disorder, as treatment recommendations vary depending upon the disease. The lungs of affected horses may have abnormal sounds of crackles, wheezes, and gurgles due to the narrowed airways and excessive mucus. If a horse's symptoms are very mild, a veterinarian may hyperventilate the horse by placing a large bag over its nostrils. Hyperventilation amplifies the sounds coming from the airways and lungs and helps to assess lung function. A horse with

RAO may take longer to recover from the re-breathing exam compared to an unaffected horse. For horses that are not easily diagnosed based on clinical signs, a procedure called bronchoalveolar lavage can be performed to collect a fluid sample from the lungs for microscopic analysis.

Controlling the environment is important in controlling RAO. Affected horses should live outside as much as possible. If stalled, horses should be removed prior to stall cleaning, and should not be stalled near indoor arenas; both practices limit exposure to dust. Hay exposure should be minimized through pasture access, complete feeds, or hay cubes. If it is not practical to reduce hay consumption, then the hay can be soaked for 15 minutes with water to weigh down dust particles, reducing the chances of dust inhalation.

For some horses, medications may be necessary to improve breathing. A combination of anti-inflammatory agents and bronchodilators is often recommended. Bronchodilators allow the airways to relax and can be given via horse-sized inhalers, much like human asthma treatment. Corticosteroids are given at the same time to decrease the airway irritation and swelling. These can be given via inhaler or as oral medications. Additional treatments can include drugs to breakdown the mucus, cough expectorants, and Vitamin C.

With proper environmental changes (i.e. improved barn ventilation, pasture access, and outdoor housing) and drug therapy, chances are very good that the horse can return to full function as a low to mid-level athlete. RAO is best managed by preventing the allergens from entering the lungs. Medications will typically only be needed for 2 to 4 weeks if the exposure to irritating allergens is minimized.

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Upcoming Events

Lunch and Learn Webinar

Thursday, July 26 at noon
Ticks and Horses: What Horse owners Need to Know
Presented by Dr. Julie Wilson

To join the free webinar:
<https://umconnect.umn.edu/tick/>

Equine Pasture Management Program

Fee-based, customized pasture and grazing management plans, including two farm visits.

Contact Krishona at 612-625-6776 or krishona@umn.edu

Research Collaborators Needed

The U of M Equine Genetics and Genomics Laboratory is investigating the genetic basis of the mealy (or pangaré) coat color.

Researchers are especially interested in Norwegian Fjords, Halfingers, donkeys, and Belgians.

Contact Dr. Jessica Petersen at jlpeters@umn.edu to participate in the study.

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Research Update - Feed Digestibility in Aged Horses

The population of horses 20 years of age and older is rising, and little research exists exploring the differences in nutrient digestibility in aged horses versus adult horses. It is widely accepted that aged horses have a decreased ability to absorb nutrients from the diet. The objective of the experiment, conducted at Michigan State University, was to compare the digestibility of various feedstuffs in healthy adult horses in contrast to healthy, aged horses.

Eight adult (5 to 12 years) and 9 aged (19 to 28 years) stock-type mares were fed. Horses were rotated

through three diets: hay only, hay plus a cereal-based feed, or hay plus a fat and fiber-rich feed. Horses were housed and fed one of the three diets outdoors in a group for 3 weeks, and then indoors in individual stalls for 3 weeks to record feed refusals. During week 6 of each period, a 72 hour digestibility trial was conducted in which feed intake and feces and urine were collected. The same protocol was followed for each diet.

No age by diet interaction, or differences in daily feed and hay intake were detected. No

differences in fecal or urine output were noted between the horse groups. There was no effect of age on fiber, crude protein, energy and digestibility, or mineral retention.

These results indicate that under most practical feeding scenarios, it is unlikely that differences in digestive capacity are present between adult and aged horse. However, all horses utilized in this trial were healthy, and its possible that there are differences in compromised (i.e. diseased) older horses, or those with dental disorders. *Summarized by Beth Allen, Univ. of Minn.*

VMC to Offer New Treatment for Cancer

The Veterinary Medical Center (VMC) will soon offer microwave ablation as a new alternative for treating small and large animals with cancer.

Microwave ablation uses a very thin microwave antenna, placed within the tumor using imaging guidance, to generate localized heat

sufficient to kill cancerous cells.

In humans, state-of-the-art thermal ablation therapy has shown promise in the treatment of single and multi-focal malignancies of the liver, lung, kidneys, prostate, and bone; cancers that are often difficult or impossible to treat with other modalities.

This capability was made possible, in part, through a research grant attained by Dr. Chris Ober in Medical Imaging, in addition to other resources at the College.

The unit is portable and will be available for use at the Piper Clinic as well as in the Small and Large Animal Hospitals.

Ask the Expert: Cooling a Hot Horse

By: Carey Williams, PhD, Rutgers University

Question: When cooling a hot horse after exercise, many people simply spray the horse all over with water and do not scrape away the excess. Does it really offer a benefit to spray the entire body as opposed to just the legs and belly?

Response: Spraying water on a hot horse to cool it off promotes convection cooling and assists the horse in lowering its core temperature. The reason you spray the legs and belly is because the blood vessels are closer to the skin in those locations and it promotes faster cooling of the horses core temperature by carrying the cooler

blood to the heart.

Another important part of cooling out horses is evaporation. After the horse has been sprayed off, it is very important to scrape the water off, because once the horse is sprayed, the water absorbs the horse's heat and becomes warm. In order for evaporation to occur effectively, this warm water must be removed. This process can be repeated until the horse's temperature comes down (i.e. spray, scrape, spray, scrape,). If the water is not scraped off, it could act as an insulating layer, and actually make the horse hotter than

when you started.

In extreme circumstances, ice can be added to water buckets to increase the speed of cooling the core temperature. It is commonly thought that ice will be a shock to the horse's system and could cause tying-up (muscle cramping); however, with extreme heat and internal body temperatures, this is not the case.

If a horse is prone to tying up, it may be recommended to not directly apply the ice to the large gluteal muscles in the hind end, but focus on those key areas where the blood vessels are more superficial.