



U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

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Research Update - Adding Supplements to Water

A 1,000 pound horse should drink about 8 to 10 gallons of water each day. In order to encourage horses to drink, especially when away from home, owners frequently “flavor” (i.e. peppermint) their water; however sometimes electrolytes or supplements are added, which are different than flavors. The objective of this study, conducted by Land O’Lakes Purina, was to test the hypothesis that horses decrease water intake when supplements or electrolytes are added to water.

Six mature horses were offered both plain water and water with one of 4 different supplements. Additives included 2 electrolyte preparations (Farnam Apple Dex and Land O’Lakes Calf electrolyte), a vitamin/mineral (Farnam Red Cell) additive, and a joint additive (Finish Line Fluid Action). All additives were offered at a rate of 28 g per 5 gallons of water. Water intake from buckets was recorded via weight and replenished at 7:00 am and 6:00 pm each day. Horses were fed the

same diets, had unlimited access salt, and were housed individually.

There was an effect of adding supplements and electrolytes to water as horses preferred plain water with a mean daily intake of 3 gallons versus 1 gallon for supplement or electrolyte water; horses drank over twice the amount of plain water compared to supplement or electrolyte water. There was no difference within the additive treatments for water intake. There was a trend for water intake to be affected by time of day, with the greatest volume consumed overnight. This trend may have been influenced by timing of water weighing and replenishment, and/or housing management conditions.

Adding supplements or electrolytes to water can decrease intake in horses. This may lead to dehydration, poor performance or other adverse health effects in horses.

Summarized by Krishona Martinson, PhD, Univ. of Minn.

Ask the Expert: Buying Hay

By: K. Martinson, PhD, Univ. of Min.

Q: What questions should I ask when buying horse hay?

A: Here are some questions horse owners should ask when purchasing hay:

1. Have you sold to horse owners before or do you specialize in horse hay?
2. What is the average weight of the bales? This is very important if buying hay by the bale.
3. What crop/cutting is the hay? Helps indicate maturity; good to know.
4. What species are present in the hay? Legumes and grasses have different nutrient values.
5. Where was the hay harvested? Rule out ditch hay.
6. Was the hay rained on? Rained on hay is a good choice for horses with metabolic problems; it tends to be

lower in water soluble carbohydrates.

7. Was the hay stored inside or under cover after baling? Hay stored inside or under cover has less storage loss.
8. Was the hay field fertilized and/or sprayed for weeds? Show good management and likely a better quality product.
9. What are the payment options?
10. Is delivery available and if so, what is the cost?
11. What is the price? Is there a price break for volume or cash?
12. Is assistance available with onsite handling and stacking of hay, and if so, at what cost?
13. How much hay do you have/bale each year? Helps ensure a consistent supply of hay.

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Upcoming Events

Quarterly Lunch and Learn Webinar

“Equine Insurance Options”
Presented by Jane Flanders,
Windridge, Ltd

Wednesday, May 15 2013
from noon to 1:00 pm

<https://umconnect.umn.edu/insurance/>

Research Collaborators Needed!

Is your laminitic horse/
pony confined to a drylot?
Is the drylot weedy? If you
answered “yes” to these
questions, please contact
Krishona at 612-625-6776
or krishona@umn.edu

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to reducing hay waste.

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Neurologic disease in horses: Part II

By: Carrie Finno, DVM, PhD, Univ. of Minn.

The 4 major causes of spinal ataxia in the horse are:

- Cervical vertebral compressive myelopathy (i.e. "Wobblers" disease)
- Equine Protozoal Myeloencephalitis (EPM)
- Neuroaxonal Dystrophy/Equine Degenerative Myeloencephalopathy (NAD/EDM)
- Trauma

Cervical vertebral compressive myelopathy (CVCM) is also known by the names: cervical vertebral stenotic myelopathy, cervical vertebral malformation and malarticulation (CVM), spinal ataxia, cervical stenotic myelopathy, and "wobbler's" syndrome. It is one of the most common causes of neurologic disease in horses worldwide. There are two types of CVCM:

Type I CVCM is a developmental disease, caused by problems during development of the vertebrae or spinal canal. Type I CVCM results in a dynamic instability of the vertebral canal. This means that, when the horse flexes or extends his neck, the bony column of the vertebrae will compress the spinal cord. When the spinal cord is compressed, certain tracts are damaged and this will result in a sensory ataxia with or without weakness.

Type I CVCM typically affects young, rapidly growing horses and is most common in Thoroughbreds, Tennessee Walking Horses, Warmbloods and Quarter horses.

Type II CVCM occurs more commonly in older horses (≥ 8 years old) and results from arthritis within the joints of the neck vertebrae. This often results in a static compression of the spinal cord (the cord is compressed all the time, not

only during flexion and extension)

Clinical signs of Type I and Type II CVCM include a sensory ataxia and signs of upper motor neuron weakness (spasticity). To diagnosis CVCM, a veterinarian will typically start with x-rays of the neck. These x-rays are done with your horse standing under sedation. It is very important to obtain high quality x-rays of all neck vertebrae. This usually involves bringing your horse to a facility that has a large x-ray unit powerful enough to shoot through the region of the fifth through seventh cervical vertebrae. This region contains a lot of muscle and quality x-rays are often impossible to take in the field with a portable x-ray machine.

Although veterinarians are not able to visualize the cervical spinal cord on the x-rays since it is soft tissue, they can visualize the canal that it runs through and all of the surrounding bony structures. The cervical x-rays may reveal the following:

1. Highly suggestive abnormalities consistent with Type I or Type II CVCM. These would include malalignment of the cervical vertebrae at a particular joint, evidence of a severely narrowed spinal canal, or severe arthritis of the neck joints.

2. Suggestive abnormalities. The use of ratio measurements is employed when analyzing these cervical x-rays and you may discover that your horse has ratio measurements that are "suggestive" of compression. These ratios provide a likelihood that your horse's abnormalities are due to CVCM, but it is not definitive. If a horse appears to have a region of the canal that is narrowed and/or has some evidence of arthritis of the neck joints, your horse MAY have

CVCM.

3. Normal neck x-rays. Although this makes CVCM more unlikely, it does not, unfortunately, rule it out completely. The reasons for this are because sometimes the compression is dynamic, when the neck is flexed, and we are only seeing the spinal canal in the horse's natural stance. Additionally, we can only take lateral (from the side) x-rays in a standing horse so asymmetric compression (i.e. the right is compressed but the left is not) can be missed.

The next step that may be recommended is a myelogram. A myelogram involves placing your horse under general anesthesia and injecting a contrast agent into the space that surrounds the spinal cord. X-rays are then taken with your horse's neck in a neutral, flexed and extended position. When examining the x-rays, the contrast will outline the spinal cord and veterinarians can determine if there is any evidence of compression. Results of the myelogram may tell you the following:

1. Highly suggestive/definitive evidence of Type I or Type II CVCM.

2. No evidence of compression. At this stage, CVCM is highly unlikely. However, it is important to note that an asymmetric compression could still be missed. Many Universities are now working to obtain dorsoventral views to reduce the chance of missing asymmetric compressions.

If available, a CT (computed tomography) using contrast can accurately diagnose the location and severity of compressive lesions in cases of CVCM; however, most units are unable to image adult equine cervical vertebrae at this time.

Next month we'll conclude this series with a discussion on Equine Protozoal Myeloencephalitis (EPM) and trauma.