



U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

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Research Update: Tendon Boots and Temperature

The application of bandages and tendon boots to the lower limb of horses is widespread and performed for many reasons. Tendon boots are used in training and are applied during some horse competitions. Bandages and tendon boots are supposed to support the anatomic structures, reduce the maximum extension of the fetlock joints and protect the limbs from fractures and trauma; however, there is little scientific data to support their value except in protection against direct trauma.

The objective of this research, conducted by researchers in Austria, was to determine the skin temperature of the cannon bone in horses associated with the use of bandages and tendon boots, compared with the bare limb, at rest and after 20 minutes of lunging.

Skin temperatures at rest were not different with a bare limb, bandage, or tendon boot. Average skin temperatures ranged from 57 to 59°F. Skin temperature of the bare cannon bone after exercise did

not increase and remained at 57°F. Skin temperature of the cannon bone in horses increased during exercise when a bandage or tendon boot was used. Skin temperatures under the bandage and tendon boot were 77°F and 70°F, respectively, after exercise.

The authors speculate that both a bandage and a tendon boot accelerate the warmup phase of exercise by increasing the skin temperature. Moderate warmup exercise increases blood flow in tissues, which can help to reduce the risk of injuries. It is not known whether heavy exercise performed with limb bandages or tendon boots is detrimental because of accumulation of heat in the limb and underlying structures. Further research should focus on the effects of warmup and maximum exercise on the temperature of other anatomic structures such as tendons.

For more information, click [here](#).

Summarized by: *Krishona Martinson, PhD, University of Minnesota.*

Care of Newborn Foals By: Christie Ward, DVM, PhD, Univ. of Min.

After waiting for almost a year, your mare is finally ready to give birth. Healthy foals are very active, stand and nurse within 2 hours, and pass urine and orange-brown manure (meconium) within 6 hours.

When the umbilical cord breaks, dip the navel stump in dilute Nolvasan® to prevent infection, and repeat every 8 hours for 48 hours.

The mare's first milk (colostrum) is very important for the foal, as it contains antibodies needed to ward off infection. If the mare leaks her colostrum, or if the foal fails to nurse well in the first 12 hours, it will be at high risk for life-

threatening infections. Since newborn foals can develop serious illness very quickly, you should contact your veterinarian immediately if your foal fails to stand and nurse vigorously soon after birth, or if you notice danger signals such as depression, reduced nursing, diarrhea, dehydration, or persistent straining to urinate or defecate.

Even if the birth goes smoothly and your foal appears normal and healthy, a health check and blood test for antibody levels in the first 24 hours are strongly recommended.

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Upcoming Events

Small Farms Day

March 7, 2015
9:00 am to 3:00 pm
\$10/person
Sherburne History Center
Becker, MN
To register, visit www.regonline.com/SmallFarms

Minnesota Horse Expo

April 24-26, 2015
State Fairgrounds
St. Paul, MN
<http://www.mnhorseexpo.org/>

Lunch and Learn Webinar

March 24, 2015
Noon to 1 pm
Conditioning Your Horse for the Riding Season by Carey Williams, PhD, Rutgers

Visit our [Facebook](#) page for "Research Update Monday", "Tip of the Week Wednesday", "Friday Funny" and upcoming educational programs.

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Ask the Expert: Selenium Toxicity

By: Marcia Hathaway, PhD, University of Minnesota

Question: I feed my horse several supplements that contain selenium. I read in last month's newsletter ([January 2015](#)) that selenium toxicity is possible in horses fed multiple selenium containing supplements. How many milligrams (mg) of selenium are considered "safe"?

Response: The selenium

recommendation varies somewhat by horse age, size (bodyweight) and activity level (maintenance, performance, breeding etc.). Generally speaking, a 1,000 pound horse requires about 1 mg of selenium each day.

Because of the relatively narrow safety range for selenium, do not feed more than 3 mg of selenium

per day. When calculating this, make sure to account for selenium in all of the feedstuffs (hay, grain and supplements). You can use table values to estimate selenium in hay; however, it is best to have your hay analyzed since your hay may have significantly more or less selenium than average values found in reference tables or online.

Is My Horse Too Fat?

By: Marcia Hathaway, PhD, University of Minnesota

While "beauty lies in the eyes of the beholder", determining whether a horse is fat does not have to be so vague. The answer lies in the body condition score. A body condition scoring system was developed by researchers at Texas A & M based on the location and amount of fat stores underneath the horse's skin. The scoring system uses a number scale from 1 - 9. A body condition score of 1 is 'poor' and the horse is emaciated, whereas a body condition score of 9 is given to a horse that is 'extremely fat'. A body score of 5 is 'moderate' (Figure 1).

One characteristic of a score of 5 are ribs that cannot be seen (when the horse has a summer coat), but can be easily felt. Visually examining your horse and then running your hands over the horse's side to feel its ribs can give you a good indication of your horse's body condition score. A score of 4, (moderately thin), allows a faint outline of the ribs to be seen, whereas a score of 6, (moderate to fleshy) is characterized by ribs that cannot be seen and fat over

the ribs that feels spongy. Although a score from 4 - 6 is appropriate for most horses, the ideal score for each horse will vary, depending on differences in energy expenditure, frame size, physiological condition, diet history and the owner's personal preference.

Visually and physically examining your horse is the best way to establish its body condition score. Assessing your horse's body condition score on a routine basis allows for dietary adjustments to be made. How much you need to feed your horse will vary over time and is strongly influenced by changes in exercise, environmental conditions and quality of feedstuffs.

Trying to maintain your horse's ideal body weight is a constant challenge. Without frequent assessment a horse can lose or gain a significant amount of weight before it may be obvious to someone who sees the horse frequently. Altering your horse's body condition score takes considerable time and effort. Any increase or decrease

must be accomplished gradually over time in order to be done safely.

Figure 1. Horse BCS chart.

