



# U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

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## Neurologic Disease Cont.

By: Carrie Finno, DVM, PhD, U of MN

We continue our series on neurologic disease with the exam process of the neck, trunk, and at different gaits.

**Cervical (neck) region:** A horse's neck is felt on both sides of its spine from its head to its withers for pain or swelling. Then flexibility of the neck is tested by offering treats on each side at the shoulder and determining how far the horse can stretch. It is important to remember that, although abnormalities in these tests might indicate neck pain, they are often very subjective. The cervicofacial reflex is tested by pushing a blunt object, such as a pen cap, into the skin on his neck and noticing if the horse twitches its ear or grimaces on the same side, which is a normal response.

**Thoracolumbar (trunk) region:** The cutaneous trunci reflex, which is the skin rippling reflex that horses use to keep flies off, is tested by looking for a twitch response to pressure.

**Sacrocaudal (tail) region:** A horse's tail and anal tone are examined to determine if there are any abnormalities that could be localized to the *sacrocaudal* region. If a horse has had difficulty urinating or passing manure, a rectal examination is used to further assess this region.

**Gait exam.** Assessing a horse's gait is an important part of the exam. The most common series of maneuvers include walking and trotting in a straight line, walking in serpentine figure, spiraling in on a circle at the walk, backing, going up and down an incline and on or off curbs or steps, walking with your horse's head elevated, and the tail pull. All of these tests are aimed at evaluating the gait and coordination when your horse is asked to do complex movements. When circling, it is important to pay careful attention to a horse's leg position. Does the horse make mistakes and step on himself? Does the

horse drag its forelimbs when backing?

Sometimes, in subtle cases, it is necessary to perform a full gait examination, then lunge the horse for 15 to 20 minutes, and repeat the gait examination. Subtle abnormalities that were not noticeable before exercise may become apparent after some work.

**Interpreting the neurologic exam: grading system.** Once the exam is completed, a veterinarian will have an answer to the original two questions: (1) Does a horse have neurologic abnormalities? (2) If the horse does, where do they localize to and how severe are they?

To answer question #2, a veterinarian will localize a horse's clinical signs to either a region of the brain, spinal cord or to a peripheral nerve (i.e. nerve outside the spinal cord). If a horse demonstrates a spinal ataxia (i.e. in-coordination originating from the spinal cord), a grading scale to determine how severe a horse's gait deficits are is assigned. Each limb is graded separately with regard to four aspects: ataxia (incoordination), weakness, dysmetria (a combination of overshooting and weakness commonly observed with disease of the cerebellum) and spasticity. Grade 0: Normal; no deficits observed; Grade 1: Mild intermittent gait deficits; Grade 2: Mild consistent gait deficits; Grade 3: Moderate consistent gait deficits; Grade 4: Severe consistent gait deficits; or Grade 5: Recumbent.

A great deal of experience is required to interpret the signs, localize them to the proper region, and to select the best diagnostic tests. As we continue this series, we will discuss the four most common causes of spinal ataxia, and the diagnostic tests that can be used to try and determine which of these diseases is responsible for a horse's clinical signs.

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### Upcoming Events

#### Quarterly Webinar

January 29, 2013 at 6 pm

"Update on EMS"

Dr. Nichol Schultz, U of M

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#### Minnesota Horse Expo

April 26, 27, 28, 2013

MN State Fairgrounds

[www.mnhorseexpo.org/](http://www.mnhorseexpo.org/)

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## Medical Therapy for Osteoarthritis in Horses

By: Claire Kamrath, U of M Vet Student

Osteoarthritis (OA) is one of the most common causes of lameness and can significantly limit the competitive life of a horse. OA is a result of cartilage damage due to injury, infection, or degeneration due to use. It is insidious and hard to detect early. OA can't be reversed, so therapy centers on improving lameness, decreasing joint inflammation, and limiting progression of disease. While surgery may be indicated for some forms of OA, there are different options for medical management.

**Nonsteroidal anti-inflammatory drugs (NSAIDs)** are aspirin-like drugs and are the mainstay of long term anti-inflammatory therapy for OA. These drugs limit joint inflammation (which causes pain and can cause further damage) and swelling (which causes pain). Examples of NSAIDs that are commonly used for the treatment of OA include:

- Phenylbutazone ("Bute"). The most popular NSAID used for OA, cost effective, available in a powder or paste, side effects include stomach ulcers, colon damage and kidney damage.
- Firocoxib (Equioxx®). Fewer side effects than "Bute", more expensive, available in a paste.

**Corticosteroid joint injections** are very popular for the treatment of OA. These substances are stronger than the NSAIDs but act similarly. Examples of common corticosteroids used for OA are triamcinolone (Vetalog®) and methylprednisolone acetate (DepoMedrol®). These drugs need to be used with caution because they have been associated with increased risk of joint infection and laminitis. Overuse can also cause additional cartilage damage.

**Hyaluronate (HA)** is a component of joint cartilage and an

important joint lubricant. Injection of HA into arthritic joints has shown to relieve pain and inflammation, promote the production of natural HA, and protect the remaining joint cartilage from damage. HA is commonly used with a corticosteroid. This combination can be beneficial because it allows for a reduction the corticosteroid dose and takes advantage of the cartilage protective properties of the HA. Common brand names include Legend® and Hylartin®.

**Polysulfated Glycosaminoglycans (PSGAGs)** are synthetic glycosaminoglycans (GAGs), which are components of joint cartilage. Adequan® is a common brand name product. These drugs are also anti-inflammatory properties and may inhibit further degradation of cartilage. PSGAGs can be administered as a joint injection or in the muscle. Intramuscular injections are beneficial because they avoid the possibility of introducing infection into the joint, but are not as effective as delivering the PSGAGs directly to the joints.

**Nutraceuticals.** Dietary supplements such as oral chondroitin sulfate and oral glucosamine are considered nutraceuticals. Cosequin® is one example of a commercially available dietary supplement. The goal of nutraceutical therapy is to lower the dose of other medications and prevent progression of OA. These compounds are not regulated tightly by any federal agency such as the FDA. This can lead to problems such as inconsistent formulations of products between batches and products not meeting label claims. Very few products have been evaluated scientifically. Talk with your veterinarian to see which products are considered reliable.

**Extracorporeal Shock Wave Therapy (ESWT)** therapy utilizes low energy sound waves directed at a specific area to stimulate tissue and promote healing. There is evidence to show ESWT can help relieve OA pain in certain circumstances. This method is most often used in combination with other therapies or used when other therapies have failed.

**Exercise.** Light exercise is beneficial to improve the range of motion of joints and to strengthen surrounding muscle. Horses should be maintained on pasture turnout; stall rest can increase stiffness. Exercise also promotes weight loss in overweight horses, further reducing stress on joints.

**On the Horizon: Cell based therapies.** There are many new biological therapies on the horizon for the treatment of OA. Some are currently being used in equine practices, but a better understanding of their efficacy for the treatment of OA is needed. These therapies include Interleukin 1 receptor antagonist protein, Platelet rich plasma, and Mesenchymal stem cells. These modalities are more expensive and are generally used when other treatments have failed.

In summary, there are many different medical therapies available and/or being developed for the management of OA. Depending on the severity and chronicity of the disease, different options may be needed for different horses. Most options work best early in the course of the disease so early diagnosis is critical. Talk to your veterinarian about what therapies are right for you and your horse.

*Reference to commercial products is made with the understanding that no discrimination is intended and no endorsement by University of Minnesota is implied.*