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Efficacy of Manual Therapies on Back Pain (AAEP 2011)

by: Erica Larson, News Editor January 26 2012, Article # 19498

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With massages, chiropractic care, touch therapy, and other manual therapy approaches, one could say that today's horses are living the high life. But just how effective are these modalities in relieving back pain? According to one researcher, they can be very effective if applied properly.

At the 2011 American Association of Equine Practitioners convention, held Nov. 18-22 in San Antonio, Texas, Kevin Haussler, DVM, DC, PhD, Dipl. ACVSMR (Sports Medicine and Rehabilitation), assistant professor at Colorado State University's Equine Orthopaedic Research Center, described what scientists know about the efficacy of manual therapies for thoracolumbar (the horse's back forward of the pelvis) dysfunction.

"The use of touch, massage, or manipulation of painful articulations or tense muscles is arguably one of the oldest and most universally accepted forms of therapy to relieve pain and suffering," Haussler began. "Firmly grasping an acutely injured thumb after a misdirected hammer blow or rubbing a sore muscle or stiff joint after a long day's work are simple and often effective methods of providing short-term pain relief in humans.'

Haussler explained that animals naturally behave in a similar manner, "licking, scratching, or rubbing wounds or areas of irritation in an apparent attempt to reduce pain and suffering."

Particularly, he noted, most horses respond favorably to activities involving touch, including grooming, rolling, and rubbing, presumably because it provides them a sense of comfort.

"The goal of manual therapy is to restore normal joint motion, stimulate neurologic reflexes, and reduce pain and muscle hypertonicity (increased rigidity, tension, and spasticity)," he said. Simply put, in the case of thoracolumbar pain, the aims are to restore the back to its original functionality prior to injury or insult.

Back Pain Diagnosis and Spinal Examination

"Unfortunately, the use of the term 'back problems' is very nonspecific and is comparable with terms like colic, lameness, skin problems, and 'ain't doing right,' " he revealed. "Horses with back problems often present with vague signs of poor performance, lack of impulsion, stiffness, or avoidance of tack."

Before turning to manual therapies, Haussler said it's important for a horse owner to have a veterinarian diagnose any back problems and perform a spinal examination on the animal in question.

"The principle goals of the manual therapy evaluation are to identify if a musculoskeletal problem exists and to localize the injury to either soft tissue, articular, or neurologic structures," he noted. "The spinal examination also helps to identify and differentiate signs of acute and chronic spinal dysfunction and localize pain, stiffness, or muscle hypertonicity to a few vertebral segments or an entire vertebral region.

Haussler explained that historically there has been a "poor correlation between structural changes identified on diagnostic imaging and actual functional capabilities." For this reason, he recommends using a combination of clinical signs, diagnostic imaging, and diagnostic anesthesia (nerve blocks) to confirm back problems.

It's conceivable, Haussler noted, that the cause of back problems in a particular horse might never be identified: "Even with recent advances in high-tech diagnostic imaging, approximately 80% of human patients have no identifiable cause of the back pain and are subsequently categorized as having nonspecific back pain." Horses likely have similar statistics he noted



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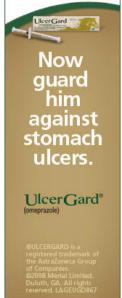
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Massage, Mobilization, and Manipulation, Oh My!

Next Haussler described manual therapies commonly used to treat back pain in equine practice and explained how each aids in the horse's recovery.

Massage Therapy "Massage therapy is defined as the movement or manipulation of the skin and underlying soft tissues either manually (e.g., rubbing, kneading, or tapping) or with an instrument or machine (e.g., mechanical vibration) for therapeutic purposes," Haussler explained.

He noted that both superficial and deep tissue massage techniques are commonly used to treat a variety of back conditions--most of which address the soft tissue.

The goals of massage therapy include:

- · Promoting relaxation;
- · Reducing anxiety;
- Reducing muscle hypertonicity and pain; and
- · Increasing venous and lymphatic flow.

Haussler said that studies have shown massage therapy can increase stride length, increase mechanical nociceptive thresholds (i.e., reduced pain), reduce heart rate, and increase positive behavioral responses.

Mobilization Spinal mobilization describes using cyclic and rhythmic forces to induce selective displacement along the spine; this is achieved by applying and releasing firm downward pressure repetitively along the length of the spine.

The goals of articular and soft tissue mobilization simply are to reduce pain and--not surprisingly--mobilize affected tissue. While few studies exist on the topic, Haussler noted that some research in horses has shown that mobilization can effectively reduce joint stiffness and increase range of motion.

Manipulation Not to be confused with mobilization, each manipulation is achieved with a high-velocity, low-amplitude thrust that pushes a "joint beyond its physiological range of motion without exceeding the anatomical limit of the articulation." Chiropractic care, for example, is included in manipulation.

Goals of manipulation include increasing joint range of motion, reducing pain, and reducing muscle hypertonicity. Haussler relayed that research has shown that spinal manipulation is effective in increasing spinal mobility, reducing pain, reducing muscle weakness, and improving athletic performance in horses.

Stretching Haussler also described the effects of **stretching** on thoracolumbar pain: Through a regular stretching program, muscles become stronger and, thus, able to absorb more energy, which also reduces injury.

Goals of stretching to aid in reducing back pain include:

- Reducing myofascial contractures (tender spots in tense bands of skeletal muscle that result in pain and motor dysfunction);
- Increasing joint mobility;
- Increasing flexibility; and
- Reducing pain.

Haussler noted that in some cases stretching has been reported to reduce limb range of motion, however he added that the correct "dosage" still isn't clear. In other cases range of motion was increased, and the multifidus muscle (responsible for rotating the vertebral column) size was increased as well, indicating an increase in back strength.

Contraindications and Adverse Effects

There are few adverse effects associated with any type of manual therapy; most mild unwanted effects last only a day or two and resolve without additional medical treatment, he noted.

It's important to remember that each case of thoracolumbar pain should be diagnosed, treated, and evaluated individually. While massage therapy might work wonders from some horses, others could excel with the aid of chiropractic work. Consult a veterinarian to determine what will work best for each individual situation, keeping in mind that not every back ailment should be treated via manual therapies, Haussler cautioned.

"Manual therapy is not a cure-all for all joint or back problems," he noted. "It's generally contraindicated in the presence of fractures, acute inflammation or infectious joint disease, osteomyelitis, joint ankylosis (fusion), bleeding disorders, progressive neurologic signs, and tumors.

He also added that neither mobilization nor manipulation can reverse "severe degenerative processes or overt pathology."

Haussler also noted that it's important to ensure the professional performing the manual procedures is experienced and qualified to do so, as individuals with "poorly developed manipulative skills" could cause more problems in the long run.

Take-Home Message

While hard evidence of efficacy is still lacking in some areas, manual manipulation is a commonly used treatment modality for horses with back pain. Both scientifically and anecdotally, manual therapies have been shown to aid in reducing back pain in horses, said Haussler.

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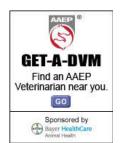
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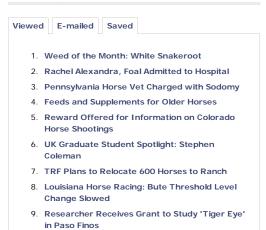
"Additional research is needed to assess the effectiveness of specific manual therapy recommendations or combined treatment for the management of back pain, muscle hypertonicity, stiffness, and select lameness issues," He added.

Further research is needed to evaluate the short- and long-term effects of manual therapy, as well, and if they can in fact enhance athletic performance in horses.

Haussler emphasized that it's crucial to work with a "specifically trained veterinarian or licensed human manual therapists" to ensure the safety of the horse receiving treatment.

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