

Equine Manual Therapies in Sport Horse Practice

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KEYWORDS

- Manual therapy • Proprioception • Neuromuscular control • Massage therapy
- Stretching exercises • Joint mobilization • Chiropractic care • Osteopathy

KEY POINTS

- Manual therapies can provide detailed diagnostic and therapeutic approaches to assess and manage neuromuscular coordination and strength in sport horses.
- Active stretching involves using the patient's own movements to induce a stretch; whereas, passive stretches are applied to relaxed muscles or connective tissues.
- Soft tissue or joint mobilization is indicated to help limit the effects of joint immobilization and to restore proprioceptive mechanisms.
- Equine chiropractic research has shown positive effects for pain relief, improving flexibility, reducing muscle hypertonicity, and restoring spinal motion symmetry.

INTRODUCTION

Manual therapies involve the application of the hands to the body, with a diagnostic or therapeutic intent. In horses, a diverse array of manual techniques, such as touch therapies, massage, joint mobilization, and manipulation (ie, chiropractic), have been applied with a primary therapeutic intent (eg, reduce pain or stiffness).¹⁻³ However, all of these therapies also have important diagnostic value in assessing musculoskeletal pain and dysfunction that is not possible with other more traditional physical examination approaches or imaging modalities. In sport horse practice, the primary issues that limit performance are chronic repetitive use injuries associated with long active athletic careers of pushing physical and psychological limits of horse and rider. Chronic, poorly localized pain and stiffness combined with slower reflexes or altered muscle timing contribute to poor performance issues and increase the risk of acute injury and inflammation. Manual therapies can provide detailed soft tissue, osseous, and articular evaluation techniques and unique methods to assess neuromuscular

Disclosures: The author has no commercial or financial conflicts of interest and there was not any funding source for this work.

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Vet Clin Equine ■ (2018) ■-■

<https://doi.org/10.1016/j.cveq.2018.04.005>

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coordination and strength in sport horses that are not possible with routine lameness evaluation or neurologic tests.

Touch therapies and massage techniques focus on myofascial tone and the role of connective tissue (ie, fascia) in supporting optimal muscle, joint, ligament, and tendon function. Joint mobilization techniques involve assessing the quantity (eg, range of motion) and quality (ease of movement) in static and dynamic settings. Joint mobilization is used to provide subjective assessments of joint stability, passive and active joint movements patterns, and type of palpable resistance created as a joint is brought toward its end range of motion (ie, end-feel), which all provide critical insights into the biomechanical and neurologic features of an articulation. The ability to localize pain or stiffness to a specific vertebral level or defined spinal motion pattern (eg, restricted right lateral bending at C3-C4) provides a level of specificity that is required to diagnose subtle performance issues and to address vague or poorly localized sources of pain or upper limb lameness. The objectives of soft tissue and joint mobilization are typically to reduce pain, restore tissue compliance, and improve overall tissue mobility and joint range of motion.⁴ Manipulation is more often used to address localized pain and joint stiffness, with less focus on the surrounding soft tissues.⁵ Manual therapy techniques can also provide an adjunct to therapeutic exercises and rehabilitation of neuromotor control, where applied forces are used to induce passive stretching, weight-shifting, and activation of spinal reflexes, which help to increase flexibility, stimulate proprioception, and strengthen core musculature.⁶

IDENTIFICATION OF REHABILITATION ISSUES

Any medical, surgical, or rehabilitation plan is only as good as the diagnosis on which it is based. Veterinarians typically are good at establishing or defining diagnoses based on a known pathology or on anatomic localization (ie, pathoanatomic diagnosis). At times, they may even slide into the misguided approach of “treating the diagnostic image” without giving full consideration to determining the clinical relevance of the diagnostic imaging findings relative to the presenting or continued clinical signs of the patient. At the other end of the diagnostic-treatment spectrum are those owners and practitioners that are solely focused on the function of the horse (ie, is the horse able to do its job) despite the accumulation of known musculoskeletal injuries and chronic, multilimb lameness over a long active athletic career. Striving to find a balance between applying structural and functional approaches is ideal for managing the athletic demands and injuries in sport horses.

From the functional perspective, general rehabilitation issues to be addressed in equine athletes include, in progressing order, (1) pain management, (2) proprioceptive deficits, (3) stiffness, (4) weakness or fatigue, and (5) neuromuscular control. Pain management is always the first step in rehabilitation because it is not possible or ethical to ask a patient to exercise or do stretching when they are in pain. The body's normal protective mechanisms do not allow one to fully contract a muscle attached to an acutely stained tendon or to freely move a joint with acute synovitis. Nociceptive input by itself induces many other neurologic reflexes (eg, withdrawal reflex, crossed-extensor reflex) that function acutely to protect the body from further injury. However, chronic nociceptive input leads to peripheral and central sensitization (ie, wind-up) that has widespread neurologic and musculoskeletal effects that make clear distinctions between pain or lameness, altered proprioception or body awareness (ie, somatoesthesia), and altered gait patterns difficult to interpret.

As horses move into the proprioceptive and flexibility phases of rehabilitation, more focus is placed on how the horse is perceiving its environment through its sensory

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