Fact Sheet





Lameness in Horses

Prompt recognition and treatment of lameness is imperative to minimize losses

Overview

Lameness, traditionally defined as any abnormal gait, is a common event in the equine industry, contributing to untold economic and horse losses annually.^{1,2} Today, veterinarians also accept that even behavior changes, not just gait changes, can cause lameness in horses due to pain in the neck, withers, shoulders, back, loin, hips, legs, or feet.²

Causes of Lameness

A number of conditions can result in lameness. These include trauma, congenital conditions (e.g., contracted tendons), acquired abnormalities (e.g., osteochondritis dissecans), and infection (e.g., septic/ infectious arthritis). Essentially, any body part that has nerve endings can serve as a source of pain, and horses with poor conformation are more likely to suffer problems with tendons, ligaments, and joints than horses with more ideal conformation.¹

Even factors unrelated to the musculoskeletal system, such as metabolic, circulatory, and nervous system abnormalities (e.g., wobbler syndrome/cervical stenotic myelopathy) can cause lameness.

Diagnosing Lameness

Lameness due to musculoskeletal abnormalities is the leading cause of poor performance in athletic horses.⁴ Your veterinarian must have a detailed knowledge of horse anatomy, mechanics, conformation, and breed characteristics to evaluate a lameness quickly and accurately.

Not surprisingly, diagnosing lameness is sometimes challenging for even the most experienced veterinarian. Over the years, veterinarians have devised a list of general rules and patterns when evaluating a lame horse. For example, most lameness occurs in the forelimb, and at least 95% of forelimb lameness occurs from the knee down.³ When the hind limb is involved,



During a lameness examination, a veterinarian watches the horse walk and trot in a straight line to see how the horse's limbs travel in motion.

80% of the time the culprits are the hock and/or stifle.

Most veterinarians use a step-by-step approach to lameness and begin with a complete lameness history of the horse, a general physical examination, and conformation assessment. The "standing" part of the exam also involves feeling the horse's body for heat and swelling. He or she palpates individual tendons and ligaments and assess blood flow to the feet. Hoof testers are used if foot pain is suspected.

Next, the veterinarian will evaluate the way the horse moves in hand and/or under saddle. A variety of surfaces can be used. A hard, level surface might be used in some cases, but others might mandate the use of a deep, sand ring. During this part of the exam, the veterinarian can establish which limb(s) is/are involved.

Once the affected limb(s) is/are identified, the veterinarian will likely perform flexion tests (bending individual joints for an extented amout of time and then watching the horse trot off) to determine which areas are painful, and if a decreased range of motion exists.

In the United States veterinarians typically classify the degree of lameness by grade using the American Association of Equine Practitioner's (AAEP) lameness grading system:²

Grade 0 is defined as no detectable lameness under any circumstances.

Grade 1 is defined as lameness that is difficult to observe and is inconsistently apparent regardless of the circumstances (e.g., in hand or under saddle, hard surface, incline, or circling).

Grade 2 lameness is difficult to detect at a walk or trot in a straight line, but is consistently apparent under particular circumstances (e.g., under saddle, hard surface, incline).

Grade 3 lameness is consistently observed at a trot in all circumstances.

Grade 4 lameness is obvious with a marked head nod, hip hike, and/or shortened stride.

Grade 5 lameness is obvious with minimal weight bearing either during motion or at rest. The horse might be unable to move.

This grading system helps veterinarians describe lameness consistently (especially when communicating with other veterinarians) and track the lameness in the same horse over time. It is important to recognize that this system is subjective and therefore imperfect.

One recent study identified a lack of reliability and repeatability even in experienced veterinarians' lameness evaluations. As a result, the research group challenged the equine industry to search for and develop "a more objective and reliable method of lameness evaluation for use in the field" and noted that such efforts "should be encouraged and supported."⁵

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A veterinarian can also use regional anesthesia to temporarily block the joints and nerves from sensing pain as a way to identify the pain source. For example, blocking the palmar digital nerves that supply the foot can (generally) desensitize the heel and sole region to help localize the pain to the rear of the foot, which is caused by conditions such as navicular disease.

Once a specific nerve or joint has been "blocked," your veterinarian will reevaluate your horse to determine if the lameness has improved and, if so, to what extent. If a horse was a grade 3 before blocking and a grade 1 or 0 after blocking, then the blocked area likely contributes to the lameness.

It is important to note that athletic horses are often lame in more than one limb or have secondary, compensatory lameness. Alternatively, if no improvement in lameness grade is noted after a block, then the source of pain likely resides in different anatomic location.

Localizing lameness can be timeconsuming and dependent on the horse's temperament; natural gait; whether it is the hind or forelimb that is involved; if a unilateral or bilateral lameness exists; and if the horse needs to be worked in his natural setting (e.g., under saddle for a dressage horse).⁶

Once your veterinarian has isolated the source of your horse's lameness, he/she will frequently perform radiographs (X rays). Ultrasonography is also quite common for tendon and ligament injuries, among others. Advanced imaging techniques such as a bone scan (nuclear scintigraphy), magnetic resonance imaging (MRI), and computed tomography (CT) might also be needed.¹

Treatment and Prognosis

Treatment and prognosis for any lameness will vary dramatically depending on the use of the horse and the exact nature of the lameness. Your horse's treatment plan could involve conservative therapy (e.g., stall rest, hand walking) or surgery (e.g., to remove chip fractures or repair a fracture of a long bone with plates or screws). Other treatment options, depending on the cause of lameness, could include nonsteroidal anti-inflammatory drugs (NSAIDs), joint injection with various anti-arthritic compounds,⁷ physical therapy,⁸ extracorporeal shock wave therapy (ESWT), IRAP (interleukin-1 receptor antagonist protein), platelet-rich plasma (PRP), and/or stem cell therapy. Information on each of these therapies is available on TheHorse.com.

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