

Equine Lameness

Lameness in horses is an indicator of structural or functional disorder in the musculoskeletal system

Overview

Lameness, defined as a deviation from a normal gait, is an indicator of a structural or functional disorder of the musculoskeletal system (the limbs or spinal column) that is noted while the horse is either moving or stationary. Lameness can be due to trauma, a congenital condition (e.g., contracted tendons), an acquired abnormality (e.g., osteochondrosis dissecans), infection, and even metabolic, circulatory, and nervous system abnormalities such as wobbler syndrome (cervical stenotic myelopathy).

The timely and accurate evaluation of lameness requires a detailed knowledge of the horse's anatomy, mechanics, conformation, differences in breed characteristics, and an ability to assess a variety of gaits.

Diagnosis

The first step in a lameness examination is a complete history of the lameness, a general physical examination to rule out other, potentially more serious, diseases (described above), and conformation assessment. Conformation might play an important role in how a horse moves and the development of lameness. Following are important steps in a lameness exam:

Evaluating the horse at rest and exercise
The horse is then observed while moving either in hand or under saddle. A variety of surfaces can be used, depending on the horse, the veterinarian, and the suspected lameness. For example, a hard, level surface might be desirable in some cases, but other situations might mandate the use of a sand ring. Observing the horse while it is moving will enable the veterinarian to establish which limb or limbs are involved. Gait analysis can be challenging in gaited



The first step in any lameness examination is a complete history and a general physical examination to rule out other problems.

horses such as Paso Fino, Peruvian, Tennessee Walking Horse, and Missouri Fox Trotter, to name a few.

Palpation Next the veterinarian will palpate each limb to better determine which particular region of the limb(s) is/are affected. This is achieved by feeling for heat and swelling. The joints are manipulated by flexing and extending the limbs to determine if the joint in question is a source of pain or if a decrease in the range of motion exists. Individual tendons and ligaments are palpated and the blood flow to the feet is assessed. Hoof testers might be applied to evaluate foot pain.

Grading lameness Once the horse has been assessed, the degree of lameness is recorded. The American Association of Equine Practitioner's (AAEP) lameness grading system is based on a five point scale. Using a standard lameness grading

system permits one to consistently describe lameness to other individuals and a veterinarian and to track the progress of the lameness in the same horse over time.

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, circling).

Grade 2 is lameness that 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 is lameness that is consistently observed at a trot in all circumstances.

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

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

Rules of thumb Particularly in complex or subtle lameness cases, some rules of thumb can help guide a veterinarian to determine the location of a lameness. For example, most lamenesses are identified in the forelimbs and 95% of lamenesses in the forelimbs occur from the knee down.

In contrast, 80% of lamenesses in the hind limbs occur in the hock and stifle. While these guidelines can be useful, breed and use of horse will impact common locations of lameness. For example, Standardbred racehorses and other performance horses (e.g., those used for dressage and cutting) have a higher incidence of hind limb lameness.

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Regional Anesthesia

The strategic desensitization or “blocking” of joints and nerves can be very beneficial in diagnosing the source of a lameness. This involves injecting a local anesthetic, such as lidocaine or carbocaine, either directly into a joint or around a nerve that supplies a particular anatomic region. For example, blocking the palmar digital nerves that supply the foot will (generally) desensitize the entire heel and sole region to help diagnose palmar pain such as navicular disease.

Once a block has been performed, the horse is re-evaluated to determine if the lameness has improved, and if so, by what extent.

Athletic horses often have more than one lameness, so blocking out one lameness can reveal another. Alternatively, if no improvement is noted, then the source of pain is likely in another anatomic location and the next region higher on the limb can be desensitized in similar fashion until the area is identified.

Diagnostic Imaging

Radiographs (X-rays) remain the most

common imaging modality in equine practice. Other common imaging techniques used in identifying the exact cause of lameness are ultrasound and nuclear scintigraphy (bone scan).

Additional tests are available at various veterinary centers and include fluoroscopy, magnetic resonance imaging (MRI), and computed tomography (CT). These imaging modalities in combination can give a complete assessment of skeletal and soft tissue structures in a specific region.

Treatment and Prognosis

The treatment and prognosis for any lameness will vary dramatically depending on use of horse and the exact nature of the lameness.

Conservative therapy (e.g., stall rest, hand walking), surgery (e.g., to remove chip fractures, repair a fracture of a long bone with plates or screws), joint injection with various anti-arthritic compounds, physical therapy (aqua treadmills), extracorporeal shock wave therapy (ESWT), and IRAP (interleukin-1 receptor agonist protein) are all viable options to treat a lame horse depending on the cause and

FAST FACTS

- Lameness is a deviation from a horse's normal gait and is an indicator of a structural or functional disorder of the musculoskeletal system.
- The lameness can be primary (e.g., due to trauma) or secondary to other conditions, such as a metabolic, circulatory, or neurological disorder.
- Diagnosing a lameness is a multi-step process involving observation, palpation, blocking, and diagnostic imaging.
- In horses with subtle lamenesses and gaited horses, diagnosis can be challenging.
- Treatment and prognosis are highly dependent on the exact nature of the underlying problem.

extent of the injury.

Prognoses can be as positive as an anticipated full recovery and return to performance or as negative as a career or even life-ending condition. ◀



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