

Lameness in animals caused by muscles and soft tissue injuries.

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Lameness is an abnormal gait or stance in an animal caused by locomotor system dysfunction. It is most commonly caused by pain in horses, but it can also be caused by neurologic or mechanical dysfunction. Lameness occurs when an animal experiences leg or foot pain that affects their ability to move. Lameness is a concern for animal health and welfare, as well as a production issue. Pain from lameness frequently limits growth because animals are hesitant to eat or drink.

The most common cause of lameness in horses is pain, which is usually the result of trauma or orthopaedic disease, but other causes such as metabolic dysfunction, circulatory disease, and infection can also cause pain and subsequent lameness. The most common orthopaedic causes of lameness are injuries to the hoof, bone, joints, or soft tissue [1]. Conformational flaws, poor hoof balance, working on poor footing, repetitive movements, and poor conditioning for a given activity, as well as competing at a very high athletic level, all predispose horses to orthopaedic lameness. Infectious causes of lameness are caused by inflammation and tissue damage. Cellulitis, hoof abscesses, and septic arthritis are examples of such issues. Mechanical lameness results from a physical abnormality, such as scar tissue, that prevents normal limb motion. Mechanical lameness is not painful. Upward patella fixation and fibrotic myopathy are two classic examples of mechanical lameness, but any type of adhesion or fibrosis can cause mechanical lameness [2].

Neurologic lameness can be caused by infection, trauma, toxins, or a congenital disease. If the cause of the lameness is not obvious, a neurological evaluation of the horse may be warranted. Unilateral muscle atrophy, paresis, paralysis, or dysmetria are more commonly associated with a neurologic cause. Several other symptoms are present in both front and hind limb lameness. One method is to examine how much time each leg spends in the cranial phase of the stride [3]. A front leg is when the lower leg is in front of the horse, i.e. angled forward, whereas a caudal leg is when the leg is beneath the horse, i.e. angled backward. The cranial phase of a hind leg occurs when the lower leg is under the horse's body, and the caudal phase occurs when the limb is out behind the horse's body. A normal horse will have an equal length cranial and caudal phase, and the horse will bring the leg forward as far as it does backward. The cranial phase of a lame horse is shorter than the caudal phase, so it appears to spend more time with the leg backward than forward [4].

The most common cause of loss of use in horses is lameness; pain-related lameness can be classified as weight bearing or

nonweight bearing. Although lameness is most commonly observed as a weight-bearing deficit, it can be a combination of the two. Supporting leg lameness occurs when the horse reduces the amount of time or force applied to the weight-bearing limb [5]. The head nod, also known as a pelvic rise or hip hike, is associated with forelimb lameness and the sacral rise, also known as a pelvic rise or hip hike, is associated with hindlimb lameness. Lameness in one part of a limb frequently causes secondary soreness in another part of the same limb and may result in lameness of the contralateral forelimb or hindlimb as a result of compensatory overuse.

In cases of lameness, the fetlock drop during the stance phase of the stride may be reduced, as the horse tries to relieve weight on the painful limb, the lame leg produces fewer drops than the sound leg. Lameness is also indicated by a decrease in stride height or dragging of the toes, as the horse avoids bending its joints. Reduced flight arc in the front limb is common in cases of shoulder, knee, or fetlock joint pain, and it is frequently associated with a shorter cranial phase and a longer caudal phase of the stride. The lesions that cause lameness in dairy cows cause excruciating pain and are a major concern for animal welfare. Stress, which debilitates and reduces productivity, is also caused by lameness. The financial impact of lameness includes lost production, treatment costs, a longer calving interval, and possibly nursing labour. The appropriate treatment for lameness depends on the condition being treated, but it usually includes rest or reduced activity as well as anti-inflammatory medications.

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