Lameness

Lameness is an abnormal gait or stance of an animal that is the result of dysfunction of the locomotor system. In the horse, it is most commonly caused by **pain, but can be due to neurologic or mechanical dysfunction**. Lameness is a common veterinary problem in **racehorses, sport horses, and pleasure horses**. It is one of the most costly health problems for the equine industry.

Pain

Pain is the most common cause of lameness in the horse. It is usually the result of trauma or orthopedic disease, but other causes such as metabolic dysfunction, circulatory disease, and infection can also cause pain and lameness.

Orthopedic

causes of lameness are very common and may be the result of damage to the hoof, bone, joints, or soft tissue. Horses are predisposed to orthopedic lameness by conformational flaws, poor hoof balance, working on poor footing, repetitive movements, poor conditioning for a given activity, and competing at a very high athletic level.

Metabolic

causes of lameness include hyperkalemic periodic paralysis (HYPP) and polysaccharide storage myopathy, which directly affect muscular function.

Circulatory

causes of lameness occur when blood flow to an area is compromised. This may be due to abnormal blood clotting, as in the case of aortic-iliac thrombosis, or decreased blood flow (ischemia) to an area, such as is sometimes seen in laminitis.

Infectious

causes of lameness are the result of inflammation and damage to tissue. These include problems such as cellulitis, hoof abscesses, and septic arthritis.

Mechanical lameness

Mechanical lameness is caused by a physical abnormality, such as scar tissue, that prevents normal motion of a limb. Mechanical lameness does not cause pain. Classic examples of mechanical lameness include upward fixation of the patella and fibrotic myopathy, but any type of adhesion (often secondary to scarring during healing post-injury) or fibrosis can cause mechanical lameness.

Neurological lameness

Neurologic lameness may be the result of infection, trauma, toxicities, or congenital disease. Neurological evaluation of a lame horse may be warranted if the cause of the lameness is not obvious. Signs more commonly associated with a neurologic cause include unilateral muscle atrophy, paresis, paralysis, or dysmetria.

Hoof disease in horse

Laminitis

Laminitis affects tissue called sensitive laminae which are found in the horse's hoof. Laminitis occurs when blood supply to the hoof is compromised which may result in failure of the bond between the internal structures within the hoof. This can cause the pedal bone to move.

Navicular disease

Navicular disease (also known as navicular syndrome) is caused by damage to the area surrounding the navicular bone in the horse's hoof.

The damage could be seen in the navicular bone, ligaments, deep digital flexor tendon or the navicular bursa. When the area has been compromised it can cause obvious lameness, but it may only be apparent when on hard ground or a tight circle.

Signs of navicular disease can include:

- Intermittent lameness
- Shortened stride length
- Reluctance to turn on a small circle
- Soreness in the shoulders.

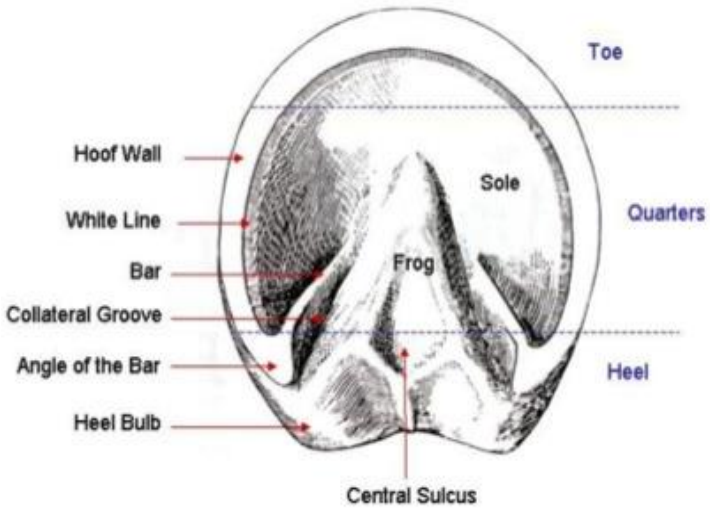
Thrush

Thrush is a common bacterial infection affecting the horse's hoof, more specifically the soft frog tissues and sometimes the heel of the foot. It

usually starts in the frog clefts and can produce black smelly discharge. It can affect one hoof or all four at a time.

White line disease

White line disease (also known as seedy toe) occurs when the hoof wall and sensitive laminae begin to separate at the white line. This causes a cavity which can then start to fill with dirt, horn and other debris exposing it to infection. Horn is the hard tissue which makes up the outer hoof wall. Once the horn has become compromised begin to thrive and spread throughout the hoof wall.



The highlighted area shows a large cavity caused by separation at the white line

Penetrations

Penetrating hoof injuries are relatively uncommon in horses, but can be caused by nails and screws. Deep wounds can cause severe damage to the internal structures of the hoof causing permanent and severe lameness.

Bruised sole

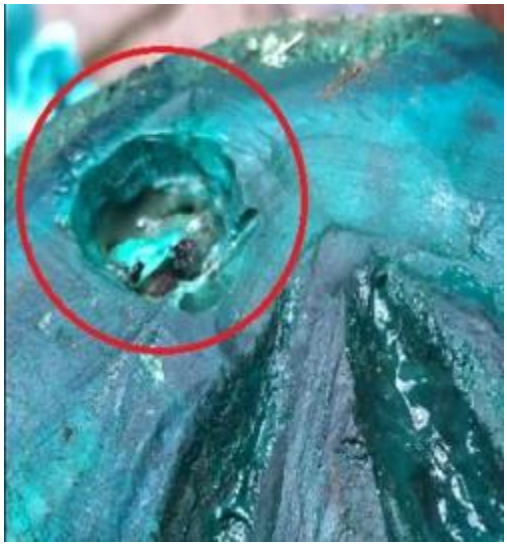
This is one of the most common causes of lameness in horses and can affect both shod and unshod horses. Injury to the sole of the hoof can damage the sensitive structures within, causing bruising. Standing on a hard object such as a stone, repetitive work on hard ground or poor hoof care can all cause bruising.

Bruising occurs when the tiny blood vessels within the sensitive sole burst when damaged. Severe bruising can cause the formation of a 'haematoma', this is like a blood blister and can be extremely uncomfortable for the horse.

Abscesses

An abscess occurs when bacteria gets trapped between the laminae and hoof wall causing a localised infection. The infection builds a large amount of pressure within the hoof which causes sudden and severe lameness. Sometimes abscesses can burst out of the top of the coronet band if left untreated.

Changes in weather can cause the hoof to become dry and as a result can crack allowing bacteria into the hoof wall. Poor management can lead to abscesses if the hoof isn't regularly trimmed, or if your horse suffers a penetration injury.



The image shows an abscess after an initial poultice being applied. The blue colour is an antiseptic which has been used by the farrier to draw out infection

Grass/sand cracks

Grass cracks tend to start at the bottom of the hoof or on the sole whereas sand cracks originate at the top of the hoof at the coronet band.

Grass cracks usually occur when the hoof becomes overgrown, and the pressure causes the horn to split or break off. This type of crack rarely causes severe lameness; however, it can lead to infections such as abscesses.

Sand cracks tend to occur due to poor foot balance or injury. They can be superficial.

Hoof cracks will not heal without intervention. It's important to find the cause of the cracks before infection starts to take hold. It's better to act early to prevent further damage to the hoof from occurring. Remedial

shoeing or alternative procedures may be required to help correct and support the hoof while the crack grows out.

Crack hoof