

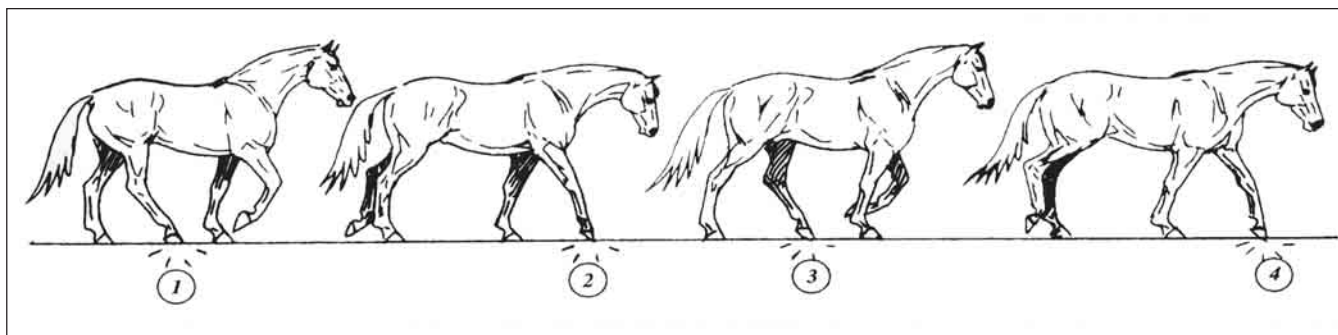
Movement

Gaits

The gait of a horse refers to the different sequences in which the horse's feet touch the ground. The common gaits for horses are the walk, trot, canter and gallop. Some breeds pace and rack. The terms used to describe a horse's gait is determined by the style of riding that is being done. For example, the western horse jogs and lopes while the english trots and canters. There are some breeds of horses that naturally do other gaits than walk, trot, lope or gallop. For example: Standardbreds pace – a two beat gait where the horse moves the legs on the same side together.

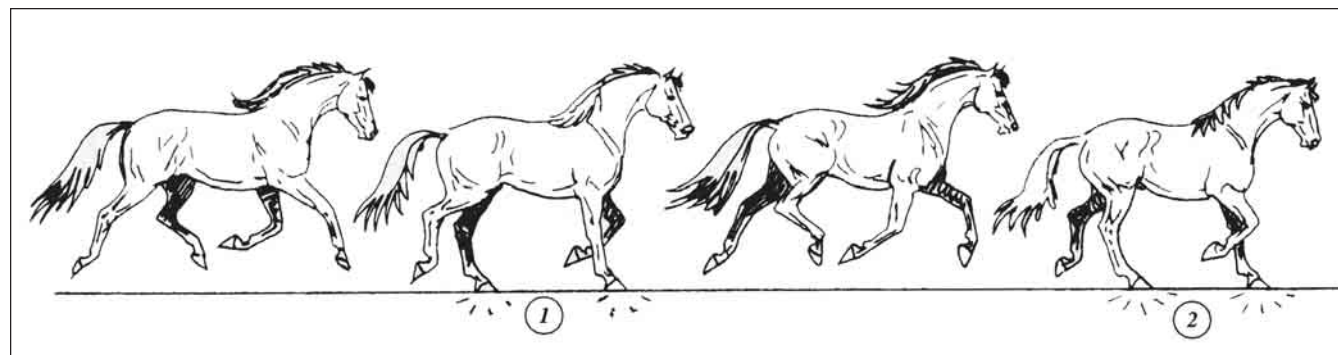
Walk

The walk has a four beat rhythm. Each foot is picked up and set down in sequence. The horse's back is level at the walk.



Trot/Jog

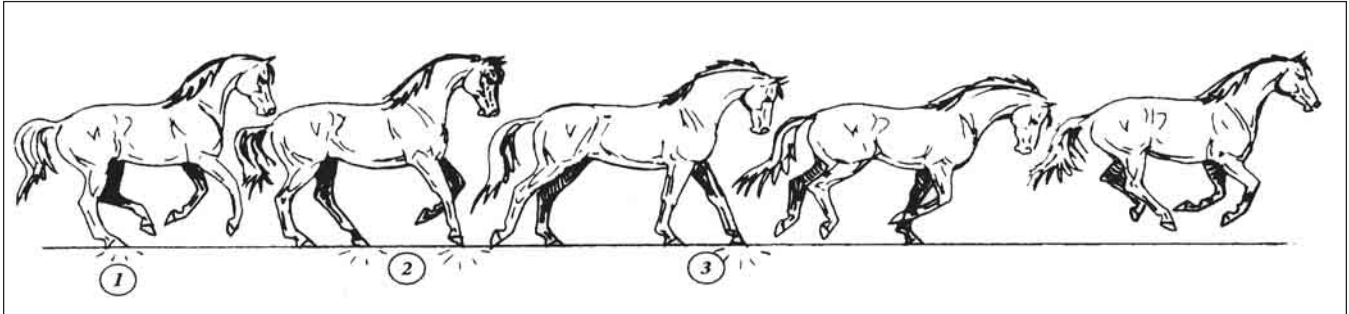
The trot/jog has a two beat rhythm. Diagonal (opposite) front and hind feet move forward at the same time. This is called a diagonal movement. The horse's back has a regular up and down movement at a trot/jog.



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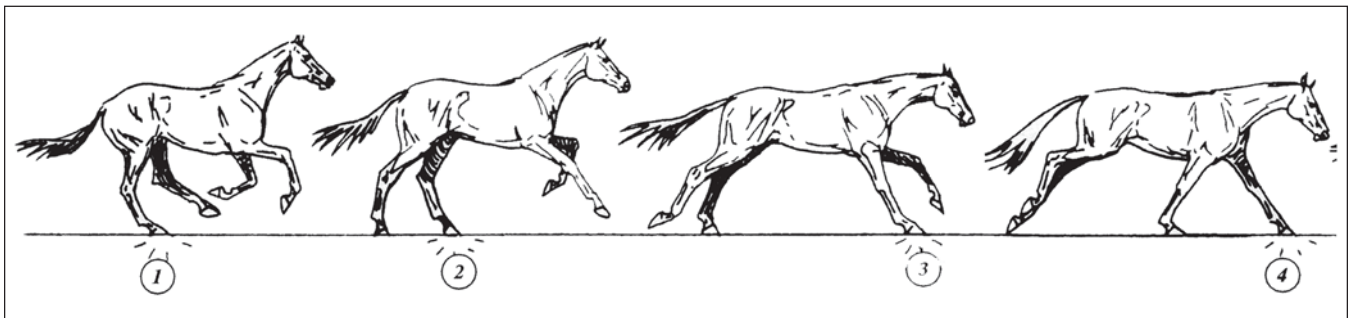
Canter/Lope

The canter/lope is a three beat gait with a moment of suspension (hesitation). The head and neck are carried above the natural position of the neck to lift the forequarters and help front leg action.



Gallop

The gallop is the horse's fastest gait and is a four beat gait, with a moment of suspension. The body of a horse is more stretched out when it gallops than with any other gait. Race horses gallop.



Stride

Stride is the term used to measure the distance covered between two successive steps of the same hoof in any gait. When a horse lengthens its stride it reaches further with each leg.

Leads

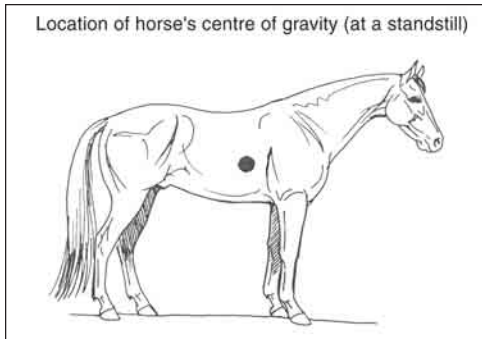
When a horse lope/canters it reaches further in front with one front leg which is called the lead. To be properly balanced on turns and circles a horse naturally and/or with training should pick up the inside lead. Hind legs should take the same leading actions as the front. When the front and hind legs are not on the same lead, it is called crossfiring/cross cantering.



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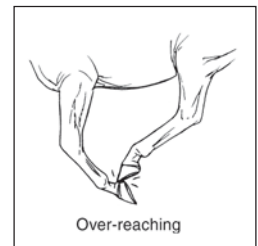
Center of Gravity

Every living thing has a center of gravity and as they move, the center of gravity moves. The horse's center of gravity is located behind the wither at the lowest part of the back. A horse (at a standstill) carries approximately 60% of his weight on the forelegs and approximately 40% on the hind legs. As a horse speeds up, its center of gravity moves forward and as it slows down or collects its center of gravity shifts back. The horse's neck and head also affect the center of gravity. As the head and neck are raised, the center of gravity moves back and when the horse moves with its head and neck lowered, the center of gravity moves forward.

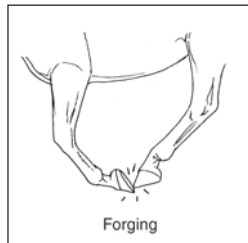


Defects in Movement

Over-reaching - is when the toe of the hind leg "grabs" the heels of the forelegs. This can cause serious injury, usually to the heels or the tendons. This can happen in high energy sports when the hind leg extends too much or the front leg doesn't extend enough.

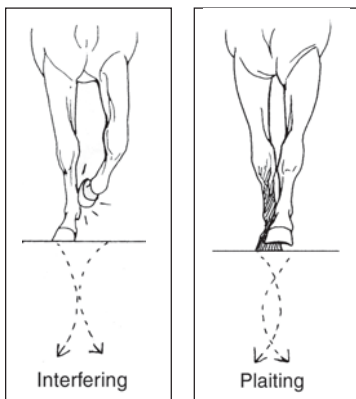


Forging - the hind foot striking the sole of the front foot as a horse trots is called forging. Horses wearing shoes will make a distinctive sound if they have this fault when they travel. Forging happens when a horse advances its hind foot too quickly or lifts its front leg too slowly. Young inexperienced horses will sometimes do this, or it can be a sign of laziness (especially in the front end), lack of condition or fatigue.



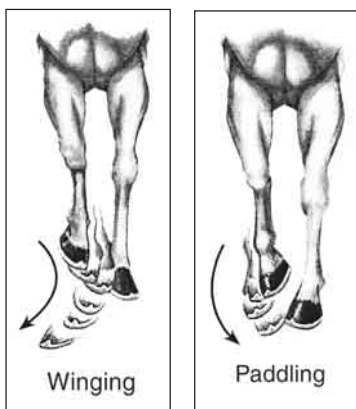
Interfering - associated with horse toeing out. Horse usually base narrow and/or thin chested.

Plaiting - is when a horse places its front feet directly or almost directly in front of each other (like walking a tight rope). A horse that plaits often has conformation faults (base narrow) and may be subject to stumbling.



Winging - is when the foot wings in to the inside and then lands to the outside of the straight track. A horse may strike itself when it wings and it places extra stress on the inside of the horse's leg as it lands outside rather than straight.

Paddling - the foot paddling out to the outside and then landing to the inside of the straight track is called paddling. It rarely causes interference but it does place extra stress on the outside of the leg. Horses that toe in (conformation fault) often paddle when they travel.



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Brushing - happens when one front or hind foot hits the opposite foot at the fetlock. Ankle boots are a must to protect the fetlock of a horse that brushes.

Scalping - is when the hind leg is hit at the coronet band with the toe of the front hoof.

Lameness

Lameness is a sign that there is something wrong with the structure or function of the horse. For every lameness there is a cause. Strain is the most common cause of lameness. Like kids and athletes, horses can hurt themselves at play and work. When a horse is lame, it will favour one or more legs, not allowing it to touch the ground or limping so that it doesn't place its full weight on it.

Sometimes it is easier to hear a lameness than to see one (rhythm of feet hitting the ground). Lameness is most readily seen at a trot. The horse's head will bob up and down most often, indicating a sore foot or leg in the front. Lameness can be caused by numerous factors. Look for swelling and heat in the lame leg or foot. If your horse is limping, it is important that you find out the cause of the limp so that you can remedy the situation before it gets worse.

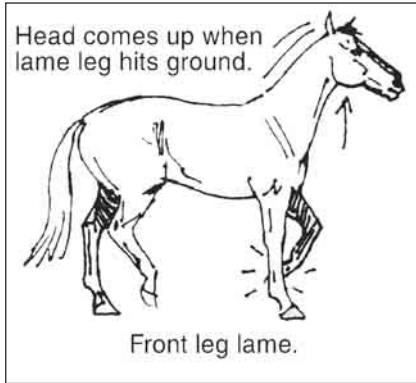
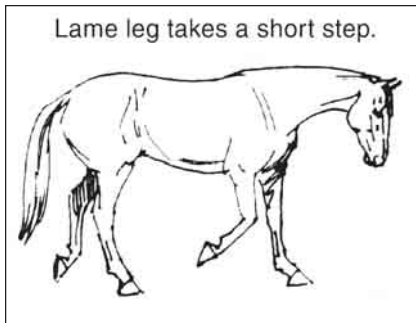
Diagnosing Lameness

Methods to Help Diagnose Lameness:

- 🐾 Observe the horse at rest. The stance position can indicate where lameness is. Watch for the horse doing any of the following:
 1. "*Pointing*" of front foot indicates pain in the limb, usually heel area.
 2. "*Pushing back*" with weight on heels indicates pain in the toe area.
 3. Hind limbs camped under body if both front legs are affected.
 4. Shifts weight from one leg to another if both front and hind feet are affected.
- 🐾 Observe the horse in motion. Note the gait and how the horse carries its head. Observe the horse walking and trotting directly away from and towards you, as well as from the side.
 1. Lame in **one** FRONT leg:
 - a. Note the horse's gait and how the horse carries its head.
 - b. Head raises sharply as the animal steps on the lame leg.
 - c. Usually a horse will step shorter with the lame leg.



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2. Lame in **one** HIND leg:
 - a. Hip raises sharply as the unsound or lame leg strikes the ground.
 - b. Head bobs down sharply as unsound or lame leg strikes the ground.
 - c. Tail carried to one side.
3. Lame in **both** FRONT legs:
 - a. stiff, stilted action ("*pottery*" gait).
 - b. Short stride
 - c. Appears stiff in the shoulders.
 - d. Head is carried high without nodding
 - e. Hind feet carried farther under the body.
4. Lame in **both** HIND legs:
 - a. Short stride.
 - b. Awkward gait.
 - c. Lowered head.
 - d. Front feet raised higher than rear feet.
 - e. Difficult or impossible to back.



Note the progression of lameness. You may want to lunge the horse in both directions to observe this.

1. "*Warms out*" (progressively sounder) - may indicate arthritis, bursitis, and so on.
2. Progressively becomes lamer with use - may indicate tendons, ligaments, and so on.



Examine the leg closely using palpations and manipulating joints.

1. Start with the foot. Clean it out and check. Progress upward.
2. Compare suspected limb and foot with sound one(s).
3. Look and palpate for:
 - a. Cracks in the hoof or coronet, or in the cleft of the frog.
 - b. Wounds.
 - c. Swelling.
 - d. Pain.
 - e. Heat.
 - f. Irregular pulse.

Lameness is usually seen in the forelegs. This is because they support 60 - 65 per cent of the weight of the horse. The injury can occur from the shoulder down. A lameness in the hind legs is less common. If a horse does develop a hind leg lameness, the injury is usually in the hock or stifle area.

Injuries

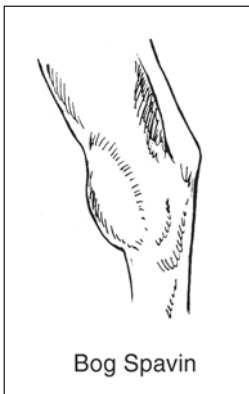
Injuries, inflammation, and soundness problems are often described as acute or chronic. Acute means that the problem is happening now but will heal. Chronic means that the problem will not go away. Any lameness that has been present for more than one month may be considered chronic.

Abscess Pocket of infection with swelling and pain. An abscess is often caused by the presence of a foreign object.

Arthritis Horses, like people, can develop arthritis. The problem usually appears as the horse ages. It can be a primary problem or secondary (develops at the point of an old injury). With arthritis, the joints enlarge as they become inflamed. As the disease progresses, the cartilage becomes discoloured and small pieces can slowly break away.

Bruises Bruises on the sole of the foot are quite common. Sole bruising is simply the result of an impact to the sole of the foot or frog without causing a puncture. Horses with flat feet or thin soles are more likely to be injured. Bruises can be serious because they may be as deep as the coffin bone. A deep bruise may abscess.

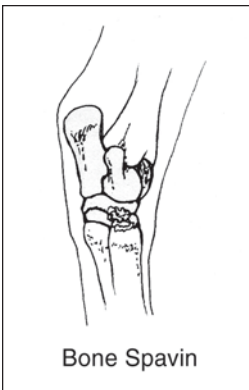
Bog Spavin



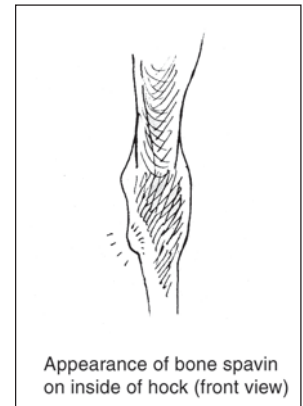
Bog spavin is a swelling at the front of the hock, usually not hot or painful; it seldom causes lameness. This swelling may also be seen at the outside and inside of the hock. Bog spavin can occur from various causes; stress, conformation faults, strain, as well as poor nutrition in young horses.

The amount of swelling may vary. It is soft enough that applying pressure to one area will reduce the enlargement at that point and increase swelling in other areas. The horse may not show any signs of lameness unless the spavin is caused by an injury. Not all cases of bog spavin can be treated. Only those caused by injury (bone chips) or poor nutrition can be treated to reduce swelling. In some cases excess fluid can be drained.

Bone Spavin



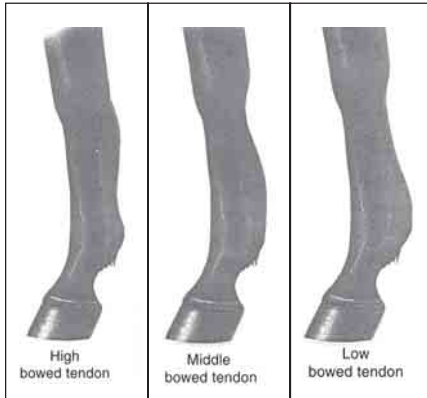
Arthritis in small bones of the hock. A bone spavin usually produces a hard swelling low down on the inside of the hock joint. More common in horses that put extra strain on their hocks. Cow hocks, bowed hocks and very straight hocks are more prone to develop bone spavins. Generally horses with bone spavins are lame. Sometimes referred to as "Jack Spavin".



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Bowed Tendon

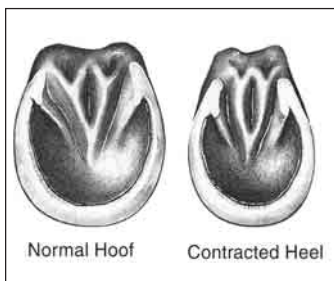
The simplest way to describe a bowed tendon is a tendon that has been stretched so that it can not return to its original length and shape. A bowed tendon appears as a bulge down the back of the leg behind the cannon bone above the fetlock. The injury is usually found on the foreleg. It happens when the leading foreleg has all of the body weight on it as the horse lands or takes off during a canter, lope or gallop.



The most common cause is an over extension of the leg while the horse is being worked. Other factors that can cause this type of injury are forced training procedure, fatigue caused by speed and exertion, toes that are too long, improper shoeing, long weak pasterns and horses that are too heavy for their tendon structure. Soft or slippery footing can increase the chances of an injury. A bowed tendon takes a long time to heal and is considered a serious injury.

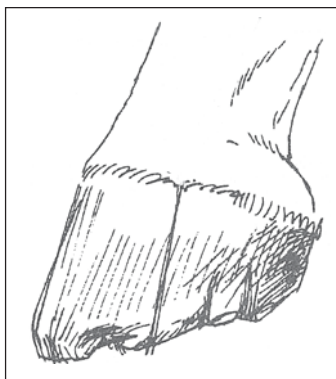
Contracted Heels

A horse with contracted heels has a narrower heel than normal. The horse may not show any signs of lameness. The problem may be caused by a lack of frog pressure on the ground due to incorrect shoeing or chronic lameness.



A number of changes take place in contracted heels. The foot becomes narrower at the heel as the frog dries and shrinks (becomes recessed and atrophied) up against the sole of the foot. If the problem continues for a long time, the bars of the foot may touch each other. Contracted feet may be slowly corrected by trimming and shoeing. This correction may take a year or more.

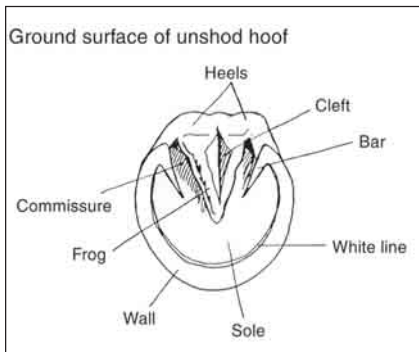
Cracked Hooves



Hoof cracks are a common cause of lameness. Quarter and heel cracks are usually more serious than toe cracks. The animal may or may not be lame. Foreign material entering a crack may cause an abscess. The horse becomes lame if the crack is so deep that it enters the sensitive area (laminae) of the hoof. Once the coronet band is damaged the crack is permanent.

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Corn A corn is a bruise on the sole of the foot between the main wall and the bar of the heel. It can be caused by poor or improper shoeing or when the shoe is left on too long, or by poor hoof conformation (flat footed, shallow feet or narrow boxy feet, or low heels).



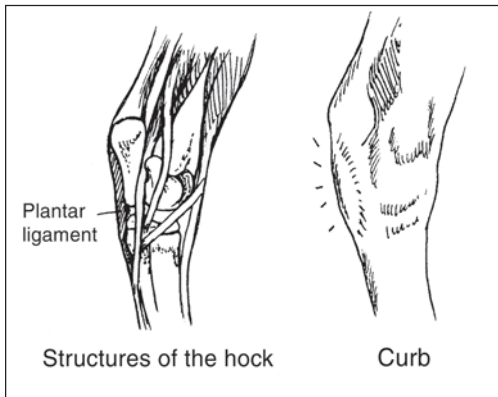
There are three types of corns a horse may get. They are the dry corn, moist corn and suppurating corn.

U The **dry** corn is common. Unless it causes a lameness, it may go unnoticed. It usually causes red or blue coloured stains on the sole of the foot. It is generally found in the area of the bars. Proper trimming (and shoeing) of the foot that will help the foot spread as it makes contact with the ground will help. For corns near the toe, a protective pad on the bottom of the foot may be used.

U A **moist** corn is caused by a severe injury to the sole.

U A **suppurating** corn is a corn that has become infected. It may lead to the death of cells in some of the inner structures of the foot and lameness will be noticeable.

Curb Curb is a swelling of the back of the hind leg below the hock. This swelling is caused by an inflammation (heat and swelling) and thickening of the plantar ligament. New bone growth may occur. Depending on the type of damage, a curb may not be permanent.



Curb may be due to conformation problems or an injury. Horses that have sickle hocks and are cow hocked are more likely to have a curb because of stress on the plantar ligament. Horses with normal conformation can get a curb by violently attempting to straighten the hocks.

If a curb has been caused by an injury, treat the leg to reduce the swelling. It does not usually cause a lameness.

Laminitis/Founder Laminitis or founder is a lameness caused by pressure on the sensitive laminae of the hoof. This happens when the sensitive laminae swell with blood in response to chemical changes in the body. Laminae are like leaves, or the wafer-like sections on the bottom of a mushroom. One set of laminae grow out from the coffin bone, while another set of laminae grow in from the hoof wall. These intermingle like velcro and act like a cushion between the coffin and the wall. When laminitis occurs the two intersecting laminae pull apart.



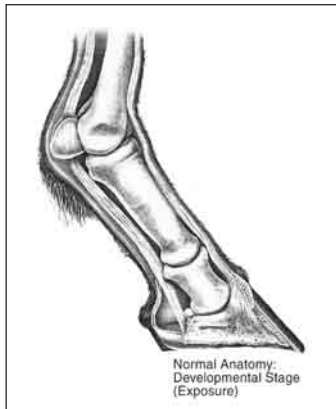
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Laminitis/Founder (continued)

Laminitis has a number of possible causes. These are:

- ⓪ **Grass Founder** - Grass founder is common in overweight horses and ponies that are kept on pasture. The chance of founder is increased if the roughage mixtures contains alfalfa and clovers.
- ⓪ **Grain Founder** - This is caused by the horse eating much more grain than it is accustomed to. This is often due to an accidental excess (like getting into the grain bin) or the symptoms may suddenly appear in a horse that has been eating a large amount of grain every day. The symptoms often do not show up for 12-18 hours after eating the grain. The symptoms are milder for oats than with other grains.
- ⓪ **Secondary Infection** - In some cases the horse will founder if it is extremely sick with a high fever caused by a virus or a systemic infection.
- ⓪ **Road Founder (Concussion)** - This is more common in horses with thin walled and thin soled feet. Working a horse fast or for a long time on a hard surface or hauling a horse for too long can cause road founder. The most problems are found in horses that are not physically conditioned before they are worked hard.

After Foaling - The laminitis is a secondary reaction by the body. The mare will also have an infection caused by a retained placenta or a general uterine infection.



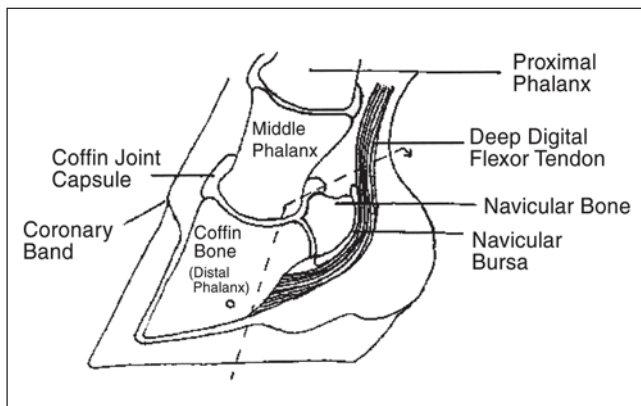
Laminitis can occur in two main forms. It can be acute or chronic.

- ⓪ A horse with **acute** laminitis may have all four feet affected. If this happens, the horse may lie down for long periods of time to relieve the pressure. When the horse is standing it tries to reduce the amount of weight on its front legs. It does this by standing with its forelegs ahead of its body and the hind legs forward to support more weight. Their front legs may be close together, and the weight will be on their heels.
- ⓪ **Chronic** laminitis is a long lasting case of laminitis (over one month). More deformities of the foot are noticeable. In most cases the sole of the foot drops and becomes flat, and in severe cases, the coffin bone may become visible. Because of this, the horse travels so that it lands on its heels (normally the horse lands first on its toe). Heavy horizontal rings can be seen around the hoof because the coronary band has been affected. Without proper care, the toe can curl up as it grows longer.

Laminitis must be treated immediately by a veterinarian. Treatment is more successful if the problem is recognized in its early stages (usually the first 48 hours).

After a horse has foundered, you should consult with a veterinarian or farrier before you ride it again. If the horse is not foundered too badly, pads and shoes can be put on the afflicted feet and the horse may be ridden in an area that has soft footing. Ride for about 15 minutes and see how the horse reacts. For more serious cases of founder, a long rest period is advised, but severe cases may never improve.

Navicular The term “*navicular*” refers to a condition due to poor conformation or injury that causes changes to the navicular bone. It begins as an inflammation between the deep flexor tendon and the navicular bone. In time the surface of the bone becomes pitted and sharp and the deep flexor tendon is destroyed.



Navicular is usually found in the front legs. Horses with faulty conformation (small feet, upright pasterns/shoulders) are sometimes subject to this condition. Strenuous work, repeated concussions on hard surfaces and/or poor shoeing may be contributing factors. These factors lead to broken hoof-pastern axis, long toes and underslung heels.

Many lamenesses induce obvious signs, such as head nodding or limping. Because navicular syndrome does not induce head bobbing initially, the disease often progresses to its chronic stage before it is caught.

With navicular syndrome, the horse may stand with one or both feet planted slightly more forward than normal to relieve pressure.

You generally cannot cure or reverse navicular syndrome, but you can often manage it. Between a farrier and a veterinarian, navicular can sometimes be minimized to make the horse useful.

Puncture Wounds

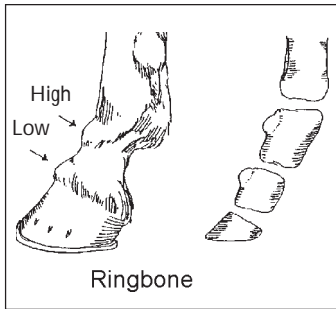
Puncture wounds are fairly common. Puncture wounds often occur to the sole or frog of the foot and to the legs. Punctures can occur from objects such as nails, sticks or glass. The wounds are often hard to find, but they will look like a black spot on the sole. A puncture to the frog is harder to find because of its colour and texture. The location of the puncture will affect how the horse puts the foot down.



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Puncture wounds may not drain on their own. If your horse has a puncture wound call your veterinarian. The horse should also be treated for tetanus. The area must be kept clean. Use hydrogen peroxide and pack it with an iodine solution. Bandage the foot. If a puncture wound goes unnoticed and an infection occurs, treatment will become more complicated.

Ringbone



Ringbone is an arthritic change in the pastern joint caused by pulling of the ligaments, direct blows or wire cuts. This causes a buildup of bone around the joint. The injury will cause heat and pain. As it heals, the heat will disappear. The horse will travel like a horse with laminitis.

Ringbone is more common in horses with base narrow conformation, and horses with upright pasterns. It can occur in the front or hind legs.

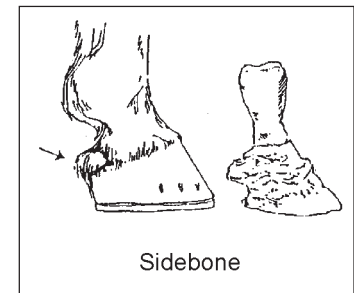
Scratches

Scratches is a chapped skin condition of the back of the pastern which can become infected. It is very difficult to treat. Another name for scratches is greasy heel, or mud fever.

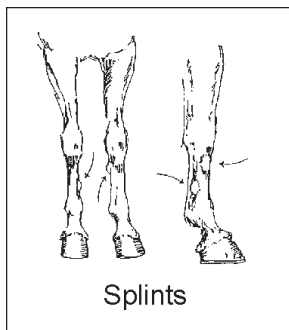


Sidebone

Sidebone is caused by the calcification (cartilage turning to bone) of ligaments on either side of the bone above the hoof. These look like boney ridges. The problem is most common in base narrow horses. The horse may have lameness.



Splints



Splints are usually described as a problem of young horses (between two and five years old). It is usually found on the inside of the front legs in the form of a strain or tear in the ligament between the splint bone and the cannon bone. It may be caused by hard training, poor leg conformation, poor nutrition (mineral imbalance) or any type of stress. A swelling will form over the area, caused by calloused bone and ligament.

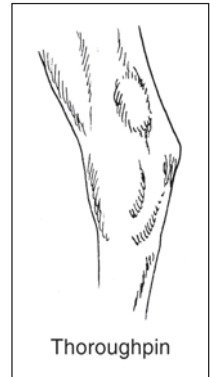
If the splint bone is injured or strained the ligament between the cannon and the splint bone becomes sore. It heals by creating a calcium deposit to weld the splint bone to the cannon bone. A healed splint bone does not affect soundness unless it is high enough to affect the action of the joint.

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Splints (continued) Lameness caused by a splint will be most obvious at a trot or if the horse is worked on hard ground. Swelling at the location is always present. The amount of heat and pain will depend on the cause of the injury and how recently it took place. Splints caused by stress may cause little or no pain. Many horses do have reoccurring splints that will appear with a small amount of stress to that area.

Sweeny Sweeny is shrinking of the shoulder muscles. This can occur in any muscle but is most common in the shoulder. The muscles over the shoulder blade and shoulder joint waste away. It is most often caused by a blow to the point of the shoulder. It may be treatable depending upon the severity.

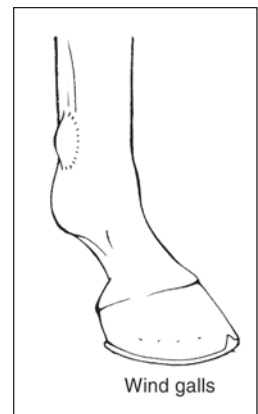
Thoroughpin This is usually caused by stress or strain on a weak hock, especially a sickle hock. The tendon sheath produces extra fluid and stretches, causing a soft, cool swelling in the upper part of the hock. It does not usually cause lameness.



Thrush Thrush is a fungus infection of the frog and sole of the foot. It can be seen around the frog. Thrush is caused by overworking of the glands that keep the frog moist. This secretion breaks down and causes a distinctive odour. The area can get raw and painful causing lameness.

Thrush often is worse if rotting manure or bedding is not cleaned from the frog area. Overgrown frogs are more susceptible to thrush because material is harder to remove from the area. To reduce the chances of thrush, clean the feet on a daily basis. Use soap and water to clean a thrush infected area. Use bleach or Koppertox to disinfect.

Windpuff Windpuffs are a swelling of the joint capsule, tendon sheath or bursa in the fetlock area. It is usually seen in horses that are in heavy training. It seldom causes lameness.



Windgalls An old windpuff that has become more dense and fibrous is sometimes referred to as a windgall.

