



WorldHorseWelfare



Laminitis

What is laminitis?

How can I reduce the risk?

What do I do if my horse or pony has it?



What is laminitis?

Laminitis is an extremely painful condition that can affect any horse, pony, donkey or their hybrids (this booklet will concentrate on horses and ponies). It is very serious and you should contact your vet immediately if you suspect your animal may have it.

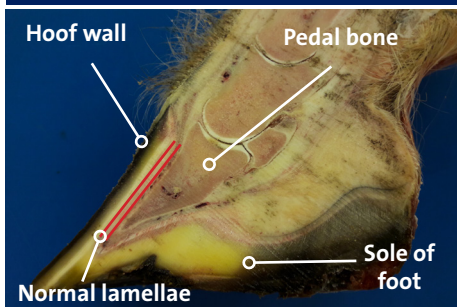
Laminitis occurs when the finger-like projections of the lamellar layer, which support the pedal bone of the foot within the hoof capsule, become weakened by losing their normal shape. This results in instability of the pedal bone within the foot, potential inflammation and signs of pain and lameness.

In severe cases, the weakened lamellae may no longer be able to keep the pedal bone in its normal position, causing it to separate from the hoof wall and rotate or drop towards the sole of the foot, thus crushing the sensitive layers underneath.

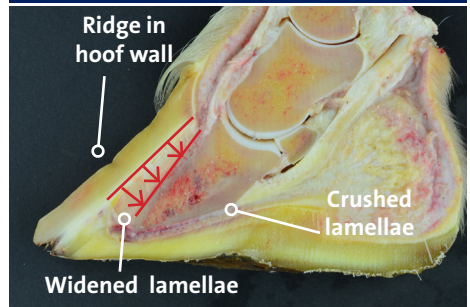


Separation of the hoof wall from the underlying lamellae – note the pink area around the toe where gaps can be seen

Healthy foot



Laminitic foot



The difference between a healthy foot (left) and one damaged by severe laminitis (right). In the healthy foot note the tight, neat lamellar layer and smooth hoof wall. In the laminitic foot, note the widened, irregular lamellar layer leading to rotation of the pedal bone away from the hoof wall towards the sole of the foot and the resulting ridges in the hoof wall

Why does laminitis develop?

Laminitis is very complex. It is usually a consequence of an underlying hormonal disorder and/or an inflammatory condition. However, how we manage our horses and ponies, particularly in terms of their diet and exercise, also plays a crucial role.

1. **Hormonal disorders:** disorders that disrupt the normal levels of hormones, such as equine metabolic syndrome (EMS) and pituitary pars intermedia dysfunction (PPID or equine Cushing's disease), appear to contribute to many laminitis episodes. Contact your vet for advice about the tests used to diagnose EMS and PPID, their treatment and ongoing management.

What is Equine Metabolic Syndrome (EMS)?

EMS describes a collection of risk factors for laminitis, the most significant of which is insulin dysregulation (usually leading to critically increased insulin levels). Some horses with EMS are obviously overweight, but others may have localised fat deposits such as a cresty neck, enlarged sheath or udder, or puffy eyes. Some horses with EMS do not look fat at all but have invisible fat within their abdomens

What is PPID? PPID is an age-related progressive condition. It disrupts the correct function of the pituitary gland, which produces and regulates important hormones. Overproduction of certain hormones leads to visible changes, such as delayed shedding of the winter coat, loss of muscle and a pot belly, regional fat storage (such as above the eyes and/or a cresty neck). It can also affect insulin regulation, leading to higher laminitis risk. Medication, alongside careful management, can control the condition.



A cresty neck can be a sign of EMS but be aware that not all horses and ponies with EMS are overweight

2. **Inflammatory responses to another event/condition:** these can occur after carbohydrate overload (e.g. gorging on starch- and sugar-rich feeds) and in very sick animals that have body-wide septic infections (e.g. complications after colic surgery or retention of placenta after foaling).

Contact your vet for advice about diagnosing EMS and PPID, treating the conditions and ongoing management.

Acute laminitis

The early stages of laminitis when signs of pain are first noticed. The horse/pony can either recover without serious damage to their feet or go on to develop chronic laminitis. Early recognition and prompt treatment of an acute episode gives the best chance of recovery without lasting damage. An animal can have multiple acute episodes during their life.

Chronic laminitis

Refers to cases where the pedal bone has moved within the hoof capsule resulting in permanent changes to foot structure. Affected horses/ponies remain permanently susceptible to further damage and can have ongoing problems such as lameness, recurring abscesses and multiple acute episodes.

Why should I call my vet?

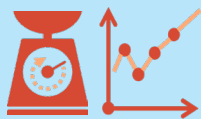
Laminitis causes severe pain and lameness which needs emergency first aid and veterinary treatment. Animals that have had laminitis previously are much more likely to have future episodes* and need careful ongoing management and attention for the rest of their lives. The intensive veterinary and farriery care needed by laminitic animals can be lengthy while the management changes that owners must make to reduce the risk of future episodes are a long-term commitment.



****Remember that due to the painful nature of laminitis and potential for further damage within the feet, repeat episodes should be treated just as seriously as the first one.***

How do I reduce the risk of laminitis?

When it comes to laminitis, prevention is most definitely better than cure. Two large studies funded by World Horse Welfare have now identified three important laminitis risk factors:



Recent weight gain more than doubled the likelihood of laminitis occurring



Animals with a history of laminitis were more likely to develop future episodes



Foot soreness after shoeing/trimming almost tripled the likelihood of laminitis occurring

Ensure your animal is the right weight and avoid unintentional weight gain. It can be very difficult to notice your horse/pony gaining weight when you see them every day. The most practical ways to recognise weight gain are to carry out regular weight monitoring and fat scoring. You can then adjust diet, exercise and other management factors accordingly.

For advice on weight loss and management visit www.worldhorsewelfare.org/right-weight

However, even lean animals, particularly those on an inappropriate diet and with EMS, can still develop laminitis.

Your horse/pony is at high risk and requires particular vigilance if they have a history of laminitis, are sore or lame after routine hoof care and are a pure/crossbred native UK or Irish pony breed.

A history of laminitis, especially multiple episodes, indicates they may have EMS or PPID. Diagnosis, treatment and ongoing management of these hormonal disorders (ideally before laminitis develops for the first time) can help prevent future episodes. Your vet will be able to offer advice on what is appropriate for your animal.

There is evidence that horses/ponies that went more than eight weeks between being shod or trimmed were more likely to develop laminitis. Having a regular foot care routine will not only keep the feet in good condition, it can also help you and your farrier notice if there is any subtle foot pain.



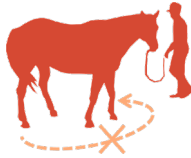
Monitoring weight and body condition consistently is important to recognise weight gain

How do I recognise laminitis?

Laminitis can affect any or all of the feet, although it is most common, and usually most severe, in the front feet. While laminitis has no single conclusive signs, there are a number of possible indicators of pain which can change the way your animal stands and moves. The most common of these are likely subtle and could be confused with other conditions, such as an abscess, general stiffness or even colic. By recognising laminitis early on, you can give your animal the best possible chance of recovery. Vets and owners reporting on 700 laminitic animals found they commonly had:



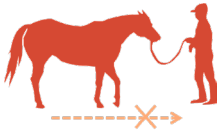
*Strong/bounding digital pulses felt at the back of the fetlock**



Difficulty making a tight turn



Alternate shifting of weight from foot to foot when at rest



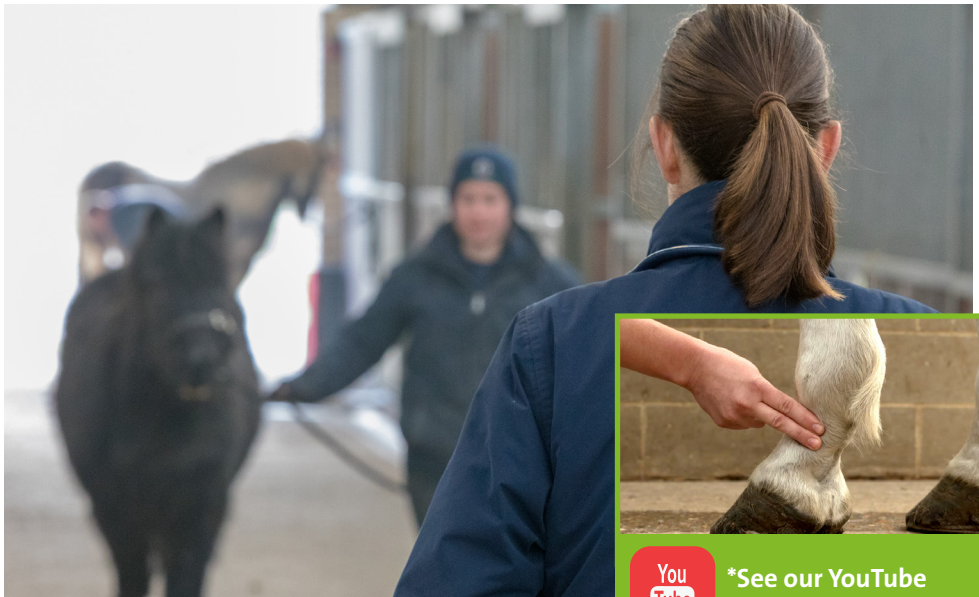
Reluctance to walk forward



Excessive heat in the feet



Lameness, stiffness or short, stilted or potterly walk, especially on hard or uneven ground



YouTube

*See our YouTube video on how to check your horse's pulse

Chronic laminitis

Chronic laminitis can cause visible changes to the hoof capsule, some of which may only become noticeable after some time. Even though the animal may not be obviously lame, they remain permanently susceptible to future episodes. Signs of chronic laminitis include divergent growth rings and a convex or bulging sole (see below).



Divergent growth rings (wider at the heel) and a change in the hoof wall angle

While the sole of a healthy foot (below left) is gently curved inwards/concave, the sole of the laminitic foot (below) can appear flat or bulging outwards/convex



Photographs above and top courtesy of Andrew Poynton FWCF

I suspect my horse or pony has laminitis. What should I do?

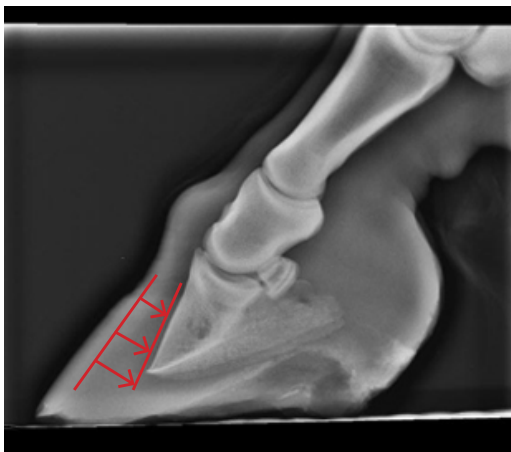
- Call your vet immediately. If you suspect it to be laminitis, it probably is. A recent study showed that vets confirmed laminitis every time an owner suspected their horse/pony had it.
- Whilst waiting for the vet, do not move your animal unnecessarily as forced exercise can cause more damage. Only remove them from grazing and to a soft surfaced area (sand paddock or deep-bedded stable) if this is a short distance away and let them walk slowly and carefully. Move a friend/companion animal within seeing or touching distance so that isolation does not cause further stress.
- If it is not possible to move your animal, try to make them comfortable in the area they are already in, including restricting their movement and access to grass if necessary.
- Provide access to water and small amounts of soaked hay (ideally soaked for at least an hour in warm water). Your vet will offer further advice once they arrive.

Owners of animals diagnosed with laminitis by their vets were found less likely to suspect laminitis in horse breeds compared to pony breeds. Even though pony breeds are at higher risk we should not discount laminitis in horse breeds.

How will my vet diagnose laminitis?

Your vet will use a combination of factors to make their diagnosis. These include the presence of one or more of the common indicators of pain, your animal's clinical history and the presence of any laminitis risk factors e.g. your animal's body condition and if they have recently gained weight.

Vets can also use imaging techniques, such as X-rays, to confirm laminitis once it has developed into the more chronic stages. Apart from confirming diagnosis, X-rays are an important tool to help determine the extent of the damage and are recommended to monitor treatment. Your farrier can use the X-rays to help guide foot support and therapeutic farriery.



An X-ray of a foot with chronic laminitis – note the rotation of the pedal bone so that it no longer aligns with the hoof wall

How is laminitis treated and managed?

Treatment and management of laminitis is very animal-specific. You should talk with both your vet and farrier about the different potential approaches, which will depend on the underlying reason laminitis developed and the stage and severity of the episode. Three general steps include:

1. **Initial treatment:** restricted movement, medication to relieve pain and appropriate foot support to make the animal more comfortable and prevent further damage.
2. **Once stabilised:** therapeutic shoeing and/or trimming to help support and re-align the feet. Additional X-rays are recommended to guide farriery and monitor treatment. Diagnosis, treatment and management of underlying hormonal disorders e.g. EMS and/or PPID.
3. **Ongoing management:** careful monitoring and regular attention from both the vet and farrier, who will help you deal with any problems caused by damage to the foot e.g. abscesses. Appropriate changes to your animal's diet and future grazing to ensure the laminitis risk is minimised and that they are the right weight. Encouraging movement and, following your vet's advice, making gradual changes to exercise once they are sound, in order to increase fitness, control weight and help regulate insulin.



Track systems encourage horses to cover more ground as they move between grazing and water troughs

Laminitis and diet

High-calorie diets that contain substantial sugar and starch should be avoided as they can cause problems with insulin regulation and lead to excess weight.

Consider:

- whether your horse or pony really needs a hard feed – most do fine on just forage and a low-calorie forage balancer, and if your horse has had laminitis then it is highly unlikely to need hard feed
- forage analysis to help you estimate how much sugar and starch are in your hay or haylage
- testing your horse's insulin response to the feed it is on

You will likely have to restrict grass. Consider:

- options that restrict the amount/volume of grass, rather than the time spent on grass
- if compensatory eating could be taking place - research has shown that ponies anticipating access to grass for only a short time can just eat quicker!
- alternatives to grass turnout (e.g., woodchip areas or woodland tracks). Speak to your vet and a nutritionist to formulate an appropriate diet for your horse or pony.



Unfortunately, it is very difficult to tell how many calories your horse/pony is getting from grass. Restrict the volume of grass rather than the length of grazing time.



Taking your horse or pony for regular 20 minute walks can help keep their insulin metabolism healthier. This is especially important for non-ridden horses and ponies.

Laminitis and exercise

A combination of exercise and an appropriate diet are the best ways to ensure your horse or pony maintains a healthy weight. Exercise also helps to improve metabolism and lower insulin levels.

Start an exercise log to help keep you motivated and to keep track of how much your horse/pony is doing

What is the chance of recovery?

As with treatment and management, recovery is animal-specific and depends on factors such as the length, progression and severity of the new laminitis episode, whether there is damage from any previous episodes and your animal's current health status.

Early recognition and prompt veterinary and farriery care can assist recovery and return to soundness. Studies in the UK have reported that 59 to 75% of horses and ponies with laminitis returned to ridden work. Unfortunately, up to 20% were euthanased.



Early intervention can increase the chances of successfully getting a horse back into ridden work

For some animals experiencing repeat episodes, despite appropriate treatment and management, it is important to consider their quality of life and whether euthanasia may be the kindest option. Your vet can discuss this with you.



