

Laminitis: your questions answered

Vets from XL Equine practices, and Dr Tom Shurlock of British Horse Feeds, answer the most common questions asked about laminitis

Q What are the signs a horse or pony is suffering from laminitis?

CLAIRE SAYS Pain in the feet is the main sign of laminitis – the degree of pain shown can vary dramatically from case to case.

Some horses demonstrate mild pain, shown as a reluctance to walk forward normally on rough or uneven ground.

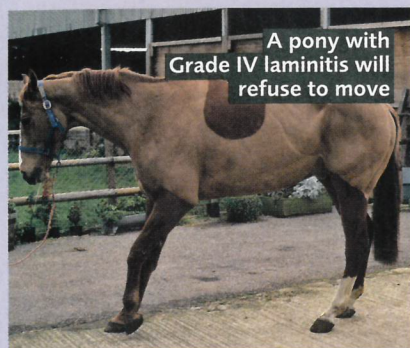
Others shift their weight as they stand or are reluctant to lift their feet or walk and turn in tight circles.

Severe cases are unable to move at all and are seen lying down frequently.

A horse may also show that he's in pain by an increased breathing rate and sometimes you will see signs that are more usually associated with colic – sweating and lying down, for example.

Vets grade laminitic pain using the Obel System:-

- Grade 1: The horse or pony will shift weight from one foot to the other or constantly lift his feet. Lameness is not evident at walk but the stride is shortened at trot.
- Grade II: He moves willingly at a walk and trot but with a noticeably shortened and 'stabbing stride'. Feet can be lifted off the ground without difficulty.
- Grade III: At this level, the equine will move reluctantly and resist attempts to lift his feet.
- Grade IV: Horses express marked reluctance or an absolute refusal to move.



A pony with Grade IV laminitis will refuse to move

Q What should you do if you suspect laminitis?

CLAIRE SAYS The first thing you should do if you think your horse or pony has laminitis is remove him from grazing and stable him on a deep, supportive bed.

The bed should be deep enough that the foot does not contact the floor and must extend the full length of the stable, right up to the door.

Shavings are ideal for this as they conform to the shape of a horse's foot, but straw is acceptable, especially in the short-term.

Once stabled, the horse should stay on strict box rest and not even be walked out until you have spoken to, or he has been examined by, your vet.

Anti-inflammatories are commonly used to help manage the pain but medication must only be given under veterinary guidance.

If your horse is reluctant to move you need to ensure he can reach feed and water, which may mean moving them within the stable.

While he is on box rest it is important to adjust your horse's diet. If necessary, hard feeds should be restricted and forage nets reduced. Seek advice from your vet if necessary.

Where hay is being fed, soaking it can help to reduce the sugar content.

Q Can you suggest a good diet for a laminitic?

IMOGEN SAYS Many cases of laminitis have a hormonal underlying cause. This may include high levels of blood insulin and insulin resistance.

Avoiding sugary feeds – including the simple sugars found in grass – is important. These feeds will greatly increase the risk of laminitis.

A high-fibre based diet, such as hay, non-molassed sugar beets and chaff with a vitamin and mineral supplement is appropriate.



Feed a high-fibre, low-sugar diet

Q How can I tell if a pony is at risk of laminitis?

LEE SAYS Early warning signs include shifting weight between the feet, a reluctance to move or a potter gait, an increased digital pulse (see *Tip from the top*, below) and soreness across the sole.

The most well-known risk factor is an overweight pony that contracts laminitis from eating too much or too high-quality grass.

Some medical conditions such as retained afterbirth from foaling and infection of the womb in mares, can also lead to laminitis.

Another cause is excessive weight-bearing in one limb due to pain in the other limb.

Delays between trimming or shoeing can lead to stress on the laminae and present as a risk factor for laminitis; a warning sign would be an excessively long toe and collapsed heel.

Any signs of Cushing's disease or Equine Metabolic Syndrome can be warning signs as they present a risk for development of laminitis.

Horses and ponies undergoing treatment with steroids are also at increased risk.

If your horse or pony fits into any of these categories they will be at risk and should be monitored closely for signs of laminitis.

TIP from the TOP

A bounding digital pulse may indicate laminitis. Feel for the pulse at the back of the pastern using your thumb on one side and two fingers on the other.

OUR EXPERT PANEL



CLAIRE HODGSON
Claire is a vet at Wright & Moreton in Cheshire and leads the equine anaesthesia team. She holds an Advanced Veterinary Practice Certificate in equine medicine.



IMOGEN BURROWS
Imogen qualified from the Royal Veterinary College in 2000 and works at Cliffe Equine in East Sussex. Her interests include internal medicine.



LEE PRITCHARD
Lee is an equine vet at Calweton Veterinary Group, Cornwall. His main interests lie in equine surgery. He holds a Certificate in Advanced Veterinary Practice.

Q What should I feed a pony directly after a laminitis attack?

IMOGEN SAYS Most laminitic ponies are overweight to start with, so reducing calorie intake is important.

Avoid simple sugars, such as grass or any molassed feed.

Stick to a high-fibre diet – soak hay and feed it in small-holed nets that are double or even triple-netted, to slow eating speeds.

Aim to offer feed little and often.

If medication needs to be given, a small handful of chaff with a vitamin and mineral supplement mixed in should be fine.

If the laminitic pony is thin, oil given at 1ml per kg of bodyweight can be added to high-fibre feeds for extra calories.

Q If a horse or pony has had laminitis once, will he definitely get it again?

IMOGEN SAYS That is not necessarily the case, but such animals are at greater risk.

It is important to address underlying causes – such as whether the horse has Cushing's or EMS – and bodyweight issues to reduce the risk.



Increasing exercise, booking regular farrier visits and dietary control are all important to preventing recurrent bouts.

Ensure the horse is receiving the right amount of feed for the work he is doing, and keep an eye on his weight by using a tape or weighbridge.

Q What is the difference between 'acute' and 'chronic' laminitis?

LEE SAYS 'Acute' laminitis refers to cases that are of short duration, usually less than three days, and where the horse has not undergone displacement of the pedal bone.

Typical signs of acute laminitis are an exaggerated or bounding digital pulse, excessive heat in the affected feet, marked pain especially when pressure is applied to the sole and often an elevated heart and respiratory rate.



A bounding pulse is seen in acute cases of laminitis

'Chronic' laminitis refers to cases that have undergone displacement of the pedal bone in the hoof capsule, regardless of duration.

Cases that are longer than three days in duration, and not accompanied by displacement of the pedal bone, are described as suffering from 'subacute' laminitis.

Q Is it only horses with insulin resistance or metabolic conditions that suffer from laminitis?

CLAIRE SAYS It is believed over 90 per cent of laminitis-affected horses have an underlying endocrine medical condition.

Insulin resistance and metabolic issues are two of the key conditions alongside Cushing's disease (now more commonly referred to as Pars Pituitary Intermedia Dysfunction or PPID).

Laminitis is a complex disease and horses may have one, all or none of the above conditions playing a role.

As we know these syndromes to be important factors in laminitis, there is a high likelihood of at least one of them being involved. A vet will want to identify as soon as possible if they do play a role in your horse's disease.

By doing this – through carrying out an appropriate blood test – we can manage the case appropriately, shorten the time your pony is in pain and ill and help to reduce the risk and severity of future laminitic episodes. ▶



Blood tests will identify if a horse is suffering from an underlying condition

Q My cob had laminitis – how should I ask my farrier to address his hoof care in the future – will any changes be needed?

LEE SAYS Assuming he has suffered from acute laminitis, with no displacement of the pedal bone, once he has recovered completely and any underlying triggers have been identified and treated he should not require remedial farriery.

Make sure he is assessed and shod by your farrier at regular intervals as stress and damage to the laminae can be a risk factor for developing laminitis.

If your cob has suffered from chronic laminitis, with displacement of the pedal bone, this will require ongoing remedial farriery.

The aim of remedial farriery for the chronic laminitic is to stabilise the pedal bone within the hoof capsule, control pain and encourage new hoof growth in order to help the pedal bone return to the normal position.

A variety of shoes and packing materials are available such as heart bars, plastic shoes, clogs and the equine digital support system. However, their use is on an individual case basis.



Plastic shoes may be advised by your farrier

TIP from the TOP

Don't be complacent in autumn or winter, as attacks of laminitis can occur all year round.

For future hoofcare, it is important to reduce abnormal forces on the laminae.

This can be achieved by the farrier providing correctly positioned and adequate break-over to the foot.

Some farriers and vets advocate the use of heart-bar shoes permanently. However, in my experience this can lead to pressure damage to the frog so is not advised.

Q I have tried using a grass muzzle on my pony, however, he keeps getting it off. Do you have any tips?

CLAIRE SAYS Some ponies can be very skilled at removing grass muzzles and the attachments that come with the products are often insufficient for little Houdinis!

In these cases you need to experiment with alternative methods, such as attaching the muzzle directly to a well-fitting headcollar.

I have had some success with two approaches to this technique.

The first uses cable ties and duct tape to attach the muzzle securely to the headcollar, while the second uses bridle clips.

Use a headcollar that will break under pressure, in case the pony should get caught on fencing, for example.

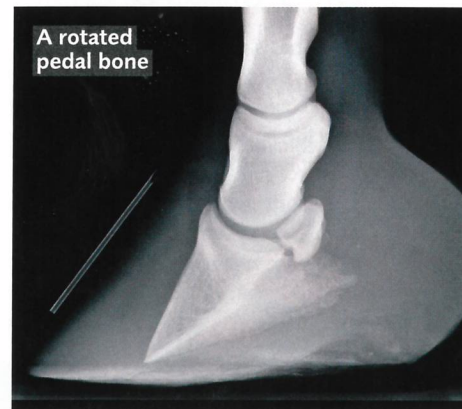
Q What causes the pedal bones to rotate, and can they return to normal with treatment?

IMOGEN SAYS Tissue called the laminae keep the pedal bone supported in the correct position within the hoof capsule.

When the laminae become inflamed during laminitis, the bond between the pedal bone and the hoof capsule weakens.

The weakened bond, combined with forces from the pull of the flexor tendons on the back of the pedal bone and the weight of the horse, means the bone will rotate.

If the laminitis is severe enough, the bone may sink, prolapsing through the sole.



Once steps have been put in to ensure a laminitic pony's pain is under control, X-rays should be taken to ascertain the extent of pedal bone movement.

Corrective trimming or shoeing can help rebalance the hoof and gradually the angle of rotation may be corrected over time. Severe rotation or sinking may not be correctable.

Q How long after an attack of laminitis can I exercise my horse, including riding him on hard ground or the roads?

CLAIRE SAYS This is dependent on the individual, the severity of the laminitis, any underlying conditions and whether there have been changes such as movement of the pedal bone.

For some horses it will be a few days or weeks, for others it can be several months.

Unfortunately it is very difficult at the start of a laminitic episode to predict this timeframe.

Rapid identification and treatment of underlying endocrine problems – such as insulin resistance, EMS or Cushing's disease – can help to bring about a resolution of symptoms as quickly as possible.

When combined with appropriate pain management and remedial farriery, recovery periods can be maximised.

Horses with underlying insulin resistance and metabolic conditions will benefit from exercise as soon as is practical as this helps to improve insulin sensitivity.

This may mean starting exercise on soft surfaces even before the horse or pony is completely sound.

At the other end of the spectrum, horses with pedal bone movement will require strict rest to avoid further destabilisation.

It is very important to work with your vet to produce a rehabilitation programme that is specific to your horse's problems.

Q I'm looking for a pony for my daughter, but I'm worried about buying one that's prone to laminitis, or has had it in the past. What should I look out for?

LEE SAYS Ponies that have suffered from or are prone to laminitis will show varied signs, and most depend on the time since the last bout.

Equines that have contracted laminitis as a result of Cushing's disease or EMS should be examined for signs of these two diseases.

The former can show one or more of the following: an abnormal, long hairy coat; increased urination and thirst; a pot-bellied appearance; an increased susceptibility to respiratory and skin infections, dental disease and worms.

Those that may be suffering from EMS typically present as a young to middle-aged native pony-type breed with obesity and



Could your horse be getting more energy than he needs?

Q I bought a horse that had previously suffered from laminitis. I thought I could manage it, but any intake of grass triggers an attack. I don't really like the idea, but should I keep him on a diet that doesn't involve any grass at all?

LEE SAYS If he keeps getting bouts of laminitis when he is turned out to grass, one of two things is happening.

The first is that there could be something underlying it all – for example Cushing's disease or EMS, or he is still suffering from chronic laminitis (where structural changes occur in the feet).

The second option is his energy intake is greater than he needs, which is triggering laminitis. Start by working out exactly how much energy he is consuming over a 24-hour

period – consult your vet or a qualified equine nutritionist for help if necessary.

If this is greater than he requires for maintenance, this must be addressed and his diet should be changed accordingly.

Horses that have completely recovered from laminitis can be managed involving turnout on grass.

In your case, talk to your vet to determine whether an underlying disease process is present. If not, it is most likely an energy balance issue.

large regional fat deposits (on the crest or hindquarters, for example) despite very little food intake.

Assuming there are no signs of active laminitis or soreness in the feet, indicators of previous laminitis can include

abnormal heel growth, a change in the angle of the hoof wall, hoof 'rings', stretching of the white line and wall flare or bruising.

A discussion with your veterinary surgeon prior to, or at the time of, a pre-purchase examination will allow you to ascertain the significance of any of these findings. ▶



Ponies suffering from EMS may have a cresty neck

TIP from the TOP
Act quickly if you suspect laminitis. You can get your horse treatment immediately and save him pain and suffering.

Q Is it safe to allow our Welsh pony to have grass if we give him lots of exercise to keep his weight down?

IMOGEN SAYS If the pony is, or has been, fat in the past and has had laminitis previously, there is a greater chance that equine metabolic syndrome (EMS) may be underlying.

These ponies are insulin resistant and struggle to manage their blood sugar and insulin levels.

Grazing ponies that have EMS puts them at much greater risk of laminitis.

Normal weighted ponies with no prior history of laminitis should be able to cope with access to grass. However, you will need to exercise the pony regularly and manage his grass intake to prevent him getting fat.



Restrict grass intake to avoid weight gain

Q My 18-year-old pony has been diagnosed with Cushing's disease. Is it inevitable that Cushing's sufferers will get laminitis?

IMOGEN SAYS Cushing's syndrome does increase the risk of laminitis so it is important to monitor horses or ponies that have the condition carefully. However, the good news is that not all Cushing's sufferers will get laminitis.

Controlling the disease with medication prescribed by your vet will keep the internal hormone cascade under control, and greatly help to reduce the likelihood of laminitis.

Regular blood tests to check his hormone levels will be recommended, and regular health checks are also important, as is providing a high-fibre, low-sugar diet.



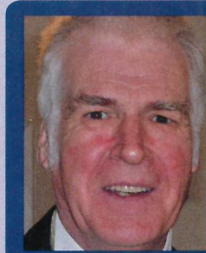
Q Can laminitis affect the hindfeet only, or is it always in the front feet?

CLAIRE SAYS Laminitis is defined as inflammation of the laminae, which are the soft tissue structures within the foot that attach to the hoof capsule. As horses essentially walk around on their fingertips, the laminae are the equine equivalent of your nail bed.

Since all four feet have laminae, all feet can be affected. Laminitis is seen most commonly affecting the front feet only, however cases are seen in all four feet. Less commonly, only the hindfeet are affected.



Laminitis and nutrition



OUR EXPERT

Dr Tom Shurlock
Tom is a nutritionist for British Horse Feeds, which manufactures Speedi-Beet and Fibre-Beet.

Q I've heard that soaked sugar beet can be fed to laminitics, but surely this has a lot of sugar and is therefore unhealthy?

TOM SAYS Sugar beet is a variety of the root crop *Beta vulgaris* (others are fodder beet and beetroot) which is grown because of the high level of sucrose stored in its roots.

When harvested, the roots are separated from the tops and undergo extensive water extraction processes to remove as much of the sugar as possible.

Although only hot water is used, about 95 per cent of the sugar is removed and the remaining pulp is dried and it's this that is fed to livestock.

Some beet pulp (the dried remainder) has molasses added back to it, giving a sugar level of about 18 per cent. Others (including Speedi-Beet) are unmolassed, with sugar levels at around five per cent.

This is far lower than other horse feed materials, including grass or hay.

Research has shown that laminitics should not be fed starch and sugars at greater than 10 per cent of the total ration.

So, unmolassed sugar beet pulp is a good option, especially as it allows a little more leeway in using other feeds.

Q Can you tell me if hay or haylage is more suitable for a laminitic pony, and why?

TOM SAYS Haylage is typically grass baled at around 30 per cent moisture, where microbial degradation of fibre and sugar preserves the product.

Microbial digestion produces short chain fatty acids, some of which are the same as the slow-release-energy nutrients in the horse's hindgut.

Also produced is lactic acid, which is regarded as the main trigger for laminitis, by disrupting the hindgut ecosystem and increasing gut permeability to endotoxins



which accumulate in the hooves. It would seem obvious that haylage is not a good choice.

However, the lactic acid will be utilised by bacteria in the small intestine to give butyric acid, which is beneficial to gut lining cells.

So, paradoxically haylage can be as good a choice as hay.

Q Is it OK to feed soaked sugar beet on its own, or should it be mixed with something else?

TOM SAYS Soaked sugar beet pulp can be fed on its own, but it is far better to give it in conjunction with other feeds.

This is because the soluble fibre in beet pulp – the pectins – can act as a prebiotic and help stimulate microbial fermentation of other fibre types, such as hemicellulose.

It means poorer quality forage, such as chaff or oat hay, can get a boost in terms of energy without relying on adding starch or sugar from other feed sources.

Feeding soaked beet pulp on its own can be a good idea prior to turn out, as it will act as gut fill and reduce the initial high intake of grass and its possible fructans overload.

However, it would not be advisable to use sugar beet as the only fibre source as it has intrinsically high-energy, and would lead to the horse putting on extra weight.

Beet pulp is not a complete feed and so a vitamin and mineral supplement, a balancer or a complete feed, for example a leisure mix or nuts, should be fed alongside it to balance the diet.