

## Laminitis

This is one of the most common and most serious conditions affecting the foot. The condition is caused by the laminae tissues that connect the hoof wall to the pedal bone becoming swollen and inflamed. They are weakened and the connections can tear. The pedal bone becomes unstable, and it can sink and rotate, crushing and destroying the soft tissues underneath it.

In the most severe of cases, the pedal bone can rupture through the bottom of the hoof. This condition is extremely painful and debilitating for the horse.



### Causes

Recent research has shown that 80% of laminitis cases actually have a hormone imbalance as the instigating factor of the disease, either Cushing's or Equine Metabolic Syndrome. So by early detection of these syndromes we can prevent laminitis from ever occurring.

### **Cushing's (Pars Pituitary Intermedia Dysfunction – PPID)**

This was thought of as an old horse disease however horses as young as 10 have been diagnosed. The Pituitary gland in the brain becomes overactive producing a surplus of a hormone called ACTH. This has downward effects on the laminae and can lead to laminitis. This hormone imbalance can also lead to insulin resistance and EMS. Please see our separate factsheet for more information.

### **Equine Metabolic Syndrome (EMS)**

This is comparable to Diabetes Type II in humans whereby becoming overweight leads to insulin resistance. The body no longer handles sugars appropriately and this leads to laminitis. Native breeds are commonly affected but are by no means exclusive. Their genetics mean they are good at storing fat as in the wild they need to. They would naturally become fat during the spring/summer and then slim right down over the winter months when food is scarce. By keeping our horses in a good body condition over the winter months when the spring grass hits, they easily tip over the edge into the obese category. They get regional deposition of fat over their crest, shoulders and rump and their insulin control becomes dysfunctional leading to poor control of their blood sugars and laminitis. We have always known that fat horses get laminitis but now we understand why, we are able to treat them much more effectively.

If you are concerned your horse may be suffering with EMS, a simple blood test after a period of starvation and a sugary meal can diagnose and a diet and treatment plan designed and instigated. By performing this test, we can effectively reduce the likelihood of laminitis occurring.

### **Infection**

Certain infections such as seen in mares with retained placenta, and some causes of diarrhoea result in release of a substance called endotoxin released from the bacteria and into the blood stream. The laminae are highly sensitive to this and results in laminitis.

## **Dependant Laminitis**

If your horse is lame for a reasonable length of time on one limb, they will naturally transfer weight from the painful limb and weight bear more heavily on the limb next to it. The excessive load overtime causes stress to the laminae and can result in laminitis.

## **Farriery**

Excellent farriery and harmonious foot balance is paramount for all our equines. Spending time with the feet in poor balance leads to inappropriate forces being exerted on the laminae and laminitis.

## **Medicines**

Medicines administered to treat a condition can sometimes have an adverse effect and can lead to laminitis. Although this is rare, a veterinarian has to consider the likelihood of a laminitis flare up versus the benefit of the treatment to the horse.

## **Founder**

This term relates to excessive intake of feed. If your horse gets into the feeding room and consumes large amounts of grain the body can't digest it properly. The grain exits the stomach before it has undergone its primary digestion completely and enters the hindgut. Here the bacterial population isn't used to dealing with such material and volatile fatty acids are produced. This irritates the guts and can lead to the leakage of endotoxin into the blood stream, resulting in laminitis.

## **Grass**

Grass is commonly blamed for all cases of laminitis. As you can see from the list above its only part of the story. Frosty grass, new spring grass, and stressed grass that has been overgrazed are all higher in the sugar fructan. Excessive consumption of this can lead to laminitis. However, in 80% of cases, the horse that suffers with laminitis after eating too much fructan, is often found to be the horse that cannot regulate their blood sugar/ insulin levels. Often, they have one of the other causes going on and the excess fructan just pushes them over the edge into laminitis.

Laminitis is commonly a multi-factorial disease; there may be a combination of the above reasons why a horse finally becomes laminitic so treatment has to take all of these factors into consideration.

## **Signs of Laminitis**

These vary dramatically depending on how far the condition has progressed. The structures inside the hoof are similar to the mechanics of how our fingernails are held in place. Laminitis normally affects the fore limbs but it can affect just one or all four, depending on the reason for the disease.

Digital pulses, pain and heat in the hoof is a good indicator of laminitis, but a diagnosis is not made solely on the presence of these, but on a variety of symptoms.

For patients that have a mild case of laminitis, they may have become foot sore, and prefer

walking on softer surfaces to harder concrete or tarmac. These patients tend to deteriorate further unless treatment is started immediately.

In more advanced cases, the horse or pony may be unable to move without discomfort. For those whose forelimbs are affected, they often develop a laminitic stance where they sit back on their haunches.

In the most severe cases, the animal may be panting, sweating and may even be recumbent (unable to get up).

### **Treatment**

Normally, a treatment plan is put in place with different aspects of care to be given depending on the underlying causes. Pain relief and anti-inflammatory medicines can be administered to reduce the discomfort of the animal as well as reducing inflammation within the hoof capsule, this reduces the pressure within the hoof and allows the flow of blood into the hoof more easily. Box rest is a must for laminitics. The aim is to avoid movement of the pedal bone, achieved and box rest allows this to remain restricted. The more they move around and put stress on the laminae when they are inflamed and delicate, the more laminae will be torn allowing the pedal bone to move.

Frog supports can be added to the animal's feet to help relieve the pressure on the laminae. Also, farriery is very important during the treatment, recovery and future prevention of laminitis. Veterinarians and farriers work well together to provide the best treatment plan for these animals.

Detection of Cushing's and EMS is a must for successful treatment of these horses. You are unlikely to be successful long term if these conditions go untreated. Weight loss is absolutely crucial to the recovery of the horse or pony. A vet should be consulted on the safest and most effective way to help with weight loss, and in some instances, may prescribe medicines to help with the control of insulin during this process.

### **Prevention**

Whilst detection of hormone imbalances is key to successful treatment it is also paramount in its prevention. As vets, we now have the knowledge and skills to prevent a horse from ever having to suffer this truly awful condition. We aim to offer early detection of Cushings and EMS before a laminitic attack ever takes place.

Weight control is the number one tool in preventing recurrent laminitis. By preventing our horse from getting overweight you protect him from development of EMS. A steady weight throughout the year is important. They should not enter spring in a fat condition. You should be able to feel the ribs easily, and just about see them. Grazing muzzles, restricted turnout/turnout in grassless pens, soaking hay to remove nutrition, double hay-netting a smaller amount of hay to last longer and increasing exercise and cardio fitness, are all tools we can employ in the battle against the bulge!