

Laminitis

WHAT IS LAMINITIS ?

Laminitis - which is also known as founder or foot fever, is an extremely painful and debilitating condition of the hoof. It is a condition where there is reduced blood flow to the laminae of the hoof which leads to breakdown and degeneration of the union between the horny and sensitive layers of the laminae. In people it would be equivalent to the area where our fingernail attaches to the sensitive area of the nail bed below the fingernail. Any major trauma to this area leads to a painful throbbing feeling to the finger – for the horse this painful throbbing is felt throughout the entire hoof which is why it is such a debilitating condition.

It is a symptom of a generalised metabolic disturbance and can be classified as acute (very severe), subacute (severe), or chronic (milder signs). It can develop in the forefeet only, all four feet or occasionally only in the hindfeet. Rotation of the pedal bone within the hoof may occur in longstanding chronic cases and can even perforate the sole of the foot.

WHAT CAUSES LAMINITIS?

The most common cause of laminitis is ingesting excess carbohydrates (grain overload) and grazing lush pastures - especially in ponies.

Laminitis may also occur secondarily with uterine infections after foaling and endotoxaemia from bacterial infections associated with colic, enteritis and diarrhoea.

Excessive medication with cortisone and Cushings disease will also predispose to laminitis.

Occasionally laminitis can be induced with excessive exercise and concussion of the foot in an unfit horse or pony.

HOW DO I KNOW IF MY HORSE OR PONY HAS LAMINITIS?

In acute cases of laminitis the following signs will be shown – the horse will be very depressed and not interested in eating due to the extreme pain being experienced. There will be an abnormal standing posture where the horse is trying to take the weight off the affected legs and an absolute refusal to walk. Heat can be felt in the entire hoof and there will be a bounding and exaggerated pulse palpated. Often there is a fever, muscle trembling and increased heart and respiratory rates. This presentation of laminitis is a medical emergency and veterinary attention should be summoned immediately for humane reasons.

Subacute laminitis will present as above but its presentation is not as severe. There is a milder stance change, reluctance to walk and not as much heat felt in the hoof. It still requires immediate veterinary attention due to the extreme pain the horse or pony is in.

Chronic laminitis can follow one or more acute attacks of laminitis – it presents as a change to hoof shape where it becomes narrow and elongated and there are bands of irregular hoof growth. There are varying degrees of lameness and a thorough examination of the hoof is needed to examine the position of the pedal bone. Veterinary attention is still needed for this presentation of laminitis in order to prevent further degeneration of the hoof and to control any pain or discomfort the horse or pony is in.

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WHAT IS THE LINK BETWEEN DIET AND LAMINITIS?

Temperate, climate, grasses ie. cooler temperature grasses have large amounts of sugars that are water soluble when they are in the rapid phase of growth – typically in early spring or winter pastures that are heavily fertilised. Typically the sugars present are sucrose, fructose, glucose and fructans.

Grain has high starch levels which act like the water soluble sugars.

The excess sugars and starches are fermented in the hind gut which leads to a lactic acid buildup. This in turn kills the normal gut bacteria in large numbers leading to the release of endotoxins. The endotoxins are then absorbed into the bloodstream and travel to the hoof where they interfere with normal hoof bloodflow. The bloodflow is dramatically reduced with sludging and emboli occurring the capillaries. The reduced oxygen perfusion means that the hoof wall starts to degenerate and break down resulting in the clinical signs of laminitis.

It appears to be the fructan levels that are the most critical and some grasses store more than others eg. Perennial ryegrass can have 12% fructans but cocksfoot only 2% fructans. The amount of sugars in a plant is a highly dynamic and environmentally responsive process – it can vary from 5% to 50% of dry matter in a matter of hours. The sugars are mainly stored in the stems rather than the leaves.

HOW DO I MANAGE LAMINITIS IN MY HORSE OR PONY?

The most important thing to remember is that horses and ponies have evolved over eons of time to forage for and ingest large amounts of poor quality grasses to be consumed over most of the day and night. They also evolved to be constantly on the move as they foraged. Ponies in particular have become very efficient at utilising poor quality grasses due to the environment they evolved in and are less adaptable than horses to metabolising sugars and starches. Modern horse husbandry often does not allow for constant intake of poorer quality hay or grasses and also greatly restricts mobility in many cases.

How can I help my horse or pony that is prone to laminitis?

Feed mature grassy hay that can be soaked in water for 30 minutes prior to feeding to reduce the sugar content.

Do not turn your horse or pony out onto lush spring grass for the reasons outlined above. Keep grass long and more mature – regular mowing or slashing of grass keeps the sugar levels high.

Have areas where there is no grass so that they can move around all day and graze only mature grassy hay.

Do not feed any grain of any kind.

Overweight ponies and horses are more prone to developing laminitis – they need exercise and low sugar high fibre forage. Being overweight could also be a symptom of insulin resistance or Cushings disease.

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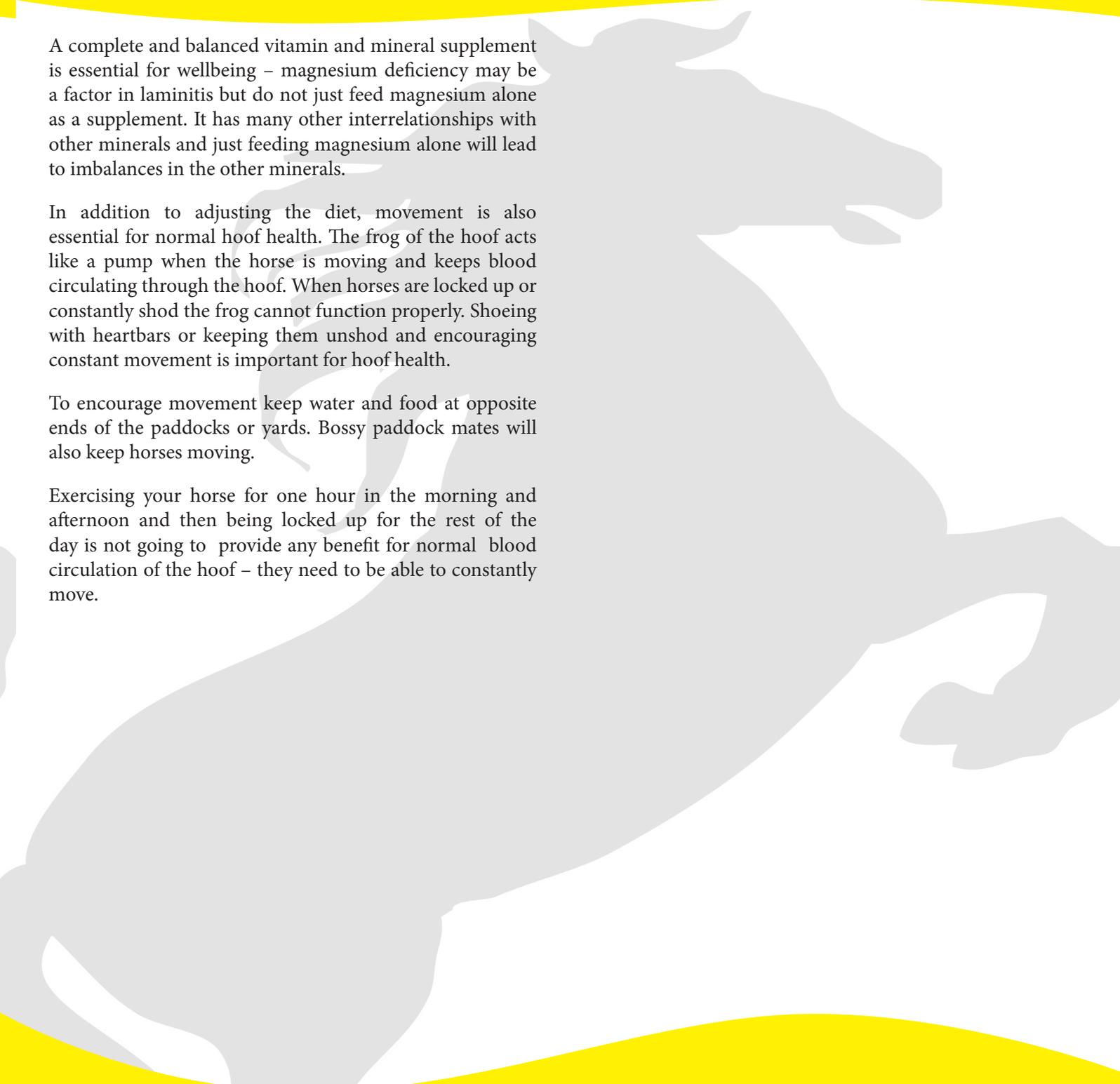
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A complete and balanced vitamin and mineral supplement is essential for wellbeing – magnesium deficiency may be a factor in laminitis but do not just feed magnesium alone as a supplement. It has many other interrelationships with other minerals and just feeding magnesium alone will lead to imbalances in the other minerals.

In addition to adjusting the diet, movement is also essential for normal hoof health. The frog of the hoof acts like a pump when the horse is moving and keeps blood circulating through the hoof. When horses are locked up or constantly shod the frog cannot function properly. Shoeing with heartbars or keeping them unshod and encouraging constant movement is important for hoof health.

To encourage movement keep water and food at opposite ends of the paddocks or yards. Bossy paddock mates will also keep horses moving.

Exercising your horse for one hour in the morning and afternoon and then being locked up for the rest of the day is not going to provide any benefit for normal blood circulation of the hoof – they need to be able to constantly move.



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