



## - LAMINITIS -

# What is Laminitis?

Laminitis is a condition linked to the overconsumption of sugar or water-soluble carbohydrates. It is not a disease but rather the result of several interconnected factors. Specifically, it involves the inflammation and breakdown of the lamellar tissue—connective tissue that secures the hoof to the bone within the toe. Laminitis progresses through three phases: developmental, acute, and chronic, each with varying levels of severity.

### Causes of Laminitis

The causes of laminitis are complex and multifaceted. At the hoof level, the condition is associated with poor circulation, vasoconstriction (narrowing of blood vessels), and the accumulation of toxins from disrupted hindgut fermentation. Additional contributing factors include oxygen deprivation, impaired glucose utilization in hoof metabolism, and the release of pro-inflammatory agents and metalloproteinases (MMPs) due to poor circulation.

Since blood pressure is naturally lower in the hooves (being the furthest point from the heart), they are more susceptible to damage. Factors such as inflammation further reduce circulation, exacerbating the condition. Gentle exercise can be beneficial as it helps improve blood flow.

Laminitis results from a combination of endocrinological, dietary, mechanical, and genetic factors. For instance, conditions such as obesity, insulin resistance, and pituitary pars intermedia dysfunction (PPID) significantly increase susceptibility. Dietary issues, such as consuming excessive fructans or sugars, or physical factors like hoof bruising or wounds, can also trigger laminitis. Certain breeds, particularly native breeds, are more prone to the condition.

Some horses may remain unaffected despite mild triggers, while others with additional factors, such as obesity or a high-starch diet, are at greater risk. For example, an overweight horse on such a diet is more likely to develop laminitis than a lean horse consuming high-quality forage.



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### The Role of Diet in Laminitis

Diet plays a pivotal role in the onset of laminitis, with spring grass being a notorious factor. Wild horses typically experience hormonal changes after a winter of limited grazing, preparing them for rich, new growth. Domesticated horses, however, are often well-fed during winter, leading to a nutritional surplus in spring.

Spring grass contains elevated levels of protein, sugars, and fructans, which can disrupt gut microbial balance. Non-structural carbohydrates (NSCs), such as sugars, starch, and fructans, are particularly implicated in laminitis, as they promote the growth of lactate-producing bacteria in the hindgut. Excessive lactate production, along with the absorption of endotoxins and inflammatory agents, contributes to the condition. Structural carbohydrates (fibres), in contrast, are fermented more slowly and are less likely to cause issues.

### Forage Options

Modern grasses, bred for high protein and carbohydrate content, are less suitable for horses prone to laminitis and can increase the risk of metabolic issues. Native grasses with slower growth and lower nutrient levels, are safer alternatives, and make ideal low sugar and starch hay for laminitis prone horses. Limiting grazing time, particularly at times of high sugar content can be a good idea. Remember sugar levels increase throughout the day as the plants photosynthesise due to sunlight.

Hay is often fed year-round to horses sensitive to laminitis, but soaking it for between 1-2 hours is necessary to reduce its sugar content. Alternatively, low-sugar, low-starch, and low-fructan fibre sources, such as beet pulp products, can be used. These products, like Speedi-Beet and Barastoc Fibre-Beet Mash, are low in sugar and starch while providing digestible fibre. Feeding these products before turnout can reduce grass intake and support healthy gut function.

### Additional Dietary Support

Speedi-Beet, containing only 5% sugar and 0% starch, and Barastoc Fibre-Beet Mash, with 3% starch and 5% sugar, are excellent choices for horses and ponies prone to laminitis. These soaked products expand significantly, providing a low-calorie, stomach filling, fibre-rich option.

