

EQUINE LAMINITIS

ETIOLOGY

- Obesity and insulin resistance (equine metabolic syndrome) are the two most common predispositions for laminitis in horses and ponies.
- Circumstances that have been identified as high risk for developing acute laminitis include:
 - Overloading the hindgut with starch, sugar and fructans, which ferment rapidly (grain overload or pasture associated laminitis)
 - Retention of fetal membranes
 - Gastroenteritis
 - Mechanical injury which can be further exacerbated by increased weight bearing due to obesity
- Starch, sugar and rapidly fermentable carbohydrates that reach the hindgut are rapidly fermented, resulting in an increase in lactic acid production.
- Acidosis causes the death of many beneficial bacteria, releasing endotoxins, exotoxins and vasoactive amines, which in turn results in microvascular dysfunction (hypertension), which may compromise blood flow to peripheral tissues.
- Additionally, in conjunction with an IR state, chronic mild hyperglycemia can also influence vascular endothelial tissue, contributing to vascular dysfunction.
- Soft tissue in the hoof capsule is highly susceptible to damage resulting from microcirculatory dysregulation.
- Older horses that are overweight may be insulin resistant or suffer from PPID.
- Horses with either condition must have their weight and intake at every meal strictly monitored.

SYMPTOMS

- Many horses with chronic laminitis are overweight, cresty-necked and have additional areas of fat deposition.

MANAGEMENT RECOMMENDATIONS

- If lush pasture is available, horses with laminitis or prone to laminitis should be fitted with a grazing muzzle to prevent excess consumption of forage that contains high levels of fructans (plant sugars). If a muzzle is not an option, placing the horse in a dry lot is preferable to lush pasture.
- Strict weight control and appropriate exercise as can be tolerated is beneficial to the laminitic horse.
- Hoof trimming and/or corrective shoeing every three to four weeks is imperative, particularly in horses that have suffered rotation of the coffin bone. Horses with laminitis fare best when left turned out round the clock once the acute phase has passed.

DIETARY RECOMMENDATIONS

- Horses prone to laminitis or suffering from the disease should be fed total diets with controlled levels of starch and sugar.
- Horses with laminitis should be fed rations well fortified with vitamins/minerals and essential amino acids to help with repair of the hoof wall and supporting structures.
- Horses that have suffered from laminitis should not be fed diets rich in starch and sugar, as sensitivity to increases in blood sugar and insulin may be present in these horses.
- Some horses may benefit from supplemental magnesium and chromium, both of which assist in increasing sensitivity to insulin.
- Always provide a low NSC good quality grass forage, free choice access to salt and clean, fresh water.

SUGGESTED PURINA PRODUCTS:

FEED NOTES:

- Ensure appropriate levels of vitamins, minerals and quality amino acids for hoof reconstruction; control starch and sugar intake due to insulin insensitivity and provide highly digestible fibre.
- It is important to determine if the condition is caused by Cushing's disease or insulin resistance. If this is the case, please refer to the condition fact sheet.

During the recovery period and if the horse is obese, **EQUILIBRIUM EQUILIZER** is recommended. If the hay or pasture is below 12% protein, **EQUILIBRIUM OPTIMAL** is proven to be a better option. In both cases, supplementing with **BMZ** is recommended.

Once recovery is complete, the following feeds are recommended for their fibre content and omega-3 and -6 ratios.

Recommended:

SUPERFIBRA INTEGRI-T
 ou **SUPERFIBRA CLASSIC**
 (with another source of omega-3s)



Alternatives:

SUPERFIBRA PLUS
SUPERFIBRA ULTRA
EVOLUTION SENIOR
EVOLUTION ELITE



NOTE: an obese horse can continue with **EQUILIBRIUM EQUILIZER** or **OPTIMAL** at the Purina Superior level.

A supplement fortified in biotin, methionine and zinc, which are all involved in the growth and integrity of the horse's hoof, is highly recommended. Purina's **BMZ** supplement can be used to promote hoof integrity.

FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a "Minimum" and a "Purina Superior". The "Minimum" meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The "Purina Superior" is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply "Minimum" is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the "Purina Superior" level is paramount to ensure an optimal level of performance and immunity.