

## Risk factors for laminitis

Katy Watts

- The amount of sugar and starch (NSC) in the feed, including pasture, which changes daily and seasonally. With some horses, just lowering the average amount of sugar and starch in the overall diet may suffice. In more sensitive horses, one high sugar/starch meal or grazing too much is enough to trigger an episode. No one but an observant owner can establish what level is optimum for individual horses.
- Easy keeper, 'air fern'. Any horse that must have it's 'grass hay only' diet restricted to 1% of body weight in order to maintain proper body weight. Any horse that must have its diet restricted in comparison with the rest of the herd.
- Obesity can create insulin resistance. Not all obese horses are IR, and not all IR horses are obese. Some IR obese horse can return to normal insulin levels if they return to appropriate body condition.
- Lack of exercise, too much food for the amount of work being performed.
- Presence of abnormal fat deposits:  
Cresty neck, fat pads over the eye socket, around head of tail (apple butt), behind the shoulder, around the withers. These horses may look just right over the ribs and abdomen. The traditional BCS (body condition score) that focuses on fat covering the ribs does not work on horses with metabolic disease. The texture of the fat is often corrugated in the neck, and like cellulite around the tail. This fat may develop very quickly with an increase of sugars and/or starch in the diet, and may melt off just as quickly when the diet is corrected. Those of us with hyperinsulinemic horses feel their necks very often. When the crest gets hard, it's time to get pro-active and focus more on getting NSC minimized. Soft necks make us smile.
- Certain breeds are more prone to high insulin and diet related founder. Previous anecdotal evidence is being proven by good science and even the genes involved are being identified. More susceptible breeds include: all pony breeds, Icelandic and Norwegian Fjords, Arabs, Morgan, gaited horses including Walkers, Foxtrotter, Peruvian Pasos, Paso Finos, Marchador, Spanish horses, mini's, mustangs, certain lines of Quarter horses and Paints. Note these are generally breeds known for being easy keepers, and who were naturally genetically selected to survive best in deserts or areas with harsh environments



where good feed was hard to come by and they needed to live off their fat during hard times.

- Horses who have foundered before are at higher risk for further episodes and rotation of the coffin bone. The metabolic differences that led to the founder in the first place can be managed, but don't go away completely. The condition may worsen as the horse ages. Chronic laminitis often lasts the horse's whole lifetime and must be continually managed. Blood supply to parts of the foot may be permanently compromised after founder. The laminar tissue that grows after a founder is not as well organized, and therefore less strong as before. It's scar tissue. Any rotation will create abnormal mechanical stresses inside the foot that may increase the risk of further rotation from a laminitic episode.
- Any horse with PPID (previously known as Cushing's disease). Not all PPID horses are insulin resistant, but many are. As the disease advances, different parts of the pituitary may be compromised. Not all PPID horses founder, but you'll need to stay vigilant as the disease progresses. Always include insulin when testing for PPID. Do not use the dexamethasone suppression test as it can cause laminitis in horses with high insulin.