

## Founder and Spring Pastures

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Founder, also known as laminitis, is an inflammation or swelling of the laminae or tissues that connects the hoof wall to the coffin bone. The swelling causes pressure on the blood vessels in the laminae, and if it persists, will cause the laminae to die. The laminae in the front of the hoof, which carry most of the weight, will stretch and tear allowing the front part of the coffin bone to pull away from the hoof wall. This is called "rotation". In severe cases, all the laminae die allowing the coffin bone to drop through the bottom of the hoof. This is called vertical displacement or sinking. Most vets say a horse has "foundered" when they have signs of pain in their feet, increased digital pulses and swelling in the lamina that may potentially lead to rotation or sinking. Accurate diagnosis of laminitis is done by a veterinarian's examination. X-rays are helpful in determining the degree of severity of laminitis. Prevention of founder is dependent on identifying and correcting an underlying cause, as laminitis can be triggered by such diverse events as grain overload, retained placenta, colic, overexercise on a hard surface or insulin resistance.

The most common laminitis relates to nutrition and diet. Rapid intake of starches or fructans (a sugar) stored in pasture can cause laminitis. Fructans are the primary reserve carbohydrate stored in cool season grasses like fescue and ryegrass. Grazing management is important for horses predisposed to laminitis (often ponies and overweight horses). This includes limiting grazing during the times of day when fructans are at their highest level in grasses. Generally, horses predisposed to laminitis should graze in the evening and over night and be inside or in dry lots during daylight hours. Grazing should also be limited during times of environmental stress on plants such as drought or cool temperatures. Rotational grazing is recommended where regrowth is limited to 4 to 6". It is important not to over graze pastures as the lowest stems often contain the highest amount of sugar. Avoid grazing on pastures with lots of seed heads as they also contain high amounts of sugar. Introducing horses to lush spring pasture gradually will reduce the chance of laminitis. Turn horses into the pasture slowly over a several week period. Begin with short (15 min.) grazing periods and work your way up to the full day over the several week period.

Gradual spring turn-outs are beneficial for the pasture as well. Spring turn-out should be determined by: stocking rate (how many horses and how much total pasture acreage), pasture species and condition, and ability and availability of mowing/haying equipment for paddocks that may get too tall/mature for effective pasturing. On average, 1 to 2 acres of well-managed pasture can provide the forage needs for one horse from spring to fall. "Well managed" means subdivided into at least 3 paddocks, fertilizing according to soil tests, and controlling weeds. If you have that much or more acreage per horse, you may want to start grazing early to get a jump on the spring flush of pasture growth. If you have less than 1 to 2 pasture acres per horse, as is the case for many of us, the pasture cannot be expected to meet all the forage needs for your horses during the grazing season. Plan to provide some hay and designate a sacrifice area/paddock to feed horses as needed to allow adequate rest (on average 30 days) for the remaining paddocks. If you are overstocked, it may make sense to wait until you have more spring growth before grazing, since staying ahead of the spring flush will be less of a concern. Grass pastures with good stands of Kentucky bluegrass or smooth brome grass can handle early spring grazing. "Early" means when bluegrass is 3-4" tall and brome grass is about 6" inches tall. These grasses are sod-forming and tolerant of horse hoof damage. Pastures dominated by bunchy-growing grasses like orchardgrass and timothy should be taller (about 10"). These grasses are more easily damaged by hoof action and grazing. If conditions are really wet, it's best to wait, regardless of plant height.

If your horse is diagnosed with laminitis, prompt treatment is important. Treatments are aimed at controlling pain and inflammation. Encouraging circulation to the laminae is important as well as stabilization of the foot and coffin bone. Recovery of laminitis depends largely on the amount of damage done to the laminae and general health of the horse. Severe cases may require treatment varying from corrective trimming and shoeing to surgery. Management of a foundered horse is best accomplished through close cooperation of horse owner, veterinarian and farrier.