



910-992-8225

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## Equine Metabolic Syndrome

Your horse has been recently diagnosed with, or is suspected to suffer from, Equine Metabolic Syndrome (EMS). This condition is also referred to as Insulin Resistance.

Equine Metabolic Syndrome is a complex disorder that is still somewhat poorly understood. The condition is primarily dependent on fat deposits throughout the horse's body. This fat is an active producer of hormones that results in the inability of the horse's cells to respond to insulin (somewhat like type 2 diabetes in humans), increased systemic inflammation, hypertension (high blood pressure), and other potentially harmful effects. The most active and dangerous fat in the horse's body is stored in the crest of the neck (on top of the neck, where the mane emerges). This fat is similar in its activity to the dangerous pot-belly fat in aging men.

It is likely that EMS is a genetic condition. It may have developed as horses and ponies evolutionarily adapted to survival in conditions where feed was not readily available. Under modern conditions in which adequate feed is available, these animals gain weight. Interestingly, not all horses diagnosed with EMS are obese.

The primary harmful result of EMS is the development of laminitis. Though we do not fully understand how or why laminitis develops, it occurs much more frequently in horses with EMS. Implementation of controlled diet program is the most effective way to reduce your horse's risk for developing laminitis. Please see the guidelines below for detailed instructions for feeding your horse.



## Equine Metabolic Syndrome Feeding Guide

We recommend feeding your horse according to guidelines established for horses with Equine Metabolic Syndrome. Current guidelines include the following recommendations:

1. Reduce the amount of energy provided and facilitate weight loss
  - total dry matter should not drop below 1% of body weight, however 1% to 1.5% of her ideal body weight (1000 lb) is ideal. This is equal to 10 to 15 lbs of dry matter per day. Dry matter includes the weight of hay and the weight of grain fed in a day. (hay may be weighed in a trash bag using a fishing scale, grain may be weighed in a bucket, but don't forget to deduct the weight of the bucket).
  - To stop boredom associated with reduced hay offered, you may purchase or construct a hay net to slow consumption. Hay nets (Nibble Net, Slow-feed net, etc) can be purchased online and from tack shops. Select the net with the smallest available holes.
  - concentrates (grain) may need to be eliminated completely. A commercial ration-balancer or vitamin/mineral supplement may be fed instead.
  - Exercise is an excellent way to facilitate weight loss in horses that are sound for work.
2. Consider eliminating pasture grass from the diet
  - if grass is to be consumed, access to pasture should be restricted during periods of dynamic changes (rapid growth in the spring or preparation for cold weather in the fall). Grazing in the very early morning (prior to 7am) is likely the safest period, except after a hard frost. Other unsafe times include periods in which the grass is regularly cut and bright, sunny, cool conditions.
  - ideal grazing/ pasture solutions include use of a grazing muzzle during turnout and confinement to a small area. Grazing times in excess of 1 hour may be risky.
  - complete elimination of grass consumption (drylot housing) is ideal.
3. Lower the non-structural carbohydrate (NSC) content of the diet -
  - Triple Crown's Safe Starch Forage is a complete feed with 9% NSC. This may be fed exclusively.
  - If grain is to be fed, choose a low-starch commercial feed (like Purina Wellsolve or KER Re-Leve).
  - beet pulp (without molasses), soybean hulls and fat sources (corn or vegetable oil) are typically safe.
  - sweet feeds, oats, rice bran, molasses, sugar, and rye grass are to be avoided
  - NSC content of your hay may be determined by a forage lab (contact your agricultural extension agent or [www.equi-analytical.com](http://www.equi-analytical.com)). Forage analysis of grass may be attempted, but grass often varies tremendously from one area of a pasture to another.
  - if NSC content is not provided in forage analysis or on feed labels, it may be determined by adding starch and WSC (water-soluble carbohydrate)
  - when all sources of feed are added, NSC content of the entire diet should not exceed 10% of dry matter
  - low-quality grass hay (such as coastal Bermuda) is usually lower in NSC content, though hays can vary greatly.
  - hay can be soaked in cold water for 60 minutes to lower the WSC content (water should be poured off prior to feeding).



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#### 4. Supplements

- A vitamin E supplement and mineral block may be indicated if both pasture grass and all commercial grain are eliminated.

#### TREATMENT FOR EQUINE METABOLIC SYNDROME

Treatment for this condition is currently based on weight loss, dietary management and exercise (when appropriate). Drugs for the treatment of the condition have not been adequately developed or studied.