



## Equine Metabolic Syndrome

In a recent nationwide survey (EQUUS Feb 2009) of 300 horse owners, 50% of their horses were determined to be overweight, and 19% were considered obese. Many of these horses may be affected by Equine Metabolic Syndrome (EMS), a term used to describe middle-aged obesity accompanied with insulin resistance and insidious-onset laminitis (founder). Clinical signs of laminitis commonly develop while horses are grazing spring pasture but can also occur at other times of the year and in horses without pasture access. Affected horses tend to be between 10-20 years and there does not appear to be a sex predilection. Ponies domesticated Spanish mustangs, Peruvian Pasos, Paso Finos, Andalusians, European Warmbloods, American Saddlebreds, Arabians, and Morgan horses are more commonly affected than other breeds, thus supporting a genetic predisposition.

The cause of obesity is fairly straightforward: caloric intake exceeding daily caloric requirement. As horses have transitioned from beasts of burden to recreational companions, the physical condition of many horses has paralleled that of their human counterparts: they have been overfed and become more sedentary. Unfortunately, obesity has a number of metabolic consequences including insulin resistance (IR), hyperglycemia, and a host of other metabolic abnormalities. The most obvious clinical sign that results from these metabolic alterations is laminitis. Often, EMS is not recognized until laminitis develops.

What is insulin resistance? Simply stated, IR is the metabolic state in which a greater amount of insulin is required to exert its physiological effect when glucose is taken into the tissues. IR can be most easily documented using a blood test taken after an overnight fast. Alternately, a blood test can be taken 60-90 minutes after a measured amount of sugar (in the form of Karo syrup) is given orally.

The role of hypothyroidism in EMS is a cause for great debate. There is no evidence that EMS horses have lower levels of thyroid hormones or response to thyroid stimulation testing. However, EMS horses are commonly treated with thyroid supplementation and some owners feel that this really helps to “jump start” the horses weight loss.

EMS management involves primarily “diet intervention”. The horse is fed limited low-quality forage at 1.5% of body weight which is decreased weekly by 10% for 2-4 weeks until it reaches 1.5% of ideal body weight. The horse is removed from pasture and given a vitamin/mineral supplement along with increased exercise until it reaches a body condition which would commonly be referred to as “ribby” and maintained at this condition. Exercise is defined as at least a 20-minute trot 4-5X per week.

There are a variety of products used to treat EMS and promote increased metabolism. Results vary but many claims to have success and none have been documented to cause harmful side effects.