

## Metabolic Syndrome

Imagine a bright spring day. You excitedly turn your horse out to indulge in the fresh spring grass as a special treat. You return in a few hours to collect your companion, but instead are met by an unhappy painful horse, slowly limping its way back to the gate. Sound familiar? Unfortunately for some owners, this is an all too real scenario. Many horses suffer from carbohydrate sensitivities, or metabolic syndrome, which make them extremely susceptible to changes in carbohydrates in the diet. One may also hear these horses referred to as insulin resistant, almost like Type II diabetes in humans. In recent years there has been an upsurge in the number of studies and articles written about metabolic syndrome in horses. While awareness in the general public has increased, many horseman still wonder if their horse is indeed one of these individuals. Should you be paying strict attention to every type of carbohydrate your horse consumes? Should horses no longer consume grass? Does your horse need medication? How do you know if your horse truly has metabolic syndrome?

Horses with metabolic syndrome are described by a certain appearance. They are typically obese horses which gain weight readily, and are considered "easy keepers". Breeds with a higher prevalence of metabolic syndrome include the traditional easy keepers such as ponies, Morgans, and Paso Finos. However, metabolic syndrome can be seen in a wide spectrum of breeds including Quarter Horses, Arabians and Thoroughbreds. Beyond just being obese, metabolic horses tend to have regional adiposity, or specific fat deposits on the crest of their neck, over their tailhead, the sides of their abdomen and also in the scrotal or mammary area. The size of the crest of the neck is often the best physical predictor of metabolic syndrome. The thicker the crest, the more likely the horse truly fits into this category. However, it is important to note that it is possible for leaner horses to also suffer from metabolic syndrome. Despite being lean these horses still demonstrate regional adiposity, along with a susceptibility to pasture associated laminitis, as well as insulin resistance. Therefore, if your horse shows symptoms, it may be wise to have it tested, despite it not being overly obese.

Unfortunately the most common way horses are diagnosed with metabolic syndrome is the frequency of laminitic bouts. Usually this is seen following grazing on pasture, especially in the spring or fall. These horses may be young or middle aged, which sets them apart from horses who suffer from Pituitary Pars Intermedia Disorder or PPID (also known as Cushings disease). However, horses who suffer from metabolic syndrome early in life are certainly more likely to develop PPID later on. PPID horses are also distinct in the prevalence of hair coat which does not shed or long curly hair while the metabolic horse has a normal hair coat.

If your horse has been diagnosed with metabolic syndrome, or has show signs of pasture associated laminitis, it is important to start them on a rigorous management protocol. First, as these horses have sensitivities to carbohydrates, concentrates (grain) should be removed from the diet. As these horses are typically obese anyway, there is little need to supply concentrates to them. There are many vitamin and mineral supplements which are intended to complement forage only diets. Typically these are pelleted supplements which are fed at very low levels of intake. Grazing should also be limited in these horses. Horses should only have access to pasture for a short time or have access to a very small area. If more movement of the horse is desired, a grazing muzzle should be employed to prevent

overconsumption of grass. Be sure the horse knows how to drink with the muzzle on and watch for rubbing.

The obesity issue in the horse should also be addressed. If the horse is sound, exercise should be gradually increased, ideally to 5 days a week. As mentioned previously, the horse should receive an all forage diet, preferably of grass hay, with intake reduced in order to encourage weight loss. If weight loss is not able to be achieved at an intake of 2% of the body weight, then reduce feed intake to 1.25 to 1.5% of bwt. Unfortunately simple diet restriction may take a long time due to the efficiency of the horses prone to metabolic syndrome. If the horse has greater degrees of insulin resistance, it is advisable to test the non-structural carbohydrate composition of the hay, with it ideally below 10%. If horses have persistent issues with metabolic syndrome after calorie restriction, decrease in adiposity, alteration of diet, limitation of pasture intake and exercise have all been employed, then there are medical therapies which can also be used. If all of these measures are followed faithfully, there is no reason that these horses cannot be returned to a metabolically normal state and enjoy a long healthy life.

For further questions on metabolic syndrome: please contact us.