



DAVIE COUNTY LARGE ANIMAL HOSPITAL

928 Farmington Road
Mocksville, NC 27028

Equine Metabolic Syndrome (EMS)

By: Alston Dickinson and Dr. Jose R. Castro

What is Equine Metabolic Syndrome?

To have Equine Metabolic Syndrome (EMS) horses must suffer from both a metabolic and hormonal disorder characterized by obesity, insulin resistance (for more information visit Equine Insulin Resistance) and chronic/recurring laminitis. Clinical signs include: regional adiposity at the neck, tailhead, sheath or mammary glands and/or above the eye; polydipsia; polyuria; “pot belly” appearance; and laminitis. While there is no cure for EMS, a horse can be successfully managed with medication, diet and exercise.

What horses are at risk for EMS?

All horses are at risk for EMS, but the condition generally affects horses considered “easy keepers”, or those that can thrive on pasture alone. In addition, horses that are given diets high in sugar and/or starch are at higher risk for EMS especially when in conjunction with other risk factors such as obesity and breed. While generally thought to occur in older horses, EMS can develop in horses between the ages of 5 and 15.

Body condition score (BCS) is another contributing factor that can lead to EMS. If a horse is at or above a 7 out of 9 in BCS they will exhibit the regional adiposity characteristic of an EMS horse. The last factor to be aware of is breed. While not all horses of these breeds develop EMS, they have a genetic predisposition to obesity, including Morgans, Spanish Mustangs, Paso Finos, Peruvian Pasos, Arabians, Saddlebreds, Warmbloods and most pony breeds.

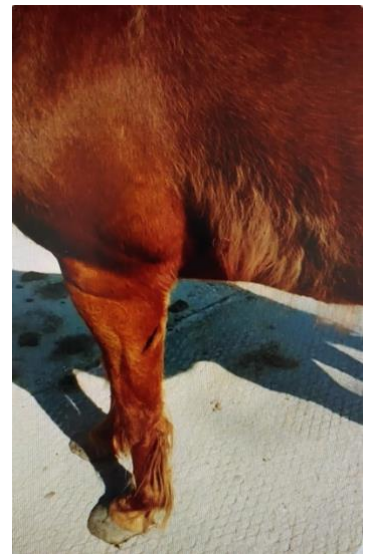


Figure 1: Hypertrichosis

What tests do I need to run to find out if my horse is suffering from EMS?

There are a couple of options to test your horse for EMS:

1. Blood glucose and blood insulin levels: a simple blood test that can be done at the farm by a veterinarian. However, there are a lot of variables including diet, feeding time, fasting, stress, season, time of day, sample handling, and technique that can skew the results of this test.
2. Combined Glucose-Insulin Tolerance Test (CGIT): for this test, a veterinarian will give an IV injection of glucose and insulin to a fasted horse. They then take blood samples over several hours to test blood glucose concentrations. In a horse with EMS, high concentrations of blood glucose and blood insulin will be maintained longer than the normal 45 minutes required to return to baseline.
3. Euglycemic insulin clamp is the gold standard in testing for EMS. In this test, a slow, constant infusion of insulin and glucose is given IV. Afterwards, a series of blood samples are taken to

calculate the amount of insulin necessary to reduce the artificially elevated blood glucose levels.

What treatments are available to treat EMS?

EMS is an incurable condition that can only be managed through medication, diet and exercise. In terms of medication, short-term L-thyroxine can aid in weight loss in the beginning of treatment and an alternative medication called Metformin can help control high blood sugar. However, the majority of treatment for EMS comes in dietary and exercise management. Horses suffering from EMS must be kept off lush pasture and only be fed low-sugar, low-starch grass hay and no grain. If they are on pasture, a grazing muzzle must be kept on at all times. They will require regular exercise to lose weight and close monitoring for laminitis episodes. If a horse has already suffered or is currently suffering from laminitis, they will also need corrective shoeing and trimming due to rotation of the coffin bone. Treating EMS is a slow process, but can be successfully done with the help of your veterinarian and farrier.

How can I prevent EMS?

If you own a horse at high risk for EMS, you can institute the dietary and exercise recommendations listed above to help avoid the development of EMS in your horse.

What is the prognosis for a horse with EMS?

While there is no cure for EMS, a horse can be successfully managed through diet and exercise. The main challenge for a horse with EMS is to manage and prevent recurrent bouts of laminitis, which will require more aggressive management.

If you are concerned your horse might be suffering from Equine Metabolic Syndrome, please contact Davie County Large Animal Hospital to set up an appointment or talk to one of our veterinarians. Our veterinarians will work with you to find a suitable treatment plan including nutritional consultation personalized to you and your horse.

If you wish to know more about Equine Metabolic Syndrome, please read the following article from our partners at Cargill: <https://www.vetnutritioninfo.com/page/equine-metabolic-syndrome>