

Fact Sheet

Equine Metabolic Syndrome (EMS)

What is EMS?

Equine Metabolic Syndrome (EMS) is a condition associated with excessive secretion of insulin which then predisposes to laminitis. Horses or ponies with EMS release far more insulin than normal horses when sugar is eaten. High levels of insulin cause damage to the laminae which may lead to weakening of the laminae which can lead to obvious pain and laminitis. Certain breeds are at greater risk, including Welsh, Dartmoor, Arabian, Shetland and Warmbloods, although any breed can be affected if management, particularly diet, is inappropriate.



How is EMS recognised?

- A predisposition to laminitis is the commonest reason to suspect EMS
- Lameness is not always obvious and hoof damage often occurs gradually and apparently painlessly in many cases
- Obesity is also a typical sign and it may be seen as being generally overweight, or as localised uneven distribution of fat (e.g. crest of the neck, above the eye, behind the shoulders or at the tail head) also known as regional adiposity



How can you diagnose EMS?

Your vet may be suspicious of EMS based on the body condition of the horse and a history of laminitis, but a definitive diagnosis requires demonstration of abnormal regulation of insulin. Common testing methods include:

- Karo Light Syrup Test (Oral Sugar Test)

Hard feed should be withheld for 3-6 hours and then a calculated dose of Karo Light corn syrup is given by mouth. Your vet will then blood sample your horse between 60-90 minutes later to monitor the blood glucose and insulin responses. The vast majority of EMS cases show abnormally high insulin values following this test, although a few other conditions can produce similar responses such as equine Cushing's disease (PPID), pregnancy, stress, anxiety and other generalised illnesses.

- Resting or fasting glucose and insulin blood test

Glucose and insulin can be also measured after a horse has been eating its normal diet or sometimes after a short fast for a few hours. Normal results in these tests do not rule out EMS, but they do offer useful information regarding the suitability of the current diet

- Adiponectin is a hormone made by fat tissue that affects insulin actions. It is found to be abnormally low in most EMS cases

EMS | Fact Sheet

How can I treat/manage EMS?

Diet

The most crucial element of treating EMS cases is to ensure an appropriate diet; both with respect to what is fed as well as how much. It is important to realise that high insulin levels are the cause of damage to the laminae, so a diet must be given that does not stimulate excessive insulin levels. As sugars and starches are the major cause of insulin release, this must be restricted to no more than 10% of the diet. Most mixes and cubes will have much more starch and sugar than this, and it is not unusual for many hays to have higher values also. Any dietary changes should be made gradually (over at least 2 weeks). A sudden severe calorie restriction is potentially harmful.

Forage

Hay is generally preferred as some evidence suggests greater insulin release after eating haylage.

Soaking for 1 to 12 hours (depending on ambient temperature) will reduce its sugar content although the magnitude of the effect is variable between hay batches.

Weigh your hay before soaking! In order to achieve weight loss, most horses should receive 1.2-1.5% of their body weight in total food every day, comprising hay and also everything else that is fed.

Grazing

Access to pasture should be restricted or eliminated while EMS is being treated and rich grass definitely avoided, especially in the spring and summer,

Turning your horse/pony out with a grazing muzzle and restricting grazing to a small area of the field, can be helpful in maintaining a healthy weight following on from a weight-loss program. Turning out in a sand or woodchip pen or paddock with hay is better still. Also, turning horses/ponies out at night might reduce high sugar intake as the sugars within the grass are often lower during this time, although this effect can be variable.

Anything else?

Any additional feeds that are offered (e.g. to carry drugs or supplements) must be low in calories, sugars and starches and usually various non-molassed chaff-based products are good in this respect.

A "feed balancer" is important to include in the ration to ensure adequate protein, mineral and vitamin intake, especially if the hay is being soaked and there is limited access to grass.

Do not feed treats as these are often high in sugar. This includes apples and carrots.

Exercise

As long as laminitis is not currently present, daily exercise helps weight loss and decreases insulin levels. At least 30 minutes of exercise that makes your horse work (i.e. sweat!) several times a week is required to make a difference.

Medications

Diet and exercise are the best way to manage EMS, but sometimes a little help is needed from short term medication.

Metformin - decreases glucose uptake by the intestine, therefore reducing blood sugar levels and the insulin response.

Levothyroxine - might aid in weight loss by increasing the basal metabolic rate but will also increase appetite so it is important that diet is restricted.

Ertugliflozin - has recently been found to lower insulin levels in horses and be useful in some cases.

How can I prevent EMS?

Maintaining a fit horse with a low sugar diet and a healthy weight is the best way of preventing EMS!

For further information, please contact your local
VetPartners Equine Veterinary Practice on:

vetPartners

VetPartners Equine has a diverse range of practices and expertise within the group.

Together with our practices, our focus is on providing an excellent service to our equine clients.

No two practices are the same, and we understand and embrace that independent spirit.