

## 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

### How can I treat/manage EMS?

**Diet:**

Focus on a low-insulin diet, limiting sugars and starches to under 10% of the total intake. Make gradual dietary changes over at least two weeks to avoid stress from sudden calorie restriction.

**Forage:**

Prefer hay over haylage to minimize insulin release. Soak hay for 1 to 12 hours to reduce sugar content, weighing it before soaking. Aim for 1.2-1.5% of body weight in total daily food, including hay.

**Grazing:**

Restrict or eliminate pasture access, especially during spring and summer. Use a grazing muzzle if turning out, preferably in a small, managed area or a sand/woodchip pen with hay. Nighttime turnout might reduce sugar intake.

**Additional Feeds:**

Choose low-calorie, low-sugar, low-starch feeds for supplements. Consider non-molassed chaff-based products. Include a feed balancer for adequate protein, mineral, and vitamin intake, especially if relying on soaked hay and limited grass.

**Exercise:**

Regular exercise, at least 30 minutes several times a week, promotes weight loss and lowers insulin levels, beneficial unless laminitis is present.

**Medications:**

While diet and exercise are primary, short-term medications may be necessary 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!

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This factsheet was created by the VetPartners Equine Team, with assistance from our Marketing Team and Veterinary Regulatory Advisors.

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

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