



Management of Equine Metabolic Syndrome/ Horses at risk of laminitis

What is Equine Metabolic Syndrome (EMS)?

Equine metabolic Syndrome (EMS) is a fairly recently recognised hormone condition in ponies and horses. The term describes a syndrome characterised by obesity, insulin resistance and predisposition to laminitis. The condition is similar to Type 2 diabetes in people. Insulin has an important role in the body, enhancing glucose uptake from the blood into cells, and is majorly involved in controlling blood glucose levels. Ponies affected with EMS do not respond to insulin as they should, so high levels of glucose are found in the bloodstream. The increase in glucose and insulin in the bloodstream lead to damaging effects, particularly to the blood vessels in the feet which can cause laminitis.

What are the signs of EMS?

Most horses which are grossly overweight have EMS. It is less obvious in horses which are in good condition or a little overweight. Weight, girth and neck measurements are all useful indicators of EMS and also help monitoring weight loss. Laminitis is also commonly encountered in horses with EMS, and horses with EMS are less likely to recover from laminitis. EMS also causes the body to be less able to fight infectious disease, increases the risk for strangulating colic which requires surgery, causes horses to have less energy and perform poorly and can also cause reduced fertility so mares are less likely to get in foal.

How do we test for EMS?

Testing for metabolic syndrome is performed by blood tests to measure insulin and glucose levels. There are 2 main options for testing. The simplest way is to take a blood sample at home after either a period of starvation or feeding a measured amount of glucose. For other horses, we can measure how their metabolism responds to injections of glucose and insulin over the course of a day in the hospital.

How is EMS managed?

The single most important treatment for EMS is diet and exercise. By eating less and exercising more, metabolism changes and weight is lost. Treatment with drugs is possible, but it should only be used as a short-term solution until exercise and diet strategies and weight loss are effective. Drug use without effective management will not work.

Weight reduction and feeding horses with EMS or at risk of laminitis

Weight loss must be controlled and gradual. All sugary and starchy treats should be stopped immediately- this includes sweets, fruit, vegetables and molasses. All cereal feeds must be stopped- horses which are overweight do not need hard feed. Any medications to be given can be given in a small amount of grass nuts or chopped alfalfa/ straw products designed for laminitics. A balanced vitamin/ mineral supplement should be fed due to feed restriction to ensure adequate provision of trace elements. Turn-out on grass should be restricted- 30 minutes to 1 hour twice daily is generally recommended, but talk to your vet about your horse's individual situation. The remainder of the diet should be made up of hay, which should be fed at 1-2% (dry weight) of the horse's ideal body weight. For a 500kgs horse, this is 5-10kgs dry hay per day. Weighing hay accurately is a good habit to get in to.

Hay can be analysed by a feed company and ideally it should contain less than 10% NSC's (non-structural carbohydrates). If hay is not analysed or contains over 10% NSC's, soaking hay for 12



hours and then rinsing will remove about a third of the sugars which ensures adequate protein and fibre are provided while limiting sugars.

Pasture management

Grass should be kept healthy and fertiliser use kept minimal. Sugar content is highest during conditions of plant growth- warm, wet, sunny weather, when grass is growing and flowering. Sugars also accumulate when photosynthesis (regulated by light) exceeds respiration (regulated by temperature and water supply) i.e. cold/ frosty sunny weather. Susceptible horses should be kept off pasture when nights are cold and days are sunny. Sugars also accumulate during the day and are used-up at night so turnout late at night or early in the morning.

On hot, sunny days- sugars are lowest in the early hours.

On cool, overcast, rainy days- sugars are lowest mid-morning.

Overgrazing should also be avoided as sugar levels are higher in stems than in the leaves. It also causes proliferation of weeds and more hardy grass species which have a higher sugar content. Restricting intake of healthy, steadily growing grass is preferable to allowing free access to overgrazed pasture. Consider using a grazing muzzle and rotate the grazing to keep grass healthy. Turnout on grass which is in the shade also has a lower sugar content.

Hay production

Sugar levels vary massively depending on conditions. Avoid cutting hay early in the growing cycle and opt for hay which has gone to seed. Hay should not be cut after stressful conditions such as cold/ drought. Ideally cutting hay early in the morning then curing it slowly in mild conditions rather than rapid drying will lead to lower sugar content.

Exercise

The more the better (laminitis permitting). Exercise burns calories, but it also changes the metabolism so sensitivity to insulin increases. Small ponies, which don't have a small enough rider can be a challenge to exercise- leading them from another horse, lungeing or long-reining will keep them active! Many overweight horses are stabled to restrict grazing, however turnout in a school or yard will increase physical activity. Turnout is not sufficient exercise.

We also run a weight clinic at the hospital which provides information, support and the all important weigh-ins! Please phone the hospital and speak to Catherine!