
EQUINE METABOLIC SYNDROME

Is your horse on the 'cuddly' side?



Incorporating Ada Cole
Memorial Stables

WHAT IS EQUINE METABOLIC SYNDROME?

EMS is similar to Type 2 diabetes in humans. Scientists have found that fat cells actively produce hormones that can impair the actions of insulin. Insulin takes glucose from the bloodstream for use or storage in the cells.

Excessive fat cells can lead to a resistance to insulin, which the body then compensates for by producing more insulin. This increase in circulating insulin is called hyperinsulinaemia. It is these changes in hormonal regulation that are thought to cause laminitis, although the exact mechanisms are not fully understood at the moment.



An obese horse (Body Condition Score 4).

How do I know if my horse is at risk?

If your horse is obese, he's at risk of EMS! Keep reading to find out how to estimate your horse's weight and how much fat he is carrying. Many owners do not realise their horses are obese.

Even if your horse's coat is shiny and he's come first in the show-ring, obesity affects your horse's welfare. An increased breathing rate, an increased heart rate, arthritis, high blood pressure and reduced organ function are all effects of obesity.

Native horse and pony breeds are most at risk of Equine Metabolic Syndrome because they are designed to store fat in the Summer, ready for harsh winters where food supplies may be scarce. Domestic native breeds have more rich grazing compared to their wild relatives, and therefore have access to more calories!

Young to middle-aged horses are more likely to suffer with EMS. The symptoms of EMS can be similar to Equine Cushing's Disease; this condition is more likely to occur in older horses. However, it is possible for a horse to have both conditions at the same time.

WHAT ARE THE SIGNS?

Horses that have developed EMS will carry bulges of fat, normally around the crest, shoulders, sheath (for males), and the rump. They may have abnormal fat deposits too, such as in the hollow above the eyes or a cresty neck.

Other signs include:

- Sluggishness.
- Recurring episodes of acute laminitis.
- Low-grade laminitis, which may go unnoticed.
- Difficulty losing weight.

- Increased urination.
- Increased drinking.
- Infertility in mares.

A blood test can determine whether a horse has EMS. When a horse becomes insulin-resistant, the body produces more insulin to try to counteract it. A blood test that shows high insulin levels can be enough to diagnose EMS. Also, some signs of EMS are very similar to Equine Cushing's Disease. A blood test will help to determine which one your horse has.



An overweight horse with a cresty neck.

TREATMENT AND PREVENTION

The treatment of EMS is all down to the horse's owner! Thankfully, EMS can be reversed, but only with a lot of hard work. Horses with EMS are very, very hard to diet – so it takes real dedication to get the job done. It involves a serious permanent lifestyle change. Your vet and a nutritionist will help you plan a tailor-made diet for your horse. However, keep reading for a few handy hints and tips.

It is much better to prevent EMS in the first place by not letting your horse become obese. Monitor your horse's weight and fat distribution regularly.

So how can I tell if my horse is obese?

Use a weighbridge!

The best way to find out your horse's weight is to weigh him on a weighbridge! Your vet may have a weighbridge at his or her practice, or look out for roadshows by feed companies. Some feed companies will come along to your yard if there is a small group of you that are interested. Your vet or a nutritionist can advise you on the ideal weight for your horse.

If you do have access to a weighbridge, weigh your horse at least once a month. Horses lose fat from the inside before they lose fat on the outside. Even if your horse doesn't look any different, a weighbridge will let you know if your horse is shedding the kilos.

Give your horse a Body Condition Score

Body condition scoring will help you to feel how much fat your horse is carrying. There are a few different scales for body condition scoring. At Redwings we use the 0–5 scale. A score of 0 is 'very poor', and a score of 5 is 'very fat'. A score of 3 is 'good'. See our Body Condition Score chart for more information.



Remember to check for abnormal fat distribution too (e.g. fat deposits in the hollows above the eyes or a cresty neck).

**Heart Girth measurements:
the tape is placed just
behind the elbow.**

Use your hands to feel how much fat your horse is carrying. Body score your horse at the same time of day every week. Write down your results and take a photo.

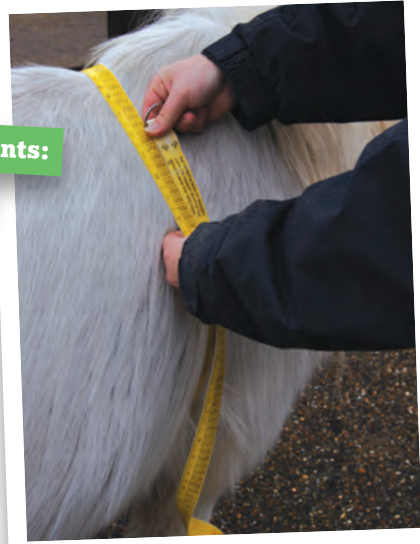
Use a weigh tape

Use a weigh tape at the same time as body condition scoring your horse. Weigh tapes are not 100% accurate at measuring your horse's actual weight, but they will help you to detect an *increase or decrease*. Remember to use the same weigh tape in the same place each time!

• Heart Girth measurements

A heart girth measurement is where the weigh tape is placed just behind the horse's elbow. Research shows that this may not actually be the most accurate way to detect changes in your horse's weight. Girth belly measurements could be more accurate.

**Girth Belly measurements:
the tape is placed around
the widest part of the belly.**



• Girth Belly measurements

As well as placing the weigh tape behind the shoulder, try placing it on the widest part of the belly too (about two thirds of the way between the shoulder and the point of hip). This is where horses are more likely to store excess fat. Do this at the same time each week to help spot weight loss and then adjust the horse's diet accordingly.



Give your horse a Cresty Neck Score

Fatty bulges at the top of the neck are thought to be a sign of EMS. You can ‘cresty neck score’ your horse on top of your weekly body condition scoring. You give the crest a score between 0–5. A score of 0 means there is no appearance of a crest on the neck at all, and a score of 5 means the crest is so fat that it is visibly sagging to one side. A score under 3 is ideal.

Take regular photographs of your horse’s neck to help you spot any changes.

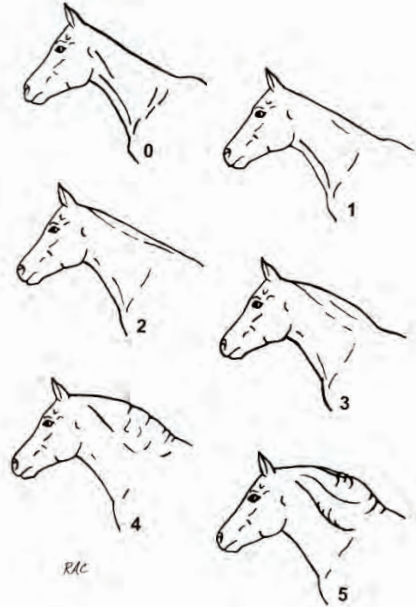


Fig. 1. Illustrations of individual cresty neck scores.

**Cresty Neck Scores,
Carter et al 2009.**

Table 1
Cresty neck scoring system

Score	Description
0	No visual appearance of a crest (tissue apparent above the <i>ligamentum nuchae</i>). No palpable crest
1	No visual appearance of a crest, but slight filling felt with palpation
2	Noticeable appearance of a crest, but fat deposited fairly evenly from poll to withers. Crest easily cupped in one hand and bent from side to side
3	Crest enlarged and thickened, so fat is deposited more heavily in middle of the neck than toward poll and withers, giving a mounded appearance. Crest fills cupped hand and begins losing side to side flexibility
4	Crest grossly enlarged and thickened, and can no longer be cupped in one hand or easily bent from side to side. Crest may have wrinkles/creases perpendicular to topline
5	Crest is so large it permanently droops to one side

My horse is a little cuddly! How can I shift those extra kilos?

We can give you a few hints and tips here, but your vet and a nutritionist can give you more tailor-made advice. Every horse is different. Any changes to your horse's diet must be done gradually. A 'safe' rate of weight loss is around 1% of body mass per week.

Remember this simple sum:
fewer calories + more exercise = weight loss!

Dieting is seriously hard work – especially when it comes to those with EMS – but you must never lose faith. Keep trying. Your horse will thank you in the end.



No treats means no treats!

Fewer calories!

Consider everything that goes into your horse's mouth. Cubes, mixes, apples, carrots, treats, grass – the lot!

Feed and Forage

- Weigh all feeds, including hay, according to what your vet or nutritionist has advised. Do not go a single gram over! Most feed companies are happy to give free advice.
- If anybody else looks after your horse from time to time, make sure they stick to the rules and don't give your horse any sneaky treats on the side.
- Get your hay analysed. Most feed companies will be happy to do this for you. Choose hay that has less than 12% WSC (water soluble carbohydrates) and is as low in calories as possible.
- Soak hay for *over 12 hours* in tepid water to reduce calorie content further.
- Use wood shavings as bedding – not straw. Horses may eat straw, meaning they'll be consuming unwanted extra calories.



Weigh your hay.

- Make sure your horse is getting enough vitamins and minerals by feeding a balancer supplement, even if he is overweight.
- Horses are trickle-feeders. No access to food for long periods of time can cause stomach ulcers and behavioural problems. Use small-holed haynets or double netting to increase the amount of time it takes your horse to eat his hay.

Grass – it looks innocent, but it's seriously calorific

- Talk to an agronomist (a soil management expert) about your grass. Some types of grass are higher in calories than others.

- Try strip grazing between May and September (when grass sugar levels are high). This is where a strip of paddock is sectioned off by electric tape. The tape is moved forward every day to give access to small amounts of fresh grass. However, take caution! Herd members may compete with each other for this new grass, meaning chances of injury are higher.
- It is vital to strip graze in a way that allows horses to exercise. Horses are foragers. Some say creating a track around the outside of the paddock using electric tape encourages a horse to move around more.
- Try using a grazing muzzle between May and September. These stop a horse gobbling up too much grass in one go.
- Turn your horse out at night, when sugar levels in grass are naturally lower.



Strip grazing will help to control grass intake, but beware of herd members fighting for the fresh grass.

- ‘Starvation paddocks’ are **not** recommended. Your horse will eat the newest bits of grass growth, which are always high in sugar. Also you’ll leave your paddocks open to damage, leading the way to problems like ragwort growth.

- Turning out onto a woodchip paddock with **no access** to grass is ideal for those with EMS, as this means their calorie intake can be tightly controlled. Ensure your horse has small amounts of hay to nibble on throughout the day.
- Be wary of limited periods of turnout on grass, as your horse will overeat to make up for lost time.

For more information on cutting the calories, try Spillers’ Care-line team on **01908 226626**



It’s a luxury, but turnout on a woodchip paddock is ideal for overweight horses.



Take your horse for a walk!

More exercise!

- Take things back to basics. Remember, wild horses spend 18 hours a day grazing and will walk for miles and miles to find food.
- Living in a small herd will help to encourage exercise.
- If your horse is not ridden, take him for power walks every day. Make sure it's a power walk and not a gentle stroll! Exercise programmes should be built up gradually.
- Turning out onto a woodchip area or making use of a ménage is preferable to stabling. The horse will have more opportunity to walk around.

Don't forget, if your horse is suffering with laminitis, your horse should do NO exercise. See our laminitis leaflet for more information.

Other things to think about

- Does your horse really need to wear a rug? Horses are very good at keeping themselves warm. Wearing a rug may hinder their efficient insulation systems, leading to weight gain.
- Don't give in! If your horse is looking a little bored, find another way of stimulating him that doesn't involve a bucket of food. Low-calorie treat balls and toys work well.



Native ponies have efficient central heating systems!

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If you need more information, the Redwings welfare team would be happy to help. Please call us on 01508 481008 or email us at welfare@redwings.co.uk

Redwings Horse Sanctuary was established in 1984 and has grown to become the largest horse sanctuary in the UK, working to save horses, ponies, donkeys and mules whose future would otherwise be bleak. Its work has three themes: rescue and rehabilitation, specialist sanctuary care and prevention through education. The sanctuary currently provides more than 1250 horses, ponies, donkeys and mules with specialist sanctuary care and has 500 horses out on loan in Guardian homes.



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