

# GASTRIC ULCERATION: what horseowners should know

**Gastric ulceration is common in an alarming number of working horses, according to the latest research. Kathy Carter investigates what can be done to manage this man-made condition**

Recent studies showing gastric ulcers in a large number of working horses have prompted vets and equine enthusiasts to look closely at their horses' management systems in search of preventative measures for this condition.

## The saliva connection

Equine physiologist and nutritionist Linda Linnane first became interested in equine gastric ulceration when observing Andalusian horses in Spain. The stabled stallions experience similar management systems to racehorses, and share many clinical problems and feed-related digestive disorders, including

**Infrequent feeding on low-fibre, high-cereal diets puts horses at risk of contracting gastric ulcers.**



gastric ulceration. "Horses that are fed infrequently, on low-fibre, high-cereal (soluble carbohydrate) diets, are at risk from equine gastric ulceration syndrome (EGUS)," Linda says.

"Unlike humans, horses continually secrete gastric acid, which is suited to their natural, trickle-feeding pattern, where they would be continually eating small amounts of fibrous foliage," she explains. "Mastication, the mechanical process of breaking down food in the mouth, also results in the continual production of saliva, which helps to 'buffer' gastric acid."

The link between gastric ulceration and infrequent feeding is saliva production. "When horses are deprived of forage and are not fed very often, saliva production is greatly reduced and gastric acid levels increase," Linda adds.

It is therefore desirable to provide a natural environment for our horses where possible, specifically regarding diet and management. Diets excessively high in starch have also been implicated in other digestive-related disorders, such as laminitis and azoturia (tying up): it seems that, where nutrition is concerned, natural really is best.

## Psychological and physiological stress

If we are considering an holistic approach, a horse's management system must also be addressed. The Spanish stallions that Linda observed were predominantly stabled; this can sometimes lead to ulcerative conditions, particularly if combined with a high-starch diet and a stressful lifestyle.

"It has been well documented in recent times that sports horses kept in intense management environments show a high incidence of gastric ulceration," says Linda. "Racehorses, in particular, are known to be highly affected."

"During physical exercise, gastric secretion increases and some of the acid in the lower (glandular) part of the stomach is pushed into the upper (non-glandular) region, which is not protected from the effects of gastric acid,"

## Worrying statistics

A recent study by researchers at the University of Montreal (ref 1) reported that 95 per cent of the horses trialled were suffering from gastric ulcers. This backs up extensive work by Dr Mike Murray of Merial Equine Health, who found that, of the racehorses he tested, between 93 per cent and 100 per cent of those in training, and 55 per cent of those out of training, also suffered from gastric ulceration (refs 2,3).

Meanwhile, researchers at the University of Pennsylvania found that the risk of ulceration increases with age in geldings, with 87 per cent of male racehorses in training affected (ref 4).

A further US-based study, carried out by Dr Richard Mitchell (ref 5), confirmed that around 60 per cent of show jumpers, dressage horses and other performance horses tested were affected by gastric ulcers. Dr Mitchell also found that 77 per cent of competition and performance horses confirmed as having gastric ulcers had performance-related problems. Many were also suspected of having recurring back pain.

Linda adds. "Psychological stress caused by isolation, travelling or prevention of natural species behaviour patterns is also a contributing factor."

Furthermore, research by Al Merritt at the University of Florida demonstrated the effect of exercise on gastric acidity, and proposed an association between the volume of gastric acid produced and increased incidence of ulceration in animals in training (ref 6).

In an ideal world, none of us would impose any stress upon our horses, but simply by competing and travelling, we may be placing high demands on their systems. Performance horses are often stabled in intensely managed environments, with dietary restrictions and inappropriate

## EXPERT FILE

Linda Linnane is an equine physiologist, specialising in natural nutritional health to prevent feed-related disorders and improve performance. Linda founded *Primero Equine*, which produces *Total*, a feed rich in nutrients, fibre and oil, to aid digestive health. Linda is now based in Andalusia, Spain, where the inspiration for the product was originally born from a need to improve nutritional health in Andalusian horses. Visit: [www.primeroequine.com](http://www.primeroequine.com)



## NSAIDS

According to Linda Linnane, use of non-steroidal anti-inflammatory drugs (NSAIDs) such as phenylbutazone (bute) are also implicated as a cause of glandular gastric ulcers.

One of the roles of NSAIDs is to block the production of prostaglandins, molecules that cause inflammation and trigger pain in the body.

Unfortunately, however, the drugs also disrupt normal blood flow to the stomach, which can lead to gastric ulcers. This can prevent or delay the healing of ulcers in horses already affected by the condition.

nutrition, such as a low-forage, high-starch diet. Combined with a lack of natural grazing and herd interaction, and potentially stressful lifestyles, performance horses are prime candidates for EGUS.

## Are certain breeds more susceptible?

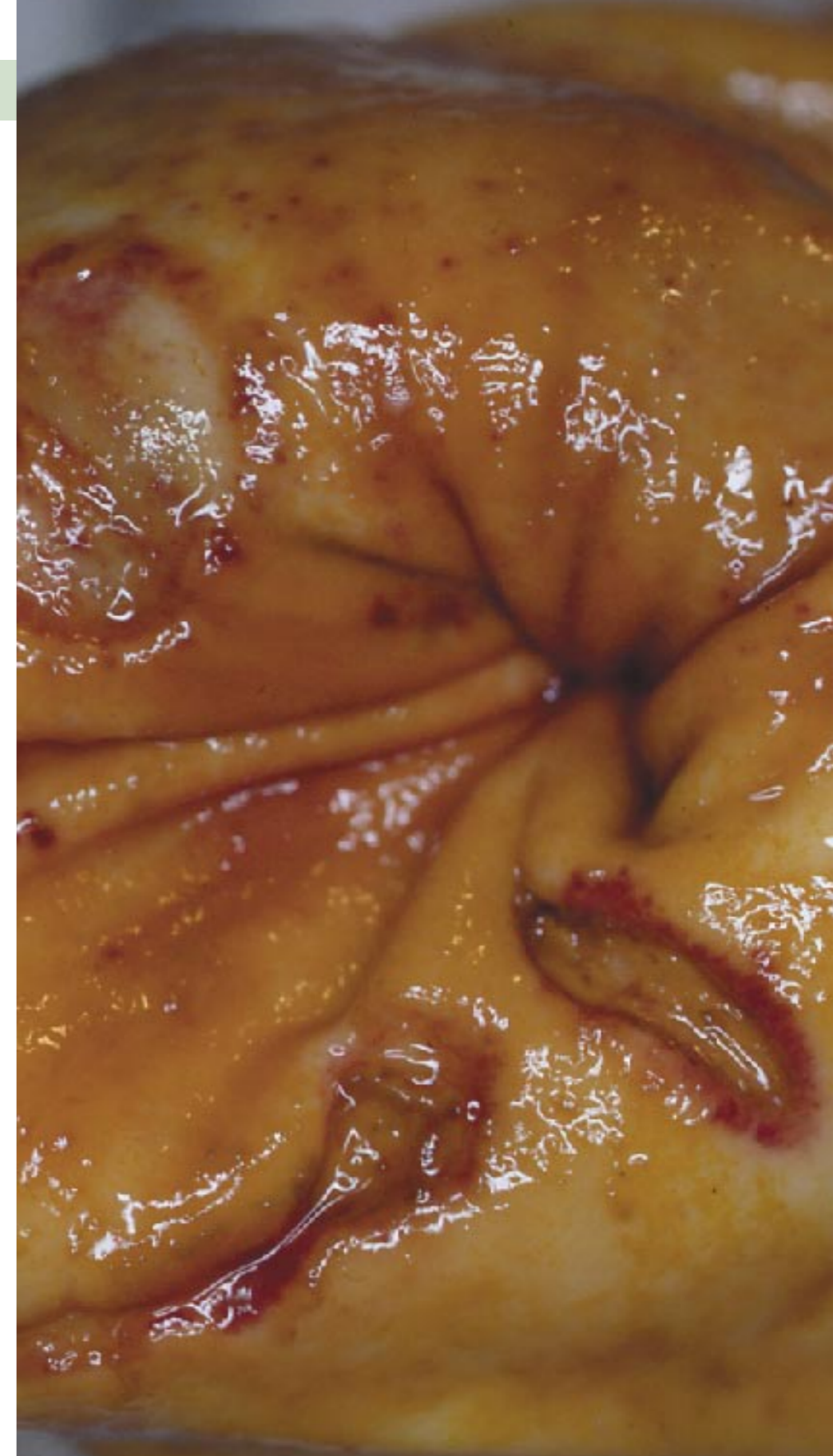
Some horses are naturally more 'stressy' than others, and these may be the same animals that excel at competition – for example, Thoroughbred racehorses.

However, it isn't a simple to suggest that a particular breed is more susceptible to gastric ulcers than others, Linda says. "I believe that Thoroughbred racehorses are often nervous or fractious, or display behavioural stereotypies [meaningless patterns of behaviour] due to the detrimental effects of diet and/or daily management routine," she explains. "This is often incompatible with their physiological and psychological needs."

## What this means for owners

It may seem as though those of us who do not own highly strung competition horses need not worry about gastric ulceration, but

**Gastric ulcers may go unrecognised, since symptoms are different in each case, varying from diarrhoea to irritability.**



## Symptoms of the condition

Charles Cullen of Merial Equine Health, which produces pharmaceutical products, maintains that the non-specific nature of the symptoms of ulcers means it is one of the most under-recognised problems in the equine field.


"Symptoms can vary considerably from one horse to another, but can include poor physical condition, dullness, changes in attitude, such as sourness or irritability, poor performance and, in some instances, colic and diarrhoea," Charles says. Another common symptom of gastric ulceration is decreased appetite – this creates a vicious circle, as lack of saliva further exposes the stomach lining to the effects of gastric acid.



Performance horses, such as Thoroughbreds, are naturally prone to stress from their lifestyle and management, so are at risk of contracting gastric ulcers, but it's impossible to generalise about which breeds are more susceptible to the condition.

that is not the case. According to Linda, all horses can be susceptible to the condition when exposed to the causative factors.

"Equine gastric ulceration syndrome, like many other man-made diseases that we see today, is caused by our failure to address the horse's evolved digestive system and inherent behaviour patterns," she explains.

"Horses, unlike humans, are not 'meal' eaters, so feeding them large amounts of cereal and reducing forage intake immediately pre-disposes horses to gastrointestinal distress, which may result in conditions such as ulceration, colic, laminitis and muscle myopathies, to name but a few." 

## DIAGNOSIS

Diagnosis of gastric ulcers is always veterinary. Specialist vets perform a gastric endoscopy, an examination of the inside of the gullet, stomach and duodenum, and suggest treatment in the form of appropriate drugs and management changes to aid healing and limit the chances of ulcer recurrence. The Willesley Equine Clinic in Gloucestershire recently invested in a special, three-metre-long video endoscope. Vet Richard Hepburn, of the American College of Veterinary Internal Medicine, is delighted with the product. "It is vital in helping us identify and grade the severity of ulcers in both the top and bottom of the stomach, and is the only way of getting a definitive diagnosis," Richard explains.

Vets grade equine gastric ulcers on a scale of 0-4, with the most serious showing extensive lesions and deep ulceration. "However, in my opinion, short of 24-hour paddock turnout and no exercise, only acid suppressive therapy, which uses drugs to inhibit acid formation, will heal gastric ulceration," explains Richard. This type of treatment is different to the administration of antacids, which neutralise the acid once it has been produced.

"Furthermore, exercise may be a vital factor in the onset of equine gastric ulceration syndrome, so ulcers may not be preventable in performance horses without the intervention of pharmaceuticals. The only product licensed in the UK that heals and prevents ulcers in horses is Gastrogard, a medicinal oral paste."

## References

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## Dietary management

Although your vet will recommend a course of action, which may include medicinal treatment, dietary management of horses prone to gastric ulceration is relatively easy to put in place. Linda Linnane has the following tips:

- The diets of horses suffering from, or predisposed to, gastric ulceration need to be completely reassessed and the causative factors (excessive stabling, high-starch diet, and so on), removed. Feed a diet that mimics the horse's natural eating pattern as closely as possible.
- In an ideal world, all horses would have constant access to grazing and hay. More forage should be introduced into the diet, and for horses whose needs cannot be met by forage alone, a nutrient-fortified fibre feed or oil-based concentrate feed should also be added to supply extra calories and nutrients (preferably a low-starch, low-sugar blend).
- Several supplementary products are said to offer antacid effects and reduce the clinical signs of equine gastric ulceration syndrome. However, many reports say that the buffering effects of the products are limited and temporary. Prevention is better than cure.

● Oil is an excellent energy replacer in a horse's diet. Although it does not appear to be the natural food choice of horses, it is well utilised and digested without any known detrimental effects.

It can be used in many cases to replace soluble carbohydrates as an energy source, which allows us to remove starchy cereals and sugar from the diet. It has also been shown to reduce fractious behaviour. Corn oil, in particular, is said to enhance the rate of healing of gastric ulceration.



Feed plenty of forage to your horse to lessen the risk of gastric ulceration, taking care to offer a diet that mimics natural grazing patterns as closely as possible.