



# STABLE TALK

## MANAGEMENT OF GASTRIC ULCERS IN HORSES

8 habits for a healthy stomach

### KEY POINTS

- ▶ The horse's stomach has two parts. An upper squamous part (white) and a lower glandular part (red) [See diagram on page 2]. The glandular part includes the pylorus, the valve that regulates the flow of ingesta out of the stomach.
- ▶ Both parts of the stomach may develop ulcers.
- ▶ Gastroscopy is the only definitive way to diagnose gastric ulcers, make the important differentiation between squamous and glandular ulcers and to monitor the effectiveness of any treatment or prevention programs.
- ▶ Less than 10% of ulcers heal spontaneously.
- ▶ The treatment for squamous and glandular ulcers is different. Therefore an accurate diagnosis via gastroscopy is important.
- ▶ Horses should always be fed a high roughage feed (of at least 3L/2kg) prior to exercise or travel to prevent "acid splash", the most common cause of squamous ulcers.
- ▶ Omeprazole is the drug of choice for treatment and prevention of squamous gastric ulcers.
- ▶ Glandular/pyloric ulcers affect about 30-50% of horses, depending on breed and discipline.
- ▶ Treatment of glandular/pyloric ulcers is more problematic and requires long-term treatment with omeprazole and other drugs. Consult your veterinarian.
- ▶ Omeprazole should always be given on a relatively empty stomach and a minimum of 20 min (preferably 60 min) prior to feeding.
- ▶ Ensure horses do not chew on enteric coated ulcer medications (eg Gastropell Forte & Gastropell Daily). Always administer over the base of the tongue as far back in the horse's mouth as possible.

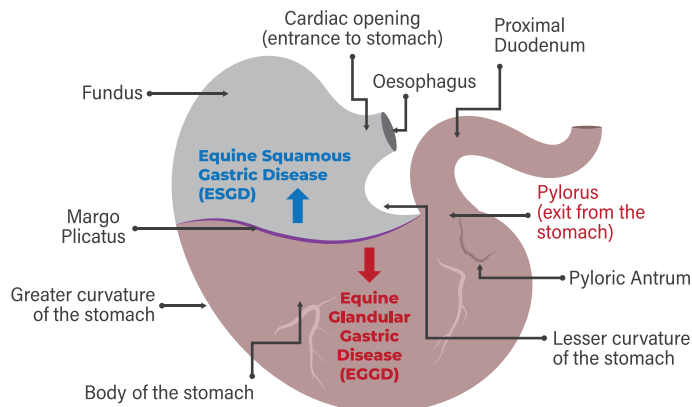
- ▶ Nutraceuticals, herbal extracts and compounded products for treatment of gastric ulcers seldom meet their advertised claims.
- ▶ Ulcers may recur once treatment has stopped. Most horses require ongoing treatment with ulcer medications such as omeprazole, especially when they remain in training.
- ▶ Maintenance doses of anti-ulcer medications may not be sufficient to prevent recurrence of ulcers in horses in heavy training.
- ▶ Accompanying husbandry changes are imperative for the successful treatment and prevention of gastric ulcers.
- ▶ Wherever possible, horses should be given free access to hay or pasture throughout the day.

**Consult your regular veterinarian for specific recommendations**

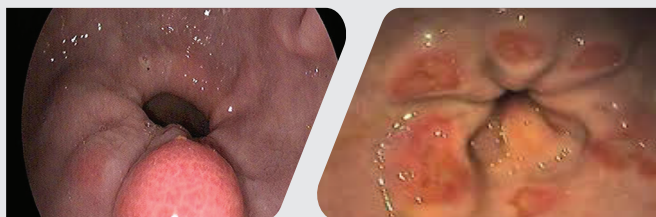


## FACT 1

### There are two types of gastric ulcers in the horse



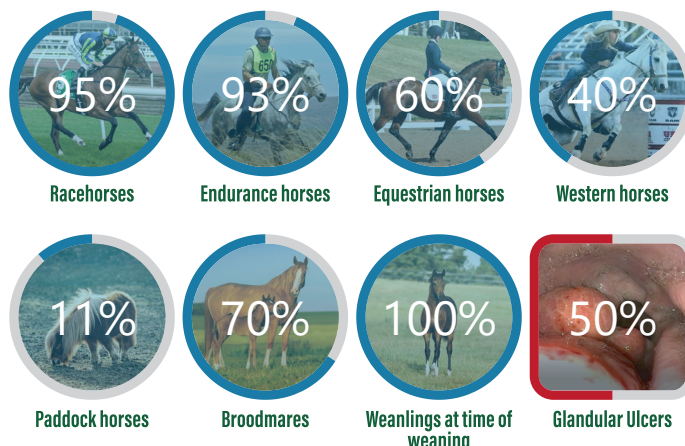
- ▶ The stomach has two anatomical parts. The top part is known as the squamous stomach and has a pearly white appearance when healthy.
- ▶ The squamous stomach has no innate protection from acid splash.
- ▶ The bottom half of the stomach is known as the glandular stomach and has a mottled red appearance.
- ▶ The glandular stomach includes the pylorus, the valve that regulates the flow of ingesta out of the stomach into the small intestine.
- ▶ The glandular stomach produces the gastric acid and enzymes responsible for digesting food, and as such does have some innate protection against acid damage.
- ▶ Both parts of the stomach may be affected by gastric ulceration/disease.
- ▶ The treatment, management and prognosis for squamous and glandular ulcers/disease is different. That is why it is important to determine which type of ulcers (squamous or glandular?) are present by gastroscopy.
- ▶ Glandular/pyloric disease may occur in conjunction with squamous ulcers or independently. The presence of one type of ulcer does not preclude the presence of the other.
- ▶ Glandular/pyloric disease occurs in approximately 30-50% of horses across all disciplines, breeds and ages.
- ▶ Warmbloods may have a higher prevalence of glandular lesions.
- ▶ Although lesions may occur anywhere in the glandular mucosa, they are most frequently found surrounding the pylorus or in the pyloric antrum. The pathology is similar to Inflammatory Bowel Disease (IBD).
- ▶ Symptoms caused by glandular/pyloric ulcers are similar to those of squamous ulcers. Behavioural problems are particularly common.
- ▶ Glandular/pyloric ulcers are not caused by "acid splash" but acid suppression remains an essential part of the healing process.



Up to 50% of horses will have ulcers/lesions of their pylorus (the valve that regulates the flow of ingesta from the stomach into the small intestine). Image on the left shows the most common type of pyloric lesion with raised, swollen rugal folds and discolouration of the mucosa. Image on the right shows an ulcerated pylorus. The cause, treatment and prognosis for glandular/pyloric disease is more complex than squamous ulcers.

## FACT 2

### Gastric ulcers affect horses of all breeds, all disciplines, all ages and under all management systems



The harder your horse works and the longer it is in work, the more likely it is to develop gastric ulcers. This is especially true for squamous ulcers, but also applicable for glandular/pyloric disease.

Stabled horses are 4x more likely to have squamous ulcers than paddocked horses. Warmbloods are particularly susceptible to glandular/pyloric disease.

## FACT 3

### Gastric ulcers affect the general health, well-being and behaviour of horses

Common signs of gastric ulcers include:  
(in order of prevalence)

- Poor appetite
  - Weight loss / poor body condition / failure to thrive
  - Behavioural changes eg nervousness, reluctance to work, jacking up, irritability, etc
  - Dull, harsh coat ("ulcer coat")
  - Reluctance to train, refusing jumps, resisting contact & frame
  - "Girthiness"
  - Colic; usually intermittent and mild but may be severe. Often associated with eating
  - Windsucking / crib-biting
  - Chronic diarrhoea
  - Teeth grinding
  - Chronic ulcers may rarely cause anaemia
- Some horses with ulcers (even grade 4/4 ulcers) may appear to be symptomless but improve once their ulcers are treated.

## FACT 4

### Gastric ulcers also affect performance

Horses with gastric ulcers may still be competitive, but they will generally improve once their ulcers are treated.

Gastric ulcers have the potential to impact significantly on performance, both directly and indirectly [see list under Fact #3 above]. There is a large amount of anecdotal and clinical evidence to support the negative effect of ulcers on performance. This has been confirmed in several scientific studies which have shown that the presence of gastric ulcers results in:

- Earlier fatigue
- Lower oxygen uptake
- Shorter stride length

All of which are likely to directly impact on performance in all types of competition horses. This is thought to be largely due to the pain caused by the ulcers decreasing respiratory depth and increasing abdominal guarding.



## FACT 5

### Gastroscopy is the only reliable way to diagnose gastric ulcers



**Gastroscopy is the only way to definitively diagnose gastric ulcers.** It is also essential for monitoring the effectiveness of any ulcer treatments and making the important distinction between squamous and glandular ulcers.

## FACT 6

### Management is important in the treatment and prevention of gastric ulcers

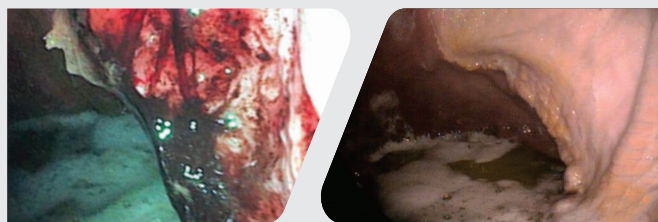
- ▶ The harder a horse works and the longer the horse is in work, the more likely it is to develop ulcers and the more severe the ulcers are likely to be.
- ▶ Horses that work more than five times a week are known to have a higher prevalence of glandular ulcers.
- ▶ Decreasing the number of times per week that the horse works may be a useful strategy in reducing the prevalence and severity of ulcers.
- ▶ It is essential that your horse is fed prior to exercise or travel. This includes walking exercise. Feed in the stomach not only absorbs any free gastric fluid ("sponge effect") but also forms a physical barrier to acid splash.
- ▶ It is important that the pre-work feed (> 3L / 2kg) contains some hay or roughage which have good absorbent properties. Consider also adding some dry bran for additional absorption.
- ▶ Transport also causes gastric acid splash and is another known ulcer risk factor. Horses should always be fed prior to transport.
- ▶ Grain should be limited to 1g/kg (or maximum 2g/kg) BW twice daily.
- ▶ Horses are designed to be continuous grazers. Turn out/pasture time will reduce the prevalence of squamous ulcers. Ideally horses should have access to roughage (hay or grass) 24/7. A slow feeder/hay net or round bale is best.
- ▶ Ideally horses should be fed 1.5-2% BW in roughage per day. That amounts to approx 10kg (5 biscuits) of hay throughout the day.
- ▶ Lucerne hay is high in protein and calcium, both of which provide extra gastric acid neutralising (buffering) effects.
- ▶ It is preferable to feed horses at ground level as this increases chewing and saliva production (and provides a back and neck stretch).
- ▶ Alternatively two slow feeder hay bags should be used at opposite ends of the stable or yard to mimic normal grazing behaviour and reduce boredom.
- ▶ Consideration should be given to utilising fats/oils as an alternative energy source to replace some of the grain in the horse's diet.
- ▶ Up to one cup (200mL) of oil can be given twice daily in the feed. The oil should be introduced slowly into the diet over a period of about 3 weeks, starting with 50mL twice daily. Consider any oil/fat that may already be in the horse's (pre-mix) diet when adding additional oil.
- ▶ Oils rich in Omega-6 fatty acids are preferred for squamous ulcers and oils rich in Omega-3 fatty acids are preferred for glandular lesions.
- ▶ Horses that have some physical contact with each other (in addition to visual contact) are less likely to develop ulcers.
- ▶ Horses are more likely to develop ulcers if a radio is playing in the stable.

## FACT 7

### Omeprazole is the treatment of choice for both the prevention and treatment of gastric ulcers

There is a large volume of scientific research and clinical experience proving that omeprazole is the most safe and effective treatment for gastric ulcers in horses.

- ▶ Omeprazole and ranitidine (both acid suppressing drugs) are the only proven treatment for gastric ulcers in horses. Omeprazole is the most effective way of blocking acid secretion.
  - Omeprazole (eg Ulcershield, Gastropell) is 10 times more potent than ranitidine (Ulcerguard) and has been shown to be more effective than ranitidine in treating ulcers in horses.
  - Omeprazole only needs to be given once daily compared with ranitidine which is administered 2-3 times per day (ideally every 8 hours).
  - Omeprazole comes in two forms; enteric coated (eg Gastropell Daily and Gastropell Forte) and buffered paste (eg Ulcershield). Both formulations are known to protect the omeprazole against acid destruction in the stomach.
  - In horses in heavy work, the full treatment dose is likely to be required. It is doubtful that the maintenance /prevention dose will prevent ulcers from recurring in this population of horses. Humans with gastric ulcers require ongoing (often life-long) treatment.
  - Nutraceuticals and feed supplements seldom meet their advertised claims for the treatment or prevention of gastric ulceration.
- ▶ Ulcer medications must be given a minimum of 20 mins (and preferably 60 mins) prior to feeding.
  - The presence of food in the stomach dramatically decreases the absorption of ulcer medications.
  - Horses naturally eat less between 10 PM and 5 AM. Thus early morning is usually when the stomach is at its emptiest and the best time to administer ulcer medications.
  - Ulcer medications should be given at whatever time of the day the stomach will be emptiest. It does not matter whether the medications are given in the morning or the afternoon.
  - There is no need to starve your horse overnight.
- ▶ Ulcer medications need to be given daily and long-term.
  - Ulcer meds should be given at the same time every day, seven days per week. Ulcers may recur once treatment has stopped.
  - Horses that are in high intensity training/stressful scenarios (eg typical competition horse) are at high risk of developing gastric ulceration and will require regular and ongoing treatment for their ulcers.
- ▶ Long-term administration of omeprazole is known to be safe.
  - Although omeprazole may decrease the absorption of calcium from the horse's gut, this is of no clinical significance. The horse's diet is rich in calcium and able to compensate for this relative decrease.



**LEFT:** Severe (grade 4), haemorrhagic ulcers along the lesser curvature. The ulcers are caused by acid splash from the pool of gastric fluid below.

**RIGHT:** The same horse after a 4-week course of Ulcershield (omeprazole). The stomach still shows some minor yellow discoloration but is much improved and no longer painful.

## FACT 8

### Glandular/pyloric ulcers require additional treatment & management



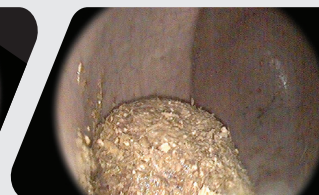
**Sucralfate adjunct treatment for ulcers** (esp. glandular/pyloric ulcers) and other ulcerative disorders of the intestinal tract. Sucralfate coats the ulcer bed, forming a "biological bandage" and promotes secretion of protective mucus.

- ▶ Horses with glandular/pyloric disease have been shown to be more sensitive to the effects of the natural 'stress' hormone, cortisone. Stress should be minimised.
- ▶ The treatment of glandular/pyloric lesions is more problematic. They are difficult to clear up and require longer term treatment (8-12 weeks). Your veterinarian will advise you of the best treatment options if your horse is diagnosed with glandular/pyloric disease.
- ▶ If your horse is prescribed sucralfate for the treatment of ulcers, the sucralfate must be administered at least one hour after any omeprazole. Otherwise the sucralfate will decrease the absorption of the omeprazole. Sucralfate needs to be given 2-4 times per day. It can be given in the feed.

**Consult your regular veterinarian for specific recommendations**

Important management recommendations for glandular/pyloric disease include:

- Limit exercise to 5 or less days/per week.
- Try and maintain your horse in a daily routine.
- Minimise riders/handlers to two people.
- Provide your horse with companionship and physical contact. Equine is preferable, otherwise human (eg massage and grooming).
- Avoid dry, abrasive feeds. Pelleted feeds are preferable.
- Soak all hay and chaff prior to feeding.
- Wet hard feed to 'slop' consistency prior to feeding.
- Add oil to feeds to improve softness.
- Oil can be added at a rate of 50mL twice daily increasing by 50mL weekly to a maximum of 200mL twice daily.



*The image on the left shows a pool of gastric acid in a horse's stomach splashing on the squamous lining. The stomach has evidence of acid damage with yellowing of the lining and some deep, chronic ulcer craters.*

*The image on the right shows the effect of feeding a roughage/hay feed. The food forms a "fibre sponge" ball which absorbs the gastric acid and also provides a physical barrier to acid splash. Feeding a small roughage feed prior to exercise and travel will minimise any gastric acid "splashing".*

# RANDLAB'S ULCER MEDICATION SUITE

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### ENTRY LEVEL

Ideal for horses in light work, horses under low stress scenarios or low body weight dosing (foals and ponies).

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### THE "GO TO" ULCER PRODUCT

The 'workhorse' of the ulcer suite. Increased absorption compared to competitors in 4 x University trials means better bioavailability.

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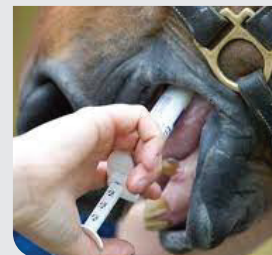


### PREMIUM

Fortified product for high performance horses. Great for chronic recalcitrant ulcers, whenever a rapid response to treatment is required or for horses under high stress scenarios.

Enteric-coated formulations need to be given over the base of the tongue, as far back in the mouth as possible.

**Do not allow horse to chew on enteric coated products.**



STRENGTH

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