



ULCER DISEASE IN HORSES

Gastric ulcers are ulcers in the horse's stomach due to loss of the upper layer of the stomach lining of horses. Gastric ulcers are also common in humans and cause heartburn. Ulceration of the stomach in horses causes pain and can result in loss of performance. Gastric ulceration is relatively common and has been reported to occur in up to 100% of racehorses. In general, 90% of racehorses in active training in racing stables have ulcers whereas only 60% of pleasure horses in full work have ulcers. Daily oral treatment with a drug called omeprazole, widely used in both humans and horses is effective to both treat ulcers and prevent their recurrence for horses in training.

- Anatomy of the horse stomach
- How do stomach ulcers occur?
- Risk factors for ulcers
- Signs of ulcer disease
- Diagnosis of ulcer disease
- Treatment for ulcers
- Preventing ulcers

ANATOMY OF THE HORSE STOMACH

The horse stomach is divided into two distinct areas, the non-glandular region and the glandular region, the division between the two is a line called the margo plicatus. The non-glandular region of the stomach is the upper region where the oesophagus attaches. This part of the stomach has the same lining as the oesophagus and consists of a number of layers of cells, similar to the skin. The larger glandular layer covers the base of the stomach and this area contains glands which secrete acid to digest food as well as mucus and bicarbonate (baking soda) to protect the cells from the acid.

HOW DO STOMACH ULCERS OCCUR?

Unlike in humans, bacteria do not cause ulcers in horses. Management factors are the major cause. Horses are grazing animals and secrete acid into the stomach constantly, whether the horse is eating or not. The acid is buffered by feed and saliva, which contains bicarbonate (baking soda). When the horse is

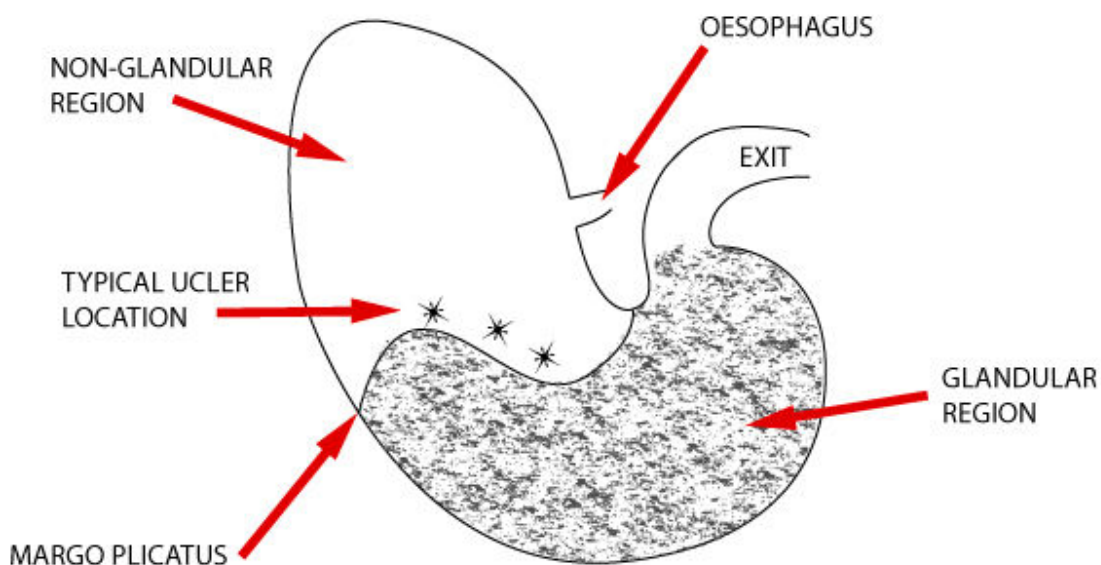
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grazing, grass and saliva flow constantly into the stomach, which buffers the stomach acid and prevents ulcers forming. Exposure of the stomach to acid is thought to be the major cause of ulcer disease in horses. Ulcers occur mainly in the non-glandular area of the stomach, along the margo plicatus. This area of the stomach is exposed to acid and the cells here are not protected from the acid as they do not secrete mucus or bicarbonate. The severity of ulcers is related to the duration of exposure to acid. If ulcers are severe they will bleed into the gut and the blood loss can cause anemia and low protein.

HORSE STOMACH



RISK FACTORS FOR ULCERS:

Risk factors include stress, keeping horses in stables, high-energy feed, intermittent feeding, intense exercise, racing and transport. When horses are put into stables and fed only twice daily there are long intervals when the horse is not eating and the stomach is exposed to acid. Confining horses in stalls and withholding feed has been shown to cause ulcers. Feeding grain increases the

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secretion of stomach acid and also grain breaks down into volatile fatty acids which can cause inflammation and ulceration. Protein can buffer these effects of grain feeding so it is important to feed both grain and protein together. Lucerne hay is high in protein and feeding lucerne hay and chaff with grain will assist in preventing ulcers. Exercise, particularly high intensity exercise also predisposes to ulcers due to decreased stomach motility or increased pressure in the stomach resulting in increased exposure of the non-glandular stomach lining to acid.

SIGNS OF ULCER DISEASE:

There are many varied signs of ulcer disease and some horses show no signs. The major signs are:

- loss of appetite
- dull coat
- failure to 'thrive'
- poor performance
- mild diarrhea
- recurrent colic
- teeth grinding
- stereotypic behavior such as crib-biting

These signs are non-specific and so further investigations by your vet are required to diagnose ulcers.

DIAGNOSIS OF ULCER DISEASE:

The only method to accurately diagnose ulcers is by your vet visualizing the ulcers with an endoscope. This usually involves withholding feed from your horse for a minimum of 6 hours and then the vet will pass a 3m long endoscope down your horse's nose into his oesophagus and down into the stomach to look at the lining of the stomach. The ulcers are normally graded 0-3 according to their severity.

Grade 0: Normal

Grade 1: Small single or multiple ulcers

Grade 2: Large single or multiple ulcers

Grade 3: Extensive ulcers with areas of deep ulceration

SUCCEED TEST KIT:

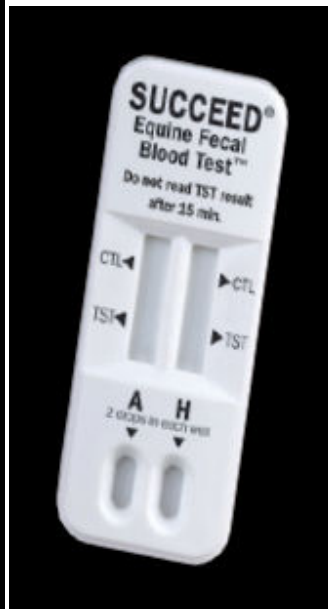
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A new test kit from the US is now available in Australia to assist in ulcer diagnosis. These Succeed test kits can accurately detect blood and protein in the faeces of the horse and provide an indication as to whether the blood is from the stomach or lower intestine.

You just put a sample of the horse's faeces into the container, add water and then using the pipette take out some of the fluid and put into the wells in the test kit. After 15 minutes a line appears at the test window at either the test line (positive result) or the control line (negative result).



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TREATMENT FOR ULCER DISEASE:

Your vet is the best person to advise you regarding treatment of ulcers. The vet will likely prescribe for your horse an oral paste which contains Omeprazole to reduce the production of stomach acid. This drug binds to the cells of the stomach lining which produce acid. It binds to the enzyme ATPase which pumps hydrogen ions into the stomach. Blocking this enzyme inhibits the production of hydrochloric acid. Blocking acid production will result in healing of ulcers. Omeprazole is given orally once a day as a paste. Ranitidine is another drug used to treat ulcers which blocks histamine receptors on acid producing cells and reduces acid secretion. Ranitidine needs to be given three times a day and has been shown to be less effective at healing ulcers than omeprazole given once daily. Ulcer healing takes 14-28 days depending on the severity of ulcers, your vet will advise on treatment duration. In addition management changes should be employed to reduce the risk factors for ulcers. If ulcers are severe the horse may require a spell from training and being turned out into the paddock with other horses for company, either in the same paddock or an adjacent paddock.

PREVENTION OF ULCERS:

As discussed there are a number of risk factors for ulcers and reducing these factors as much as possible will assist both in treating and preventing ulcer disease. It is best to avoid keeping horses in stables and to train them out of the paddock. If this is not possible it is important to ensure that horses have access to grazing and so put them into a yard or paddock for some time every day. For stabled horses which cannot be turned out in the paddock it will help to provide access to low energy grass hay that the horse can pick on during the day. Lucerne hay should be fed in addition to concentrates, and grain intake should be reduced as much as possible. Horses should be fed small, frequent feeds rather than two large feeds daily. A companion horse will help reduce your horses stress, it is important that there are other horses in the adjacent stable or paddock if the horse cannot be turned out with other horses. Sometimes other animals such as goats are used as companions for stressed horses and these can be stabled with the horse. Although it is routine to keep horses in stables this management factor results in a number of equine health issues and it is important to reduce the stress level of horses where stabling is the only option.

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