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Equine Gastric Ulcer Syndrome

Equine gastric ulceration syndrome (EGUS) is a common condition seen in many types of horses, but is often missed as the cause of a variety of problems. These include reduced body condition, changes in appetite, behavioural and exercise-related issues. EGUS has many causes and can be complicated in nature, so if you think you horse may be suffering from gastric ulcers, give us a call.

What is EGUS?

EGUS describes the development of ulcers on the inner wall of the stomach caused by exposure to excessive amounts of acids produced by the stomach. As a general rule a horses' stomach acids are neutralised by a constant supply of saliva while the horse eats/grazes, preventing the development of ulcers, however under certain conditions, the horse may not produce enough saliva to neutralise these stomach acids which can lead to EGUS.

The severity of gastric ulceration can range from minimal inflammation of the stomach lining to severe ulceration and bleeding. In extreme cases the stomach can perforate which can lead to sudden death.

A grading system has been implemented to help classify the severity of EGUS:

- **Grade 0** = intact stomach lining; no appearance of reddening.
- **Grade 1** = intact stomach lining; areas of reddening.
- **Grade 2** = small single or multiple ulcers on stomach lining.
- **Grade 3** = large single or multiple ulcers on stomach lining.
- **Grade 4** = extensive/deep ulcers on stomach lining.

There are two types of gastric ulcer:

- **Squamous ulceration ulcers** occur in the upper section (often near the junction between the squamous and glandular tissues) of the stomach as a result of overexposure to acid secretions. Reported incidence 77% Thoroughbreds in training, 40-46% eventing, 57% pleasure horses
- **Glandular ulceration ulcers** occur in the lower section of the stomach where the protective mucus layer overlying the tissue is undermined, eg due to side-effects of certain medications, chronic stress and potentially bacterial infections. Reported incidence 47-65% Thoroughbreds, 16-33% endurance, 54% pleasure horses

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What Can Cause EGUS?

EGUS can affect any type of horse, from pony to performance horse. There are a number of risk factors which can lead to the formation of gastric ulcers. These include diet, intensive exercise, physical stress or illness, psychological stress and medication, although EGUS can affect horses even in the absence of these factors. Foals are particularly at risk due to the delicacy of the stomach lining at this young age; they also produce high amounts of gastric acid from the first few days of life making them at higher risk of developing EGUS.

Diet - the stomach continually produces acids to cope with the continuous trickle of feed horses consume, in turn these acids are neutralised by the saliva produced while eating and trapped within food. Feed in the horses stomach forms distinct layers - very acidic fluid and small food particles sit at the bottom in the glandular layer, higher up in the squamous layer the fluid is almost neutral with large food particles, particularly roughage. Lucerne hay is reported to have a buffering effect in the stomach for up to 5 hours. When a horse experiences prolonged periods of fasting, excessive amounts of acids build up causing ulceration. High grain/low roughage diets are also thought to contribute to EGUS as grain requires less chewing which in turn stimulates less saliva. A predominantly grain diet also upsets the normal layering within the stomach. Ulcers can develop within a 24-48 hour period if a horse is unable to eat.

Intense Exercise - during exercise blood flow to the stomach is reduced and the pressure in the abdomen is increased, which in turn pushes the accumulated acids up into the sensitive non-glandular portion of the stomach which can cause squamous ulceration.

Physical Stress or Illness – for example shock, infection, parasites, traumatic injury, transportation or stable confinement. These may cause ulcers due to restricted blood flow to the stomach and increased acid production.

Psychological Stress - stressful situations may affect feed intake which leads to reduced saliva production and consequently excess amounts of acids in the stomach; increased acid production also often occurs during stress. A radio in the stables increases risk up to 3.6X and horses with vices such as cribbing and windsucking are up to 7.6X more likely to suffer from EGUS.

Medication - some long-term medications such as phenylbutazone (in particular anti-inflammatory drugs or NSAID’s), can cause restricted blood supply to the stomach which can lead to glandular ulceration.