

Equine Gastric Ulcers
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What are Gastric Ulcers?

Gastric ulcers are an erosion of the lining of the stomach that occurs due to acid damage. They are common in horses, and have a variety of clinical signs.

Why do horses get gastric ulcers?

In domestication, we took an animal that was built to graze continuously throughout the day and put it in a confined areas with an average of two feedings a day. That is not what horses' bodies are developed for. Horses have a small stomach for their body size, and constantly secrete gastric acid. This is why any horse can develop gastric ulcers.

Horse have two different areas of their stomach. The lower portion is glandular, and has cells which secrete gastric acid. These cells secrete acid, but they also produce materials to protect themselves from the acid. The upper portion of the stomach is the squamous portion, this is where the feed mixing happens, and this portion has a thinner lining because it does not normally come in to contact with acid.

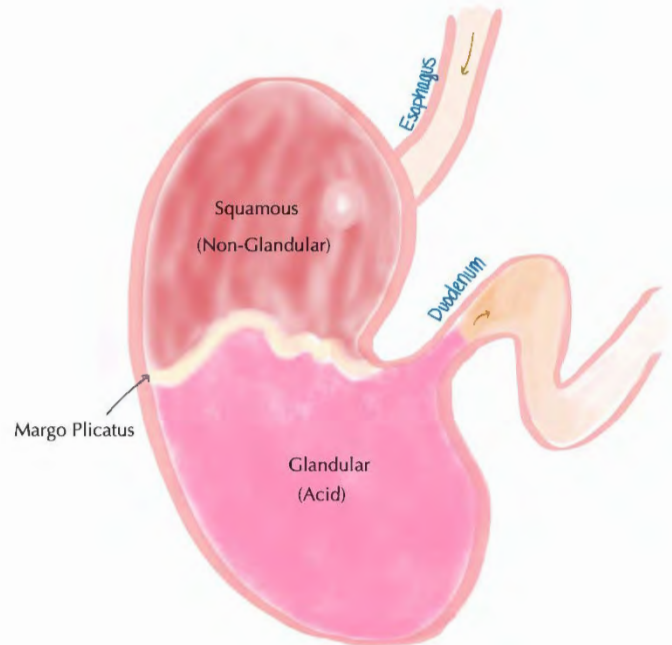
Both areas of the stomach can develop ulcers, but the mechanism is different between the two diseases. While there are over-arching similarities between the two diseases, alterations in treatment course and duration may be necessary due to the different disease mechanisms.

Which horses get gastric ulcers?

Any horse (or donkey) can develop gastric ulcers. They are more common in horses that are in work. Racehorses are most commonly affected, followed by endurance horses, and then English sport-horses.

Clinical Signs, Diagnosis & Treatment

The clinical signs of gastric ulcers are variable and include inappetence/poor appetite, poor body condition and weight loss, poor coat condition, behavior changes, acute or recurrent colic, poor performance, or no clinical signs at all. There is no correlation between clinical signs and presence or severity of gastric ulcer disease. A complete gastroscopy is the only definitive diagnostic test for equine gastric ulcers. A gastroscopy is a procedure performed by a



| Squamous Ulcer Risk Factors: |
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| • Stress (transport, change in management, race/competition) |
| • Intermittent Fasting |
| • Illness |
| • Confinement to a stable |
| • Intense Exercise/Training |
| • High Carbohydrate diet |

| Glandular Ulcer Risk Factors: |
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| • Exercise > 5 days a week |
| • Inexperienced/lower level horses are more at risk |

veterinarian in which a special tube with a camera on the end (endoscope) through the horse's nasal passages, through the throat, into the esophagus, and down into the stomach. A complete gastroscopy has to be performed when the horse has been fasted. If the patient is not fasted, feed will still be present at the bottom of the stomach and we cannot fully evaluate the exit of the stomach, which is the most common site for glandular ulcers. A complete gastroscopy allows the veterinarian to evaluate the location, distribution, number, and severity of the ulceration; this information is important for developing a treatment plan and monitoring progress.

Gastric ulcers will not resolve without treatment. The specific treatment for gastric ulcers depends on the location, distribution, and severity of the ulceration and differs from horse to horse. The overall goal of treatment is to decrease the acidity of the stomach. As veterinarians, our main method of decreasing acidity is to decrease acid production. In veterinary school we were taught the mantra "No acid, no ulcer". Anti-acids are short-acting and relatively ineffective in horses. The two main drug classes that we use in horses to decrease acid production are proton pump inhibitors (PPI), such as omeprazole and H₂ Blockers, such as ranitidine. The PPIs destroy a pump on the acid-producing cell, which stops acid production until the cell can build a new pump, H₂ blockers blocks a receptor on the acid cell, but do not destroy it, so it requires frequent re-dosing to achieve the same acid-suppression as a PPI. This is why omeprazole is recommended over ranitidine. Approved omeprazole products (such as Gastrogard®, Ulcergard®) have been shown to be the most efficacious primary treatment for gastric ulcers in horses. While compounded omeprazole products are available, using them is not recommended. The compounded products are cheaper, but they are not effective because they lack the buffer formulation needed for the horse to actually absorb the medication. Depending on your horse's individual case, your veterinarian may recommend medications such as Sucralfate and/or Misoprostol. Sucralfate is a medication which helps coat the lining of ulceration, which can help improve comfort and aid in healing. Misoprostol is a medication which can improve blood flow to the stomach, which aids in protection of the glandular cells. It also has an anti-inflammatory effect. It is important to adhere to your veterinarian's recommendations about the administration of the medications, as this will maximize the efficacy (and make the most of your money). It is recommended to administer omeprazole 60-90 minutes before a meal (the stomach acid is needed to activate the drug), and 60-90 minutes apart from any other medications, especially Sucralfate. Omeprazole and sucralfate will both bind to each other, as well as other medications, so it is better to give them separately. If your horse is diagnosed with gastric ulcers, be prepared for a long course of treatment, with the minimum average course of treatment being 28 days for a typical case.

Practical Preventative Measures:

- Make sure your horse always has access to water. If you live in a cold environment, consider filling plastic jugs with salt water and leaving them in the trough, or other means to keep the troughs from freezing.
- Do not feed horses straw.
- Provide access to turn-out, avoid extended stall confinement. If horses are stalled, make sure they can visualize or interact with other horses.
- Limit your ridden exercise to 4 days a week or less. Horses exercised 5 days a week or more are at increased risk of developing ulcers.

- Consider adding ¼ cup of corn oil to your horse's diet. The corn oil helps decrease acid production and increases blood flow to the stomach.
- Feed more frequently or consider feeding in a hay net. For horses with ulcers, continuous access to good quality grass pasture is recommended. If that is not feasible then free choice hay, or frequent (4-6x a day) feedings.
- Feed grain and concentrates sparingly, and avoid sweet feed.
- If you give electrolyte solutions, give them in water or as part of a mash. Oral paste administration of electrolytes has been shown to increase risk of ulcers, but electrolyte administration in water or grain does not.
- Consult your veterinarian before administering NSAIDs such as Phenylbutazone ("Bute") or Banamine, especially for a prolonged or repeated administration
- If your horse is prone to ulcers, talk to your veterinarian about preventative measures such as prophylactic doses of omeprazole during times of stress.

Don't give yourself an ulcer stressing about your horse! Reach out to your primary veterinarian about any questions regarding ulcer prevention or treatment for your horse.

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