

Gastric Ulcers in Horses

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Gastric ulceration occurs in horses of all ages and occupations. Horses with gastric ulcers might show one or more of the following signs: poor appetite, lower body condition, reluctance to train or poor performance, poor coat condition, or low-grade colic that coincides with grain feeding.

The prevalence of gastric ulcers among racehorses has been well-known for years. Several studies have shown that 80-90% of racehorses and 40 -60% of other performance horses have stomach lesions. Foals, weanlings, and yearlings are also prone to gastric ulcers, and over 50% of foals and 80% of yearlings have been found with ulcers. Under normal conditions, the mare's colostrum and milk might help prevent gastric ulcers in foals. Development of ulcers is sometimes caused by trauma or illness and this may relate to reduced milk intake. The stresses of weaning can also precipitate ulcer development. Signs include diarrhea, mild colic, teeth grinding, cribbing and in nursing foals, refusal to suckle.

Certain behaviors might be indicative of gastric ulceration in young horses. In a study at the University of Bristol, researchers found that cribbing foals had more extensive gastric ulceration than foals that did not crib. An antacid supplement (**KER Neigh Lox**) was given to half of the foals, and all of these individuals had improved gastric health scores by the end of the three-month trial.

Most ulcers occur in the upper portion of the horse's stomach, which is composed of nonglandular squamous epithelium. These ulcers are primarily the result of prolonged exposure of this tissue to gastric acid. Unlike the glandular portion of the stomach, the upper half does not have a mucous layer and does not secrete bicarbonate onto its surface. The only protection this portion of the stomach has from gastric acid is from saliva production and the buffering capacity of feed.

Researchers have identified various risk factors that include feeding routines, stall confinement, temperament, exercise, transport, even gender. The single risk factor believed to be most important in the occurrence of gastric ulcers is feeding management where type of forage, amount and frequency of forage, starch intake and water intake have all been identified as risks.

The stomach secretes acid continuously. The pH of gastric fluid in horses withheld from feed for several hours has consistently been measured to be 2.0 or less. Horses that received free-choice grass hay for 24 hours had mean gastric pH readings that were significantly higher than fasted horses. This should be expected since forage consumption stimulates extra saliva production. German researchers measured the amount of saliva produced when horses are either hay, pasture, or a grain feed. When fed hay and fresh grass, they produced twice as much saliva compared to when a grain-based feed was offered.

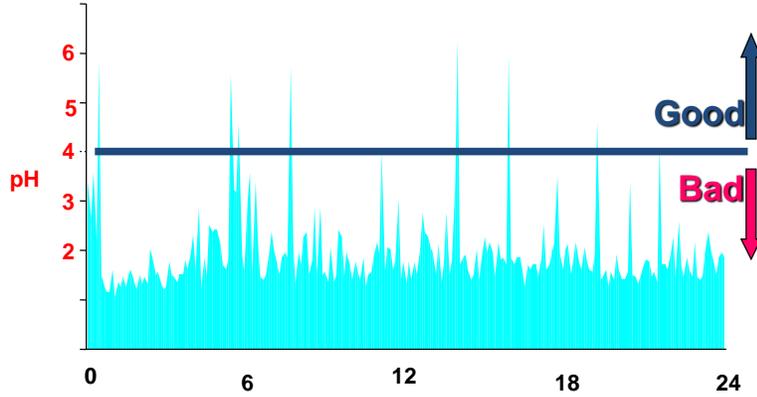
Ideally horses should have access to ad lib forage but the type of hay fed has a significant impact on acid neutralization and the incidence of gastric ulcers. Several studies have shown that horses fed lucerne hay have less severe ulcers than when on grass hay. As work involves compression of abdominal muscles and splashing of acid in the stomach so ulcers are aggravated, it seems sensible to give a small feed of lucerne before work. This can put a fibre mat over the liquid stomach contents and the lucerne helps buffer the acid in the stomach.

Aside from appropriate management techniques, the type of concentrates fed will have an impact on ulcers. As high starch diets increase the risk, lower starch feeds where more energy comes from fat and digestible fibre is desirable. The type of fat is important as research in Florida has shown that oils with high levels of omega 6 fatty acids can stimulate protective substances and increase stomach pH thus reducing the risk of ulcer development. In most circumstances we find that omega 3 fatty acids are the beneficial type, but to reduce ulcer severity/risk you need to feed corn oil, sunflower seeds or stabilized rice bran (KER Equi-Jewel). Feeding significant amounts of these fat supplements also allows you to reduce the grain and starch level in the feed.

Gastric ulcers can pose problems for horses of all ages, from foals to high-performance racehorses. Strategic nutritional management of horses can sometimes completely offset the risk of gastric ulcers.

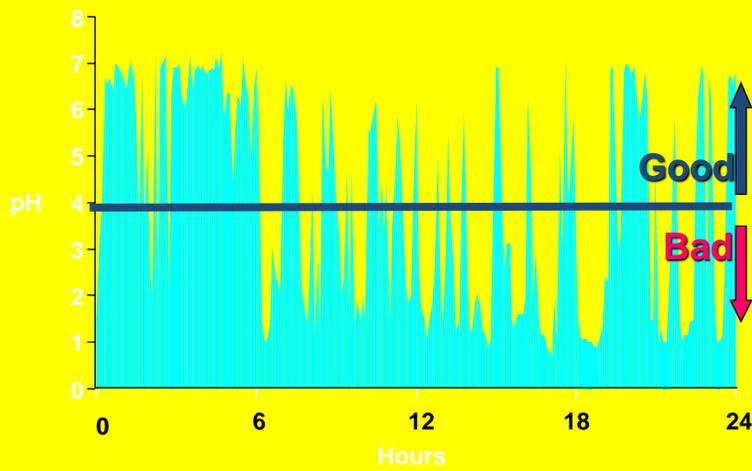
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24-Hr Gastric pH: *No Feed*



Murray and Schusser, Equine Vet J, 1993

24-Hr Gastric pH: *Free Choice Grass Hay*



Murray and Schusser, Equine Vet J, 1993