

# *The Prevention & Management of* **EQUINE GASTRIC ULCERS**

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*The scenario is a familiar one.* There's a horse in the barn that's become a picky eater and just isn't performing up to his usual standard, or another that's started grinding his teeth and seems to be more moody. While the symptoms can be vague and may vary from horse to horse, gastric ulcers are a problem that plague many racehorses. Perceived to be one of the most common performance limiting issues next to lameness, studies have reported the prevalence of ulcers to be as high as 87 per cent in racing standardbreds, with trotters appearing to be slightly more at risk than pacers.

*Story by Lindsay Day*

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A painful condition caused by excess gastric acid, ulcers are essentially wounds in the lining of the stomach. Their severity can range from a slight wearing away of the inner mucosal surface to a case of multiple bleeding lesions. Largely considered a ‘management disease,’ a number of risk factors have been associated with equine gastric ulcers – many of which comprise typical aspects of your average racehorse’s life.

Transportation, intense exercise, stall confinement and high grain diets have all been implicated in the development of ulcers, says Dennis Sigler, Ph.D., Professor and Extension Horse Specialist at Texas A&M University. “When you think about the things we do in the horse industry, especially when we’re talking about performance horses, it’s really no wonder that we see the high incidence of gastric ulcers that we do.”

But rather than accepting the risk of ulcers as an inevitable cost of doing business, new research is pointing to ways that the risk of ulcers can be successfully managed

– even amongst those individuals with a demanding schedule. “These horses have a job,” acknowledges Sigler. “They are working animals so they aren’t just going to be left out to pasture 24/7. That’s why we’ve been particularly interested in looking at prevention strategies that are relevant and can be applied in the management of these horses.”

#### **BEYOND PHARMACEUTICALS**

The treatment of equine gastric ulcers often begins with omeprazole (sold as Gastroguard or Ulcerguard). Administered as an oral paste once a day for a series of 28 days, the medication works by directly inhibiting the secretion of hydrochloric acid in the horse’s stomach. Though studies have shown omeprazole to be a highly effective treatment, part of the challenge of dealing with equine ulcers is that in some horses there is a high rate of recurrence after the treatment ends.

Prolonged, ongoing use of omeprazole is not uncommon, says Sigler. The associated cost is one drawback, but Sigler also cites concerns over the extent to which long-term use

of the drug might upset the normal digestive process in the horse. “The acid in the stomach is there for a reason – to aid in the digestion of proteins and other nutrients. At this point we don’t know enough about how long-term use may affect that process. We also don’t know how altering the pH of the stomach influences the balance between healthy and pathogenic (disease causing) microbes.”

“Some horses are just more prone to ulcers than others,” explains Jenifer Nadeau, Ph.D., Assistant Professor and Equine Extension Specialist at the University of Connecticut. “Medicating these horses is one option but we really want to emphasize that management changes can actually make a big difference.”

#### **KEEPING IT NATURAL**

“One of the best things we can do in our management of ulcers is to try and mimic as closely as we can the natural conditions in which horses evolved,” says Nadeau. “Even though they are domesticated animals now, horses are still very much like they were in the wild in terms of their physiology and the

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## SIGNS AND SYMPTOMS

The only way to know for sure if a horse is suffering from ulcers is to have a vet examine their stomach by endoscopy. While certain symptoms are commonly associated with the malady, they can be vague, easy to misinterpret and some horses may show no signs at all. Those symptoms reported to be most common include:

- Poor appetite
  - Moodiness
  - Listlessness
  - Mild bouts of colic
  - Teeth grinding
  - A dull coat
  - Difficulty maintaining weight
  - Poor performance
  - Tendency in foals to lie on their back
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way their stomach functions.”

Unlike people, horses secrete stomach acid continuously, even when they are not eating, leaving them particularly vulnerable to the development of ulcers. As grazing animals, they are designed to eat small amounts continuously throughout the day. The roughage and saliva produced through chewing provide a buffer against the stomach acid.

A number of studies have shown the deleterious effects of an intermittent feeding regimen, particularly if there are long periods where the horse is not consuming any roughage. “Free-choice hay is ideal, but we recommend feeding at least three times a day,” says Nadeau, citing a 2008 study that found the incidence of gastric ulcers in racing standardbreds to be 18 per cent lower in horses fed three times a day when compared to those fed two times a day.

“Water intake is important too,” adds Nadeau. “A 2009 study found that horses without access to water in their paddock were more likely to have gastric ulcers that were more severe.” Not only does water di-



lute the gastric fluid and increase the pH (i.e. reduce the acidity) in the stomach, but a thirsty horse is also inclined to stop eating.

Providing adequate turnout time is deemed to be an important consideration as well. It has been shown that prolonged stall

confinement alone can be sufficient to induce gastric ulcers in horses that were previously turned out to pasture, even when free-choice access to hay is provided. “Even if horses are just turned out on a dry-lot, it’s good to get them out of their stall,” says Nadeau.



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“Studies have shown that provided the proper environment, equine ulcers will heal on their own within a short period of time, once you *take the horse out of the stress situation and change whatever management factors that may be contributing factors.*”

### DIETARY CONSIDERATIONS

One of the most fertile areas of research in recent years, the role that a horse's diet can play in the prevention of ulcers has been the subject of a growing number of studies. While some questions remain unanswered, a number of valuable insights have been gleaned from the work so far.

- **Alfalfa hay.** “Three studies to date have indicated the beneficial effects of alfalfa hay in reducing the risk of equine gastric ulcers,” says Sigler. He describes a recent study at Texas A&M University in which exercising horses were fed a diet of either alfalfa or grass hay, together with a 13 per cent protein ration commercial feed. Ulcer scores went down in all but one horse in the study during the time that they were fed alfalfa hay.

While researchers are still hashing out the details, it is suspected that the buffering effect may be due to the high calcium and/or protein content of the hay. “We haven't exactly figured out why alfalfa has this anti-ulcerogenic capability, how much is required in the diet, or in what other forms similar benefits might be delivered,” says Sigler.

- **Starch & fat content in commercial feeds.**

High-starch feeds are associated with increased acid production in the stomach. While there are a number of low-starch options on the market that are desirable in certain situations, Sigler cautions that they

may not necessarily be appropriate for those horses in intense training. “We've known for a long time that digestion of starch in the stomach influences acid secretion, but when we're talking about racehorses and high level performance horses, they need to eat a diet with sufficient starch or they're going to run out of steam. Muscles are designed to run on starch, that's just how they work.”

The role of fat in the diet is also being examined. In particular, researchers have been interested in the extent to which feeding concentrates higher in fatty acids like omega-3 may help reduce the risk of ulcers, but according to Nadeau, “the jury is still out on that one.”

- **Textured vs pelleted feeds.** There is some new evidence that the form of the horse's grain may influence the development of ulcers. A recent study at Texas A&M University found that horses fed a diet consisting of grass hay and a textured feed had lower ulcer scores when compared to those fed grass hay and a pelleted feed. “Textured feeds are those with un-ground grains, what a horse-man would call sweet feed, though it doesn't necessarily have to be something with lots of molasses in it,” explains Sigler.

Though the reasons behind the findings are still not fully understood, a similar observation has been made in the study of pigs. “There is a significant amount of research in swine that particle size does affect ulcer



development and that a more coarse feed is more conducive to better gut health and integrity," says Sigler.

• **Frequency of feeding.** While free access to hay or pasture helps to buffer stomach acid, the feeding of grain (particularly those high in starch) causes a rise in the amount of gastric acid secreted. According to Nadeau, it is recommended that concentrate meals be fed no less than six hours apart. "We don't want the concentrate meals too close together or you will have a build up of acid in the stomach."

### THE ROLE OF STRESS

Stress has long been regarded as a culprit in the development of gastric ulcers in the horse – from the stress of competition and transport, to the stress associated with long periods of time confined in a stall. Common recommendations include providing suf-

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ficient turnout time, increasing training demands gradually, and allowing sufficient time for the horse to adjust to new situations and schedules wherever possible.

As Sigler points out, however, what may be stressful for one horse might not be for another. "You have to evaluate each individual case. For the majority of horses, being turned out on pasture will reduce stress – particularly compared to confinement in a 12x12 stall. But for the more timid individual in a situation of group turnout, where horses are competing for food, that may actually be more stressful."

Because each horse is different, broad recommendations are difficult to make. But as Sigler affirms, "studies have shown that

provided the proper environment, equine ulcers will heal on their own within a short period of time, once you take the horse out of the stress situation and change whatever management factors that may be contributing factors."

It may take some experimentation to figure out what works best in each individual case, but making appropriate dietary and management changes are likely to be part of any long-term strategy to reduce the threat of ulcers. **T**

*Lindsay Day is an equine massage therapist with a special interest in rehabilitation and performance issues. She has been practicing in Southern Ontario since 2008.*

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### CHANGE YOUR TUNES...

Horses, it appears, do not have the same appreciation for talk radio as their human caretakers. An Australian study that examined factors associated with the development of ulcers in thoroughbred racehorses found that having the radio on in the barn was correlated with an increased risk of gastric ulcers. Talk radio was associated with a higher risk (3.6 fold increase) than music radio (2.8 fold increase).

Other risk factors identified in the study included cribbing/windsucking, an urban environment, time in training and difficulty maintaining weight. Interestingly, the study, which looked at 403 thoroughbred racehorses with 37 different trainers, revealed that some trainers had no horses with ulcers while others had ulcers in nearly every horse in the barn.

