HI FORM

Written by Antoinette Foster Dip. Nut. Equine Nutritional Therapist and Medical Herbalist

Preventing Gastric Ulcers

Tips on how to manage your horse's diet to avoid ulcer development.

"This is giving me an ulcer!" These probably are words our horses would utter if they could speak because many performance horses and racehorses develop ulcers due to stress that might not even be apparent to us. A domesticated environment, increased exercise and competition, transport, an unnatural diet, and other factors can all contribute stress to your horse's life. The good news is that you can strategically manage his diet to minimize incidence and severity of ulcers.

Stephen Duren, PhD, an equine nutritionist and founder of Performance Horse Nutrition in Weiser, Idaho, says people generally think in terms of gastric (stomach) ulcers, but we now realize there can be ulcers in the colon, as well. Researchers at the University of Tennessee and University of Kentucky, studying ponies with cannulas (openings into the digestive tract), were able to sample material in the stomach and colon to learn more about ulcers.

"The initial thrust of early ulcer research was to find drug therapies and acid blockers to help with treatment," says Duren. "But along with medication, we also must consider what we should do from a feeding standpoint to reduce or help heal this condition, or prevent ulcers in the first place".

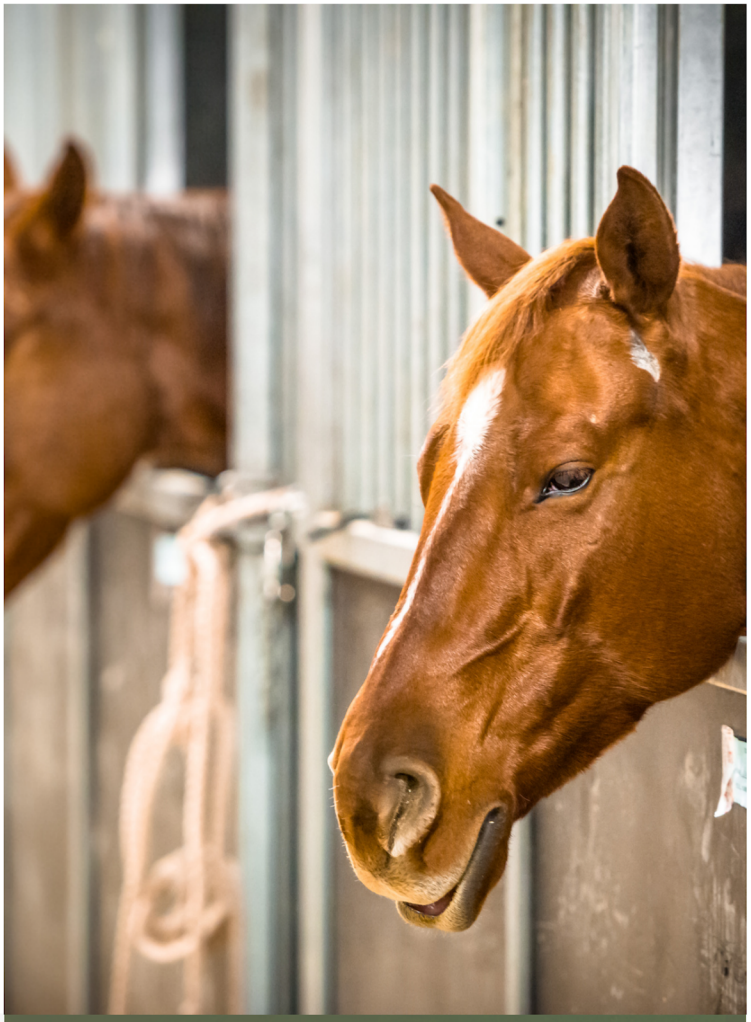
"Many ulcers occur in performance/racehorses for two reasons," he continues. "First, we change their diet. As the horse goes from a pasture or sedentary animal to athletic performance, his diet must change in order to provide the needed energy. He can't get enough calories from forages for the increased work. So we feed different ingredients.

"One reason these different feeds may cause ulceration is because the main buffer for acid in the stomach is saliva," Duren explains. "The horse produces about twice as much saliva when eating hay or grass than when eating grain. The very nature of a grain diet takes away some of the protection in the stomach."

Horses at pasture graze almost continuously, and at the same time they produce saliva. "Acid in the stomach is produced on a continuous basis," he says. "It doesn't stop. So the constant eating is a help."

Tom Trotter, MS, general manager of Progressive Nutrition in Iowa, says horses are not like humans in how their digestive systems work. "We salivate mainly when we eat, and certain enzymes are produced when food enters the stomach. Horses are producing digestive acids all the time. So if a horse has an empty stomach, he is at risk for ulcers," says Trotter. "The most effective way to prevent ulcers is to allow horses full-time access to hay or pasture. This also gives the animal something to do, which relieves stress and boredom. When we do consultations on farms, one of the first things we do is check to see if there is hay in the stall."

Scott McClure, DVM, PhD, Dipl. AVCS, of Iowa State University, agrees that anytime you can maintain roughage in the horse's stomach you decrease the formation of gastric ulcers.



"In a stall situation, if you can break the meals up into three per day instead of two, this will help," says McClure. "If you divide the roughage into four feedings it would be even better--whatever you can do to distribute the roughage more evenly throughout the day."

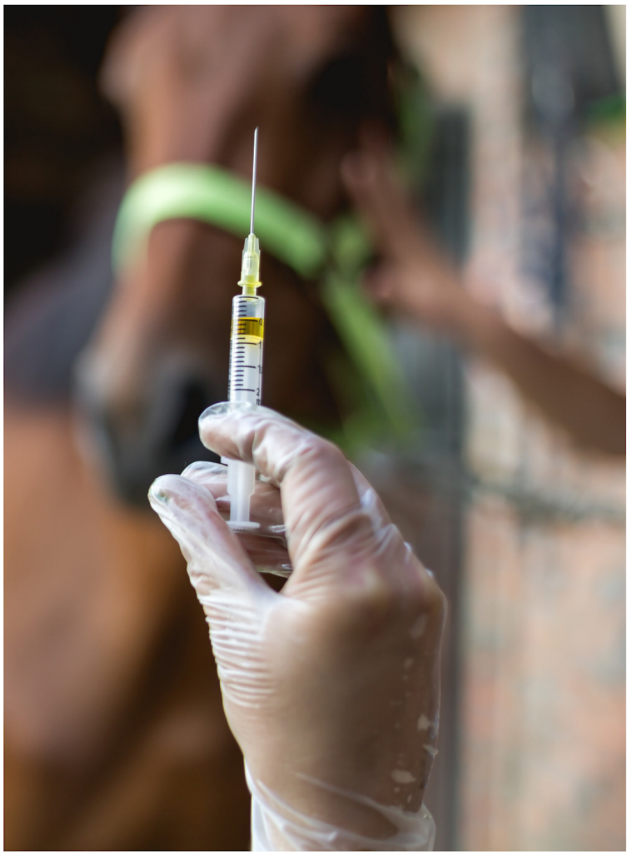
Ulcers: Causes and Signs

Any type of stress makes a horse more prone to ulcers. Stresses might include change in environment, transportation, disruption in social dynamics, etc. Scott McClure, DVM, PhD, Dipl. ACVS, of Iowa State University, says, "Every time you rearrange horses, take horses in or out of a group, this is a stress. The whole social structure must be recreated and they have to figure out the pecking order all over again."

Pay attention to the horse's total environment and routine and try to stick to that routine, whatever the circumstance.

"This means hauling horses in the same order in the trailer, having similar feed when you travel, limiting changes as much as possible," McClure explains.

In these stressed animals, "symptoms we look for with ulcers include poor appetite or fussy eating," says Tom Trotter, general manager of Progressive Nutrition in Iowa. "This is one of the most common early signs; the horse is reluctant to eat or to finish a meal. Horses with ulcers may also grind their teeth, which is a sign of discomfort. They may be cinchy or sensitive in the girth area. If the horse is in a stall he may pin his ears when you go by. Horses may be grumpy, irritated, or aggressive."



In some situations, a horse might not be performing up to expectations.
"There are other issues than feed that predispose a horse to ulcers, such as (administration of) non-steroidal anti-inflammatory drugs. These are often used in performance horses," says Trotter.
--Heather Smith Thomas

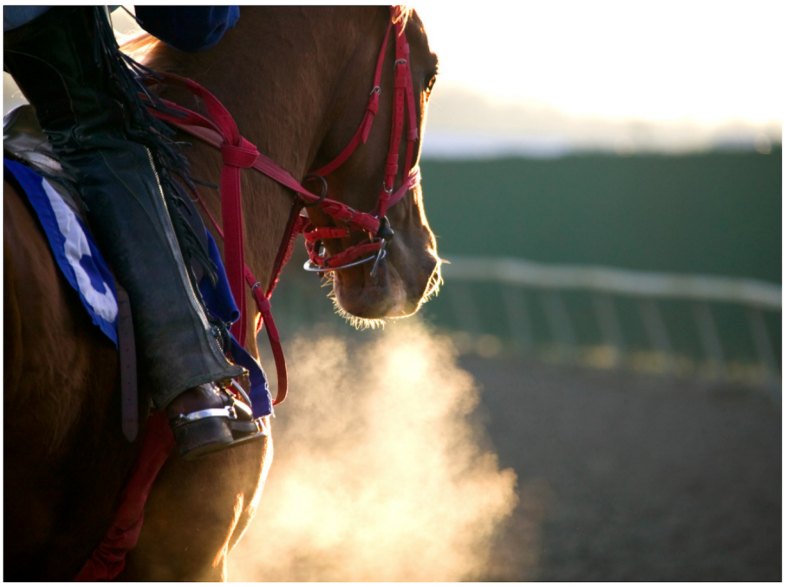
Typically, racehorses are fed large grain meals and allowed to pick at hay in between. Although they usually have hay in front of them all the time in their stalls, they are not engaged in steady feeding behaviour like a horse at pasture. "They may be resting, or not interested in eating the hay," explains Duren. "Thoroughbred trainers don't withhold hay, but the horse may not be eating much of it.

"There is actually more feed withheld in other types of performance horses that are not working as hard--and the trainer is trying to control their weight," he adds. "There is significant incidence of ulcers in nonracing performance horses because they are in stalls and have no pasture turnout. Access to pasture may not fit into the management or schedule of those performance horses."

Ulcers are prevalent in other types of equine athletes and in nonathletic horses, as well.

Trotter notes that feeding large grain meals will directly reduce how much hay a horse eats. "The amount of grain in the total diet is a big part of the equation, regarding ulcers," he says.

Duren adds, "Large grain meals may actually be fermented in the stomach. There are bacteria in the stomach that (ferment the sugars in grains and) produce acids (called volatile fatty acids, or VFAs) that further drive the acidity."



The other major cause of ulcers is exercise. The horse's stomach lining contains glandular tissue (mucus-producing glands) that helps protect against the effects of stomach acid, but the top part of the stomach is not as well-protected. There is a thin layer of mucus that coats this area of the stomach, but there are no mucous glands there.

"When the horse begins to exercise, the diaphragm and movement of internal organs compress the stomach and push acid from the buffered area up into the nonbuffered area," says Duren.

Diet Strategy to Minimize Ulcers

"Our first attempt at diet management was to try to mimic pasture and feed grass hay," says Duren. "We thought that if horses had access to grass hay, they would chew it and be able to buffer ulcers with the additional saliva. But researchers at University of Tennessee, (University of) Kentucky, and Texas A&M discovered that alfalfa hay was more efficient in buffering against stomach ulcers than grass hay, due to the higher level of calcium (and protein) in alfalfa. The extra protein and calcium can both act as potential buffers for stomach acid."

McClure adds: "We always thought Lucerne was a little worse than grass hay in leading to ulcer development until those studies showed just the opposite. Some of the horses fed grass hay actually had more gastric ulcers than the horses fed Lucerne. It's probably not a dramatic difference, but there is some advantage to Lucerne. If you are feeding a horse that needs limited calories, however, the grass hay would be a little better."

Many Thoroughbred trainers feed a small amount of alfalfa early in the morning, so that it's already in the stomach when horses go out for morning exercise. "We are also finding this with performance horses," says Duren. "Trainers are adding some alfalfa to the diets and feeding it in the morning before the horses are exercised."

Because of the potential fermentation and resulting VFA production caused by feeding large grain meals, horse owners should feed more nongrain energy sources, such as fat. "Fat slows the rate at which the stomach empties, and this keeps more material in the stomach longer. Fat is also a great energy source," says Duren. Another grain substitute that provides energy is beet pulp. This fibrous feed is not fermented in the stomach, but, rather, in the hindgut, where it produces calories.

Management Strategies
There are many good management strategies, but some - like more turnout time and grazing - are hard to fit into the life of a performance horse. "Many horses don't have that option," says Duren.

" Keeping hay in front of horses all the time is a good plan, along with feeding alfalfa hay at certain times of day." --Dr. Stephen Duren

"More small, frequent meals can help, rather than large, single concentrate meals," he adds. "Keeping hay in front of horses all the time is a good plan, along with feeding alfalfa hay at certain times of day (or mixing Lucerne hay with grass hay) and using a grain concentrate fortified with other energy sources besides sugars."

Good feeding management, can go a long way in helping heal ulcers, and they can even help reduce the risk for them developing in the first place.

Take-Home Message
Ulcers can begin developing in as few as five days in the horse. Stresses as simple as changing herd dynamics or travel can incite the onset of gastric ulcers.

Managing diets appropriately can help horses avoid the nutritional stresses that can trigger ulcers. However, some horses might first require medication such as omeprazole in order to heal or prevent gastric ulcers.

For further information on managing horses prone to ulcers or those that have a history please contact is via FB or email enq@hiform.com.au