



## EQUINE GASTRIC ULCER SYNDROME IN FOALS



By Dr. Barry David, DVM, DACVIM, Associate, Hagyard Equine Medical Institute

Dr. Barry David received both his BS and DVM from Colorado State University. Dr. David served as an intern at Hagyard Davidson McGee Equine Hospital and remained at Hagyard's as an associate ambulatory veterinarian for three years. After practicing in Virginia and Dubai, Barry completed a residency in large animal internal medicine at Texas A&M University and then accepted a position as internal medicine specialist at Hagyard Davidson McGee. Dr. David then practiced in both Virginia and Florida before rejoining the staff at the McGee Medical Center. Dr. David has written several book chapters and journal articles in addition to speaking at a number of state veterinary meetings.

*The Grayson-Jockey Club Research Foundation has funded several research proposals that have provided a large body of information regarding the medical management, nutritional management, and prevention of equine gastric ulcer syndrome in adult performance horses. Gastric ulceration also remains a significant medical problem in foals of all ages. This article originally appeared in Blood Horse magazine.*

### Four syndromes have been recognized in foals with equine gastric ulcer syndrome:

- (1) silent ulcers, which occur most often in the non-glandular stomach and are considered an incidental finding, identified during gastroscopy or at necropsy
- (2) active ulcers, where foals frequently present with clinical signs such as abdominal pain, poor condition, poor coat, and excessive salivation
- (3) perforating ulcers, which typically result in a severe, diffuse, and fatal peritonitis
- (4) pyloric or duodenal stricture, where a physical blockage of the terminal stomach or small intestine develops in association with ulcer healing

The clinical signs a foal demonstrates with gastric ulcers vary and some of the signs are similar to other disease processes that cause gastrointestinal tract or abdominal pain. A poor coat, a pot-bellied appearance, and a lack of growth are common signs in a foal with gastric ulceration. Other clinical signs associated with equine gastric ulcer syndrome in foals include anorexia (complete or partial), lying on its back, rolling, flank-biting, hyper-salivation, and teeth-grinding. Unfortunately, many foals with perforating ulcers do not show clinical signs of gastric ulceration until the ulcer perforates.

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They then demonstrate signs of septic shock (shaking, sweating, high heart rate). In cases of pyloric or duodenal stricture, the foal will continue to demonstrate signs of severe pain until the stomach is decompressed via passage of a nasogastric tube.

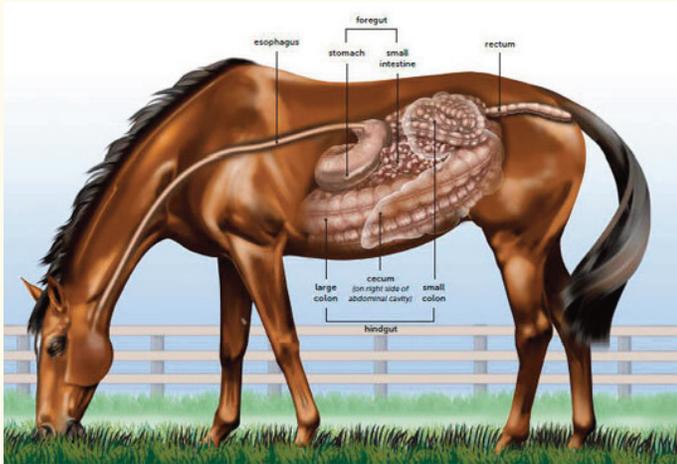
Gastric ulcers have been diagnosed in foals as young as two days old and can occur throughout a young horse's life. Studies have identified that approximately 21%-51% of the general population of foals has silent ulcers. The highest incidence of gastric ulceration in foals occurs in foals fewer than 10 days of age or when a foal of any age contracts a disease, particularly a disease that results in diarrhea and decreased gastrointestinal tract motility. Gastroscopy is considered the gold standard for the diagnosis of gastric ulceration at this time. The shortcomings of this diagnostic modality are the inability to define accurately the depth of the ulcer and to determine the degree of damage to the various layers of the gastric tissues. Currently, there are no accepted blood tests to identify biomarkers in foals with gastric ulceration. However, recently, a blood sucrose absorption test was evaluated as a screening tool for the presence of gastric ulceration in adult horses. The test appears to identify horses that have gastric ulcers, but the test has a significant number of false positive results. This test has not been studied in neonates, foals, or weanlings.



The treatment for foals with gastric ulceration is similar to that of adult horses in most cases. The hallmark of therapy is gastric acid suppression. Omeprazole is the most popular and effective oral medication used to decrease gastric acid formation in a foal's stomach. An intravenous medication,

pantoprazole, has been studied in foals and is a viable alternative medication to suppress acid formation in the foal's stomach if the stomach is not emptying normally. Sucralfate is an oral medication

The inciting cause of equine gastric ulcer syndrome in foals is not well understood; therefore, making recommendations to prevent the formation of gastric ulcers in foals is difficult. The administration of sucralfate is a safe and effective way to prevent ulceration in foals that are at a higher risk of developing ulcers, but if ulcers are already present, sucralfate alone will not affect ulcer healing. The use of omeprazole will likely prevent ulcer formation and will facilitate ulcer healing.



Unfortunately, studies have demonstrated that acid suppression also will make a foal more susceptible to other gastrointestinal tract diseases. Currently the most popular recommendation is to treat a foal that has been diagnosed (via gastroscopy) with gastric ulceration only with drugs that suppress gastric acid formation.

that will coat ulcers, provide comfort, and possibly aid in healing by enhancing blood flow to the ulcer and protecting the damaged tissue from further acid-induced injury. Misoprostol is a synthetic hormone analogue that is administered orally and may be useful in promoting blood flow to ulcerated regions in any part of the gastrointestinal tract, to promote ulcer healing. At this time, bacterial infection is not considered a primary component of equine gastric ulcer syndrome; therefore, antibiotics are generally not recommended for treatment of gastric ulceration. If a foal has developed a stricture in the terminal portion of the stomach or in the duodenum, surgery is indicated to bypass the constricted area.

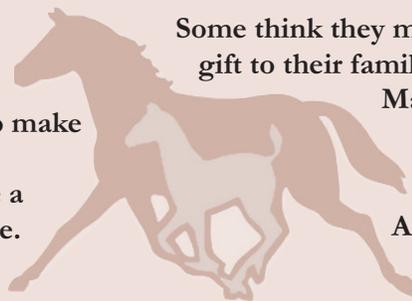


**CREATE A LASTING LEGACY OF HELPING HORSES...**

Estate planning does not need to begin late in life.

Foresight today can make a significant impact on the well-being of horses in the future.

You don't have to have extraordinary wealth to make a planned gift. Even a small amount can have a **BIG IMPACT** over time.



Some think they must choose between leaving a gift to their family or charity. **YOU CAN DO BOTH!**

Many planned gifts actually save your family money.

**IT'S EASY.**

A simple designation can make a huge difference in the health of all horses.

**THE HERITAGE SOCIETY**

The Heritage Society honors those loyal individuals who have included a gift to the foundation in their will and/or estate plans. Consider making a planned gift by designating a percentage of your estate. Examples of how you can give back to the horses include:

- Make a gift that costs nothing during your lifetime.
- Give stock and realize a larger tax savings.
- Donate your house/property and get a tax break all at the same time.

**Useful Tools May Include:**

- Wills • Living Trusts • Securities • Real Estate or Retained Life Estate • Life Insurance Policies • Retirement Plan Assets • Retained Life Estate

*When considering making a planned gift to Grayson Jockey Club Research Foundation, please be sure to consult your legal and tax advisors.*

**For more information please call Holly White at (859) 224-2842.**

# SPORT HORSE SUCCESSFULLY RECOVERS FROM COLIC

*Gus, the show horse of Holly White, Director of Development for the foundation, is living proof that research funded by the Grayson is saving the lives of many horses. All breeds and disciplines benefit from the knowledge gained by our researchers and we are delighted to share her personal story.*

Everyone has that special horse, *that* once-in-a-lifetime horse.

I know that many will recognize this special golden boy from the front of our tribute brochure. Gus, aka “The New Guy In Town,” is a 2011 model AQHA Appendix Quarter Horse and my past show hunter and heart horse.



In 2013, Gus was admitted to Cornell University with severe colic that required surgery. As we all know, this is any owner’s worst nightmare. Gus pulled through and initially recovered well, but subsequently developed adhesions in his abdomen. This resulted in his colon’s being permanently trapped in the wrong position, causing ongoing colic episodes and suspected gastric ulcers, which left untreated could contribute to even more ongoing colic episodes. Because of this he cannot pass long stem forage so he has been transitioned to a low-bulk diet of Hydration Hay or haylage and soaked hay pellets, affectionately referred to as “slop.”

The equine health research that Grayson funds helped to save Gus’ life; the post colic treatments he received were the result of funded projects from Michigan State University and North Carolina State University. Dr. Jonathan Cheetham, one of the veterinarians on Gus’ case, was the inaugural Strom Cat Award winner, a career-development award that Grayson awards each year to young researchers in the equine sciences.

Dr. Cheetham now also sits on Grayson’s Research Advisory Committee, which assists Grayson in selecting the projects we fund each year.

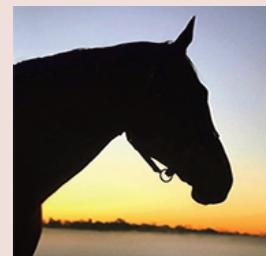
Grayson is very near and dear to my heart because its contribution to science has given me more time with my heart horse. I hope you can consider how Grayson is contributing daily to the lives of the horses in your very own backyard. Each year funded research focuses on the impact and the quality of the science for a wide range of equine health issues.

Please consider paying tribute to your very own special horse or consider honoring a friend’s horse. With this gift we will display your horse’s photo and story on our website and include a gift of a leather tribute bracelet with a brass nameplate of the honored horse along with the poem titled “A Good Horse.”



We would like to thank equine insurers- Sterling Thompson Equine for their participation in our tribute program. They choose to honor the horses of their clients through our memory wall on our website. The horse’s name and the owner are posted to our tribute page.

We also send the client a tribute bracelet with the name of their horse.



*Please visit our tribute page to learn more about this program.*

Donated by  STERLING THOMPSON EQUINE

# A LEGACY OF GIVING

*Dr. Stuart Brown DVM, recently named as the Equine Safety Director at Keeneland, spoke with Holly White, Director of Development for the foundation, about why he supports Grayson. Dr. Brown spent nearly 30-years with Hagyard Equine Medical Institute in Lexington and loves horses of all breeds and disciplines. He has included Grayson in his estate planning as part of the Heritage Society.*



## ***How did you first become involved with Grayson?***

I first became involved with Grayson after Dr. Walter Kaufman and Dr. Doug Bears contacted me about serving on the Scientific Review Committee in 1998-99. I also spoke with Dr. Gary Lavin at that time about the mission of Grayson and its unique role as the largest privately endowed source of equine research. I subsequently agreed to be a part of this critical effort that has such a direct benefit to the equine patients' care for every day in my daily veterinary practice in Central Kentucky. Following that initial term of service, I had completed two more appointments and was able to witness the firsthand impact of the Grayson contribution to advancing our knowledge of helping prevent disease and injury to the horse.

## ***What made you decide to give your first gift?***

My decision to provide my first gift was really motivated in a moment of reflection on priorities I placed on the importance of relevant efforts I would choose to support in my personal estate planning. I could think of no greater opportunity to benefit our scientific understanding in the area of equine research than through the support of the Grayson-Jockey Club Research Foundation.

## ***Why do you enjoy giving to Grayson?***

I enjoy the opportunity to give to Grayson because of my own personal experiences in participating in this unique and comprehensive work of the Grayson Scientific Advisory Committee with its robust work across the disciplines of equine research in competitive funding for valuable and relevant research to benefit the horse.

## ***What do you hope to accomplish through your philanthropy? What most inspires you and your philanthropy?***

I hope to further the mission of Grayson and bring others who have a similar motivation to join me in teaming up to further this effort as the single greatest resource for equine research that benefits all breeds of horses.

## ***If you were talking to someone else about giving to Grayson, what would you tell them?***

I would tell them that Grayson represents the greatest opportunity to advance our understanding of equine injury and disease with relevant answers to the questions that elude us most as practitioners treating the horse. Investments in Grayson lead to returns on insightful projects that help the horses we care for every day.

Probably my single biggest motivation in supporting Grayson through its foundation has been my firsthand experience in serving as part of the Research Advisory Committee. It has provided me the insight to witness the planning and preparation by Grayson to execute on a strategy that brings together annually over 35 influential minds that span the various disciplines and experiences found in equine veterinary medicine to serve in the grant review process. This group of individuals includes private practitioners like myself who bring their "real-life" clinical experiences to engage with leading researchers from our veterinary institutions to competitively review submitted grant proposals in awarding funding to further advance equine health. This process is accomplished through much organization, recruitment, and oversight by Dr. Johnny Mac Smith, the committee's veterinary advisor. He works in conjunction with the chairman, Dr. Steve Reed, to coordinate these reviews, leading to an in-person meeting where all can openly discuss their reviews and the inherent merits and constructive criticisms of each submission. This ensures that the projects with the most potential for impactful outcomes receive funding. Having had the great privilege to participate in this process during its leadership under Dr. Atwood Asbury and Mr. Ed Bowen, I recognize the solid foundation laid by the members of Grayson as stewards of the horse and could only hope to play some small part to give back in an impactful way to help generations of horses to follow

*text-to-give*  
**horsehealth to 243725**



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