



Straight talk about COLIC

By Joanne Meszoly

Colic has long topped the list of horse owner worries and with good reason: It is the leading cause of death in horses. Nonetheless, says Anthony Blikslager, DVM, PhD, there are reasons for optimism. Advances in diagnostics, along with new surgical techniques and other treatments, now help many more horses than ever before survive severe digestive upset.

Blikslager has been studying colic since he arrived at North Carolina State University (NCSU) as a resident nearly 20 years ago. "I decided to specialize in colic because of the volume of cases we saw at the clinic and the difficulty we had in saving many of them," he says.

Over the course of his studies for a PhD in physiology and his subsequent teaching and research career, Blikslager has treated hundreds of colic cases, with each yielding a little more information about this often confounding condition. His main motivation, he says, is to find ways to "shorten horses' hospital visits, reduce veterinary bills and increase survival rates."

Now interim department head and associate professor of equine surgery at NCSU, Blikslager shares his findings through textbooks, research papers and lectures. We asked him to discuss some of the most pressing issues related to colic prevention and treatment. His insights, combined with the visual guide to common types of digestive upset (page 46), will help you protect your horse from colic and, perhaps, worry just a little bit less.

A leading colic expert tells you how to reduce your horse's risk of developing serious digestive upset and increase his chances of recovery if he does.



Q: *What are your top three recommendations for colic prevention?*

Anthony Blikslager, DVM, PhD:

The best way to minimize your horse's colic risk involves adjusting his lifestyle to mimic, as closely as is practical, the way wild horses live, which means grazing and foraging for about 18 hours a day. This can be accomplished in three basic ways:

■ **Feed a diet comprised of maximum grassy forage and minimum grain.** Although many horses manage to live on a grain-heavy diet, it is not ideal. Grain is best digested in the stomach or small intestine, but the horse's system shuttles it off to the large colon as fast as possible, usually in three to four hours. The bacteria in the large colon are accustomed to digesting fibrous food, like hay, and they become overly active when presented with grain. As a result excessive gas and acid are produced.

Most horses can maintain good weight on forage alone, but even if yours can't, it's best to build a ration around hay or grass and supplement it with grain as needed.

■ **Provide as much turnout as possible.** People don't always like to hear this advice. When I tell them increased turnout is one of the best ways to prevent colic, they ask, "Well, what else can I do?" But there is really no substitute for turnout. In essence, it allows a horse to move around as he would in the wild, eating and digesting food more naturally.

■ **Be consistent in your management plan.** Horses are creatures of habit and don't respond well to change. Take a horse on the road, change his stall and his turnout routine and he is likely to get upset and stressed. This is not to say that stress causes colic, but it can influence how much a horse eats and exercises, which in turn affects digestion.

Of course, show, sport and race-horses are going to have busy travel and competition schedules, with all that entails. In these cases, try to maintain consistency in the basic

Common types of colic

Gas buildup, usually in the large intestine (8-15) and cecum (7), causes painful distention.

Cramping of the smooth muscles of the digestive tract, known as **spasmodic colic**, is often of unknown origin.

Impaction colic can occur anywhere in the gastrointestinal tract. Common causes include *packed feed*, which typically becomes lodged near the large colon's pelvic flexure (11); the sudden death of large quantities of *parasites*, which can cause obstruction of the small intestine (4); and *sand*, ingested when a horse eats his feed or forage off sandy ground, which can cause an obstruction where the large colon connects to the small colon (14-15).

In addition, **ileal impaction (6)** is associated with poor-quality coastal Bermuda hay and/or tapeworm infestation.

A simple **obstruction** prevents ingesta from passing through the ileocecal valve (6). Most obstructions occur after a horse swallows foreign matter, such as baling twine or a piece of a plastic bag.

Usually found in the large intestine (8-15), **enteroliths** are stones that form around ingested pebbles, grit or other foreign material.

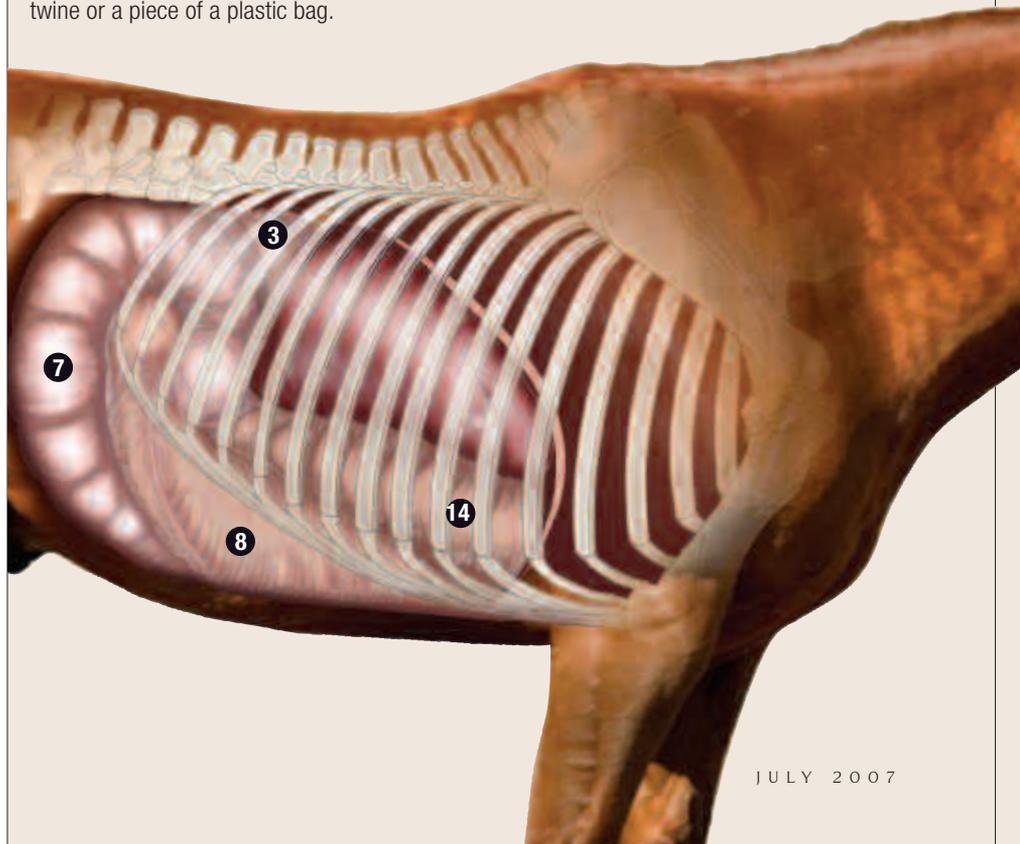
In many cases, the cause of a **twisted gut** (also called strangulation or torsion colic) is never found, but gas or a lipoma (fatty tumor) can be the culprit.

Mesenteric rent entrapment occurs when a section of small intestine (4) pushes through a hole in the mesentery (5), the sheer layer of tissue that suspends the intestine near the backbone.

In **epiploic foramen entrapment**, the intestine pushes through a natural hole between the stomach and liver.

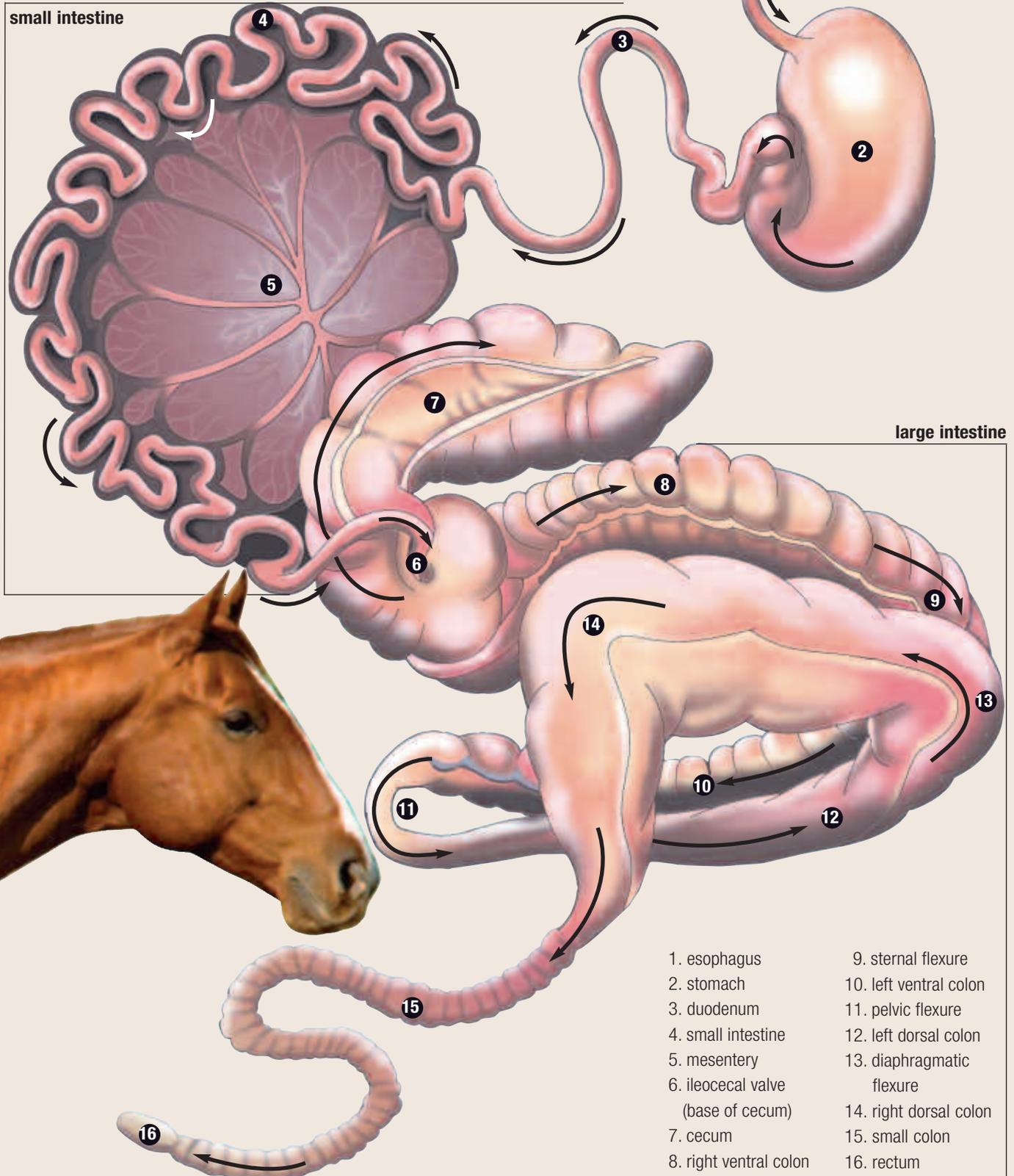
Enteritis/colitis, inflammation of the small/large intestine, is usually the result of infection.

Ulcers have many causes but those that appear in the colon (8-15) are often traced to high doses of bute. Stomach (2) ulcers are usually the result of stress, heavy work and/or changes in feed.



Anatomy

The horse's digestive system is comprised of nearly 100 feet of intestine packed tightly within his midsection. Although colic-causing conditions can occur virtually anywhere along the gastrointestinal tract, some areas—the hairpin turn at the pelvic flexure (**11**), for example—are especially prone to problems.



elements of a horse's routine—feeding times and exercise—and be on the lookout for signs of stress.

Q: *What's the first thing to do when a horse seems colicky?*

Blikslager: Call your veterinarian—even if the discomfort appears to be minor. Many colicking horses are saved by prompt treatment, and from the description of your horse's condition, your veterinarian can determine whether immediate care is needed.

A call will also provide a reference point for when the colic began: The duration of the episode and the horse's level of pain help the veterinarian gauge the severity of the illness. Typically, when survival depends on intensive hospital care, a horse needs to be admitted within three to four hours of the onset of colic.

Fortunately, owners are good at recognizing early signs of a problem. Not every horse rolls, looks at his flanks or exhibits the other classic signs of colic. Just as often, an owner notices subtle clues: when a horse doesn't come in right away, appears depressed or doesn't clean up his feed.

Q: *If a horse who has previously had mild colic suffers a recurrence, is it safe to give him a little Banamine to reduce his discomfort until the veterinarian arrives?*

Blikslager: I realize that some owners and trainers are experienced in giving Banamine and other non-steroidal anti-inflammatory drugs (NSAIDs). But it's easy to become too comfortable administering them.

The problem I have with Banamine, in particular, is that it lasts a long time—eight or 12 hours depending on the dose—and that can mask minor pain, complicating diagnosis if the horse doesn't improve. A shorter acting analgesic, such as Rompun, may be better for a colicking horse. But, in general, it's best to leave the choice of drug and its administration up to your veterinarian.

Reading the signs



TEXTBOOK CASE: The most common signs of colic include restlessness, pawing, rolling and nipping at the flanks.

Colic signs are as varied as the potential causes for digestive upset in horses. They range from minor depression and loss of appetite to restlessness and rolling.

Severely affected horses appear extremely agitated and may roll and thrash. In the late stages of the worst cases, they may be sweaty, shocky and unresponsive.

Red Alert: Three factors determine whether a colicking horse requires immediate veterinary care:

- his **level of pain**
- the **length of time** that he has been uncomfortable
- his **heart rate**, as measured by the pulse on the jaw or on the back of the pastern. A horse's normal resting heart rate is 48 or fewer beats per minute (bpm); 49 to 60 bpm is moderately high; 61 to 80 is extremely elevated; and above 80 bpm is critical. A horse who appears to be in severe pain and has a heart rate higher than 60 bpm requires immediate veterinary attention.

That said, in the vast majority of cases, the colic is simple and the veterinarian will administer a painkiller to make the horse more comfortable while the cause of problem—usually gas or minor spasms—resolves itself. In these cases, the goal is to treat the signs, not the cause, and hope that the original trigger of the colic dissipates.

Q: *Are some horses prone to colic, regardless of how they are managed?*

Blikslager: We don't know for sure, but research does point to a few gender and breed correlations. Some studies suggest that Arabians are predisposed to colic, but we're not sure whether they are managed differently or are truly at higher risk. It's also possible that Arabian owners respond more quickly and report cases of colic more often than do owners of other breeds.

However, we are fairly certain that Miniature Horses have an increased risk of small colon impaction. The reasons are unproven but most of the impactions consist of poorly chewed food. Perhaps this is related to the fact that Minis also tend to have more dental problems, such as overbites.

Tennessee Walking Horses and Standardbreds appear to have an increased risk of a rare small intestine strangulated obstruction called inguinal hernia, where the abdomen and scrotum connect via the inguinal canal. This canal contains the spermatic cord, and in some breeds, it is larger than in others.

As far as gender is concerned, geldings are more likely than mares to get lipoma, a benign fatty tumor or a stalk that can wrap around the intestine. We're not sure why geldings are at higher risk, but it's well known that when you castrate an animal, he will put on more fat, and that could be a factor.

Finally, broodmares are more likely to get large colon intestinal twists. Once a mare has foaled, there is more room in the belly, and the colon can be more easily flipped around. Other factors may be involved, such as

management changes. For example, the mare may be moved after foaling or fed differently, or given more grain to produce milk, and those factors may add up.

Q: *Are horses who have colicked once likely to have a repeat episode?*

Blikslager: Not necessarily. Among horses whose colic is resolved without surgery, it is impossible to track the likelihood of a repeat episode. However, studies show that horses who undergo colic surgery are generally at higher risk of repeat colic. There are many causes for recurrence but adhesion of the bowel is the most likely culprit. In about 80 percent of the horses who develop adhesion, the problem occurs within two months of surgery.

Q: *Do daily doses of bute over an extended period of time increase the risk of colic?*

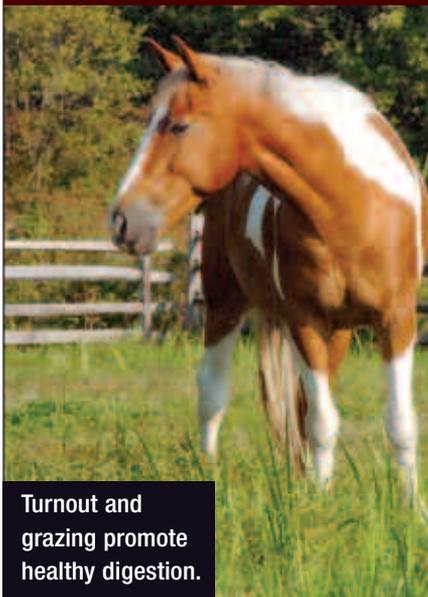
Blikslager: We know that NSAIDs, such as bute and Banamine, can increase the risk of stomach ulcers, and that's one cause of colic. We don't know how long a horse must stay on bute to increase this risk, but in general, the more you use and the longer you use it, the more likely it is that a problem will develop.

Bute can also contribute to inflammation of the colon, a condition called right dorsal colitis. Fortunately, this type of colic is rare, because it's difficult to treat—the right dorsal colon is hard to reach via surgery.

In addition, NSAIDs inhibit the production of prostaglandins, which are responsible for pain and inflammation but are also involved in organ function. As a result, long-term use of bute may have an adverse effect on the gut and kidney.



Colic prevention tips



Turnout and grazing promote healthy digestion.



In regions with sandy soil, reduce the risk of sand impaction colic by feeding horses on mats or with tubs and hayracks.



Control colic-causing internal parasites with a well-designed deworming program.

- Make good-quality hay the foundation of your horse's diet, and feed only as much grain as he needs.
- Provide as much turnout as possible.
- Make any changes in feed type gradually. To start the transition, mix a quarter of the new feed with three-quarters of the horse's former ration for four to seven days, then incrementally substitute an increasingly larger proportion of the newer feed for the old.
- Make sure your horse has access to fresh clean water around the clock.
- Adopt an internal parasite control plan incorporating broad spectrum deworming products to target the maximum number of worms in your horse's environment.
- Have your horse's teeth examined regularly to ensure that he is able to chew his food properly.
- Minimize the amount of sand your horse ingests with his feed by installing a catch pan or a rubber mat beneath your feed tubs and/or hayracks.

Q: *At what point does a colicking horse require hospital care?*

Blikslager: Horses are usually referred to hospital clinics when the colic does not resolve with simple treatment. At that point, further evaluation is required and surgery may be necessary.

It used to be that horses were referred to hospitals several hours into the colic episode after every other

avenue of treatment had been exhausted. That's not the case anymore, which contributes to better survival rates.

Of course, financial considerations are always an issue and not every horse needs clinical care. But I think it's a good idea to start considering the possibility of a hospital referral if the horse does not respond to the first treatment. In severe cases, early admission and prompt evaluation and surgery can be a lifesaver. 🐾

DUSTY PERIN; BOB LANGRISH