

# The Colic E-Book for Horse Owners

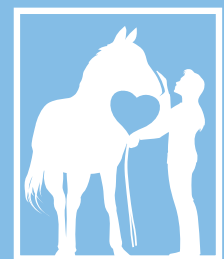
Understanding the Risks and How to Avoid Them



By the Crusade Against Equine Colic™  
Presented by SUCCEED® Digestive Conditioning Program®

Originally published as a series of articles  
on the Crusade Against Equine Colic website blog  
as part of Equine Colic Awareness Month 2013

Adapted for e-book format



CRUSADE  
AGAINST  
EQUINE  
COLIC™

## Contents

CHAPTER 1 Intervention Isn't Prevention .....	3
CHAPTER 2 We May be One Reason Horses Are Prone to Colic .....	4
CHAPTER 3 What Causes Colic in Horses .....	6
CHAPTER 4 Take Steps to Prevent Colic in Horses .....	8
Conclusion .....	10

## Introduction

You don't have to be involved with horses for long to learn what a common problem colic is. Minor colic episodes that resolve quickly – still accompanied by much stress and fear – run rampant throughout barns. And worse cases, requiring surgery or resulting in death, are always a real risk.

We are taught early in our horse experience to recognize signs a horse may be colicking: biting at his sides, pawing, getting up and down, refusing to eat, not manuring. We are taught to remove all feed, call the vet, walk the horse, and keep him from rolling. Yes, for every person who spends time with horses, these are all critical things to know.

### **But why do we only focus on resolving colic after it starts, rather than trying to keep it from happening in the first place?**

Knowing the common signs that a horse is colicking, calling the vet, and getting through even a minor colic is a temporary band-aid, not a permanent fix. Intervention is not the same as prevention: managing colic when it happens doesn't "Stop Colic." But, taking steps to improve and support good digestive health in horses to keep induced colic from happening does.



***Intervention is not the same as prevention: managing colic when it happens doesn't "Stop Colic." But, taking steps to improve and support good digestive health in horses to keep induced colic from happening does.***

## CHAPTER 1 Intervention Isn't Prevention



For many people, a colic episode is over when the horse is manuring and eating normally once again. We keep a careful watch for a few days and when all remains clear, we move on and assume all is well. **But something caused that horse to colic.**

**Relieving the symptoms does not treat the underlying problem that led to the colic.** Because the only surefire way for a veterinarian to know for certain why and how a horse colicked is to open him up. In over 80% of colic cases it's an educated guess. If you don't fix whatever may have compromised your horse's digestive health in the first place, it's very possible – perhaps even likely – that colic will happen again. And it could be much worse the next time.

### Colic Signals Other Potentially Serious Problems in the Equine Gut

Colic is a broad term that really just means a horse is experiencing pain somewhere in her gut. We generally use this term to refer to more acute pain as a result of spasms in the colon or other areas of the GI tract. Types of colic, such as gas build up, impactions, and torsions, are all really symptoms of larger problems.

It may be ulcers in the stomach or hindgut. It may be a problem with parasites – a more significant issue today than most realize. It may be digestive imbalance or hindgut acidosis as a result of how and what we feed. Relieving the pain of a colic episode, or getting a blockage to pass, doesn't resolve any of these.

### Underlying Issues That May Result In Colic Seriously Impact Horse Health and Performance

Sometimes horses colic for known or accidental reasons: ingesting wood from chewing on a fence, build up of sand, getting into the feed bin or being accidentally overfed. But research shows that some of the ways we manage horses today correlates with their risk of colicking. Two of the most common practices that increase the potential of colic are feeding grain or hard feeds and keeping horses stalled – even just some of the time.

These practices, along with other things like riding regularly, traveling, and competing, are known to negatively impact digestive health in horses. Hindgut inflammation, hindgut acidosis, and colonic ulcers, among other conditions, are increasingly recognized as common problems in horses today. And even the slightest imbalance in the equine hindgut has the ability to impact a horse's overall wellness, behavior, and ability to perform. Sometimes the only signs that your horse's gut health is less than optimal are in behavior on the ground or under saddle.

***Once a horse's digestive tract has been compromised enough to suffer a colic episode, it will not truly be healthy until you've treated the root cause and taken steps to reduce the risk of future colics.***

### The Next Colic Might Be the Last Colic

If your horse colics and survives, unless you figure out what likely caused it and make the necessary changes for future prevention and to promote gut health, chances are very good she will colic again. And it could be worse the next time – scarier, more expensive to treat, and ultimately life threatening.

Once a horse's digestive tract has been compromised enough to suffer a colic episode, it will not truly be healthy until you've treated the root cause and taken steps to reduce the risk of future colics.



## CHAPTER 2 We May be One Reason Horses Are Prone to Colic

Simply put, colic refers to pain anywhere in a horse's abdomen. This is typically associated with the gastrointestinal tract, and could result from any number of factors including ulcers, parasites, growths (such as tumors), and more. However, conventional use has evolved to when we say a horse "colics" we're commonly referring to spasms in the GI tract that occur due to gas build-up, blockages, or twists in the colon or, occasionally, the small intestine.

In most cases – more than 80% of them – the colic is deemed "idiopathic," or "of unknown origin." And while the veterinarian may have an idea of what occurred, or what gave rise to the colic symptoms, the only way to verify may be through surgery or other tests and procedures that may simply be too costly or impractical. This leaves owners in the dark much of the time about what leads to colic and, thus, how to avoid it.

What we do know is that many of the ways we feed and manage our horses compromises the health of the equine gut in a way that may create an environment where colic is more likely.



### What We Feed Puts Horses at Risk for Colic

The equine gastrointestinal system is designed to slowly, steadily, and constantly digest small amounts of fibrous foods: primarily a mix of grasses as well as seeds and bark. In the wild, horses graze up to 18 hours a day while roaming slowly over great distances.

However, because our horses are in work and have greater energy requirements, we nearly always add a hard

or concentrated feed into their diet: sweet feeds, oats, pelleted feeds – the options are almost endless. Even hard feeds that are touted as "low-starch" contain more than what the equine system should handle, which can upset the delicate health and balance of the hindgut.

**Studies have found that grain-fed horses colic astronomically more often than forage-only fed horses, especially when they are also stalled, trailered, ridden, and/or competed.**

*Many of the ways we feed and manage our horses compromises the health of the equine gut in a way that may create an environment where colic is more likely.*

### How We Feed Puts Horses at Risk for Colic

#### Limiting Turnout and Access to Forage

Horses are trickle feeders, which means they need to be grazing on small amounts of quality hay and grass nearly around the clock in order to be most healthy. This helps to buffer stomach acids, which are constantly produced, while providing fuel for the hindgut where fiber is fermented slowly over several days to generate up to 70 percent of a horse's energy.

When horses are turned out on quality pasture less than 18 hours a day, are fed only 2-3 times a day, and/or spend hours at a time with nothing to munch, their digestive health may be compromised.

#### Large Meals and Overfeeding

We've all heard horror stories about the weekend horse-sitter who unknowingly gave a horse way too much grain, or of horses breaking into the feed bin, and colicking. **But did you know that a hard feed meal of more than 5 pounds at a time can be too large for a horse to handle?**

Starches should be digested and absorbed before reaching the hindgut. Because feed moves through the stomach and small intestine in a matter of hours, a hard feed of that size goes through too quickly for the starch to be properly digested in the foregut.

## Other Management Factors That May Contribute to Poor Gut Health

Because the equine gut is so delicate, there are many common mistakes people make that may contribute to poor gut health and may lead to colic:

- Not building up on spring grass slowly over a period of weeks
- Not checking actual water intake (in addition to ensuring access to plenty of clean water around the clock)
- Not turning out for long periods or at all, which inhibits movement that helps with digestion
- Not utilizing a consistent feeding routine



## How We Use Horses Increases Colic Risk

Horses in the wild expend little energy; they walk slowly for miles as they graze and only heighten their pace in short bursts to escape from a perceived (or real) predator.

On the other hand, we often ride our horses regularly – and at more than just a walking pace. Some of us train hard and compete at least a few times a season, and often more. We trailer horses out to show or to trail ride or for lessons. And all of this can stress both the horse's digestive processes and mental health, which can also impact gut health.

## CHAPTER 3 What Causes Colic in Horses

Colic in horses. Part of the reason it's such a frightening diagnosis is that it's such a vague problem. It has numerous presentations, there are many potential causes that are often impossible to confirm definitively without surgery or autopsy.

There are many things that may cause a horse to colic.

A few of the common known causes include:

- sand impaction
- enteroliths
- gastric rupture
- enteritis
- cancer

However, these only account for a very small percentage of confirmed diagnoses among all colic cases. Over 80% of the time, the colic is considered “idiopathic,” meaning “of unknown origin.” While your veterinarian may have a good idea of what caused the colic, such as gas build-up, impaction, and/or torsion, it's difficult to prove. Thus, colic can also be difficult to treat and prevent.

*Many studies have related colic to specific management practices and overall poor digestive health.*

On the other hand, many studies have related colic to specific management practices and overall poor digestive health. In fact, such practices, and the resulting GI health issues, could begin to explain many of these idiopathic colics. These practices include feeding grain as part of the diet, limiting turnout, and riding, traveling, and competing.

**While we don't know specifically why these practices contribute to colic risk, we do know that they do. Here's a look at how the gut health in horses may be affected by how we care for them.**



### Poor Hindgut Health and Colic

**One of the biggest problems for horses today is undigested starch from concentrated feeds reaching the hindgut.** This is an issue because the hindgut is actually designed to support the fermentation of fiber found in forages. When good bacteria in the hindgut ferment sugars and starches instead, they produce lactic acid (among other things). This lowers the pH (i.e., raises the acidity) of the hindgut. This, in turn, causes the beneficial microorganisms that aid in digestion to die off and release toxins called endotoxins.

**This results in an environment that is, at best, imbalanced, and at worst, may lead to hindgut acidosis, colonic ulcers, laminitis, and potentially colic.**

### Colonic Ulcers and Colic

In addition to harming the bacterial balance of the hindgut, increased acidity may compromise the mucosal membrane that lines the hindgut wall. Lesions known as colonic ulcers may form. **Endotoxins, released when microorganisms die, can then enter the horse's bloodstream through these lesions.**

In a 2002 study of 20 racehorses in Japan\*, researchers introduced endotoxins into the anterior mesenteric artery that provides blood to the small and large intestines. Many of the horses colicked. Thus, if endotoxins are introduced into the bloodstream through colonic ulcers, the horse may be at significant risk of colic.

\*Oikawa et al. Mesenteric arterionecrosis in natural and experimental equine endotoxemia. *J Comp Path* 2006, Vol 134, 47 – 55.

When endotoxins enter the bloodstream, the body's natural response to losing blood is for the vessels to constrict to stop the loss. **In the case of colonic ulcers producing blood, this could result in decreased blood flow to the colon and the last few feet of the small intestine. This, in turn, may slow peristalsis** (the surging action of GI tract muscles that moves food through). Also, **lack of blood flow often leads to the death, or necrosis, of tissue at that location.** If a section of the intestines is necrotic, peristalsis is not possible there, and a blockage may ultimately occur. **Both situations may then become causative factors in impaction colic.**

Additionally, post-mortem analyses of horses' GI tracts revealed that **horses with colonic ulcers tend to have more flaccid colons, which may put them at risk for torsions.**

If you think colonic ulcers couldn't possibly affect your horse, think twice. Peer-reviewed research by Freedom Health found that 60% of performance horses suffer from colonic ulceration.\*

## **Changing Feeds Too Quickly May Lead to Colic**

Any time there is a change in types of hard feed, pasture grass, or hay (including hay coming from different fields or suppliers) – the transition should be done gradually over a period of weeks.

Each horse has its own unique population of bacteria in the hindgut which is based on many factors, including the specific type of foods in its diet. Changing feed types too quickly can negatively impact the types of bacteria in the hindgut, causing them to die off and kicking off a chain of events that may result in colic.

\*Pellegrini FL, Results of a large-scale necroscopic study of equine colonic ulcers, *J Equine Vet Sci*, 2005; 25(3):113-117.

## CHAPTER 4 Taking Steps to Prevent Colic in Horses

We started with the bad news, so that we could end by encouraging you with the good news:

**There are steps you can take to help prevent colic in your horse!**

Before we go further, we must make it clear: **not all colic is avoidable**. Some causes, such as tumors, may simply be unavoidable. However, as we explained in chapter 3, the underlying causes of most colic cases may be related to poor digestive health. And that we can do something about.

*Many cases of idiopathic colic may be prevented in the first place by taking steps to encourage digestive health, minimize the impact of less-than-perfect necessities of management, and diligent monitoring.*

### Steps to Make Your Horse a Colic-Free Zone

Many cases of idiopathic colic may be prevented in the first place by taking steps to encourage digestive health, minimize the impact of less-than-perfect necessities of management, and diligent monitoring. Here's what you can do to encourage your horse to be a colic-free zone.

#### **Mimic a Natural Lifestyle as Closely as Possible to Prevent Colic**

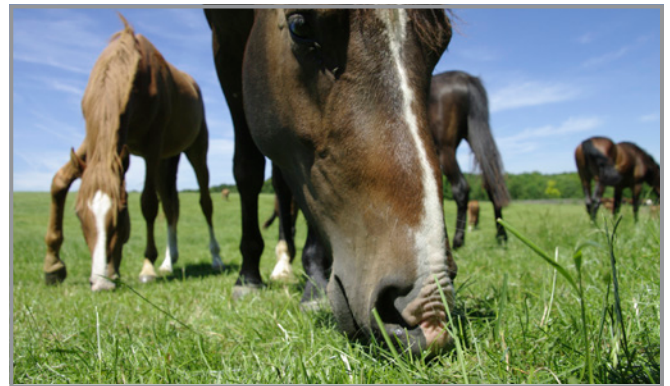
It is possible to feed and care for horses in a way that mimics how they function in the wild, despite living indoors and engaging in regular work, among other common necessities of the domesticated life.

In nature, a horse grazes up to 18 hours a day. This means the horse is constantly consuming small quantities of high-fiber forages. Breaking this down, the ideal diet consists of feed rich in structural carbohydrate (fiber), consumed a little at a time over a long period of time. Here are some things you can do to achieve a similar result:

1. **Increase turnout.** Horses should be turned out on quality pasture (or with hay) for as many hours of the day as is possible. Around the clock is best, as long as they have access to shelter. Of course, don't keep

them out in severe weather or extreme temperatures which could be dangerous.

2. **Reduce concentrates.** Find healthier ways, such as feeding soaked beet pulp, to get your horse the extra calories he needs for work. Also, recognize that promoting a healthy gut will enable your horse to better absorb nutrients in his feed – reducing the amount of extra calories he needs.
3. **Feed smaller meals.** Most horses are fed grain dumps and several flakes of hay 2-3 times a day. Instead, break meals into more small meals throughout the day. Just like it's better for us to snack throughout the day, it's better for horses to be able to graze on their food.
4. **Provide constant access to forage.** Horses should receive 1.5-2% of their body weight in forage daily, and also need it trickling through their systems constantly for optimal digestive health and function.



5. **Slow intake.** Encouraging horses to eat more slowly allows hard feeds more time to digest properly in the foregut as well as keeps a steady flow of forage into the digestive system. Mix chaff in with your horses grain to slow feeding time, use haynets, put a few large rocks in the grain bucket so your horse has to pick around them.
6. **Make changes slowly.** Switch between new types of feed – grains AND hay or pasture – slowly over a period of weeks. If you are moving to a new barn, take grain and hay from the old barn to help give your horse's hindgut time to adjust. Gradually increase the ratio of new to old feed throughout this time.



## ***Work with Your Health and Feed Partners to Focus on Wellness***

Your veterinarian is highly educated and experienced in all aspects of your horse's health. Likewise, your feed rep understands nutrition. Utilize their knowledge to develop a dietary and management program that is best for your horse's individual needs. Work with your vet and feed supplier to:

1. Develop a nutrition program
2. Implement an appropriate deworming program
3. Stay up to date on necessary vaccinations
4. Provide proper dental care
5. Monitor your horse's digestive wellness regularly

As they say, "an ounce of prevention is worth a pound of cure." Any time and money you spend to ensure your horse's wellness may be money saved in emergency visits, travel and treatment at a clinic, or a risky and expensive surgery in the event of a colic.

## ***Supplement to Support Digestive Health in Your Horse***

**We recognize that many boarding or home-care situations may have necessary limitations that do not allow for implementation of all of the natural care recommendations discussed above. In these cases, it's important to take steps to fill in the gaps another way.**

As understanding of the intricacies of equine digestive health has deepened over the last few years, the market has exploded with products to support gut health in horses. Work with your veterinarian to select a feed supplement that is scientifically researched, tested, and licensed for

sale and is well recommended by those who use it. A good supplement will contain ingredients targeted to the healthy structure and function of the entire equine digestive tract to promote total gut health.

**Also keep in mind that any product that has gone through the appropriate channels to get licensed for sale in each US state may not be able to provide their research directly to you due to regulatory issues. Be sure to involve your veterinarian, who will be able to access that kind of information.**



## ***So, Now What?***

Talk to your veterinarian. Your barn manager. Your trainer. An equine nutritionist. Develop a specialized plan to fit your horse's unique needs and take all the steps you can to promote digestive health and prevent most colics. Now that you know better, do better.

## CHAPTER 3 Conclusion

We hope this e-book has helped you learn more about colic and the best ways to prevent it in your barn.

Join the Crusade at [www.coliccrusade.com](http://www.coliccrusade.com) to pledge your support for this important cause, and to let us know that you take preventing colic seriously. If colic has happened to you and horses you love, share your story with others to get support and to help spread the word that colic is a risk to take seriously.

**Surviving colic doesn't stop colic. Make a Change.**

