



## The Informed Arizona Equestrian HORSE HEALTH SERIES

# Preventing Sand Colic

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*Scenario: Recently, at the Southern AZ Equine Health Symposium held at the University of Arizona farm, you learned about different types of colic and some preventative management strategies. Armed with your new knowledge about risk factors for sand colic, you identify that feeding your easy-keeper pony, Jenny Wren, on the ground in her corral is one risk factor. So you stop by the feed store and pick up a shiny new feed trough. However, when you get to the farm, Jenny Wren hasn't finished her breakfast and is rolling and sweating profusely. When the vet arrives, she grabs a stethoscope and starts listening to Jenny Wren's abdomen for "gut sounds" (the movement of digesta through the gastrointestinal tract). She calls you over to listen, and the sound of the sand in her digestive tract reminds you of waves on the beach.*

Colic is a generalized term for any type of abdominal pain in the horse, most commonly digestive tract pain. There are multiple causes of colic, these include gas build up, a blockage or impaction, a twisted bowel, and enteroliths, among other things. In Arizona, sand is a relatively common cause of colic. Horses ingest sand from the soil along with their hay, grain or pasture / range forage. This sand can build up in the digestive tract over time and eventually cause colic.

Since sand is heavier than the hay or grain being consumed / digested by the horse, it can sift out, settle, and accumulate in a heavy layer on the bottom (ventral) portion of the digestive tract. A significant amount of sand can build up over time in the gut and it can cause a horse to colic. A horse with a very large accumulation of sand may develop a blockage (Figure 1), or he may roll in the pasture and cause the "bottom heavy" intestine full of sand to swing like a pendulum. This could cause a displacement of the bowel (abnormal position of the bowel). This causes severe pain and blocks blood flow, causing the blood deprived portion of the intestine to die, and likely requires surgical intervention.

### Is my horse at risk?

Sand is a large component of most of Arizona's desert soils. Most horses in Arizona are kept in "dry lots", or open shaded pens with sand or dirt as the base footing. Horses that are fed on the ground are at significant risk of picking up sand as they eat. Sand can also be present in the hay bales, picked up during the baling process. Additionally, traditional "twice a day" feeding regimens can result in "bored" horses who spend much of their day picking at the ground to satisfy their natural desire to graze, and potentially ingesting more sand.



Figure 1. Sand accumulation in the large intestine of a horse. Photo courtesy of Dr. Lisa Kivett, Foundation Equine Clinic, Southern Pines, NC (FoundationEquineClinic.com)



Figure 2. Sand has settled to the bottom of the manure/water mixture. Photo courtesy of proequinegrooms.com

## Treatment

Initial treatment is similar for most types of colic, including suspected sand colic. Commonly, a tube is passed through their nose into their stomach to administer a large volume of water. The increase of fluid in the digestive tract can help to break up or move the sand or other blockage through, while providing hydration to the animal. Mineral oil may also be used, however it does not actually help to move the sand along. Instead, it may serve to protect the digestive tract from irritation caused by the sand. In some cases, IV fluids may also be used to help rehydrate the animal and aid in movement of fluid through the digestive tract. If the colic continues to progress despite fluid therapy, surgical intervention may be necessary to save the horse's life. Colic surgery to remove sand will involve the veterinarian creating an incision along the horse's abdomen, exposing the bowel in which the obstruction has occurred, and carefully flushing the sand out.

One way to check if your horse has been ingesting sand is to mix fresh manure thoroughly with water in a bucket, clear container, plastic baggy, or palpation sleeve to let any sand settle out for approximately ½ hour (Figure 2). This may not tell you definitively if your horse has an accumulation of sand in his gut, but it can verify that your horse is ingesting sand along with his diet. Your veterinarian can show you where to listen with a stethoscope to try to hear sand in his gut. If it is moving along the digestive tract when you listen, it has

## Signs of Sand Colic

Horses experiencing an episode of colic exhibit general symptoms of discomfort including:

- Disinterest in food
- Increased heart and respiratory rate
- Pale gums
- Sweating
- Looking or kicking at their abdomen
- Pawing
- Repeatedly standing and laying down
- Rolling
- Sudden death

been described as sounding like ocean waves rolling on the beach. Your veterinarian may be able to take radiographs (X-rays) or use ultrasound to help determine if there is sand in the digestive tract of the horse, and how much sand may be present.

## Prevention

The best prevention of sand colic is to use a multifaceted approach. Start by not feeding horses on the ground, by using tubs, hay nets, or feeders, to decrease the potential for picking up sand with their food. Placing the feeders on rubber stall mats to catch dropped hay or grain can further decrease sand ingestion, even if horses persist in tossing hay out of the feeder. It is important to regularly clean/sweep off the mats and dump fines out of feed tubs, since sand filled feeders and mats defeat the purpose of using them. Ensuring the horse's diet is high in fiber (hay and roughage) can help to keep sand passing through the digestive tract rather than accumulating.

**Slow feeders** are designed to decrease the speed in which the horse can access hay from the feeder. The purpose is to provide hay in a manner that mimics grazing (smaller amounts over longer time periods) and decreases hay waste. The designs can be as simple as a hay net holding several flakes (Figure 4), a bale box with some type of grating, or a netting or containment system for round bales made of wood, hard plastic, rubber, or other materials. Usually the container has some type of smaller holes or openings to restrict the amount of hay the horse can get at any one time. Additionally, the act of pulling the hay through small openings can help to separate any sand from the hay, thus decreasing the amount of sand ingested.



Figure 3. Three different versions of hay feeders for horses. Photo from: <http://www.extension.umn.edu/agriculture/horse/nutrition/effect-of-small-square-bale-feeder-design/>



Figure 4. One type of slow feeder offered by FreedomFeeder.com referred to as "Pasture in a Net" Photo courtesy of Melissa Auman, CEO.

If horses are turned out into a sandy pen or arena, feed them prior to turnout to decrease food seeking behaviors, or use a hay feeder (Figure 3). Also consider providing free-choice hay in a "slow feeder" to reduce waste, stretch consumption throughout the day, provide a steady flow of roughage to help move any sand through the digestive tract, and reduce boredom. Pastures with sandy soil should be carefully managed to prevent overgrazing, which may lead to sand consumption as horses nibble at short grasses.

The American Association of Equine Practitioners and several Arizona veterinarians recommend feeding psyllium daily for one week per month to help prevent sand build up. Psyllium helps to collect and move the sand through the gut by making the sand stick together and increasing gut motility, but it shouldn't be relied on as the sole method of prevention.

Finally, learn to recognize signs of colic in your horse. Often, the first signs you will see for a colicky or sick horse is no appetite and/or "just not acting right". Any change in normal behavior or vital signs could be the first indications of colic developing. Early veterinary intervention can mean the difference between medical versus surgical treatment of colic, and potentially save the horse's life.

### For more information:

<http://www.thehorse.com/articles/10217/dealing-with-sand-colic> (Nice summary article in *The Horse* written at a level for the horse owner).

<http://fordvetsurgery.com/equine-health/sand-colic-in-horses.html> (Ford Veterinary Surgery Center (Clovis, CA) article written for clientele).

<http://www.thehorse.com/articles/23243/sand-colic-in-horses> (Nice summary article in *The Horse* written at a level for the horse owner).

<http://www.proequinegrooms.com/tips/grooming/how-to-test-for-sand-in-your-horse/> (A blog post written by a professional groom with sand measuring and management tips).

### References

Grev, A.M., Glunk, E.C., Hathaway, M.R., Lazarus, W. F., & Martinson, K. L. (2014). The Effect of Small Square-Bale Feeder Design on Hay Waste and Economics During Outdoor Feeding of Adult Horses. *Journal of Equine Veterinary Science*. 34(11-12), 1,269-1,273. Retrieved From <https://www.sciencedirect.com/science/article/pii/S0737080614003530?via%3Dihub> *A journal article examining hay waste and return on investment for different small square-bale feeders.*

Horse & Man. (2013, October 1). Slow Feeding [Blog Post]. Retrieved From <http://www.horseandman.com/handy-tips/slow-feeding-and-zenyatta-ornaments-sort-of/10/01/2013/> *This article provides photos of and discussion about several options of slow feeders.*

Loving, N. (2016). Colic: Updates and Prevention. *American Association of Equine Practitioners*. Retrieved From <https://aaep.org/horsehealth/colic-updates-and-prevention>  
*This general colic article is written for the horse owning audience.*

Walesby, H.A., Blackmer, J.M., & Berthelot, A. (2004, September). Equine Sand Colic. *Vet Folio Compendium*. Retrieved From <http://www.vetfolio.com/internal-medicine/equine-sand-colic>  
*This peer reviewed article has excellent information and pictures about clinical signs, diagnosis, surgery, and prevention related to sand colic.*



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