



## Congratulations on Your New Horse

*Congratulations on your newly adopted horse! Whether you are new to horses or not, this is an exciting time, although it can be overwhelming if you haven't owned a horse yet or if it has been a while. We've put together some articles in a variety of areas to help get you started as a new horse owner. We hope these articles give you a good foundation on your horse ownership journey.*

# Assessing Horse Vital Signs

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Written by Preston Hickman, DVM, Wichita Equine and Sports Medicine

## Equipment Needed:

Assessing an animal's vital signs is easy, straightforward and can be done with minimal equipment. The only [equipment](#) needed are a [thermometer](#) and [lubricating jelly](#). A [stethoscope](#) makes monitoring the heart rate and respiration easier.

[Stethoscopes](#) are a worthwhile addition to any emergency medical kit. Thermometers come in many different shapes and sizes from digital to manual. If a manual variety is chosen, a [livestock thermometer](#) with a string attached will make your life much simpler when taking the rectal temperature on a large animal.

Proper restraint is important no matter what animal you are assessing. The primary goal is safety of the handler and the animal. Ensure that the animal is in a comfortable location (if possible) before you began to assess the vital signs. It is always a good idea to have a practice run before you have an emergency, so you're aware of how the animal will react. A practice run will allow your animal to know what to expect during the procedure, as well. Vital signs consist of primarily three things: temperature, pulse, and respiration. Other considerations are: Gastro-intestinal or G.I. sounds, digital pulses, mucous membrane color, and hydration status when confronted with an emergency.

## Taking Vital Signs:

**Temperature:** With the animal properly restrained, apply a small amount of the [lubricating jelly](#) to the end of the thermometer. If using a manual thermometer, make sure the thermometer is shaken down prior to inserting into the rectum. Insert the thermometer approximately 3 to 4 inches into the rectum. Allow at least 2 minutes before reading and removing if using a manual thermometer, or until the digital thermometer beeps if using a digital thermometer. The string on a livestock thermometer can be attached to the tail so that it is not inadvertently lost into the rectum or dropped on accident. Caution should be used to assure the end of the thermometer is not within a fecal ball, as this will tend to falsify the reading in some cases.

- \* Normal temperature for a Horse is 98.5-101 degrees F.
- \* Normal temperature for a Dog is 99.5–102.5 degrees F.
- \* Normal temperature for a Cow is 100–102.5 degrees F.
- \* Normal temperature for a Sheep/Goat is 101–103 degrees F.
- \* Normal temperature for a Rabbit is 100.4–105 degrees F.
- \* Normal temperature for a Cat is 100-103.1 degrees F.

\* Normal temperature for a Swine is 100–102 degrees F.

**Pulse:** An animal's heart lies approximately behind the elbow. The pulse is easiest to detect by using a stethoscope on the left side of the animal's body. It can be measured manually by finding an artery and palpating the pulse, much as you do on yourself when you palpate your pulse over your wrist. The horse's pulse may be taken manually by placing your fingertips on the large artery up against the inside of his jawbone near his cheek. The dog and cat pulse is most easily detected at the femoral artery inside the flank of the hind leg. In other livestock such as sheep, cattle and swine, the use of a stethoscope rather than manually palpating the pulse is desired. The pulse (each lub-dub counts as one beat) can be counted for a minute, or can be counted for 15 seconds and multiplied by 4 to get the rate per minute.

- \* Normal pulse rate in a Horse is 28-45 beats per minute.
- \* Normal pulse rate in a Dog is 80–120 beats per minute.
- \* Normal pulse rate in a Cow is 55–100 beats per minute.
- \* Normal pulse rate in a Sheep/Goat is 60-110 beats per minute.
- \* Normal pulse rate in a Rabbit is 20–150 beats per minute.
- \* Normal pulse rate in a Cat is 100–140 beats per minute.
- \* Normal pulse rate in a Swine is 60-120 beats per minute.

**Respiration:** Respiration is perhaps the easiest vital sign to obtain since no contact with the animal is required in order for it to be measured. In contrast, respiration is also the most variable of all the vital signs, and the most affected when the animal is excited or in pain. It is not uncommon for respiration rates to double or triple with pain or anxiety. Watch the animal's flanks, counting every inhalation for 15 seconds. Multiply by 4 to get the rate per minute.

- Normal respiration rate in a Horse is 10–14 per minute.
- \* Normal respiration rate in a Dog is 15–30 per minute.
- \* Normal respiration rate in a Cow is 10–40 per minute.
- \* Normal respiration rate in a Sheep/Goat is 10–30 per minute.
- \* Normal respiration rate in a Rabbit is 50–60 per minute.
- \* Normal respiration rate in a Cat is 20–30 per minute.
- \* Normal respiration rate in a Swine is 8–18 per minute.

Take your animal's vital signs over a number of days in different weather and temperature conditions. This will assist in establishing a baseline to interpret variations in values should the need arise.

# Worms in Horses 101: Pictures + Explanations

Did you know? Some 90% of worms in horses come from the environment they are exposed to every day. This includes small strongyles, tapeworms, pinworms, roundworms, bloodworms and threadworms. Equine parasites can present a number of health risks to horses, including:

- Poor nutrient absorption
- Increased risk of colic and pneumonia
- Lung damage
- Decreased performance
- Stunted growth
- Weight loss
- Poor coat condition

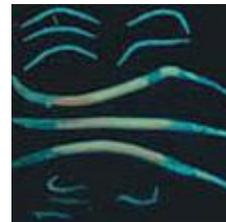
Help control your horse's risk for parasites; ensure they are on an [effective equine deworming program](#). For young horses and horses deemed high parasite shedders, consider [this annual deworming pack](#), available only at veterinarian-founded Valley Vet Supply. If you are deworming foals, look to [this specific pack](#). Both annual deworming packs were developed by the Valley Vet Supply Technical Service Veterinarian team, with guidance from the AAEP Parasite Control Guidelines.

For a better understanding of worms in horses, review the descriptions and pictures below.

## Horse Worm Facts

### Pinworms

Pinworm eggs are picked up by horses from contaminated feed, water, bedding, and may also be present on tail wraps, grooming materials, and even fence posts and stalls. The female pinworm deposits eggs around the anus, secreting a substance which can cause intense itching. This may lead to tail rubbing and even injury to the tail and rump. Washing the perianal region may help relieve the itching, but all materials used should be discarded or washed in hot water with soap. Pinworms may be difficult to diagnose in manure samples, but the eggs can usually be picked up on scotch tape pressed to the skin near the anus.



## Ascarids (large Roundworms)



The adult stages of the large roundworm is found in the small intestine, where the female passes large numbers of eggs into the manure. In about two weeks, these eggs become infective and the horse picks them up while grazing. The larvae migrate into the blood vessels and are carried to the liver and lungs. The immature worms are coughed up and swallowed, maturing in the small intestine to complete the life cycle.

## Bots



Bots are the immature maggot stages in the life cycle of the bot fly, the adult of which resembles the honeybee in general appearance. The females lay their eggs by attaching them to the hairs of the front legs, throat, and under line. As the horse licks itself, the larvae attach themselves to the lips and tongue and burrow into these tissues. After about three weeks they attach themselves to the lining of the stomach, where they may remain for several months, causing additional damage.

## Large Strongyles (Blood Worms)



Adult strongyles are found firmly attached to the walls of the large intestine, where the females pass large numbers of eggs into the manure. These eggs hatch and the larvae climb blades of grass and are swallowed. The larvae then migrate to the large arteries which supply the intestines. As the artery walls are damaged, blood clots form and break away, causing colic. Small Strongyles (Cyathostomins): Ubiquitous parasites, infecting nearly all grazing horses. Relatively mild pathogen, except when present in large numbers.

## Tapeworms



Difficult to diagnose, it is estimated that 40% of the horses in the U.S. are affected. Tapeworms are contracted during grazing, when the horse ingests the intermediate host, a mite found on plants. Once infected, tapeworms contribute to digestive problems, colic and malnourishment. Tapeworms are often undetected using normal fecal flotation methods.

# Deworming your horse Q &A

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Equine deworming is a critical part of overall equine wellness. It's also a rather *technical* part of your horse's wellness program. With this in mind, by working with our veterinarians and founders, Drs. Arnold Nagely and Ray Shultz, we bring you a comprehensive Q&A about all things equine deworming.

## **Q: What risks do parasites present to horses?**

Parasites rob horses of nutrition, energy and overall wellness. When left untreated, parasites can cause critical damage to a horse's vital organs, impair their growth, hinder their performance and even cause colic.

## **Q: When is the best time to deworm my horse?**

American Association of Equine Practitioners (AAEP) [parasite control guidelines](#) recommend deworming when parasite levels can be at their highest, during the spring and fall. Treatment for bots and tapeworms should be timed to coincide with the end of the fly season for bots and the end of pasture season for tapeworms, typically late fall or early winter. For best control, look to [ivermectin/praziquantel](#) or [moxidectin/praziquantel](#) deworming combinations.

While deworming helps alleviate adult worms, in turn reducing the number of eggs shed, it is important to keep in mind that the real damage done by strongyles occur during larval migration. Consider treating with [Panacur PowerPac](#) when the encysted stage is at its peak, typically in the fall for northern climates and spring in more tropical and subtropical climates.

## **Q: How often should adult horses be dewormed?**

Work with your veterinarian to perform a fecal egg count (FEC) test, which will help guide you on the frequency of deworming treatments needed. The [AAEP recommends](#) one FEC per year for adult

horses. As a general best practice, though, horses should be treated once or twice yearly, during spring and fall.

**Q: According to a horse’s FEC results, what constitutes as a low or high parasite shedder?**

### Understanding a Horse’s FEC Test Result Numbers and Level of Parasite Risk

Low shedder	0 to 100 eggs per gram (EPG)
Moderate shedder	<200 to 500 EPG
High shedder	600 to 3,000 EPG

**Q: Which parasites should horses be treated against?**

There are more than 150 species of internal parasites that can infect horses. The following are the most common, with the first three posing the gravest risk to your horse’s health.

- Small strongyles (cyathostomins)
- Roundworms (ascarids)
- Tapeworms
- Large strongyles (bloodworms or redworms)
- Pinworms
- Bots
- Threadworms

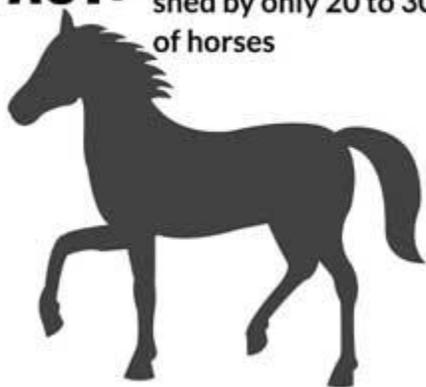
**Q: Do younger horses have unique deworming needs?**

Foals should be dewormed a minimum of four times, beginning at 2 to 3 months of age. Because ascarids are the primary target, [benzimidazole dewormers](#) are recommended. A second dose of benzimidazole is recommended by 6 months of age, at which time an FEC can be used to determine whether the primary worm burden is ascarids or strongyles. The next two dewormings, at 9 and 12

months of age, should primarily target strongyles, with tapeworm treatment included in one of the treatments.

Recently weaned foals should be turned out to the cleanest pastures available with the lowest parasite burdens. Yearlings and 2 year olds should be [treated as high shedders](#), according to their FEC results, and be dewormed on average three times per year.

**FACT:** 80% of eggs are often shed by only 20 to 30% of horses



**Q: Do high-shedding horses have different deworming needs?**

Some 80% of eggs are often shed by only 20 to 30% of horses. The key is to identify high-shedders and deworm before they begin passing large numbers of eggs into the environment.

To help control parasite burden for high shedders (more than 600 EPG), consider incorporating a daily dose of [Strongid® C 2X](#) to help break the cycle of parasite infection.

**Q: Can certain factors contribute to increased parasite levels at a barn?**

Yes! A number of elements can contribute to higher levels of parasite shedding, such as:

Boarding and training barns, which house greater numbers of horses that may contribute to increased parasite burden

Movement of horses on and off the farm for training or competitions, presenting greater contact with other horses

Foals, weanlings and geriatric horses, which are often higher shedders of eggs

High stocking densities (more than two horses per acre) and nonrotated pastures, which are proven to increase parasite levels

**Q: Should a horse's approximate weight be determined before dosing dewormers?**

Yes! It's important to dose to your horse's individual weight when deworming. Keep a handy [weight tape](#) in your tack box to help accurately dose your horse's dewormer, and remember these four simple steps to using a [weight tape](#).

1. Make sure your horse is standing square.
2. Place the weight tape around your horse's heart girth.
3. For the closest weight approximation, see the number where the tape meets.
4. Set your dewormer to the correct weight to administer an accurate dose.

**Q: What are best practices to incorporate for parasite control, in addition to deworming?**

To better manage parasites, it is recommended that horses consume grain and hay from a [feeder or hay rack](#) that is elevated off the ground. Removing manure daily, as well as composting manure and clipping pastures, also can help control parasite populations. To help eliminate larvae, pasture rotation also is a best practice. If possible, horse owners can remove horses from the pasture and rotate in another species, such as cattle, to help eliminate parasite burden from the field.

# Ensure Your Horse's Dental Health

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*Caring for your horse's teeth through regular dental floats with a veterinarian can keep them on their best behavior.*

“Could dental pain be the culprit for your horse’s behavioral problems?” asked Jeff Hall, DVM, senior equine technical services veterinarian with Zoetis. A study published in the *Journal of Equine Veterinary Science* established a link between common equine behavior problems and abscessed cheek teeth. Periapical infections or abscessed cheek teeth are common in horses and will usually induce pain that is displayed in your horse’s behavior. According to the research, half of the cases of periapical infections were diagnosed during routine dental examinations, indicating that horse owners were unaware of the association between undesirable behavioral patterns of their horses and dental pain.

## **Behavioral Problems Linked to Tooth Pain**

Common behavioral signs associated with cheek teeth abscesses fall into three main categories.

- Eating slowly or taking frequent pauses while eating hay
- Turning his head while eating or dropping hay or grain from his mouth
- Dipping hay in water or avoiding drinking cold water
- Evading the bit
- Headshaking, lolling tongue or opening his mouth when ridden and/or driven with a bit
- Rein contact worse on one side of the mouth
- Withdrawn, intense stare, aggressive behavior or self-harm to his head
- Avoiding social interaction with other horses and people
- Bad-smelling breath
- Poor performance, such as a decline in athletic ability

If your horse is expressing any of these behavioral signs, work with your equine veterinarian to conduct an annual oral and dental examination. Depending on your horse’s age, level of performance and overall condition of the teeth, additional examinations throughout the year may be needed.

## **What to Expect During a Dental Exam**

“I find that horse owners sometimes hesitate to schedule annual dental exams because they are unsure about what goes into an exam and what their horse will experience,” Dr. Hall said. “Dental exams are a safe, routine procedure that should be conducted by your veterinarian proactively every year.”

A thorough dental exam can take between 10 to 30 minutes and includes:

An assessment of external structures of the horse's head and soft tissues (e.g., lips, cheeks and lymph nodes)

An examination of internal structures (e.g., tongue, palate, gums and cheeks)

The visualization and palpation of teeth

During examination, veterinarians use a full mouth speculum. A full mouth speculum is a piece of equipment that fits onto a horse's head, similar to a bridle, with mouth plates that fit between the front teeth to hold a horse's mouth open. This allows for a more complete visualization and palpation of most aspects of the teeth.

Equine dental care, [horse vaccinations](#) and [horse wormers](#) all play an important role in their overall health and wellness.

*About the author: This content was originally provided by Zoetis, and Jeff Hall, DVM, senior equine technical services veterinarian for Zoetis, with minor additions included from Valley Vet Supply.*

# What vaccines does your horse need?

All horses should receive annual vaccination against the five core diseases.

Spring has arrived and we know you're eager to spend more time with your four-legged best friend. It's important to make sure your horse is healthy and feeling his best all year. Annual vaccinations are key to ensuring your horse's health and well-being against potentially fatal equine diseases. But what vaccines does your horse absolutely need?

Every horse is unique, and every environment is unique. To determine what vaccinations your horse needs, talk with your veterinarian first. Your veterinarian can advise you on the potential disease risks in your area, the best time for core disease vaccination and what risk-based vaccines are right for your horse.

## Core Vs. Risk-based Diseases

There are two categories of diseases that pose the most serious threats to horses:

- **Core Diseases:** The five core diseases include rabies, West Nile virus, Eastern and Western equine encephalomyelitis, and tetanus. All horses are exposed to these potentially fatal diseases and need to be vaccinated annually according to the American Association of Equine Practitioners.
- **Risk-based Diseases:** Equine influenza virus and herpesvirus are the most common risk-based diseases that your horse may need to be vaccinated against. Vaccination will vary depending on your horse's unique lifestyle and environment.

# The Danger of Core Diseases Is Real

Protect your horse from the potentially fatal core diseases every spring with Core EQ Innovator®, the first and only vaccine to protect horses against all five core equine diseases in a single injection.

## Rabies

100% fatal<sup>1</sup>

- Horses can be exposed to rabies through the bite of infected animals: commonly bats, raccoons, foxes and skunks.
- Preventive care through annual vaccination is the only way to protect horses against rabies – a zoonotic disease that is also a risk to you and your family.

## Eastern equine encephalomyelitis (EEE)

90% fatal<sup>2</sup>

- Mosquitoes aren't just a nuisance – they pose serious risks to your horse's health.
- It is transmitted to horses by mosquitoes that have fed on infected wild birds.

## Tetanus

75% fatal<sup>2</sup>

- It is caused by bacteria present in soil that can contaminate open wounds.

## Western equine encephalomyelitis (EEE)

50% fatal<sup>1</sup>

- Like EEE, it is transmitted through the bite of an infected mosquito.

## West Nile virus

33% fatal<sup>1</sup>

- West Nile virus is acquired through the bite of a mosquito that previously fed on an infected bird.

Additional annual risk-based vaccinations may be needed based on your horse's unique lifestyle and environment. Protect your horse from diseases like equine influenza, equine herpes virus, strangles, and leptospirosis through annual vaccination.

# Poor Horse Behavior? It Could Be Pain Related

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*Is your horse bucking, rearing or generally misbehaving? Read up on the much-overlooked issue of pain in horses, as it relates to misbehavior.*



She was asked to watch a horse move -- “Something just wasn’t right,” proclaimed the owner of a young Arabian. The mare was either “lazy” or bucking and rearing.

Robin Foster, Ph.D., certified equine behaviorist and university professor of 30 years, agreed that something was amiss. As she took note of the horse’s movement and behavior, she soon said to the owner, “I’m not a vet, but I have some ideas. You should get your vet out here to look at your horse. Something is happening in the hind end they may need to look at.” Through examination from her veterinarian, it was determined that this horse’s *laziness* was due to deformity in both stifles. The horse was experiencing such pain from carrying weight and moving forward that her veterinarians recommended bilateral surgery or otherwise, never ride the horse again.

Another horse, a 5-year-old off-track Thoroughbred mare, was also labeled as a “hot Thoroughbred” as she would often rear and bolt during training. When not asked to be on the bit, or when simply enjoying a light hack, her behavior was normal. The rider and trainers [changed bits](#) and switched disciplines from jumping to dressage, then to riding trails only. It was upon recommendation to involve a veterinarian that they learned the mare’s actions were not due to misbehavior. A series of X-rays revealed what the human eye could not see -- a C1 fracture of the vertebrae, nearest to the poll, causing her significant pain from [bone-on-bone contact and arthritis](#).

“In my experience, horses almost never say ‘no.’ Horses *can* talk, and it is our job to learn how to speak their language and above all, to listen and be their advocate,” said Steve Allday, DVM, an equine lameness specialist with more than 35 years’ experience caring for an impressive list of equine athletes, including legendary racehorses A.P. Indy and Cigar.

## Behavior vs. Pain

Dr. Foster shared how labeling horses a certain way such as “lazy” or “hot,” for example, isn’t uncommon. “When we label a horse’s behavior in a certain way, that becomes the truth about that horse,” Dr. Foster said. “And when the label becomes the truth, it’s hard to see past that and look for other explanations. What gets missed, though, can be signs of discomfort, pain and stress. The way horses express themselves when in pain and uncomfortable are seriously underrecognized.”

It is important to bring up any behavior-related issues with your veterinarian so they can look closely for any potential pain and discomfort during their regular exams. Of course, there are some signs of pain and discomfort that are more easily recognized, like limping, for instance. The milder pain states are more easily unrecognized, therefore resulting in horses commonly labeled as misbehaving, while they actually may be experiencing pain.

## An Important Resource for Horse Owners

To help address the underrecognized signs of pain in horses, co-authoring Drs. Catherine Torcivia and Sue McDonnell, within the University of Pennsylvania School of Veterinary Medicine, published “[Equine Discomfort Ethogram](#),” an incredibly detailed catalog of behaviors associated with equine physical discomfort. Drs. Torcivia and McDonnell outlined 73 specific discomfort behaviors and grouped them into eight categories: posture and weight-bearing; limb and body movements; head, neck, mouth, and lip movements; attention to area; ear and tail movements; overall demeanor; altered eating or drinking; and vocalizations/audible sounds. Interestingly, [the report states](#), “Recognition of discomfort in a prey species is particularly challenging. Horses have evolved to show little evidence of discomfort or disability in the presence of predators, including humans.”

Their [published work](#) includes illustrations, written descriptions and even videos to demonstrate each pain-induced behavior. It is a treasure for horse owners and horse health providers, alike, and is deserving of a thorough read.

“Signs of discomfort and pain are often instead attributed to a horse’s personality. The identification of pain is an important gap commonly missed in equine welfare,” said Dr. Foster.

## Managing Pain in Horses

You know your horse better than anyone else, often seeing them daily. Watch carefully for any new behaviors, and ask yourself whether these behaviors could instead be the result of pain. Work closely with your veterinarian for diagnosis and management of your horse’s pain and discomfort. There are a number of [supplements for horses](#) and [prescription pain and inflammation medications](#) available to help.

Help ensure your horse is living their healthiest, happiest and most comfortable life possible.

# FAQ: Is Your Horse Choking?

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*Understand symptoms of choke in horses, and beware signs of choke in a horse*

When one sees their horse choking, it's a cause for alarm and expedient action.

## **What does a horse choking look like?**

In one instance, a 7-year-old Thoroughbred took just a few bites of alfalfa pellets, immediately retching to take a breath. The gelding coughed as gobs of fluid and feed distributed from his nostrils. At first, he was alarmed, then soon lethargy took over and he displayed pneumonia-like symptoms.

## **What are symptoms of choke in horses?**

Symptoms can include feed material coming from the nostrils, hypersalivating, retching, coughing, and other signs similar to [colic in horses](#), according to the American Association of Equine Practitioners (AAEP). This can be a dangerous condition -- one to take seriously.

## **What causes choke in horses?**

Most commonly, choke in horses is caused by eating concentrated feed too quickly. When the feed is not chewed up appropriately, it is not softened with saliva, [according to AAEP](#), which details how "This forms a firm bolus that gets lodged in the esophagus."

Forage like hay or alfalfa cubes are the most frequent cause of choke in horses. Choke in older horses, or horses with poor dental health, can be common. But any horse, no matter their age, is at risk. Tony Hawkins, DVM, [Valley Vet Supply](#) Technical Service Veterinarian recommends horse owners, "Soak the grain and forage-based pellets and cubes to help horses better chew it up and help them pass it down."

## **What immediate steps should be taken for a horse choking?**

If you see a horse choking, and it's not resolved on their own within 30 minutes, call your veterinarian to come out or haul them into the clinic if you have to. Always have a backup veterinarian/24-hour clinic in mind.

Gently massage their throat beginning from the top, down.

Remove access to food and water, as "both could predispose them to aspiration," warns Dr. Hawkins.

Choke can sometimes resolve on its own, as the saliva will break down the food matter so it can pass through. But again, follow the 30-minute rule above and phone a veterinarian if not passed through by that time.

DO NOT:

Attempt helping your horse pass the blockage yourself, using a garden hose. Doing so could puncture the esophagus.

Accidentally worsening the situation, some horse owners pull up the horse's head to 'help' him pass a blockage. This only lodges it further.

### **What does treatment for choke in horses entail?**

Treatment for esophageal choke in horses often requires that a veterinarian sedate the horse before passing a nasogastric tube to clear the obstruction, while simultaneously flushing with water to remove the lodged material. AAEP notes that a second approach may be used by veterinarians. Based on the theory that most chokes eventually self-cure, horses may receive several rounds of sedation, as the medications help to relax the esophageal muscles, coupled with fluids to keep the horse hydrated. Should treatment be too much delayed, horses risk dehydration, or death.

### **Beware the after effects of choke in horses.**

AAEP describes how the after effects of choke in horses can be equally as dangerous as the choke itself, stating "Most importantly, chokes predispose horses to aspiration pneumonia, which is caused by feed material going down the trachea and into the lungs. This foreign material in the lungs can cause the horse to develop a secondary bacterial infection." It's not uncommon for veterinarians to prescribe antibiotics for your horse to help mitigate the risk.

After a choke episode, be sure to monitor your horse's temperature for several days, recommends Dr. Hawkins. A fever is one of the first signs of pneumonia. Other symptoms include nasal discharge, coughing, and labored breathing and increased respiratory rate. [Normal respiration rate](#) in a horse is 10 to 14 breaths per minute.

# Feeding Horses in Winter: 3 Facts

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*Your horse feeding regimen will need to change in winter. Learn how so, from equine nutritionists and a veterinarian*



While impressively stout yet entirely fragile, horses require a great level of care, especially as it relates to their nutrition over the winter.

“Many horse owners may not realize they actually need to feed horses differently in the wintertime than they do in the summertime,” Jyme Nichols, PhD, director of nutrition at Stride Animal Health, shared in an interview with [Valley Vet Supply](#).

For a better understanding, continue learning with these three facts and insights from equine nutrition experts, Dr. Nichols and Brittany Rahm, nutrition consultant at Stride Animal Health.

## **Fact 1: A Horse’s “Thermoneutral Zone” Directly Impacts Their Nutritional Needs.**

“The first thing that I think is important for everybody to understand is a term that sounds a little bit intimidating -- thermoneutral zone,” Dr. Nichols said. “This is basically the temperature outside in which a horse can maintain their own core body temperature without having to exert any extra effort to regulate either their heat loss or heat gain.”

Horses in the United States have an average thermoneutral zone between 40 and 80 degrees, which means horses near the low end of their thermoneutral zone will have to use extra energy (thus calories) to maintain heat.

To identify whether your horse is outside of their thermoneutral zone, “You want to pay attention to whether or not they’re using any natural defenses to that cold weather,” encourages Rahm.

These natural defenses can include:

Shivering

Standing with tail to the wind, head lowered

Seeking shelter

Dr. Nichols followed up with, “Anytime you combine cold temperatures on top of moisture -- wind, ice and of course snow-- a horse will have to increase their heat production and will need to consume more calories. Additionally, young horses or underweight horses are going to hit that lower, critical temperature and get colder faster than a mature horse or a horse that’s going into wintertime with really good body condition,” Dr. Nichols said.

An especially important detail for those traveling for competitions or pleasure with their horses is that it takes two weeks to a full month for horses to readapt to a new ambient temperature.

“When traveling, be mindful if you’re going a long distance or to a region that has a very different temperature range than what you’re coming from -- your horse may struggle a little bit more to retain heat or try to get rid of it -- depending whether you’re going to a colder climate or a hotter climate,” said Dr. Nichols.

**Fact 2: A Horse’s Feed Sources Will Help Them Maintain Warmth, in Addition to Weight.**

It’s important to understand “metabolic heat production” as it relates to increasing a horse’s feed during cold temperatures.

Dr. Nichols explained, saying, “Think of a horse’s digestive system, or their hind gut, as a furnace. The more the microbes in the horse’s hind gut are able to digest and ferment -- especially fibers -- the more heat that can be generated for that horse. That’s part of what goes into keeping them warm.”

**Fact 3: As Weather Changes, So Should a Horse’s Diet, But Not in the Way Some May Think.**

“A lot of times, people can get hung up thinking, ‘I need to change up [my horse’s] grain, or I need to change how much grain I feed,’” Dr. Nichols said. However, is either necessary? Not exactly, but there are some other aspects for horse owners to consider.

While a well-meaning sentiment, increasing grain can be harmful to a [horse’s health](#) -- heightening colic risk and more -- and secondly, doing so may not be enough to help a horse maintain their warmth when they need it most.

“Increasing the amount of hay is the best way to increase heat production and keep a horse warm during winter,” Dr. Nichols said. “Horses will naturally increase the amount of hay that they eat, based on the temperatures dropping.”

Regarding how much more hay to provide -- remember that the average thermoneutral zone for horses in the U.S. is between 40 and 80 degrees. Dr. Nichols said, as a general rule of thumb, for every one-degree Fahrenheit below the lower range of 40 degrees, horses will need an extra 200 calories.

“So, to put that in perspective, your average hay is going to have between 800 to 1,000 calories per pound. Let’s say you’ve got a 10-degree drop -- you’re going to need an extra 2,000 calories. All I did there was just take that 10 degrees times 200 calories, and that gets me to 2,000 calories, which is roughly 2 to 3 lbs. extra hay per day. So, if you’re feeding small square bales of grass hay, that’s probably going to be an extra flake, maybe an extra two flakes.”

Horse owners will need to increase their horse’s hay intake, but what about their grain? When the temperatures drop, upping feed is a common practice (but not recommended). Dr. Nichols shared two specific horse health examples, should horses be fed either a fortified feed or cereal grains, such as whole corn and oats.

Example 1. fortified feed increase -- say horsemen are feeding a fortified grain at a recommended level of 4 lbs. per day, then increase by 1 lb. per day. That feed is designed to meet all vitamin mineral requirements, amino acid requirements, etc., at 4 lbs. per day. While that extra pound may not be more harmful, it will provide some extra calories but the calories will be more quickly digested. This means the increased grain does not provide horses with long-term heat production, like hay does.

Example 2. cereal grain increase -- say horsemen are feeding a whole corn/oat mix at 4 lbs. per day and decide to double it. Corn and oats are really high in starches and sugars, which puts a really heavy load of sugar on the digestive tract that the small intestine can’t digest very well, very quickly. You can then have an overspill of starch into the hind gut of the horse, impacting the balance of the good bacteria in that gut and presenting colic issues; it can also cause founder or laminitis issues in some horses.”

“You want to keep your grain level the same. If you’re going to up anything, the most important thing to do is up that hay and consider a supplement that will keep them drinking, like [Turbo Mag BCAA](#),” Rahm said.

For senior horses or horses with poor dental conditions, both Rahm and Dr. Nichols recommend feeding forage pellets, such as Timothy or alfalfa hay pellets, or even beet pulp shreds, which all have similar benefits as long-stem hay forage.

“For horses who are underweight, it is important to try to improve their body condition, which will support their thermoregulation and overall health. In addition to increasing their total hay intake, we recommend adding a high-quality protein and energy supplement to help support healthy [weight gain](#),” said Tony Hawkins, DVM, technical service veterinarian at Valley Vet Supply.

# FAQ Horse Feeding

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Let's go back in time to 1821 -- for sake of entertainment, you can be a horse.

You're a drafty fellow, and there are fields to plow, wagons and carriages to pull and the five-day workweek has yet to be heard of, especially for a horse out on the farm. Like the steady workhorse that you are, you're hoofing 10 to 15 hours per day, expending a lot of energy and calories. Your source of food includes grazing low-quality forage (hungry yet?).

Dr. Jyme Nichols, director of nutrition at Stride Animal Health, says this is about the time cereal grains were introduced into the horse diet. The grains most popular and accessible to feed horses included corn, barley and oats. Knowing horses required higher levels of fiber, as it's safest for them and their diet, oats had the highest level of fiber and was a natural choice to feed for extra calories that provided horses with extra energy.

"Fast forward to present day -- we have horses kept in stalls or in small turnouts, and they may have very limited hours of riding. That horse that used to work 10, 12 or 14 hours a day now maybe only works an hour a day when we have time to ride them. The rest of the time, they spend eating. But they are still receiving the same concentrated grain meal that we were giving them many years ago when they were working so hard. If you take a high-starch feed like that and overfeed them, you can make a horse very excitable or crazy," said Dr. Nichols

Horse feeding and overall equine nutrition can be complex -- there is no sugar-coating that; however, Dr. Nichols warns there is plenty of "sugar-coating" when it comes to our horse's grain choices, and that along with high starch are just a few aspects to consider relating to our horse's nutritional program.

### **Does my horse need horse supplements?**

The answer to that is never black or white. It depends on what you are doing with your horse; how old your horse is; whether you're feeding your horse a forage-only diet or whether your horse is on feed. It also depends on if your horse is dealing with certain problems, like if they have arthritis, gut issues or specific needs that are outside of what we would consider 'normal,' more basic nutritional needs.

### **Does high protein horse feed make horses hot?**

No, it doesn't. It is the starch and sugars in what you are feeding that make horses hot. There is some confusion about protein -- it's commonly thought that horses need more feed, more protein and more nutrients, so we're going to feed this higher-protein feed. But what owners may not realize, is that when they were feeding that higher-protein feed, they were also feeding *more* of it. It wasn't necessarily the high protein that was making the horses become excitable. It was the fact they were feeding a really large volume of a high-starch, high-sugar feed.

### **Nutritionally, how can I manage hot blooded horse breeds?**

If you have a horse that is naturally more excitable and anxious, one of the better things you can do is look for a diet that is high in fiber and pull your calories from fat sources. Those fat sources are called "cool energy calories," meaning it gives horses the calories that they need, but it's not going to make their mind and their attitude hot and excitable. For energetic horses, avoid high starch feeds, and instead choose low starch low sugar horse feed. Refer to the feed tag for the "NSC," which is the combination of starch + sugar. "NSC" stands for non-structural carbohydrates. You get to that number by adding the starch number on the feed tag to the sugar level. As a general rule of thumb for feeds considered "low starch," if you were to add the starch and the sugar together, that number shouldn't be over 22%.

### **Can sugars impact certain horse health conditions?**

For PPID horses or Cushing's horses, starch and sugar are really important in the diet to help manage. If you have a horse with a medical sensitivity, such as a horse with Cushing's, laminitis or equine metabolic syndrome the medical sensitivity to sugar means you need to make sure that your NSC is under 12%. After that, you want to make sure you're feeding at the recommended levels of the feed. If you're not -- and let's say that particular feed calls for 6 lbs. per day and you're only feeding those horses 3 lbs. per day, you're shorting them in important trace minerals or vitamins.

### **How do you nutritionally manage a horse that ties up frequently?**

There is not a generic answer. But keep horses off green grass [which has higher sugar content]; feed low-starch, low-sugar feed; and make sure you have a proper balance of trace minerals, macro nutrients and vitamins. Also, ensure they have daily exercise.

### **How do I know if my hay is meeting their basic needs?**

First off, do a visual check and body condition assessment of your horse. Look at rib cover -- you should be able to easily feel but not easily see, ribs. Next, you'll want to look at the topline. You want the horse's topline to be essentially flat. If they can hold water on their spine on a rainy day, that tells you they're in a bit of an excess body condition. But if rain were to pour on them and just run off, and their spine peaks up like a mountain, then that tells you their body condition is probably a bit under. But the most concrete thing you can do is get your hay tested. Getting that information is