

Preventative Care for Healthy Horses

Kristine Vernon, Associate Professor – Dept. Animal & Veterinary Sciences;
Rebecca Baxley, M.S.

There are many things that we can do for our horses to help them stay healthy. This includes providing them with a safe environment to live in, the correct nutrition for their needs, routine hoof care, vaccinations and deworming. A safe environment includes providing shelter from harsh elements, providing adequate and safe food and water and opportunities for exercise and social interaction. Other tips for healthy horse keeping will be discussed in greater detail below.



Photo credit: <https://www.paulickreport.com/horse-care-category/equine-guelph-creates-online-colic-risk-calculator/>

Recognizing health in your horse

In order to recognize when your horse is unhealthy, you must first understand the standards for wellness in horses. It is recommended that horses be examined for health a minimum of twice daily, but more frequent observations might be warranted for younger or older animals that may have a weaker immune system.

When observing a horse for wellness, you would take note of the horse's body language, its weight bearing, skin condition, and evidence for altered vital signs. The horse's body language can be read through more than just its ear position; leg propping, looking lethargic, looking at its flank, laying down more than usual, pawing and other signs of discomfort can all be very telling. Know what is normal for your horse so you can quickly recognize the abnormal. If a horse is propping a leg, you might ask it to move forward to determine if there is notable lameness or altered gaits.

Evidence for altered vital signs might include noticing that the horse has elevated breathing rates or appears to be in physical pain. The horse's normal vital signs should likely fall into the ranges listed below in Table 1. To measure vital signs you will need a few basic tools: a stethoscope, a stopwatch or watch with second hand, and a digital thermometer (preferably a 10- or 15-second reading). To assess a horse's heart rate, you would use the stethoscope directly behind the left elbow by pressing it firmly against the ribcage. Count the heartbeats for 15 seconds and multiply by four to get the beats per minute rate. You can also feel for the pulse using your index finger against the external maxillary artery on the inside of the lower jawbone or the digital artery located just above the inside of the fetlock (Figure 1). You will take a horse's rectal temperature by carefully standing to the side and having someone else hold the horse. Breathing rate is best assessed by observing the raising and lowering of the rib cage or flank with each breath. Because horses breath so infrequently, a 30-second or even 60-second count is best. The capillary refill time is best taken by holding up the horse's upper lip, pressing on the upper gum and then calculating the time for the color to return to the gum.

Table 1. Vital Sign Ranges for Mature Horses

Vital Sign	Normal Range (units)
Heart Rate	30 to 42 beats per minute
Breathing Rate	12 to 20 breaths per minute
Temperature (rectal)	99.5° to 101.5° F (call vet if > 102.5° F)
Capillary Refill Time	2 seconds

Adapted from the American Association of Equine Practitioners (AAEP) Guidelines for Normal Horses

Deviations from the above vitals can be cause for alarm. Other things to take note of include hydration status using a skin pinch test, mucous membrane color (which should be moist and pink), mucosal drainage from nostril(s), and fecal and urinary output. The skin pinch test is taken by lifting or tenting the skin on the neck or neck/shoulder junction, releasing it and calculating the length of time it takes for the skin to flatten back down. Ideally, this would



Figure 1: Taking the heart rate is easy to do by feeling for the maxillary artery on the inside of the lower jaw. Use a stethoscope to assess heart rate behind the horse's elbow. Photo credits: <https://desmoinesequinevet.wordpress.com>, <https://thehorse.com/125642/taking-a-horses-heart-rate/> <http://www.westernhorsereview.com/blogs/my-stable-life/how-to-find-a-digital-pulse/>

only take 1 second; if the skin remains tented, then the horse may be dehydrated and needs intervention. Also take note of the horse's skin condition, as evidence of hives or other allergic reaction, wounds or swelling may be found. Finally, listening for the presence of healthy gut sounds on both sides of your horse's flank if important for assessing gut motility. To listen for gut sounds, simply place your ear against the horse's barrel just behind his last rib. Ideally you hear gurgling both at the top and bottom of the horse's flank on both sides of the horse. If your horse is showing signs of distress with elevated or very low vital signs, abnormal body language or other physiological changes, call

Figure 2: Body Condition Score Chart

Body Condition Score Chart
Areas of emphasis for body condition scoring: thickening of the neck, fat covering the withers, fat deposits along backbone, fat deposits on flanks, fat deposits on inner thighs, fat deposits around tailhead, fat deposits behind shoulders, fat covering ribs, shoulder blends into neck

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<p>1 Poor Animal extremely emaciated; spine, ribs, tailhead, points of hip and buttock projecting prominently; bone structure of withers, shoulders, and neck easily noticeable; no fatty tissue can be felt.</p>	
<p>2 Very Thin Animal emaciated; slight fat covering over base of spine; ribs, tailhead, points of hip and buttock prominent; withers, shoulders, and neck structure faintly discernable.</p>	
<p>3 Thin Fat buildup about halfway on spine; slight fat cover over ribs; spine and ribs easily discernable; tailhead prominent, but individual vertebrae cannot be identified visually; points of hip appear rounded but easily discernable; points of buttock not distinguishable; withers, shoulders, and neck accentuated.</p>	
<p>4 Moderately Thin Slight ridge along back; faint outline of ribs discernable; tailhead prominence depends on conformation, fat can be felt around it; points of hip not discernable; withers, shoulders, and neck not obviously thin.</p>	

your veterinarian for a consultation. There are a number of diseases or other ailments that could be troubling your horse. Young horses have different vital sign ranges, and owners of young horses should familiarize themselves with these norms, as youngsters can fall ill very easily.

An important component of proper horse management and ensuring overall wellness in the horse is effectively knowing how to assess its body condition. A standard scoring rubric has been adopted by the horse industry, which is based on research completed by Henneke and colleagues (1983). The Henneke body condition scoring system (BCS) includes a 1 (poor) to 9 (extremely fat) scoring scale for the amount of fat covering critical body parts (Figure 2). The ideal range for healthy horses is 4-6, with 5 being most preferred. It

<p>5 Moderate Back is flat (no crease or ridge); ribs not visually distinguishable but easily felt; fat around tailhead beginning to feel spongy; withers appear rounded over spine; shoulders and neck blend smoothly into body.</p>	
<p>6 Moderately Fleshy May have slight crease down back; fat over ribs fleshy/spongy; fat around tailhead soft; fat beginning to be deposited along sides of withers, behind shoulders, and along sides of neck.</p>	
<p>7 Fleshy May have crease down back; individual ribs can be felt, but noticeable filling between ribs with fat; fat around tailhead soft; fat deposited along withers, behind shoulders, and along neck.</p>	
<p>8 Fat Crease down back; difficult to feel ribs; fat around tailhead very soft; area along withers filled with fat; area behind shoulders filled with fat; noticeable thickening of neck; fat deposited along inner thighs.</p>	
<p>9 Extremely Fat Obvious crease down back; patchy fat appearing.</p>	

does take practice to correctly and consistently assess BCS, so rely on educated horsemen to assist you initially as you use this method on your horses. The scoring scale is assessed based on visual appraisal and physical palpation. There are even applications for your computers and portable devices that help you determine the horse's BCS. This in association with knowing an accurate weight for your horse can help you determine how much to feed and what type of feed to give to your horse. For example, an average horse weighs 1100 pounds and should eat a minimum of 1% of its body weight in forages (hay and pasture) and up to 1% in grain depending on its exercise requirements and metabolic rate. However, a horse with high BCS may be able to survive solely from forages alone and require no grain to reduce its weight and risk for metabolic disorders. In this instance, 1.5% of its body weight in quality forages may be all that it needs to stay healthy.

Hoof care and maintenance to keep your horse healthy

Domestic horses must have their feet cared for regularly. This service is most frequently provided by a farrier. Proper hoof care can help to prevent or treat conditions such as navicular or laminitis, which are diseases associated with the foot. Hoof care requirements vary greatly by horse and use. Some horses need their feet trimmed and shoes reset as often as every 4 weeks, while other hardier horses may only need a routine trim 4-5 times a year. In general, the horse's hoof should be maintained so that the sole of the foot and the horse's heel bulbs are protected from the ground. Flares and cracks should be prevented by removing excessive hoof growth. Your farrier and veterinarian can help you develop a hoof care plan for your horse.

Find a reputable farrier that has knowledge of equine lower limb anatomy and ample experience working with horses.



Photo credit: <https://www.eqgroup.com/farrier-insurance/>

It is very easy to make mistakes when trimming or shoeing a horse, causing it to endure unnecessary lameness that can be transient or have longer-term effects. The decision of "to shoe or not to shoe" depends on your commitment to

Monitor new horses for:

- Lethargy
- Lack of appetite
- Coughing
- Nasal discharge
- Increased rectal temperature

provide frequent care for the horse's feet, the terrain you will ride or house your horse on, and individual sensitivity or health of your horse's feet. Some horses need only front shoes and other require shoes on all feet. Still, other horses do not require shoes at all. The average cost for trimming your horse is approximately \$40, to shoe front feet is \$80 and all four feet \$120 (national average; American Farriers Journal). Farrier experience and qualifications, type of metal used to shoe the horse, and accessory

equipment such as clips, pad or caulks can all increase the cost of shoeing. Owners should be well aware of this necessary horse keeping requirement of hoof care.

Disease Prevention and Biosecurity

The easiest way to prevent most major diseases in the horse is to vaccinate. The recommended vaccinations vary by region of the country, and consulting with a veterinarian is the best method to develop a successful vaccination program. Here in South Carolina it is recommended to vaccinate for **Rabies***, **West Nile***, **Tetanus***, **Influenza, Eastern* and Western* Equine Encephalomyelitis**, and **Rhinopneumonitis**. Vaccinations denoted with an asterisk represent core vaccines recommended by the AAEP. The rabies vaccine must be given by a licensed veterinarian and is considered up to date for 1 year. The West Nile and 5-way (which contains tetanus, flu, WEE, EEE and rhinopneumonitis) vaccines should be given once per year for a minimum dose, but can be boosted every six months. Certain diseases such as Influenza, Eastern and Western Encephalomyelitis, West Nile Virus, and Rhinopneumonitis should be administered more frequently based on risk factors for your horse. Please consult with your veterinarian on frequency of vaccination protocols. Vaccines can be administered by the veterinarian, or purchased at a local feed store or online and given yourself.

In addition to these basic vaccinations, the Strangles vaccine is recommended for horses that travel regularly. The first dose of the vaccine is followed by a booster 2-4 weeks later as per manufacturer's instructions. The vaccine should then follow with annual revaccination. This vaccine is available in a killed or modified live format. The pros and cons of these two methods can be discussed with your veterinarian.

Having and implementing a good biosecurity protocol for your farm can also help prevent disease outbreak. Limiting the amount of traffic on and off farm will help with

potential exposure to disease pathogens and protect your horses. Additionally, quarantining newly arrived horses for a minimum of two weeks can help identify potential illnesses before the new horse has had contact with your resident herd. Keeping an accurate log of all visitors to your farm can also help reduce risk. Good farm management practices can decrease risk of disease that can be transmitted through birds, wildlife and insects. Keep vermin at bay by maintaining pastures and through weed control.

When traveling with horses, there are ways to minimize risk of exposure through basic husbandry practices and by minimizing stress when applicable. First, make sure horses are vaccinated against additional pathogens, whether the horse is traveling to other areas of the country or will be amongst a large group of horses such as a show or organized trail ride. Second, make sure your horse trailer is well ventilated. Third, once arriving at your destination, avoid group water troughs and nose to nose contact with other horses.

By keeping these biosecurity tips in mind, in addition to a vaccination protocol developed with your veterinarian, risk of disease in the horse can be minimized.

Parasite Control and Prevention

Controlling parasites associated with our horses can become a timely and costly project. In horses, we must address external and internal parasites, and implement a program for prevention of both. External parasites are considered flies, mosquitoes, ticks, lice, and mites. Internal parasites are listed in Table 2.

Both external and internal parasites can be controlled to some degree by implementing good farm management practices such as reducing the amount of standing water

around the farm, removing manure and urine in a timely manner, dragging pastures, and composting. The general rule of thumb for eliminating both types of parasites is thoroughly breaking the life cycle of the parasites.

There are generally two schools of thought on controlling parasites in horses. Traditional school of thought was to deworm every eight weeks with a rotation of the chemical class of dewormer. Recent research in the field of parasitology has recommended utilizing fecal egg count tests and deworming in accordance with what populations of parasites are present, and the degree of parasitic shedding of each horse on an individual basis. Some horses are high shedders and often have a faster egg re-emergence period post deworming, thus needing a more frequent deworming schedule than a low shedder. Fecal egg counts are the progressive management technique for monitoring and treating against internal parasites in horses and should be adopted. Table 2 represents the information available by the Association of Equine Practitioners, which was modified to include the most effective treatments known at this time. There is a growing body of evidence that anthelmintic resistance is present, and those dewormers are excluded from the above recommendations for various parasites.

References

American Association of Equine Practitioners - <https://aaep.org>

Henneke et al., 1983. Relationship between condition score, physical measurements and body fat percentage in mares. *Equine Vet J.* <https://doi.org/10.1111/j.2042-3306.1983.tb01826.x>

Farrier Business Practices survey, conducted by American Farriers Journal

Table 2. Internal parasites and anthelmintics that control them in horses

Internal Parasite	Anthelmintic
Bots	Ivermectin; moxidectin
Ascarids; most important for foals/weanlings	Ivermectin/moxidectin, pyrantel pamoate, fenbendazole
Strongyles (large and small)	Ivermectin/moxidectin
Threadworms (strongyloides)	Only of concern in foals – deworm mare prior to foaling
Pinworms	Ivermectin/moxidectin, pyrantel pamoate, fenbendazole
Tapeworm (of large concern)	Praziquantel; double dose of pyrantel pamoate

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