

UNDERSTANDING VITAL LIFE SIGNS IN HORSES

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INTRODUCTION

The first step in learning about equine health is to determine what the normal signs are in a healthy horse. Normal vital signs for horses are available, but horsemen must keep in mind that each horse can vary a bit from the norm. The variation depends on the horse's conformation, the horse's normal use, and its general condition. Therefore, it is best to examine each horse on a regular basis, daily if possible. An easy way to accomplish this is to take note of the horse's condition during the daily grooming session. The horseman should make notes of a horse's individual peculiarities, including temperature and other vital signs, appetite, and behavior. The optimal time to determine normal vital signs is when the horse is at rest, because exercise increases the rates of respiration and pulse. The veterinarian will benefit from the records and from the way in which the horse accepts the examination procedure. Further, the horseman will be able to tell at a glance when something is wrong and take

steps to prevent anything serious from developing.

RECOGNIZING ILLNESS

The horse owner is the most likely person to notice when his or her horse is not feeling well. However, the owner must first be familiar with how the horse acts when it is feeling well. One of the first indications that something is wrong is when a horse loses its appetite. A horse with a fever will usually drink but not eat.

If a horseperson watches a horse's manure daily, he or she will be able to tell if it becomes abnormal. A change in the texture of the manure may indicate that something is wrong with the horse. Further, changes in color or amount of manure may be signs that the horse is not well.

A horseperson can use several other indicators to tell if a horse is not well. The horse's eyes may become dull or the lining of the eyes and nostrils may become pale. The horse's coat may look dull and rough. A runny nose, a persistent cough, or sudden

weight loss are all signs that a horse may be feeling poorly.

If a horse appears to be sick, then a check of the vital life signs will help in identifying the problem. The horse's respiration rate, temperature, and heart rate are all helpful in determining the health status of the horse.

RESPIRATION

The normal respiration rate for a horse is 8 to 16 breaths per minute. Respirations triple when a horse walks. If a horse exercises extensively in high temperatures, respiration rate may increase to 120 breaths per minute. However, in a fit horse the rate should decline to 40 or 50 breaths per minute within 10 or 15 minutes.

The ratio of heart rate to respiration rate in horses is usually about 4:1. That is, the heart beats 4 times for each breath the horse takes. If the respiration rate exceeds the heart rate, the horse has a serious problem. The horse must stop and rest until the condition corrects itself. If the condition does not correct itself, the horseman must call a veterinarian.

Any type of distress increases a horse's respiration rate. Pain, fever, toxicity, illness, or work can increase respiration rate. If a horse's respiration rate

is above normal for no apparent reason (work, fright, or excitement for example), the horse may be ill or injured. The horseman should examine the horse for other abnormalities that might explain the increased respiration rate.

To determine the respiration rate, one can watch either the horse's flanks or nostrils. The abdomen rises and falls with each breath, which causes the flanks to move in and out. The horse's nostrils flare and contract with each breath. Holding a hand in front of the horse's nostrils may aid in determining how often the horse breathes.

TEMPERATURE

A horse's normal body temperature ranges from 99.5°F to 101.5°F. The average normal temperature for a horse is 100°F. A horse's temperature can vary during the day. Internal and environmental factors can influence body temperature. Exercise, excitement, hot weather, pain and illness can raise a horse's temperature. When the temperature reaches 102°F the horse has a mild fever. A moderate fever is 104°F, and a high fever is 106°F. If the temperature rises above 106°F the horse is very sick. The chance for recovery by a horse with such a high temperature is low. Horses that

are in shock may exhibit low body temperatures.

A horse owner should take his or her horse's temperature on a regular basis to determine the horse's normal temperature. If a horse seems abnormal in any way, the owner should immediately take the temperature to determine if it varies from normal. If the horse's temperature is above 101°F, there may be something wrong, depending on what is normal for that horse. If the temperature is above 102°F, the horseperson should probably rest the horse and monitor its temperature. The horseperson should call a veterinarian if the horse's temperature rises to 103°F.

A veterinary thermometer is useful in taking a horse's temperature. The veterinary thermometer has a loop at one end for the attachment of a string or cord. One can attach a clip to the end of the string to secure the thermometer when taking the temperature.

Before taking a temperature, one must shake the thermometer mercury down. The mercury should be at least as far down as 95 to 97°F. Dipping the bulb of the thermometer into a clean lubricant like petroleum jelly makes insertion easier. Horsemen always take horses' temperatures rectally. One should carefully insert the

thermometer, bulb first, into the rectum. Inserting the thermometer full length helps prevent the thermometer from breaking. Fastening the clip on the string to the horse's tail is a precaution against losing the thermometer. Most thermometers register fairly close within a minute in the rectum. However, a period of three minutes may be more accurate, and should be sufficient in all cases. After three minutes, one should remove the thermometer in once careful movement and wipe it clean. After reading the temperature, one should wash the thermometer with soap and cool water, then dip it in a disinfectant solution and rinse it again.

Dropping or jarring a thermometer may affect the reliability. Even though the glass and mercury look fine, the thermometer may not work well. One should check to determine if the mercury will still retreat without being shaken down.

HEART RATE

Heart rate (pulse) is faster in young horses than in older horses. Normal adult horses have a heart rate of 28 to 40 beats per minute. Newborn foals' heart rates range from 80 to 120, older foals from 60 to 80, and yearlings from 40 to 60 beats per minute. To determine an accurate heart rate,

the horse must be calm, cool, rested, and relaxed. Exercise, excitement, fright, and hot weather can increase the heart rate. A normal horse's heart rate will rise with stimulus, fright, for example, and then fall with lack of stimulus. An ill horse may have a heart rate from 80 to 120 beats per minute for long periods.

One can determine a horse's heart rate by counting the pulse for 30 seconds and multiplying the number by 2. For instance, if one counts 19 heartbeats in 30 seconds, the heart rate is 38 beats per minute. To determine the pulse, a horseperson can press his or her fingers against an artery. Each throb of the artery corresponds to a heartbeat. There are several places where one can feel an artery, but practice is necessary to feel it easily. One can use a stethoscope to detect the heartbeat more readily. The best place to find the heartbeat with a stethoscope is just behind the horse's left elbow.

Heart rate is one of the best indications of fitness or condition. A fit horse may have a very high heart rate when it is working hard. However, the heart rate will return to normal within 15 minutes to an hour after the horse has stopped working. Endurance and cross-country horses in good condition may arrive at a checkpoint with

heart rates of 125 beats per minute or higher, even up to about 200 beats per minute. These horses often recover to below 70 beats per minute within 10 to 15 minutes. Horses exercising very strenuously can reach heart rates of 240 to 250 beats per minute. In comparison, a person's maximum heart rate is 220 minus the individual's age.

CAPILLARY REFILL

The normal capillary refill time on a healthy horse is approximately 3 to 5 seconds. Capillary refill can be evaluated by examining the horse gums. Using your thumb, press on the gums of the horse with enough pressure to cause the tissue to lose color. This usually takes approximately 5 to 10 seconds. Release the pressure, the normal color of the gum tissue should return in approximately 3 to 5 seconds. If the color does not return in this time frame, you should retest the animal. If the refill time continues to be slow, you should consult your veterinarian.

CONCLUSION

The information contained in this paper was developed to enable the horse owner to communicate with their veterinarian more effectively. In many

cases, when a horse owner thinks that something may be abnormal with their horse and calls the veterinarian, understanding normal vital signs and being able to report them to their veterinarian can be of great benefit.