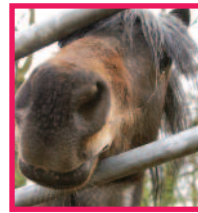
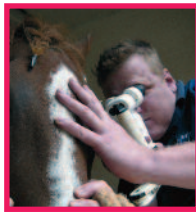




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## Animal Health Trust Fact Sheet

# Vital Signs

## What are a horse's vital signs and what is 'normal'?

### How to Check the Vital Signs

#### Heart Rate

This is the number of times the heart beats in a minute. Fear, excitement, pain and circulatory problems can cause an increase in resting heart rate. Fitness and electrical problems of the heart can cause a decrease, as can some drugs.

In slim animals the heart beat can be detected by placing a hand over the left lower chest just behind the elbow (right). A normal resting heart rate in an adult horse is between 28 and 44 beats/minute. Most adult horses have a heart rate around 36 beats/minute. It is easier to time how many beats you feel in 15 seconds, and then multiply that by 4, to work out the rate per minute.



If you are lucky enough to have access to a stethoscope, then heart rate can be monitored via auscultation (listening).

Smaller ponies may have a slightly higher resting heart rate than horses. Foals again have a higher rate, but values change according to their age.

#### Pulse



This is a measure of the arterial blood passing through an artery with every heart beat. The number of times it is felt over 1 minute is the pulse rate.

Without a stethoscope it is best for owners to measure this parameter. The pulse can be taken by placing a finger over the mandibular artery which traverses the mandible (left). Pulse rate can also be taken from the transverse facial artery. This is palpated just back from the eye (right).

The artery will feel like a cylindrical structure that you can roll under your index finger. Place your index and middle finger over the artery and count the pulse rate. Take your time- the pulse rate in the horse is slow. If you rush you may have been in the correct place but just not waited long enough until you could feel the pulse. Resting pulse rate should be between 28-44 pulse waves/minute in a normal adult horse (again around 36/minute in a normal adult horse). This may increase due to fear, pain, excitement and circulatory discrepancies. A decrease may reflect a heart electrical problem or may be normal in a very fit horse.



Again, smaller ponies may have a slightly higher resting pulse rate than horses. Foals have a higher rate, but values depend on their age.

Pulse should also be felt for quality. Is it weak and thready, or strong? This may take some practice by feeling other horse's pulse amplitudes over time.

## Heart Rhythm

Heart rhythm can also be monitored by palpation of the heart beat and pulse. Beats and hence pulse should be regular and consistent. 'Missed beats' are common in the horse, and can be of no clinical significance. However, knowing which beats are missing requires experience and should be left to the expertise of your vet. Abnormal heart rhythm which is consistently irregular or has periods or irregularity may be indicative of a problem, and your vet should be consulted.



## Respiratory Rate

This measures the number of breaths a horse takes per minute.

The normal resting respiratory rate in an adult horse is 12-16 breaths/minute. There is mild movement of the nostrils, and minimal effort taken during inspiration and expiration. It is easiest to watch the chest and the abdomen rise and fall standing to the side and back of the horse looking forward (left).

Respiratory rate may be a little higher in ponies (up to 20-24 breaths/minute) The respiratory rate in foals is again different and values depend on their age.

Increase in respiratory rate is normal during and immediately following exercise. Maintained increase in respiratory rate following exercise or at rest, or an increase in effort to breathe may indicate a problem.

## Mucous Membrane Colour

This measures how much blood is getting to the blood vessels at the periphery of the body

This is best viewed at the gums by raising the upper lip (right). The membranes should be pink and moist to touch. Varying colours of mucous membranes can indicate a circulatory problem.



## Mucous Membrane Capillary Refill Time

This measures how long it takes for the small blood vessels at the periphery of the body to refill with blood once it has been pushed out.

Again this can be done over the gums (left). Gently press a finger into the membrane surface and push out the local blood from the vessels (so the area turns yellowy/white). Time in seconds how long it takes for the area to become pink again. This should be less than 2 seconds.



## Temperature

This is a measure of the heat that the body is maintaining.

This should lie between 36.5 and 38.5 degrees centigrade in a normal adult horse. Horse's individual temperatures are very stable, and have minimal variation (dependent on the season). It may be wise to take

take your horse's temperature using a digital or mercury thermometer a few times to know what is standard for him/her. Temperature can be taken by placing a thermometer just through the anus (right). Place a small amount of lubricating gel (such as K-Y jelly) on it first to help ease it into the correct position. Temperature can be raised with fear, pain, excitement and infection. Low temperatures may indicate a circulatory problem or extreme cold.



### Guts Sounds

This is the sound made as the intestinal tract contract and relaxes, moving food and faeces along its tracts.



It is hard to ascertain if these are normal without a stethoscope and practice. However placing an ear to the abdomen gives some indication if the guts are moving and 'gurgling' as normal (left). Overactive movement of the guts may be heard easily standing away from the horse. Quiet gut sounds are hard to hear even with an ear to the abdomen. Increase or decrease in gut sounds can occur in a normal horse, but can also indicate changes in gut motility which occurs for multiple reasons.

### Drinking, Urinating, Defecating and Eating

These signs are simple to monitor and may be your first indicators of a problem. Is the horse not drinking, or drinking profuse amounts? Excessive drinking is usually coupled with excessive urination. Is the horse passing a normal amount of droppings for him/her? Examine the droppings (right). Note any excessive water or fibre content, or if the droppings are particularly dry. Has the horse refused to eat his/her hard feed and only 'picked' at the hay/haylage overnight? Any changes in these signs from what is normal for your horse may be the first sign of a problem.



### Why and when is it important to check a horse's vital signs?

It may be important to keep an eye on your horse's vital signs if your horse is being treated for any conditions or is on any medication. Your vet will advise what signs to look out for if this is the case. Changes in vital signs may be an indicator that there are side effects due to medication or change in management.

A horse that appears abnormal or 'under the weather' can also be checked. Taking the vital signs will give indicators to which body system might be affected, and will help you to alert your vet of any changes from the normal for your horse.

Horses that mix with others on yards and at competitions are at risk of infections such as viruses. It is always prudent to monitor your horse in these circumstances. A nasal discharge and a rise in temperature for example may indicate that the horse has encountered a respiratory virus.

Taking the vital signs following heavy exercise and travelling (especially those un-used to travelling or following excessively long journeys) can help the owner/trainer be alerted to a problem that may be associated.

### What changes to the vital signs could indicate that veterinary attention is required?

Heart and pulse rate that is elevated and not related to excitement, fear, pain or recent exercise may be indicative of a problem. It is usually coupled with another clinical sign/s.

Elevated respiratory rate that again is not related to fear, pain, excitement or recent exercise may be indicative of a problem. Excessive effort on inspiration and/or expiration, with excessive movement of the abdomen (which may or may not be noticeable as a 'heaves' line) is also indicative of a problem. These signs may be coupled with flaring of the nostrils, nasal discharge and a cough or wheeze. An increase in respiratory effort will often result in a concurrent increase in heart rate.

The colour of the mucous membranes may change if there is a problem. For example, a toxic horse may show bright red or purple/grey membranes. A horse with a circulatory problem may show pale mucous membranes.

Capillary refill time longer than 2 seconds may indicate a circulatory problem. This can be primary or secondary to another disorder.

Temperature may be decreased if the horse's metabolism/movement and gut movement is reduced, for example post surgery. Temperature can be increased in fear, pain and excitement, but is also an indicator for infection and other disorders. High temperatures are often accompanied with dullness and inappetance.

Gut sounds may be increased, which may indicate increased movement that can result in loose droppings. Reduced gut sounds may occur secondary to reduced gut movement. This may result in dry droppings made from multiple small balls of faeces. Change in gut movement and hence sounds may be caused by diet as well as pain, abdominal disorders and various medications.

Reduction in water intake may be due to an increase in water content of feedstuff, such as rich pasture, or be indicative of an abnormality. Excessive drinking may be normal on a warm day, or post exercise. Continuous excessive drinking may be indicative of an abnormality, such as Cushing's disease. An increase in urination may be secondary to increase water intake. Together they may be indicative of an abnormality. Excessive urination may be an indicator of kidney disease. A decrease in urination may indicate dehydration. Alternatively pain may result in urination little and often. Anuria (no urine production) is a medical emergency.

Increase in faecal production indicates increased intake. Increased water content may indicate causes of diarrhoea, increased gut movement or rich pasture. Decreased droppings may be the result of decreased intake, or may be an indication of impaction starting. A reduction or complete loss of appetite is an indicator of an abnormality, ranging from tooth or mouth pain, to infections and colic. Excessive or ravenous appetite is harder to monitor, and is often normal in some greedy horses!

If any abnormal symptoms or vital signs are seen, consultation with your veterinary surgeon is always advised.

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