



## How to Take a Digital Pulse Fact Sheet

### Introduction

A pulse is the rhythmic contraction and expansion of an artery due to the surge of blood that occurs when the heart beats. The rate and strength of this heartbeat is measured when you are 'taking' a pulse. A faster-than-normal pulse can indicate exertion, excitement, or a system-wide stress arising from injury or a medical condition. For an adult horse, the normal heart rate ranges from 28–48 beats per minute. Larger horse breeds are at the lower end of this range, while ponies tend to be at the higher end.

### What is a digital pulse?

The digital pulse is the pulse that can be felt on the lower leg of your horse in the fetlock and pastern area and is generated by blood flowing through the digital artery to the hoof. If there is inflammation of the tissues in the leg or hoof, the blood flow will be restricted making the pulse stronger and easier to feel. A pulse that is easy to find and is bounding (a throbbing sensation) may be an indicator of injury to the hoof or lower leg.

You should practise taking the digital pulse when your horse or pony is well. This will allow you to know what the 'normal' pulse rate is for your horse or pony and what the pulse feels like when taken; only by know what is normal can you detect the abnormal. A horse's or pony's pulse can be affected by exercise, environmental temperature, stress, excitement of physical condition, and therefore some level of variation is normal. Consequently, you should determine their average resting pulse rate by taking it daily or every other day for at least a week. Add the results and divide by the number of times you took the pulse to get the average.

### How to find the digital pulse

A digital pulse on a horse with no hoof or lower limb injuries will be hard to find; don't worry if you can't find it easily when your horse is sound. When feeling for the digital pulse use the index and middle fingers of your hand. Do not use your thumb; your thumb has a pulse of its own and you will end up feeling your own pulse instead of that of your horse or pony.

There are four places on the horse's or pony's lower leg where you can check for a digital pulse:

- **Above the fetlock.** There are two easy-to-find grooves in each lower limb above the fetlock joint:
  - The first is between the cannon bone and the suspensory ligament
  - The second lies between the suspensory ligament and the flexor tendons, which run down the back of the lower leg

The vein, artery and nerve run together in the space between the suspensory ligament and the flexor tendons (the second groove). Find the suspensory ligament (the big "chord" in the middle of the two grooves) and then slide your fingers toward the tail of the horse to find the artery

- **Towards the back of the fetlock.** The vein, artery, and nerve next move down over the back of the fetlock joint into the pastern area. As the digital artery crosses over the back and towards the side of the fetlock, you may also be able to feel the pulse at the bulge of the fetlock joint. At this point, the branches of the digital artery are close to the surface and may be easy to feel
- **Upper pastern.** Once in the pastern area, you will see and feel the extensor branches of the suspensory ligament reach from either side the fetlock down towards the front of the hoof, on a diagonal. The vein, artery, and nerve travel in the groove behind these ligament structures, representing the third possible area where you can feel the digital pulse
- **Mid pastern.** Finally, you may be able to feel the pulse about three finger widths above the coronary band, just below the suspensory ligament hollow of the pastern area



Figure 1 - Location of Digital Artery

To assess the horse or pony, check the digital pulse on each leg. This will allow you to identify differences between limbs, which could indicate a potential issue in a specific limb.

## What are some common causes of an increased digital pulse?

A strong pulse in one hoof can be an indicator of infection or of an injury such as an abscess, bruise, or an injury in the leg above the hoof. A strong pulse in two or more legs accompanied by hoof tenderness can be an indicator of laminitis, especially if they are rocking back off their front feet to bear more weight on their hind feet. If you detect an 'abnormal' digital pulse, you should seek the advice of your vet.