

The Digestive Tract - At a Glance

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Teeth

A horse's teeth are vital for efficient digestion, for cutting (incisors) and then chewing or grinding (molars) food to a small particle size. This is essential to allow digestive enzymes to break down feed effectively.

Did you know?

A horse may take about 850 chews to eat 1 kg of oats, but a staggering 3400 chews to eat 1 kg of hay.



Through uneven wear, teeth can develop sharp edges or hooks. Keeping your horses' teeth in good shape is important not only for his comfort, but also to maintain good feeding efficiency and digestion. Dental health needs to be addressed by your vet or experienced equine dentist on an ongoing basis.

Health note

Teeth should always be checked if a horse loses condition, or fails to thrive. Watching their eating action can also give a clue to the condition of the teeth.

The Stomach

The horse has a small stomach that is designed for continuous grazing and not meal feeding. For efficient digestion and to maintain gastric health meals should be small (ideally less than 2kg). Digestion begins in the stomach, with feed starting to be broken down by gastric juices that contain gastric acid and some protein digesting enzymes. Saliva, which contains a natural buffer called bicarbonate, is produced in response to chewing and is vital to help protect the more sensitive regions of the horse's stomach from damage by the harsh gastric juices.

Did you know?

A horse can produce 4.3 litres of saliva in response to eating 1kg of hay compared with only 1.8 litres for the same weight of mixed concentrate feed.

Horses can develop ulcers in their stomach when the more sensitive non-glandular region is exposed to a high level of acidity for prolonged periods on an ongoing basis. Gastric ulcers are very common in many performance horses, but also occur in leisure horses.

Health note

Plenty of grass or other forage is important to help maintain gastric health as it stimulates production of saliva. Veterinary drug treatment is likely to be needed if your horse develops gastric ulcers. However, afterwards you should also ensure that his management is improved with greater access to grazing and plenty of forage. Some scientifically proven anti-ulcerogenic supplements may also help in the long term.

The small intestine

Consists of regions called the duodenum, jejunum and ileum. This is the region of the digestive tract where proteins, starches and oil should be digested by a complex combination of digestive enzymes produced by the horse. Many of the dietary vitamins and minerals are also absorbed here. The small intestine is a relatively short and narrow structure and so food tends to pass through relatively quickly.

Did you know?

Cooking cereals significantly improves the proportion of constituent starch that is digested within the small intestine, limiting the amount that escapes to the hindgut. Only 20% of the starch in uncooked barley can be digested in the small intestine as opposed to 85% in cooked (micronised) barley.

The rate at which food passes through the small intestine is influenced by meal size and rate of eating. The efficiency of digestion in the small intestine can be reduced if food passes through too quickly when meal size is large, especially when it is eaten quickly.

Health note

Feeding on a little and often basis will maximise digestion in the small intestine and the rate of eating can be slowed down by the use of hay or alfalfa based chaff.

The hindgut

Consists of the caecum, small and large colon, rectum and anus. One of its main functions is fermentation of primarily fibre, but also any starch or protein that has escaped digestion in the small intestine. Water and important electrolytes are also reabsorbed here. A large and diverse resident population of bacteria and other microflora carries out the fermentation process.

Did you know?

The balance of different bacteria present in the hindgut is influenced by diet, as the bacterial population adapts in response to the nutrients that arrive in the hindgut.

A ration that is high in starch, especially where uncooked cereals are fed, can result in excessive fermentation of starch in the hindgut. This can detrimentally affect the level of acidity, resulting in loss of beneficial bacteria and an increased growth of less desirable bacteria. A microbial imbalance in the hindgut can contribute to many health issues in horses such as scouring and colic as well as laminitis.

Health note

Feeding consistently and with plenty of fibre, whilst keeping cereal containing meals small can help to maintain a healthy balance of microflora in the hindgut.

Probiotic ingredients such as live yeast can also help to alleviate the detrimental effects of a high starch diet on hindgut microbial balance to maintain digestive health.

