

# Duodenal and Colonic Ulcers

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It has been well documented that most horses in racing and equestrian sport training have a high risk of developing gastric ulcers or Equine Gastric Ulcer Syndrome (EGUS). However, horses can suffer from 3 types of digestive tract ulceration - gastric (stomach), duodenal (small intestine) and colonic (right dorsal colon or hindgut) ulcers.

The incidence of intestinal ulcers, including duodenal ulceration and lining erosion of the small intestine, and colonic ulcers of the lower hindgut bowel lining referred to as Right Dorsal Colitis (RDC) also appear to be increasing in incidence. As common with gastric ulceration, history or symptoms of low grade colic or abdominal pain in racing and performance horses are now being associated with small and large intestine ulceration.

## Duodenal Ulcers

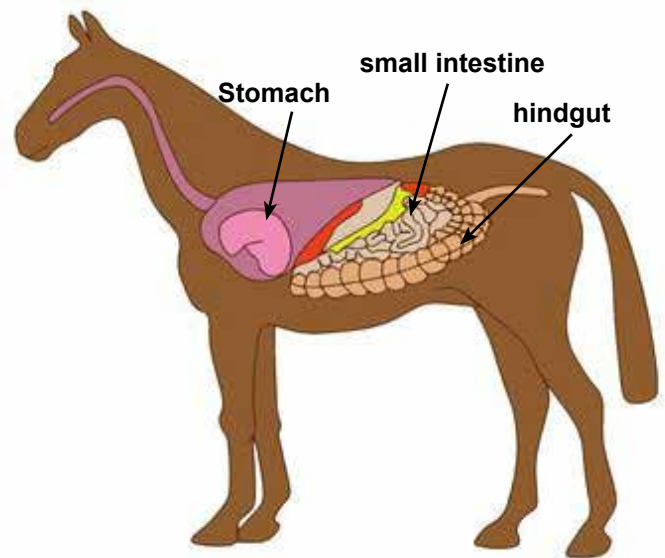
Duodenal ulcers are often associated with severe grades of stomach ulcers (EGUS), with up to 46% of horses with stomach ulcers also having evidence of duodenal ulcers. Cases of combined oesophageal, gastric and duodenal have also been documented in foals and in horses less than 2 years of age on post mortem. Many of these horses have a long term history of intermittent colic and eventual perforation of the ulcer causing peritonitis and fatal acute colic.

The underlying causes of gastro-duodenal ulceration is thought to be associated with training and confinement, use of non-steroidal anti-inflammatory drugs (NSAID's such as 'Bute'), as well as feeding concentrated processed diets with minimal roughage in both racing and upper level performance horses, such as polo, showjumpers and eventers.

Symptoms of duodenal ulceration, which is invariably associated with gastric ulceration in older horses, include loss of appetite, gradual weight loss and discomfort during and after exercise. Intermittent colic and diarrhoea, with passing of smelly, poorly formed droppings with a characteristic odour, as well as spending long periods lying down propped up on the chest, appear to be typical signs of duodenal ulcers. In severe cases, leakage of small intestine fluid through the full thickness ulcerated lining results in low grade peritonitis with eventual full perforation. Peritonitis with a high temperature, severe colic rapidly develops in untreated horses. There is evidence that horses which consume sand when grazing develop reduced intestinal motility and a devitalised area due to the weight of the sand pressing on the lining and reducing the blood supply of the small intestinal lining which result in areas of ulceration.

## Management of Duodenal Ulcers

Because duodenal ulcers are often associated with gastric ulcers, treatment with a gastric ulcer medication, such as omeprazole, will help to heal duodenal ulcers in horses over time. Supplementing with a combination of **1 litre of prime lucerne chaff** which provides well digested protein and natural mucilages, **1 scoopful of Kohnke's Own® Gastro-Coat®** to provide hydrophilic phospholipids and natural mucilages, with an Omega-3 oil, such as **15 mL of Kohnke's Own® Energy Gold™** to provide local intestinal natural anti-inflammatory protection, **per 100kg body weight** in the morning and evening before normal meals,



is considered to have a role in providing natural protection to the small intestine lining. Withdrawal of NSAID compounds used to relieve painful musculoskeletal conditions is essential to enable healing. Reducing stress of hard training and providing a diet based on oats and steam-rolled barley as starch energy sources, rather than heat-treated grains which destroy natural mucilages and polar hydrophilic phospholipids are recommended in working horses. A product, such as **2 scoopsful per 150 kg body weight daily before feeding of Kohnke's Own® Formex™** which contains polar hydrophilic phospholipids, mucilages, glutamine and other natural gut replenishment compounds, may also have a role to provide specific nutrients for the intestinal tract lining where low grade diarrhoea is associated with duodenal ulceration.

## Colonic Ulcers

Horses can also develop erosion and devitalisation of the hindgut lining, referred to as 'hindgut ulcers' of the right dorsal colon associated with Inflammatory Bowel Syndrome (IBS) or Right Dorsal Colitis (RDC). Surveys of elite performance horses with recurrent low grade colic have indicated that 54% of horses had both gastric and colonic ulcers. One study found that 44% of non-performance horses and 65% of performance horses had evidence of colonic ulcers. Colonic ulcers may be associated with a history of poor performance, low grade clinical signs of a reduced or poor appetite, occasional mild colic and low grade diarrhoea. Performance and racing horses with a history of abnormal blood test results, with low white cell counts, low total protein, low blood calcium and potassium with elevations of acute phase proteins, including fibrinogen and Serum Amyloid A (SAA) associated with non-specific colic and poor performance, have been found to have colonic ulcers.

Right Dorsal Colitis may be in part caused by gut movement in performance horses as the large bowel in this section is actually in touch with the right side body wall in horses fed on high intakes of poor quality hay which distends the hind gut, especially when trained at the canter. The continual 'rubbing' contact and movement of the heavy upper part of the colon may cause

inflammation of the external bowel wall and lead to reduced blood perfusion within the inner bowel wall and lining. Canter exercise is well documented to increase the risk of gastric ulceration on the front area of the unprotected stomach lining in horses worked on an empty stomach due to gastric acid splash as the horse pivots forward on the front legs during the canter.

Other theories include natural release of stress hormones, including cortisone, in hard worked horses, which reduces gut immunity to invasion by hindgut bacteria, or ulcerative erosion caused by courses on NSAID drugs for lameness which have an anti-prostaglandin effect to suppress the immunity and blood perfusion of the colon lining, which then devitalises and allows bacterial invasion and ulceration. Infectious diseases, such as Salmonellosis, or sensitivity/allergy to *Salmonella spp* ingested with contaminated pasture and associated Inflammatory Bowel Disease (IBD) may increase the risk of colonic ulceration.

Severe worm burdens in the hind gut with immature Small Strongyles and Pinworms which gnaw on the hindgut lining, as well as worming with worming compounds to eliminate resting stage (hypobiotic) encysted Small Strongyles (Cyathostomosis) which are killed and result in an intense inflammatory reaction and sloughing of the hindgut lining as they die and are passed out. High starch concentrated diets which can trigger a proliferation of lactic acid fermentation bacteria to increase hindgut acid levels (referred to as 'hindgut acidosis') are a possible, but less likely cause of hind gut ulceration. High bulk poorly digested fibre in predominately hay based diets, may also increase the digestive stress on the hindgut and result in enlargement ('hay belly') and wall distention with more contact with the right abdominal wall during exercise.

### Typical Symptoms of Colonic Ulcers

Most horses show initial signs of recurring, intermittent colic, often lying on their left side to take weight off the right side colon area, with signs of discomfort when rubbed or brushed over the under flank belly area on the right side, mild 'girthy' behaviour when pressed over the rear of the chest sternum area and passing of poorly formed droppings and low grade diarrhoea.

These early symptoms can progress to weight loss, lower abdominal swelling (ventral oedema) and dehydration. Testing for fresh blood in the manure which indicates colon wall bleeding (similar to bowel cancer screening tests in humans) will help to confirm colonic ulcers when considered with typical symptoms. Consult your vet for advice.

### Management

There are several management methods that should be adopted to reduce RDC ulceration. The dietary changes may need to be maintained for 3-4 months.

1. Discontinue NSAID medication in sensitive horses. Discuss alternative pain management with your vet.
2. Decrease gut distention by feeding small meals more frequently (4-6 times per day) with well digested fibre, such as prime lucerne hay or chaff, beet fibre, or lupin and soyabean hulls. This will reduce the digestive load on the colon and allow ulcers to heal. Turn out onto green grass for 15-20 minutes 4 times daily in severely affected horses is also a suitable way of avoiding hindgut over-distention.
3. Use of psyllium husks to provide protective mucilages and lubricate the food through the right dorsal colon is useful at **20g/100kg body weight per day for 2-3 weeks**. Avoid long term use in horses which are at risk of sand colic as the hindgut bacteria will adapt to digest psyllium fibre and reduce the benefit in routine management of a sand clean-out program.
4. Providing a supplement of Omega-3 fats, such as 20mL Kohnke's Own® Energy Gold™ daily, for 2-3 months to provide natural local intestinal immunity, is also recommended. Supplementation with Kohnke's Own® Formex™ at 2 scoops full per 100kg bodyweight daily for 3-4 weeks will also provide polar hydrophilic compounds, glutamine for gut health and other beneficial compounds to assist normal healing and lining replenishment.
5. A supplement containing 60g yeast to provide DNA for healing of the hindgut lining may also be beneficial.
6. Although it is widely recommended to manage hindgut acidosis with hind gut buffering compounds, it is not a common cause of RDC in horses. Feeding raw oats for energy, in place of heat-treated grain energy sources which destroys the natural mucilage content of the grain and other ingredients in racing and performance horses (to horses with no previous history of 'tying-up') to provide protective oat fibre mucilages, is also recommended.

**For more specific advice on feeding management, please contact John Kohnke Products Freecall 1-800-112227 or email [info@kohnkesown.com](mailto:info@kohnkesown.com)**

*Horses with duodenal ulcers might spend long periods lying down propped up on the chest. Horses with colonic ulcers often lie on their left side to take weight off the right side colon area.*



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