



Dentistry



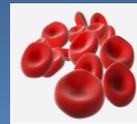
Oral and dental health has a significant impact on a horse's well-being, performance and lifespan. The teeth are a vitally important part of the digestive tract. Severe problems such as weight loss, choke and colic can be associated with dental disease. Other signs of dental problems may include nasal discharge, facial swelling or bad breath as well as a decrease in performance with issues such as bit resistance and head shaking. Less severe problems, without obvious outward signs, often go unnoticed while still causing pain and significant discomfort to your horse.

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REC Partner Practices



Floating or rasping a horse's teeth is now considered to be only a part of routine dental care. A proper dental examination usually requires sedation as well as a powerful light and long handled dental mirrors to assess the entire oral cavity and check all those hard to reach nooks and crannies, much as your own dentist would do! Obviously this includes all the different surfaces of the teeth as well as the spaces between them and the soft tissues of the mouth. A proper examination enables early detection of problems, such as periodontal disease, before they develop into more major issues.

We recommend that young horses under six years old be seen twice a year due to the many changes that occur in the mouth while the deciduous (baby) teeth are being lost and the permanent (adult) teeth are erupting. Horses over six with no previous issues should be assessed once a year and older horses (over twenty) twice a year. This is important even for horses not in work, as the early signs of dental disease such as bit resistance are less likely to be detected in unriden horses. Good dental care is also important for broodmares on an annual basis and ideally prior to breeding to allow detection and treatment of any problems that could contribute to reproductive losses in the future.

Routine dental care should consist of:

- A thorough oral and dental exam to assess the soft tissues and teeth with the aid of sedation, a bright light source and dental mirrors.
- Identification of abnormalities such as

periodontal disease, cavities in teeth, gaps between teeth, poorly aligned, missing or fractured teeth.

- Careful reduction of any sharp points, overgrown teeth or excessive ridges on the surface of the tooth. Our specially designed powerfloat is quiet, safe and well tolerated by the vast majority of horses. We also have a selection of hand rasps including slimline floats for smaller mouths. Direct visualisation of the teeth with a light source throughout the process allows treatment to be performed accurately and safely.
- A thorough examination may identify abnormalities which require further investigation with X-rays, endoscopy or even scintigraphy. This allows the correct diagnosis and enables us to recommend further treatment where necessary to ensure the best possible outcome for your horse.



Understanding Blood Results

Haematology:-

The red cells are responsible for the transport of oxygen around the body and its delivery to tissues. They do this by binding oxygen to the protein haemoglobin. As such, the number of cells, their size and haemoglobin content are all of potential importance.

There is great variation in total red cell numbers and haematocrit (the percentage of blood volume taken up by the cells) in each individual. Horses have a huge reserve of red cells stored in the spleen ready to be released when needed (ie during exercise). The total red cell count and haematocrit can vary by up to 50% by simple excitation (eg trotting the horse up or struggling to retrieve a sample from a difficult horse). Because of this routine blood should ideally be taken before work, whilst the horse is calm and relaxed.

The white cell count and its constituents (the differential count of the different cell types) are also influenced by various factors. Stress (travel, hard work etc) will increase the white cell count by increasing neutrophil numbers. Early infections have a similar effect, as does recent treatment with glucocorticoids (cortisone). The proportion of other types of white cell can also provide valuable information, eg a small increase in eosinophils may reflect a parasite burden or allergy.

Biochemistry:-

Fibrinogen is a plasma protein which is an integral part of the clotting mechanism. It is also a sensitive indicator of inflammation and tissue damage. This is a valuable aid in interpretation of haematology results. A mildly elevated white cell count with an elevated fibrinogen is likely to reflect inflammation as a result of infection, but the same white cell count with normal fibrinogen may simply be a normal physiological response to some form of stress. Other valuable indicators of acute inflammation are serum amyloid A (SAA - goes up earlier than fibrinogen) and serum iron (goes down).

Electrolyte measurements (sodium, potassium, chloride and bicarbonate) will vary according to diet, environment and exercise. Low potassium has also been linked with poor performance. Supplementation with extra potassium can help, but it must be noted that horses, like most mammals, are obligate potassium excretors - ie most potassium is held within cells and extra is quickly passed in the urine.

Increases in the enzymes creatine kinase (CK) and aspartate transaminase (AST) reflect muscle inflammation usually caused by varying degrees of "tying up". Levels up to 600-700 IU/L may be of no clinical significance especially when horses are in full work, and they are influenced by track conditions.

Other biochemical values which can provide useful information include bilirubin and gamma glutamyl transferase

(gamma GT). Elevated bilirubin can indicate liver disease, but it is more likely to be due to reduced food intake or the breakdown of red cells. Rises in gamma GT can also be associated with liver disease, but in practice this is more commonly due to inappropriate administration of various supplements or drugs.

Single blood samples are always of limited benefit as they only give a “snap shot” of information at the time of sampling. Serial samples are more useful as they show whether levels are rising, falling or staying the same. It is critical that serial samples are taken at similar times and under similar conditions to avoid the normal variations discussed earlier.

This article has only touched the surface of the complexity and value of blood analysis. It is extremely important that interpretation of results be undertaken in conjunction with a FULL knowledge of the horse’s clinical condition and a detailed history. The practice of assessing horses by blood results alone is of limited benefit and can lead to unjustifiable conclusions and, at worst, inappropriate management and treatment choices.



FAREWELL JOSH

After 2 ½ years with us here at Randwick Equine Centre, initially as an intern and then as one of our racing veterinarians, Dr Joshua Davison is leaving us to return to the United Kingdom. Josh will be joining the racing department of Rossdales Equine Hospital in Newmarket. REC would like to thank Josh for his hard work and dedication to the practice and wish him all the very best for this exciting next phase in his veterinary career.



Gastric Ulceration



What does a horse with Gastric Ulcers look like?

The difficult thing about the majority of horses with gastric ulcers is that the signs they show are often very subtle and difficult to recognise. Some of the following signs may be seen in a horse with gastric ulcers;

- Inappetence
- Weight loss
- Poor performance
- A loss in condition - eg poor coat
- Subtle behavioural changes
- Mild low-grade recurrent colic

What are Gastric Ulcers?

Gastric Ulcers are erosions of the horses stomach mucosa (aka stomach lining) that occur as a result of excessive exposure to acid production. Equine Gastric Ulcer Syndrome varies greatly in its severity from mildly inflamed but still intact mucosa to multiple large erosions that can cause bleeding into the stomach, all the way up to such severe ulcers that perforate through the stomach wall. Gastric Ulcers can affect any age of horse right from a foal and can occur in any breed.

Foals - excess salivation, teeth grinding, frequently lying on their back and poor weight gain along with reduced suckling and even occasional diarrhoea can all be seen in a foal with gastric ulcers.

How are Gastric Ulcers diagnosed?

Endoscopy of the stomach is currently the only technique to achieve a definitive diagnosis of gastric ulceration in a live horse. The procedure is conducted standing in a sedated horse which has been fasted for 6-12hrs. A flexible endoscope of at least 3m in length is required so all parts of the stomach can be visualised. Unfortunately not many ambulatory vets are capable to carry such a large endoscope and all the associated equipment so most gastroscopies are performed in the hospital.

Gastric Ulceration Grading



Grade 0



Grade 4

Gastric ulcers are graded on a 0-4 scale, with 0 being considered as unaffected (normal) and 4 being severely affected.



Grade 1

What are the risk factors for Gastric Ulcers?

- **Exercise** and regular competition have been shown to be major risk factors for the development of gastric ulcers in the horse. Even non-intensive training has been associated with an increased risk of gastric ulcer development. A study in 2007 showed that between 58% and 100% of all performance horses in work are affected by gastric ulcers to some degree.

Bell RW, Mogg TD, Kingston JK. Equine gastric ulcer syndrome in adult horses: A review. New Zealand Vet J 2007; 55(1):1-12



Grade 2

- **Stress** of transportation and stabling are both proven risk factors for gastric ulcer development.



Grade 3

- **Medication** such as phenylbutazone ("bute") and other non-steroidal anti-

inflammatories are known to predispose horses to ulcers by inhibiting gastro-protective factors.

- **Infrequent feeding** has been shown to increase the risk of gastric ulcers due to the fact that the horse was designed to graze pasture all day and have a constant inflow of food into their stomach. As such, their stomach constantly produced acids to help digest the food coming in. When a horse goes long periods without food (such as between morning and night meals whilst it is being stabled) there is nothing in the stomach to buffer the acids being produced - resulting in damage to the stomach lining

How are Gastric Ulcers treated?

The treatment of gastric ulcers in the horse is actually surprisingly easy. There are several drugs all the market, all of which are oral medications but the most effective is a drug called Omeprazole. Omeprazole is a paste that comes in what looks like a worming tube. It is initially administered at a high dose to treat existing ulcers for about a month and then the dose is lowered and used as a preventative treatment. The drug is perfectly fine to use in competition horses as it is approved under all racing and sport horse medication laws.

Can Gastric Ulcers be prevented?

You can certainly go a long way in reducing the likelihood of your horse developing gastric ulcers by bearing in mind the common risk factors and following some of these helpful hints;

- Divide your horses feed into smaller portions and feed more frequently
- Allow free access to grass or hay
- Consider dividing large hay nets into small ones so they take longer to eat
- Try to reduce high carbohydrate diets
- Consider using ulcer preventative medications during risk periods such as during the competition season or prior to transport

As you can see, the signs of gastric ulcers are often very subtle but many astute owners will pick up on these subtle changes. A common reason for investigation, especially in a performance horse is that the owner feels that the horse is "just not quite right" - in the absence of anything else, gastric ulcers may be the answer. The vagueness of clinical signs seen on physical exam could actually be considered a clinical sign unto itself when considering this disease.

Nuclear Scintigraphy

Nuclear scintigraphy (sometimes known as "bone scanning") is an invaluable diagnostic tool in some lameness cases. It is particularly useful in cases where nerve blocks have not revealed the source of the lameness, when other imaging techniques have not shown any abnormalities, in cases of multi-limb lameness and in difficult to image areas such as the pelvis. It is mainly used for imaging bones, although vascular and soft tissue phases are also possible.

The procedure involves injecting the horse with a radioactive "dye" (technetium 99), which is taken up by areas of increased bone activity. Shortly after this a special camera is used to detect the radioactivity produced and provide detailed images of the skeleton. It is particularly useful to identify stress fractures, abnormal stress modelling and to monitor fracture healing. It is also very useful in assessing some cases of back and neck pain.

Although it is well known to be a safe procedure, after injection and imaging the horse is kept in controlled conditions for twenty four hours to comply with radiation safety regulation requirements. Horses are generally allowed to leave the hospital the day after imaging, but sometimes the technique identifies problems which require further investigation. This must be done the next day to avoid unnecessary handling when the radioactivity levels are relatively high.



REC SPORTS MED

The REC Sports Med team have again been busy providing veterinary services to a variety of equestrian events throughout the state. The weekend of the 20th/21st February was the REC Summer eventing Classic at SIEC. It was a wonderful event with Olympian Megan Jones from South Australia winning the 3* class.



CONGRATULATIONS
A huge congratulations to Dr Rachel Salz who recently became a **Diplomat of the American College of Veterinary Sports Medicine and Rehabilitation** after passing a strenuous two days of intensive examinations.