

# Equine matters

SPRING 2018



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The causes of this potentially serious condition



## A racecourse vet

The responsibilities of the vet attending the racecourse



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Spring Edition 2018

## the editor

Hello and welcome to this Spring edition of Equine Matters.



We are looking at a wide range of problems and conditions in this issue; Suzanne Duncan of Clyde Vet Group tells us about a relatively uncommon but very serious condition of young foals whilst Julia Shrubbs of Ashbrook Equine Hospital gives some very helpful practical advice on a subject likely to be well known to many of you; laminitis.

Over recent years, we have heard much in the media about the rise of so-called 'superbugs' like MRSA and whilst it may not be initially obvious where horses fit into this, Ben Gaskell takes a look at how we can take responsible steps as both horses owners and as vets to make sure we are not contributing to the problem. A very important read!

I very much hope you enjoy this informative and hopefully thought-provoking edition!

Susan Donaldson Clyde Vets

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XLVets Equine is a group of 31 equine practices spanning the length and breadth of the UK. We work together to share experience, knowledge, ideas and skills in order to define and deliver the highest standards of equine health, care and welfare.

# Kissing spines explained



**Heather Rea**  
BVetMed MRCVS  
Cliffe Equine Vets

Kissing spines, also known as dorsal spinous process impingement and over-riding of dorsal spinous processes, can be a cause of back pain, poor performance or even lameness in the horse. Kissing spines can however be present without any clinical symptoms. But what is this condition and how does it cause the symptoms that we do see?

## What is Kissing spines?

The thoracolumbar spine of the horse is composed of eighteen thoracic vertebrae, six lumbar vertebrae and five fused sacral vertebrae. Each vertebrae has dorsal spinous processes which extend from the vertebrae upwards. In the normal horse there should be more than a 5mm gap between the summits of each dorsal spinous process and they are stabilised by the supraspinous and interspinous ligaments.

In cases of kissing spines (impingement) the dorsal spinous processes are closer than they should be. The most common location of impingement is in the thoracic vertebrae, although they can occur in other locations (Figure 1). The degree of impingement can be graded as shown.

When the spinous processes become close or come into contact with each other it causes pain and may cause reflex muscle spasm around the spine.

### Grade 1

Narrowing of the space between two processes accompanied with some bone changes (sclerosis).

### Grade 2

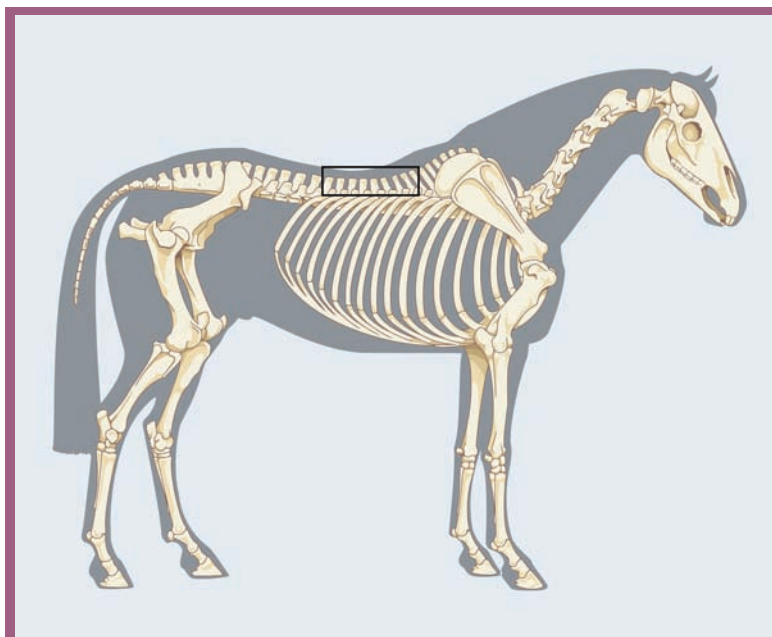
Loss of space between two processes with moderate bone changes.

### Grade 3

Loss of space between two processes with severe bone changes; may have areas of bone loss.

### Grade 4

Loss of space between two processes with severe bone changes, bone loss and change of shape of the spinous process involved.



**Figure 1:** Dorsal spinous processes in the box area T10-18 most common area of impingement (kissing spines)

## What symptoms might we see?

Often all that is reported is poor performance, which may depend on the use of the horse; this can manifest as not jumping as well as previously, lacking in impulsion or elevation of the paces or occasionally bucking. Hind limb or forelimb lameness can be seen. Some horses show signs of acute back pain such as being difficult to tack up, rearing, constant bucking and may even become dangerous to ride. If the horse has had back pain for a prolonged period of time then it may lose some topline (muscle on the back).

‘There are certainly horses which have kissing spines visible on radiographs without any symptoms of pain or poor performance.’

## How is kissing spines diagnosed?

Palpation of the back of a horse with suspected kissing spines may elicit an excessive reaction. This is not a precise technique as some horses can be generally more reactive than others. Evaluation of the horse for lameness in-hand and ridden will likely be performed to rule out other causes of the symptoms. For a diagnosis of kissing spines X-rays (radiographs) are required (Figure 2). This allows your vet to see whether the spinous processes are close, impinging or overriding, also whether there are any bone changes as discussed in the grading of impingement. There are certainly horses which have kissing spines visible on radiographs without any symptoms of pain or poor performance. Therefore if your vet is unsure whether the finding of kissing spines is significant then further tests may be required.

### These may include:

- Injecting local anaesthetic around the area of impingement (Figure 3), then re-examining. If there is improvement then the impingement would be thought to be significant
- Injecting steroids in between the impinging dorsal spinous processes (Figure 3) and then starting a specified exercise regime. This is one of the methods of treatment, if an improvement is seen at subsequent reassessment then the impingement would be known to be the cause of pain
- Ultrasonography can be a very useful technique to identify kissing spines
- Bone scan (nuclear scintigraphy), can show areas where bone is actively remodelling, increasing or decreasing in density which would suggest that the lesion was active rather than an old 'boney' change.



**Figure 2:** Red arrows show marked kissing spines and white arrows show more normally spaced spinous processes



**Figure 3:** Needles placed between the dorsal spinous processes for administration of local anaesthesia or treatment

## How can kissing spines be treated?

There are many differing approaches to treatment of kissing spines depending on the case, owner and vet. Often medical treatment is attempted initially, however if this is not sufficient or if there are more marked kissing spines then there are other options.

### Medical treatment

Rest and a course of anti-inflammatories can be tried, however although the horse may initially show an improvement, once returned to work symptoms often recur.

As described above, steroids can be infiltrated between the affected spinous processes, the idea being to remove inflammation and pain to that area. Other treatments which are often used include; bisphosphonates (Tildren) which aim to decrease bone turnover and inflammation in the area, shockwave therapy to alleviate pain also to enhance and speed up healing, and mesotherapy which aims to stop the pain spasm cycle.

### Surgical treatment

Historically the surgical treatment involved general anaesthesia and removal (amputation) of the top of the spinous processes involved, therefore removing the issue. This generally required a period of approximately 6 months recovery. A procedure to remove only the impinging portion of the spinous process (front edge) called subtotal osteotomy has shown similar results and recovery time but is less invasive.

More recently a minimally invasive procedure has been performed by several clinics without requiring general anaesthesia, including here at Cliffe Equine (Figure 4) with good success rates. Called interspinous ligament desmotomy, this procedure includes a recovery time of approximately six weeks unridden. The interspinous ligament (ligament between the dorsal spinous processes) is cut between affected processes, aiming to remove pain and allow remobilisation of the spine.

The recovery period for any treatment surgical or medical involves a controlled exercise regime designed specifically for the individual horse. This will likely involve working in a Pessoa (a lunging aid) to encourage the horse to use its back correctly.



**Figure 4:** Standing surgery being performed to treat kissing spines



# Diarrhoea - when to call the vet?

Diarrhoea is quite a common complaint in horses, so at what point do you need to call the vet?



**Andrea Kilduff-Taylor**  
MA VetMB MRCVS  
608 Equine & Farm

Some causes of diarrhoea are less problematic than others and can be managed at home and you may not need a visit right away, but it's important to remember that in some less common cases diarrhoea can be very serious and even life-threatening.

## When to phone your vet for advice

- If your horse only has mild diarrhoea or 'cow-pat' consistency droppings and is otherwise bright, well and eating normally.

## When to call your vet to come out right away!

- If your horse is dull and off his food.
- If your horse has profuse, watery diarrhoea.
- If your horse has developed a patch of swelling under his belly or chest in conjunction with the diarrhoea.
- If your horse's gums look reddened or purple.
- If your horse has lost weight very quickly.

## Causes of mild diarrhoea

Mild or short-lived diarrhoea can result from simple things like a sudden change in diet (e.g. turnout onto new grazing, change from hay to haylage) or stress. We have all seen the sloppy faeces passed by an excited horse at a competition! These will usually resolve quickly. However, it is a good idea to try and make changes gradually because occasionally horses can have more serious alterations in their gut bacteria if their diet is suddenly changed. In some cases, the addition of a probiotic supplement to the feed can help the balance of bacteria in the gut at times of stress or feeding change.

Something we experience frequently with our more veteran patients are problems related to their fibre intake. In the winter the grass in the

field is reduced and so horses become more reliant on hay or haylage. Dental problems (Figures 1 and 2) which can commonly affect older horses can reduce their ability to chew these longer fibre sources. When longer fibre sources like hay and haylage arrive at the gut without being chewed properly, the gut cannot digest them correctly, resulting in diarrhoea. Another common consequence is the passing of normal faecal balls, but with a watery component that is often excreted after the faeces. This can be very messy and a real nuisance when it is too cold to keep bathing your horse all the time. The solution to this problem is to treat any dental issues and feed more short fibre such as chaff, dried grass, alfalfa and soaked fibre nuts.

Generally speaking, it is always a good idea to phone your vet if your horse or pony develops diarrhoea, even if you think it isn't serious.



**Figure 1:** Dental problems are a common reason for diarrhoea



**Figure 2:** This tooth has caries which has caused a hole to form, identified using oral endoscope

## Causes of severe diarrhoea

These can be split into infectious and non-infectious causes:

### Infectious

Bacteria such as *Salmonella* and *Clostridia* can cause severe disease with sudden onset, watery diarrhoea and consequential dehydration which, if untreated, can lead to toxæmia and potentially death. Horses affected by these bacteria are highly infectious to other horses and potentially to people, so it is important to take hygiene precautions immediately diarrhoea is observed. Treatment includes intensive intravenous fluid therapy and isolation of the horse to prevent spread of the disease. These bacteria can cause milder symptoms in some horses so vets will often test for them even if the horse isn't severely unwell. Redworm disease (larval cyathostomiasis) is another common reason for severe diarrhoea. This usually affects younger horses or those with poor worm control. In the winter, the small redworm larvae burrow into the gut wall (Figure 3) and form cysts (a form of hibernation). The problem comes when there is a change in weather (traditionally spring, but with milder temperatures this can happen during the winter) and if there are lots of these cysts, the larvae emerge all at once causing significant damage and disruption to the gut wall, leading to severe and even

life-threatening diarrhoea. Good pasture management is crucial to prevent this disease, including poo-picking and reducing stocking densities. Good parasite control during the rest of the year with faecal worm egg counts (FWECS) and appropriate worming can reduce the number of larvae that hibernate in the gut wall. Horses suffering from mass emergence of larval cyathostomes are not directly infectious to other horses, but it's important to consider the potential of similar disease in other horses that have been co-grazing.

### Non-infectious

These can include side effects of medications such as antibiotic use which can cause diarrhoea in rare cases. It is more likely to happen if the horse has had more than one type of antibiotic within a short period. We ask owners to monitor carefully for any signs of diarrhoea when their horse is on antibiotics and to call us if it occurs.

Use of anti-inflammatories such as phenylbutazone (bute) can also cause diarrhoea through a side effect of inflammation of the colon. Sometimes this can be accompanied by colic signs and/or fluid accumulating under the belly or into the sheath in males. These side effects can be severe if left, but usually resolve if the anti-inflammatories are stopped or changed.



Figure 4: An ultrasound scan of the abdomen may be required for persistent cases of diarrhoea

Horses with more long-standing diarrhoea can present a diagnostic challenge to vets. These horses will often lose a lot of weight over a period of time (Figure 4) and won't necessarily respond to treatment very well. The difficulty in such cases is that simple tests such as blood and faecal analysis will often come back with normal results. This means further tests such as abdominal ultrasound scanning or analysis of abdominal fluid may be needed. Similarly, even after performing many tests, a definitive diagnosis may remain elusive. Some of these horses will have inflammatory bowel conditions which are thought to be due to the horse's immune system mistakenly attacking the lining of the gut. Use of short fibre diets and immune suppressive therapy such as corticosteroids can be helpful in these cases. Lymphoma affecting the gut may also lead to diarrhoea.



Figure 3: The larvae of small redworm can burrow into the gut wall and cause severe inflammation and diarrhoea

**'In summary, diarrhoea can be a pain, causing mucky tails and sometimes more serious problems such as dehydration. But understanding some of the causes can really help to guide us towards the right therapies for each horse.'**

# Responsible antimicrobial use - why your vet might say 'No'

**BISHOPTON**  
EQUINE

'Every inappropriate or unnecessary use of antibiotics is potentially signing a death warrant for a future patient'

Former Chief Medical Officer Sir Liam Donaldson in 2008



**Ben Gaskell**  
BVSc MRCVS  
Bishopton Equine



'The government backed AMR review estimated that antimicrobial resistance could cause 10 million deaths a year by 2050.'

In 1928, when Alexander Fleming found a *Penicillium* mould growing on fruit and realised it had antibacterial properties, it led to the development of antibiotics as medicines. This discovery and the ongoing research into antibiotics revolutionised healthcare in both humans and animals, and inspired many of the greatest medical advances of the 20th century.

The broad assumption was that bacterial infections could be dealt with from that point on. There is a famous but poorly attributed quote from the US chief medical officer in the 1960's that proclaims 'the threat from bacteria is over'. However, as is becoming increasingly understood, all pathogens and very notably bacteria, will continually evolve as a population to resist the new drugs that medical science has developed to combat them. As a result, the confidence in our ability to control bacterial infection has been reassessed and currently the future is not bright.

Resistance has become an increasing problem over recent years, not just because of the high use of antibiotics, but also because of the lack of new antibiotics being developed. From the late 1960s through the early 1980s, the pharmaceutical industry introduced many new

antibiotics to 'solve' the resistance problem and allow medicine to stay one step ahead. But after that point the antibiotic pipeline began to dry up and fewer new drugs have since been introduced. There are several reasons behind this, but the economics of new product development and the lack of incentives for the pharmaceutical firms are main issues at this time.

## How does antimicrobial resistance (AMR) develop?

The overuse of antibiotics clearly drives the speed and evolution of resistance. Studies have demonstrated a direct relationship between antibiotic consumption and the emergence and spread of resistant bacterial strains. This essentially happens due to 'natural selection' - antibiotics remove the drug-sensitive bacteria and resistant bacteria are left behind to reproduce and take over. There are additional mechanisms where bacteria can share resistant genes and find additional ways to evade the treatments, but essentially, every time we use an antibiotic we are moving closer to the day when it won't work anymore.



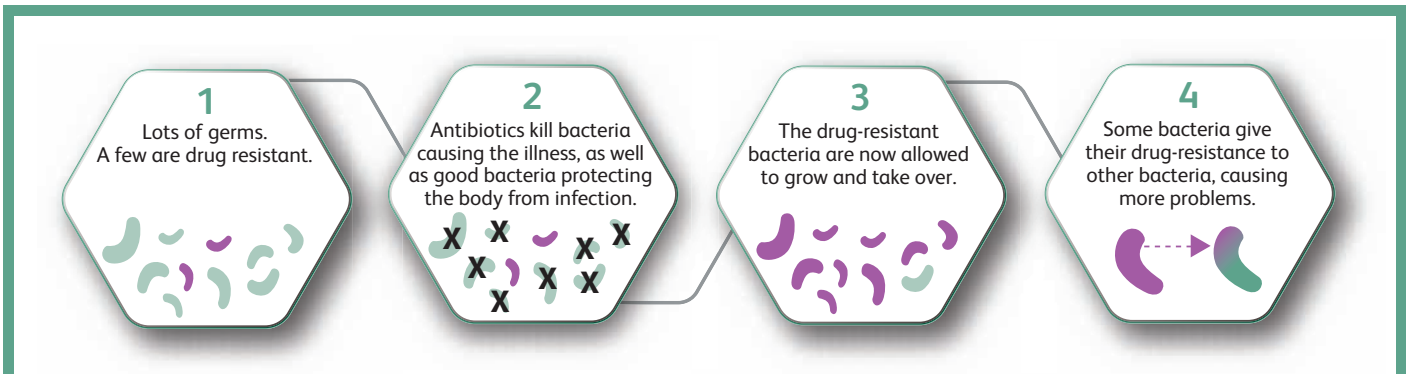


Figure 1: Antibiotic resistance can take years to become a clinical issue, but the basic methods of its development are explained in the diagram

## Why is it a problem for vets?

Since antibiotics were introduced they have become a mainstay of treatment for many existing diseases and infections, in both companion animal species and those in the food chain. Use of antibiotics in domestic pets and in production animals pose slightly different but genuine risks. Partly to blame is the global requirement for food, which puts pressure on animal production, resulting in disease issues caused by these pressures being managed with antibiotics. To many people this is an unacceptable situation, especially when they perceive antibiotics being used as a 'crutch' to manage a situation for an economic gain.

Genuinely concerning for medics and vets alike are situations such as in the US, where animals consume more than twice as many medically important antibiotics as humans. We are doing much better here in the UK; a 2017 report shows sales of antibiotics for use in food-producing animals dropped by 27%, beating a government-set target by two years\*.

It is increasingly the case that vets who are prescribing essential antibiotics will be challenged to justify their use, especially when there may be limited clinical need. We currently have a wide range of antibiotics available for use in clinical situations, nevertheless horse owners should be aware that this range could diminish in future and threaten your vet's ability to prescribe the antibiotic of choice (Figure 2).

\*UK Veterinary Antibiotic Resistance and Sales Surveillance Report 2016, (released 27 October 2017)



Figure 2: The range of licensed medicines for horses could diminish in the future

## What can be done?

On a global scale, several approaches are required. Long term, the development of improved diagnostic techniques to reduce the need for antibiotics, along with improved preventative technologies, e.g. vaccines, is the best hope. There is also the need for increased incentives to continue research and development into new antibiotics, although we must ensure that any new therapies are treated with respect. Resistance will always occur; we have to manage it.

## How can we as vets and horse owners play our part?

Reducing antibiotic use won't reverse resistance - once developed it cannot be reversed, but we must do the best we can to slow down the progress of resistance and extend the life of the medicines we currently rely on.

Our major role is in helping to maintain the effectiveness of the existing antibiotics, and there are a few things that can be easily done to help not only the bigger picture, but also your horses and their welfare.

1. Practise good management, use vaccination and effective first aid, for example in wounds, reducing the need for antibiotics.
2. Avoid the use of antibiotics without consulting your vet.
3. Allow use of diagnostics to check whether antibiotics are genuinely indicated.
4. Complete all courses as prescribed and liaise with your vet as to the success of the treatment.
5. Ask your vet to do sensitivity testing to check that the right antibiotic is being used (Figure 3).



Figure 3: Sensitivity testing can help identify the most appropriate antibiotic to use

It is good to understand the issues around prescribing antibiotics. If you have any questions, your vet will be more than happy to talk them through, and hopefully, we can continue to enjoy the peace of mind that effective antibiotic treatment can bring.

# Preventing Laminitis



**Julia Shrubbs**  
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MRCVS  
Ashbrook Equine  
Hospital

Laminitis is a very common condition that is always painful, potentially life-threatening, and causes suffering even in mild cases. This preventable condition is often costly, difficult to manage and can result in long-term damage.

Traditionally, laminitis has been associated with grass and overweight ponies; however, our understanding of the underlying factors has significantly improved in the last decade. It is now known that about 90% of 'grass-associated laminitis' is due to underlying hormonal disorders; either pituitary pars intermedia dysfunction (PPID) commonly referred to as 'Cushings' disease or equine metabolic syndrome (EMS).

**Here are ten tips to help prevent laminitis:**

## 1. Recognising if your horse is at risk or showing signs of EMS or PPID

Recognising if your horse is at risk or showing signs of EMS or PPID is the first step in preventing laminitis. EMS and PPID are separate conditions but share many features and can occur together in the same horse (see Table 1).

**Table 1**

EMS	PPID
Any age	Older horses more likely
Native breeds, Arabs, 'good doers'	Any breed
Often overweight	May be overweight, normal or underweight
May have fat deposits, e.g. cresty neck, fat pads, bulging fat above eyes, may be 'ribby' at the same time	Often poorly muscled
Normal infection risk	Prone to infections
Drinking and urinating normal	May drink and urinate more than usual
Normal coat	Longer coat than normal, delayed shedding in spring

## PPID

PPID is a degenerative disorder of old age, with some similarities to Parkinson's disease in humans. It affects around 20% horses over 15 years and increases in prevalence with increasing age. There is currently no known way of preventing PPID but recognising high risk animals and early signs (see Table 1) and getting a prompt diagnosis with a simple blood test, allows pergolide treatment to be started (Figure 1).

If PPID is well controlled the laminitis risk massively reduces. In most cases, this makes daily pergolide treatment more cost-effective than treating laminitis and also prevents unnecessary pain and suffering.



**Figure 1:** Pergolide tablets control most cases of PPID

## EMS

EMS is a syndrome commonly seen in native breeds and 'good doers', associated with obesity, laminitis and insulin resistance. Obesity and inactivity increases insulin resistance, thereby increasing the risk of EMS, much like type-2 diabetes in people. Many 'good doers' have been bred to survive on poor grazing or work hard for transport, war or farming, so are genetically predisposed to EMS in modern domestic conditions.

If you suspect your horse has EMS, your vet can test blood insulin levels before and after feeding to identify horses with abnormally high insulin concentrations. However, it is wise to treat all 'good doers' as if they have EMS.

## 2. Ask yourself honestly if your horse is overweight

Almost 50% of pleasure horses are obese. Unfortunately, it is so common to see overweight ponies that we can lose sight of what is ideal body condition. Horses with EMS may have generalised obesity (fat all-over) or regional obesity, with a cresty neck, fat pads and a fat sheath/udder (Figure 2). Often ponies with EMS have little fat over their ribs but fat pads elsewhere; however, not all outwardly obese animals are insulin resistant and neither are all insulin resistant animals obese.

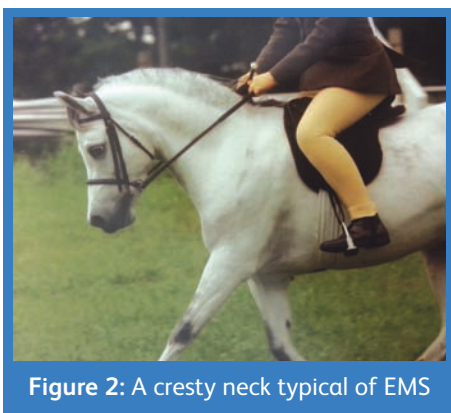


Figure 2: A cresty neck typical of EMS

## 3. Monitor your horse's weight monthly

Monitor your horse's weight monthly either using a weigh bridge or weigh tapes (girth and neck measurements). Weigh tapes are not accurate but show trends which can be hard to identify when you are seeing your horse daily.

## 4. Assess the diet to promote weight loss (if needed) as well as reducing sugar content.

Most horses that are at risk of laminitis and are in light work require a diet based mainly on forage, together with a balancer. Feeds with the 'Laminitis Trust' approval mark may be used in small quantities.

Even hay can have a significant amount of soluble sugars that can be reduced by soaking for several hours (Figure 3). Weighing all feeds is very helpful. Your vet can give tailored advice for your horse, but a good starting point for weight loss is to feed 1.25% of your horse's ideal bodyweight each day although this may have to be reduced further for some individuals.



Figure 3: Soaking hay for several hours can reduce the soluble sugar content by 50%

## 5. Restrict grass

Occasionally it is advisable to completely restrict grazing, such as during clinical laminitis or if your horse has uncontrolled PPID or EMS. However, there are many benefits to being at pasture and careful planning can reduce the risk. Greedy ponies on lush pasture can eat their daily requirement in three hours, so simply limiting grazing time is not always useful. Fencing off a small area to create a bare paddock or turning out in areas such as an arena can be a useful alternative. Grazing muzzles work for some animals but should not be used all day. They need to be correctly fitted so the pony can drink and the grass length sufficient to allow some grazing.

Cold spells are known to cause an increase in laminitis cases. This was thought to be due to increased fructans in stressed grass but this theory has recently been disproved. It may be due to hard ground and increased food intake so it's still important to take care during frosty weather.

If PPID is well-controlled with pergolide and the pony is not overweight, restricting grass is less of a concern.

## 6. Increasing exercise

Increasing exercise helps reduce insulin resistance and uses calories to aid weight loss. For maximum benefit, 30 minutes of trot and canter exercise at least every other day is suggested.

## 7. Use winter wisely

Horses naturally lose weight in the winter and gain some in spring and summer. This keeps their metabolism healthy. Does your horse really need that extra rug? Horses are comfortable at much lower temperatures than humans and use more energy keeping warm.



## 8. Talk to your farrier

Talk to your farrier to see if there are signs of laminitis despite no obvious lameness problem; such as rings on the hoof wall that are wider at the heel than the toe or a stretched or bloody white line (Figure 4).



Figure 4: Signs of laminitis noticed after trimming

## 9. Do not ignore mild signs of laminitis

A horse that is 'a bit footy' or is always tender after trimming may have mild laminitis and needs veterinary attention before it worsens.

## 10. Ask your vet for advice!

Vets would rather help prevent laminitis than see a horse suffering with the debilitating and painful effects it can cause.

# A case of sole penetration injury

## Complications and Consequences



**Hazel Clewley**  
BVetMed (Hons) MRCVS  
Kernow Farm and Equine

I was called to see 'Charlie' in December after he became acutely and severely lame after a trailer ride to a new yard.

### How did it happen and why is it so serious?



**Figure 1:**

Cross section of equine foot showing metal probe entering  
a) Navicular Bursa b) DDFT  
c) Coffin joint



**Figure 2:**

Corresponding projections of solar penetrations  
a) lateral b) solar  
c) radiographic

I was called to see 'Charlie' in December after he became acutely and severely lame after a trailer ride to a new yard. He had pulled a shoe off in the process and now was very lame on his right hind. He was reluctant to bear weight on the limb, only walking on the toe if forced. His digital pulse to the foot was elevated and on closer inspection of the foot it became clear he had trodden on a shoeing nail which was still embedded in his sole.

Penetrating injuries to the sole of the foot in horses and ponies are relatively common, but can be potentially serious due to the risk of involving deep structures of the foot such as;

- Distal phalanx (coffin bone)
- Deep digital flexor tendon (DDFT)
- Navicular bursa
- Distal interphalangeal joint (coffin joint)

These structures have varying relatively close proximity to the surface (Figure 1).

The location of the puncture entry, the type of penetrating object and the angle and depth of penetration will determine the likelihood of these structures being involved in a sole penetration (Figure 2).

Penetration into the navicular bursa and coffin joint can be particularly serious as it is very hard to clear infection from these structures without aggressive therapy. The horse has limited capacity to fight infections in joints, bursae and tendon sheaths and damage can quickly ensue.

Unfortunately, the location and angle of the penetration in 'Charlie's' foot, and his degree of lameness gave great cause for concern. The nail entered the foot at the outer cleft of the frog, approximately one-third of the way from the tip. The nail, which was bent, was carefully removed during which it became clear it had tracked back towards the heel (Figure 3).



**Figure 3:** A post surgery view of 'Charlie's' sole showing the site of penetration in lateral sulcus of frog

## Investigation

Due to the concern about entry into the navicular bursa 'Charlie' was referred to an equine hospital for further specialist investigation and treatment. The owner was warned that 'Charlie' may require a general anaesthetic and surgery and that the injury could be life-threatening. Initial treatment was administered which included;

- **Systemic antibiotics.** An intravenous antibiotic, gentamicin was administered as well as an intramuscular injection of penicillin.
- The area was cleaned and a dressing applied.
- Intravenous pain relief was given due to the severity of lameness.
- **A nerve block was performed** - the nerves supplying the affected foot were temporarily numbed to facilitate more comfortable transport to the hospital.

On arrival at the referral hospital 'Charlie' was sedated and quickly received an MRI (magnetic resonance image) examination. An MRI allows detailed assessment of both bony and soft tissue structures, and, in 'Charlie's' case unfortunately showed the tract had penetrated the DDFT and navicular bursa, damaging the flexor tendon and potentially infecting the bursa.

To investigate the presence of infection further an effort was made to obtain a fluid sample from the navicular bursa but this was unsuccessful. Antibiotic was instilled directly into the bursa.

## Treatment

'Charlie' had not improved the following day so was taken to theatre for keyhole surgery (bursoscopy) under general anaesthetic. Instruments can be introduced through another small incision in order to:

- Inspect the cavity for damage and debris
- Take tissue and fluid samples
- Remove diseased or infected tissue
- Flush the cavity
- Instil medications

The navicular bursa showed evidence of mild infection and so was flushed and medicated with the antibiotic amikacin. The coffin joint did not appear to be affected at this stage. Dead and infected tissue was removed from the tract.

'Charlie's' signs initially improved for several days as he received ongoing treatment with systemic antibiotics and anti-inflammatories, but then deteriorated, with him becoming steadily less comfortable.

A fluid sample from his navicular bursa proved difficult to obtain again, but a fluid sample of his coffin joint revealed infection. 'Charlie' was anaesthetised for a second time for keyhole surgery of his coffin joint.

**The prognosis was less certain at this stage. However, following his second surgery he was more comfortable and continued to improve, much to everyone's relief.**

## Ongoing care

Due to the injury to his DDFT, 'Charlie's' recovery was likely to be prolonged due to the poor ability for healing in tendon tissue. In order to reduce the load on his injured flexor tendon he was shod with a raised heel shoe (Figure 4). A metal treatment plate over the sole was initially used in conjunction with the shoe in order that dressings could be properly maintained and the site of original penetration protected. 'Charlie' was discharged fifteen days after admission. Oral antibiotics (trimefazine) were continued for a further two weeks and the oral anti-inflammatories (bute) administered for ongoing pain relief.



**Figure 4:** Raised heel bar shoe

## Rehabilitation

'Charlie's' recovery is still ongoing, but his owner is extremely pleased and relieved to have him home. His lameness was mild on return from hospital and has slowly improved. After one month of box rest and hand grazing, he commenced in-hand walking, building from 5 minutes twice daily up to 20 minutes. He is now sound in a straight line but still shows low grade lameness on a circle when lunged. His raised heel shoe will continue to support his flexor tendon injury in recovery with the aim of it being gradually reduced over the coming months. The prognosis for 'Charlie' to get back to his eventing is still fair to good but there is still a long road ahead. At the moment though spring is in the air and he is feeling good! (Figure 5).



**Figure 5:** 'Charlie' enjoys a little more exercise

# A happy ending to a case of stomach ache



**Andrew Robinson**  
BSc(Hons) BVMS MRCVS  
Millcroft Veterinary  
Group

## The call comes in

One of the exciting things about being a mixed practitioner is never knowing what the next phone call will be. Recently, I was at one of the branch surgeries doing an evening clinic, busy seeing sick cats, dogs and even hedgehogs. Then the telephone rang with a call from the main surgery to ask me to go to a small local livery yard to see a poorly horse.

## Getting there quickly day or night

As soon as the final consultation finished, I put on my coat and ran to the car. I knew where the yard was so it didn't take too long to get there. Upon arrival it was pitch black except for one stable where a small bulb illuminated a moving object. On closer inspection it turned out to be a black pony being led around by his very worried owner. I grabbed my stethoscope and thermometer and went straight over. The owner, Kerry, told me that she had come to see her Welsh pony, Oliver, straight after work only to find him lying down in his stable, covered in sweat and rolling around. She immediately called the practice - thank goodness for mobile phones!

## Examination of a colic

I gave Oliver a reassuring pat on his neck and began to examine him. His heart rate was 42 beats per minute, his temperature was 100.5°F and the colour of his gums was a very healthy pink - all good normal parameters. I then put my stethoscope on his abdomen, top and bottom, left and right. What a noise! It was like a cacophony of burps, pings and splashes. This was music to my ears; I would have been more concerned if there was silence, as that may have indicated a blockage either from an impaction of droppings or from a piece of gut being out of place or twisted.

I asked his owner whether he had passed droppings recently and she said that there was a normal amount in his stable and he had done a healthy pile whilst she was walking him around. All this information helped me reach the likely diagnosis of spasmodic colic.

## The treatment and recovery

I went back to the car and drew up two syringes, one with a painkiller and one with an anti-spasmodic drug. Kerry told me that he was very good with needles so I wiped his jugular with some surgical spirit and gently inserted the needle. After I had given him both injections, it was like magic - within a couple of minutes his ears went up, the sweat stopped and he looked like his normal relaxed self again. Then he put his head down and started to Hoover the hay off the floor; he was definitely getting back to normal.

## Not the beginning of the end

I advised Kerry to worm him, as parasites can often play a role in causing colic, and to restrict his feed overnight and then gradually increase it back to normal rations in the morning. Climbing back into my car I was pleased to have been able to help Oliver and give him a much more comfortable weekend!

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I was pleased to have been able to help Oliver and give him a much more comfortable weekend.

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**Figure 1: Oliver**

# Anaemia in young foals



**Suzanne Duncan**  
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Group

Neonatal isoerythrolysis (NI) is a condition that occurs in newborn foals within the first 8-48 hours of life. It occurs when antibodies obtained through the mare's milk destroy the foal's red blood cells thereby leading to anaemia and jaundice. If not caught in time, the condition can be life-threatening to the foal.

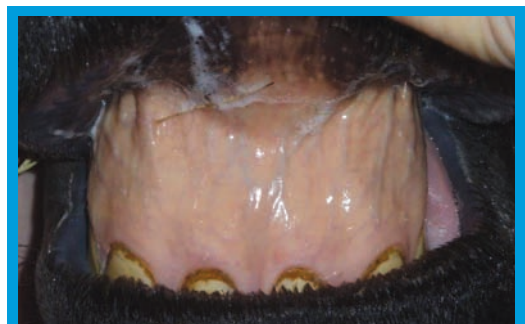
The condition arises when the foal's red blood cells manage to cross the placenta whilst it is still in utero and gain access to the mare's blood stream. If the foal's red blood cells are not compatible with the mare's red blood cells (there are 32 blood types in horses), the mare will produce antibodies or white blood cells against the foal's red blood cells. These antibodies are then transferred into the first milk (colostrum).

In a case of NI, once these antibodies are absorbed after the foal sucks colostrum, they then destroy the foal's red blood cells. The speed of onset and severity of clinical signs depends on the blood group involved and the amount of colostrum (antibodies) ingested. Early signs can be subtle and non-specific and can include lethargy, dullness, yawning, spending more time recumbent or less time on the suck. If the foal becomes excited, its heart rate and respiratory rate can increase markedly. The gums can look pale with varying degrees of jaundice (Figure 1) and the urine can become red in colour due to the presence of haemoglobin from the broken down red blood cells. In severe cases clinical signs can progress to collapse, coma and death.

Diagnosis is based on the history, clinical signs, evidence of a low red blood cell count and increased bilirubin on blood testing (bilirubin is made when red blood cells break down) and confirmed by a positive cross match (Coombs test) of the mare's and foal's blood.

Treatment varies depending on the severity of the clinical signs and anaemia. If mild, then treatment may involve minimal handling, minimal exercise/box rest, a quiet environment and close monitoring. If clinical signs of anaemia are severe then a blood transfusion is required. Blood can be taken from a cross-matched donor gelding or by taking blood from the mare and then 'washing' the blood in saline in order to remove the plasma that contains the antibodies. Supportive care, nursing and administration of appropriate antibiotics are also important whilst the foal is compromised and recovering.

Once a mare has produced an NI foal she is at high risk of her future foals also developing NI. The mare should not be bred to the same stallion again and there are other preventative strategies that can be employed. The most common of these is to muzzle any future foals for the first 24-36 hours to prevent suckling off the mare and bottle feed donor colostrum/milk replacer whilst stripping off the mare's udder. It is important to maintain high standards of care and hygiene when stripping the mare to ensure the udder does not become painful which could subsequently delay the onset of suckling. Special mare milkers can be purchased. After this time the muzzle can be removed and the mare and foal allowed to nurse as normal.



**Figure 1:** Pale gums associated with NI

# How your vet evaluates the 'colicky' horse



**Edward Cook**  
BVSc MRCVS  
Durham Equine Practice

## What causes colic?

Before evaluating the 'colicky' horse, it helps to bear in mind that colic is a broad term, with each case taking a different shape. Colic is defined as the clinical manifestation of abdominal pain; and is a clinical sign, rather than a specific condition or disease.

Most frequently the source of this pain is within the gastrointestinal tract. However, problems with other organs within the abdominal cavity may also manifest this way - termed 'false colic.' The severity of abdominal pain can vary between mild, showing as anorexia, pawing and restlessness; to severe, which can manifest as rolling and thrashing.

The exact condition causing pain may affect the severity of signs shown by a horse. It is also worth remembering that horses have individual pain thresholds. There are more than 70 different causes of colic with several underlying disease processes. Most commonly these involve inflammation, an obstruction (either simple or strangulating), gas accumulation or an infarction (reduced blood supply to a section of intestine). In addition, problems with the urinary or reproductive organs may cause colic signs.

## Examination of a horse with colic

The first key step in evaluating a horse with colic is to speak to the owner and ask what symptoms the horse has been showing and if there have been any changes in routine that may have triggered colic. Knowing the type and duration of colic signs and the horse's recent history helps to interpret the findings of the clinical exam to follow. It is important to remember that some of the manifestations of colic are not specific and may be produced by other conditions not related to the abdomen.

It is then time to perform a general clinical examination, including listening to the chest and abdomen, evaluating the horse's mucous membrane colour and assessing his hydration status. It is standard practice for a rectal examination to be performed on any horse showing abdominal pain. A number of organs can be palpated in most horses and abnormal findings may give clues to the exact cause of colic. While it is advisable for all horses showing colic to undergo a rectal examination, it is important to remember that it may not be safe for the animal, such as in small ponies or foals, or the people involved depending on the patient's temperament or their degree of pain.

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Colic is defined as the clinical manifestation of abdominal pain; and is a clinical sign, rather than a specific condition or disease.

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## Further diagnostic tests

If further information is required, nasogastric intubation may be performed. This involves passing a flexible tube through the nasal passage and down the oesophagus into the stomach. Ultrasonography can be used to identify distended small intestine, increased intestinal wall thickness and displacements, as well as increased fluid within the abdominal cavity (peritoneal effusion). In some cases it may be unclear as to the nature of the condition causing the colic signs; in these cases an abdominocentesis ('belly tap') may be helpful. This test involves obtaining a sample of fluid from within the abdomen and assessing its appearance, white cell count and lactate level.

Abdominocentesis may facilitate early diagnosis of a surgical condition before more apparent signs develop, such as severe pain and cardiovascular changes.

If the signs of colic recur over the following days or do not completely resolve then other tests may be performed such as a blood or urine sample.

## What should I do if my horse has colic?

If you feel as though your horse may be showing signs of colic the first thing you should do is contact your veterinary practice to arrange a visit. Some causes of colic are transient and will spontaneously self-resolve - but others are life threatening and as such, colic must always be treated as an emergency.

If your horse is settled and showing only mild signs of colic then it is advised to remove any feed whilst you wait for the vet. During this time it can also be helpful to gently walk your horse in hand - this serves to act as a distraction and encourage the passing of trapped gas. It is not advisable to walk your horse in-hand if they are showing more severe signs of colic. If they are attempting to lie down or roll then it is recommended they be placed into a large area such as an arena in order to reduce the likelihood of further injury to themselves or to you.



## Treatment of colic

True gastrointestinal colic cases may be divided into three categories based upon the treatment required to resolve the underlying condition.

### 1. Simple medical

These cases require only medical therapy in order to resolve, which may be a combination of drug therapy and administration of oral fluids. It is common for horses with colic to be given an anti-inflammatory to provide pain relief, in addition to an antispasmodic (gut relaxant) and in some cases a sedative.

### 2. Complicated medical

These cases may require more aggressive medical treatment (such as repeated nasogastric intubation) and may be more effectively managed in a hospital environment.

### 3. Surgical

These cases are usually life threatening without surgery and prompt referral to a hospital is required. These represent less than 10% of colic cases.

## Prevention

Studies have shown that there are many factors that can contribute to the development of colic. Some causes of colic can be effectively managed.

Such management strategies include:

- Keep feeding and turnout routines as consistent as possible throughout the year
- Ensure continuous access to fresh water

- Implement effective parasite control
- Regular dental checks, at least once a year, by a veterinary surgeon or suitably qualified equine dental technician (EDT).

It is important to remember that horses can still develop colic even if all the best advice is followed. It is simply a common and unfortunate part of horse ownership, but with early intervention, many cases have a happy ending.

# A day in the life - A Racecourse Vet

  
 Fellowes Farm Equine Clinic Ltd  
 VETERINARY SURGEONS



**Matthew Tong**  
 BVSc CertEP CertVR  
 MRCVS  
 Fellowes Farm Equine  
 Clinic

If you watch racing you will probably have noticed the convoy of doctors and paramedics following the horses from the inside of the track during each race; one of the cars in the convoy will be occupied by a vet, who heads to the start of each race and then keeps a watchful eye on the runners throughout.



Equine vets from around the country provide on-course veterinary treatment at each of Britain's race meetings, with the day's runners under their care during the race fixture.

At National Hunt jump meetings there are three veterinary surgeons on duty, while Flat race meetings have two. On-course vets are usually supplied by local veterinary practices who make sure they arrive in plenty of time before the racing gets underway, in case there have been any problems with horses sustaining injuries on their way to the course.

Racecourse vets are required to undergo refresher training courses every five years, organised by the Association of Racecourse Veterinary Surgeons (ARVS) to be able to comply with British Horseracing Authority (BHA) rules and make sure that they are up to date with all the advances in treating the equine injuries they may see at the racecourse.

Each race meeting is also attended by a BHA Veterinary Officer in charge of the regulatory aspects of racing, overseeing prevention of infectious disease, monitoring racecourse injuries and carrying out post-race drug testing.

The on-course vets work closely with the BHA veterinary officer on duty (Figure 1). Any horses that are a cause for concern prior to racing from

any welfare point of view, will be examined by the Veterinary Officer who may ask the on-course vets for a second opinion if he or she is concerned. The Veterinary Officer keeps a register of horses that are noted as poor movers and they are always assessed again on course before being allowed to run.



**Figure 1:** The on-course vets liaise with the BHA veterinary officer

The veterinary team is situated alongside the parade ring prior to each race, and although incidents at this stage are uncommon, they will check over each runner to ensure that there are no concerns which would prevent them racing (Figure 2). Once the jockeys are mounted, two vets head out onto the course to follow the runners whilst one of the team takes up a position to view the horses from a suitable vantage point. They keep in radio contact with each other as well as the Veterinary Officer and the other raceday officials.



**Figure 2:** The vets check over the runners in the parade ring before the race

**‘Any horses that are a cause for concern prior to racing from any welfare point of view, will be examined by the Veterinary Officer’**

Once at the start, the vets will assess any kicks or knocks should a horse have become injured or lame when it arrives. If a horse has taken a very strong hold or bolted on the way to the start, it is assessed to see if it is still fit to run. Also, if a jockey is unhappy with a horse’s action on route to the starting post, he will notify the starter and the vet will be asked to examine the horse. If there are any concerns or signs of lameness, the horse will be withdrawn.



**Figure 3:** The horse ambulance is ready to transport horses back to the veterinary unit

The vet following the race in the car will assess any horse who is pulled up during a race, while the vet near the finish will check that all horses have finished sound and are not showing any signs of distress or lameness.

Tragically, accidents and injuries can occur during the race meeting. If a horse is injured the veterinary team will be at the scene within a matter of seconds and screens will be put up straight away - this doesn’t necessarily mean that a horse is fatally injured but it allows the vet to assess the injury carefully without distractions, before the horse is transported in the equine ambulance back to the on-course veterinary unit for further assessment (Figure 3). Further diagnostic equipment such as ultrasound or X-ray can then be used should it be deemed appropriate.

In the case of a serious injury, splints, casts or bandages can be applied to the horse to make him comfortable for transport back to the veterinary treatment box or onward to the veterinary hospital for further assessment and treatment if required.



**Figure 4:** The vets are on hand to scope a horse post race

The racecourse vets can also be called upon for less serious incidents, such as post-race endoscopy (passing a long flexible camera up the nose into the airways) for example if a horse has unexpectedly run badly, to look for evidence of bleeding or excessive mucus (Figure 4).

On a hot or humid day, the heat can sometimes cause problems with horses becoming distressed or occasionally collapsing, but all courses now have water in a number of locations such as the winner’s enclosure and unsaddling enclosure (Figure 5). Some courses also have showers or fans which you can stand a horse under if they are susceptible to heatstroke.

The vets are always on hand in case they are called back to the course stables as some injuries or problems do not become evident until the horse has cooled down and adrenaline levels have dropped following the excitement of the race itself. In addition, once racing is over for the day the on-course vets will be ready to help with any horses that may require veterinary treatment before they are loaded up to head on home back to the trainer’s stables.



**Figure 5:** A horse suffering heatstroke being treated as it comes off the course

# Help! My horse is headshaking!

Headshaking in horses is not only a frustrating disorder for owners when riding but more importantly can make the affected horse's life a misery.



**Jenna Elliot**  
BVetMed MRCVS  
Rosevean Veterinary  
Practice

Horses may shake their heads for a variety of reasons: pain associated with oral, spinal or ocular disorders, lameness or as a response to stress or anticipation of food or exercise.



**Headshaking is reported to affect 1-4 % of horses in the UK and appears to affect horses worldwide.**

Reaction to these stimuli are normal voluntary actions where the horse chooses to toss its head. Headshaking syndrome is different; it is an involuntary action thought to be caused by pain in a nerve supplying the face. It is correctly termed trigeminal-mediated headshaking.

The condition has been likened to trigeminal neuralgia in people. The source of the pain is within a branch of the trigeminal nerve which is a sensory nerve that receives information from the head and sends messages to the brain. In headshaking syndrome this nerve is hypersensitive and reacts strongly to small levels of stimulation that would normally not cause

pain. Nerve pain is described by people as itching, tingling, electric shock-like sensations, which could explain the sudden violent reflex actions exhibited by headshaking horses.

## Which horses are affected?

Headshaking is reported to affect 1-4% of horses in the UK and appears to affect horses worldwide. The average age of onset is between 5-12 years although it can occur at any age. For reasons currently unknown, geldings may be more susceptible. The condition has been reported in most breeds and affects horses in most equine disciplines.

## What to look out for:

There can be a huge spectrum in the severity of clinical signs shown by each case. Some may just show an occasional twitch whilst others become extremely distressed and are dangerous to handle and ride. Cases may be continuous or intermittent with approximately 60% of cases showing seasonal signs in which they headshake only at specific times of year, usually spring and summer, and then enter a period without any clinical signs in the winter (remission).

### The most common clinical signs are:

- Repeated, involuntary, sudden and violent vertical movements of the head. Often described as 'acting like a bee flew up the nose'. Movements are usually worse during exercise.
- Rubbing nose and muzzle on foreleg - this can become so severe that affected cases may inflict considerable trauma to themselves with abrasions on their muzzle or limbs.
- Sneezing, snorting, runny eyes, runny nose.
- Photophobia (increased discomfort in bright sunlight and wanting to seek shade).

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**'Headshaking is usually a diagnosis of exclusion and requires many other conditions to be ruled out.'**

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## Reaching a diagnosis:

Headshaking is usually a diagnosis of exclusion and requires many other conditions to be ruled out. Occasionally a diagnosis may be reached by assessing clinical signs only; however the following steps usually need to be undertaken:

### 1 Clinical history

Your vet will take a careful history including how long you have owned the horse, when the signs started and if there are any trigger factors. Making a 'headshaking diary' prior to your vet's first visit including weather conditions (sunlight, rain, wind, pollen), intensity of flies and diet each day with a corresponding 'number of head shakes per minute' at rest (if applicable) and exercise can be very helpful.

### 2 General clinical examination

A full clinical examination including examination of the ears, eyes, mouth and back will be completed to rule out other possible causes. If it is safe to do so, the vet may also want to see the horse ridden or exercised.

### 3 Further tests

If no significant abnormalities are found on a general clinical examination then further investigations will be required. **These often include:**

- Endoscopic (camera) examination of the nasal cavity and throat.
- Radiographs (x-rays) of the head and sinuses.
- Nerve block of the trigeminal nerve (injection of local anaesthetic behind the eye to abolish sensation from the trigeminal nerve). If the headshaking signs improve after this nerve block then a diagnosis of 'trigeminal mediated' headshaking can be more certain.

### 4 Computed Tomography (CT scan)

Occasionally a CT scan (Figure 1) may be required and is usually performed at a referral centre. A CT scan is gold standard for head imaging and is especially important if electrical nerve stimulation is being considered.



**Figure 1:** A CT scan is gold standard for head imaging (Photo courtesy of Dr Veronica Roberts)



**Figure 2:** Nose nets can improve symptoms in 75 % of cases (Photo courtesy of Dr Veronica Roberts)



**Figure 3:** Horse receiving EquiPENS therapy

## What treatment options are available?

The majority of headshakers are managed rather than cured as most current treatments have little effect on correcting the trigeminal hypersensitivity. The most common options for management and treatment are:

### Home treatment and management:

- minimise known trigger factors such as avoiding bright sunlight or use a UV blocking face mask
- use of a nose net (Figure 2) has been shown to improve symptoms in 75 % of cases. Nose nets are thought to work by dampening down the nerve response by the contact of the material with skin (similar to when you bang your elbow and you rub it to make it feel better)
- fly control
- acupuncture

### Medical treatment:

There are a large number of medical treatment options available; however, there is a very variable response to treatment and possible side effects to each drug. The most common drugs trialled in headshaking cases are:

- antihistamines such as chlorphenamine maleate or cyproheptadine
- magnesium supplements
- melatonin
- tegretol, carbamazepine, penobarbitone or gabapentin
- pulsed steroid therapy

### Surgical treatment:

Surgical treatments including cutting the infraorbital nerve and implantation of a platinum coil have been trialled. However these are now not recommended as recurrence of headshaking, severe pain and self-trauma were reported.

### EquiPENS™ therapy:

Percutaneous Electrical Stimulation (PENS) therapy was pioneered by Dr Veronica Roberts MRCVS from the University of Bristol. The procedure involves the electrical stimulation of the trigeminal nerve and aims to re-set the threshold level for nerve firing to normal and hence normalise the facial sensations experienced. The safe procedure involves placing a probe directly over the nerve and stimulating it for a set period of time (Figure 3). It is performed in the standing sedated horse usually three times during a 15-day period and repeated if and when necessary. Current research suggests that 30% of those treated go into remission after three procedures with some still in remission over three years later. Of those that relapse, 80% go back into remission after another procedure.

### Euthanasia:

Severe cases of headshaking may have a considerable welfare impact on the horse, preventing them from performing even simple activities such as eating. Cases may cause significant self trauma or become too dangerous to handle. In these cases the horse may need to be euthanised.

### Grading:

- 0 no headshaking
- 1 mild and does not affect ridden exercise
- 2 headshaking at exercise enough to make ridden work impossible or dangerous
- 3 headshaking at rest



### Key Points:

- involuntary, vertical flick of the head and nasal irritation
- often worse during exercise and in the spring/summer
- associated with pain within the trigeminal nerve
- diagnosis often requires multiple diagnostic tests which may require referral to a specialist
- there is currently no reliable cure but most cases can be managed with nose nets, medical treatment or electrical stimulation



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