SPRING EDITION 2011

# Equine MATTERS

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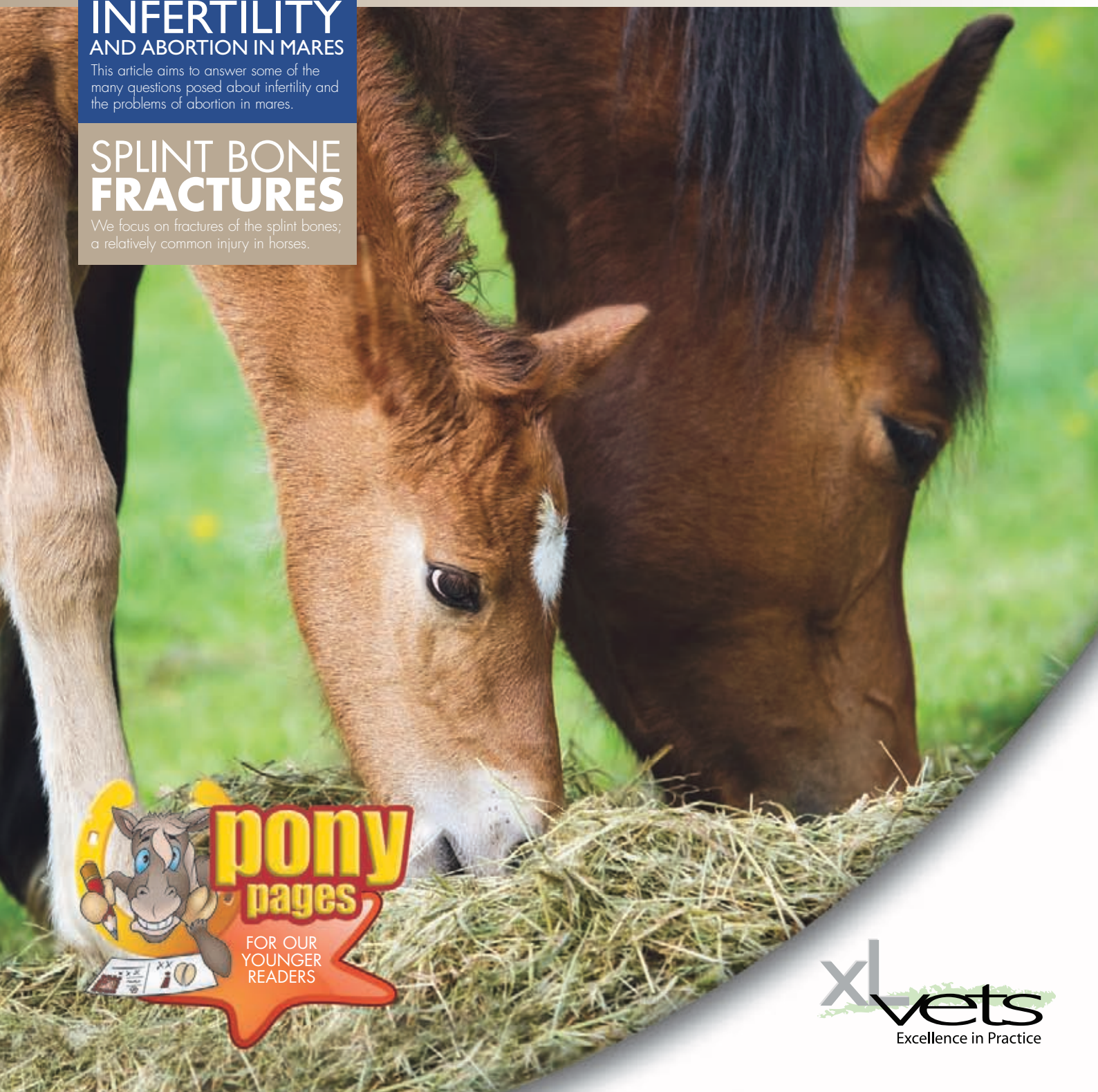


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Equine Matters is published by:
XLVet UK Ltd, Carlisle House
Townhead Road, Dalston
Carlisle CA5 7JF
Tel: (01228) 711788
*This publication is supplied free of charge to equine clients of XLVets member practices.



THE EDITOR

# Welcome to the 'First' issue of Equine Matters...

Welcome to XLVets equine newly revamped newsletter for 2011- Equine Matters. The magazine will continue to evolve over this year and Liz Jackson will be taking over as the new editor. If you have any ideas or wish to submit pictures please forward them to the XLVets office. We hope that you are all enjoying riding again after the enforced rest for many horses with the snow at the end of 2010 and everyone is looking forward to the new season. As always if anyone has any queries arising from these articles please contact your local XLVets practice where your vet can discuss them further.

**Wendy Furness** MA VetMB CertEP MRCVS
Scarsdale Veterinary Hospital

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SPRING FEATURE 05

## A modern approach to worming horses...

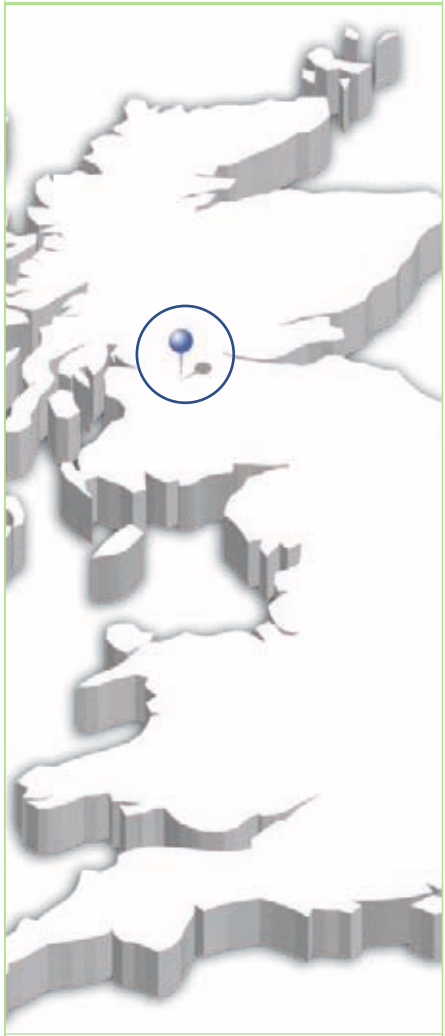
We review three main areas where those of us who keep and care for the horse need to alter our approach to worm control.

clydevetgroup

Why is it that some mares appear to fall pregnant very easily and others don't? How is it possible that your mare is pregnant at her 21 day scan but not a week later? What causes a mare to abort at 8 months despite being apparently healthy on the outside? This article aims to give a few answers to these questions, although, unfortunately, the reproductive science of horses is not an exact one.

# INFERTILITY & ABORTION IN MARES

Louise Cornish BVMS, CertEP, MRCVS Clyde Veterinary Group



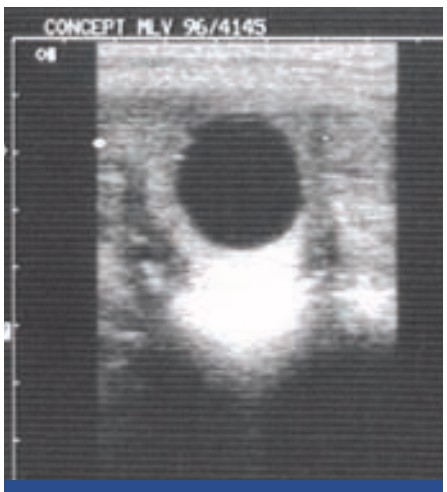

| | |
|---|---|
| Veterinary Surgeon | Louise Cornish |
| XLVets Practice | Clyde Veterinary Group, Lanarkshire |


## INFERTILITY

Mares fail to become pregnant for many reasons, some of the most common being:

- Poor timing of breeding - either too early or too late.
- Poor quality of semen - especially if chilled or frozen for artificial insemination.
- Age of the mare - older eggs are of poorer quality, and the uterine lining can become scarred with age, even in a maiden mare.
- Malnutrition or obesity - mares should be lean and receiving good quality feeding.
- Endometritis - inflammation within the lining of the womb, which may be either present long-term due to infection or brought on by semen irritating the endometrium after breeding.
- Infectious disease, such as Contagious Equine Metritis (CEM) or Equine Viral Arteritis (EVA).

It is important to remember the pregnancy rates which exist, even when conditions for breeding are ideal. Approximately 60% of young, healthy mares which are provided with fresh good quality semen conceive on their first service or covering. So, say you start with 100 mares, 40 are left empty. At the next attempt, 60% of these 40 are likely to conceive, leaving 16 not in foal. If a third attempt is made, statistically 6 mares are likely not to be pregnant. By this time, there should be strong suspicions that something is going wrong with the stallion, mare or covering/insemination regime, but you may simply be unlucky enough to have one of the 6 mares in our scenario which have happened not to conceive!




Ultrasound of a 15 day pregnancy

## POSSIBLE VETERINARY INVESTIGATIONS:

- Vaginal examination
- Clitoral or uterine swabbing
- Ultrasonographic examination
- Endoscopic examination
- Uterine biopsy
- Blood sampling

## EMBRYONIC OR FOETAL LOSS

Unfortunately, loss of a developing foal is not uncommon, especially at the early stages of pregnancy. If the embryo dies before 80 days of age, it will probably be resorbed by the uterus (womb) of the mare, and no outward signs of abortion will be present. After 80 days, the foetus and placenta will usually be expelled via the vagina. There may or may not be any traces of the abortion having taken place, depending on the amount of blood or discharge present and the management of the mare. It is, therefore, relatively common for a vet to be called to examine a mare which is overdue for foaling, only to discover that she is no longer pregnant despite a positive scan the previous spring.

An aborting foal can be dangerous for a mare, especially in the last few months of pregnancy, as the foal may not present in the normal position. It is also very common for the placenta not to be passed as normal, resulting in Retained Foetal Membranes (RFM), which can quickly lead to toxaemia and laminitis.

Causes of embryonic or foetal loss include:

- Abnormal genetics - the womb of a mare may 'recognise' abnormal chromosomes in a young embryo and terminate the pregnancy.
- A poor uterine environment - multiple large endometrial cysts, uterine infection or scarring prevent a 17 day old embryo from successfully implanting into the wall of the womb.
- Fixation in the wrong part of the uterus - such as in the horn tips or in the uterine body.
- Severe stress, trauma or malnutrition - fairly uncommon causes in reality - although often blamed.
- Pyrexia (fever) in the mare due to an unrelated infection - such as influenza or strangles.
- Insufficient amounts of progesterone - there is little evidence to suggest that poor production of this hormone by the ovaries is a common cause of miscarriage, but oral supplementation with a synthetic equivalent is sometimes recommended, especially if a blood sample has shown low progesterone levels.
- Placentitis - bacterial infection of the placenta usually develops due to infection creeping up through the cervix from the vagina, especially in the later stages of pregnancy.
- Twins - a mare's uterus has evolved to carry only one foal to term, and less than 5% of twin pregnancies will result in two live foals. Of the other 95%, many will safely lose one embryo very early on in the pregnancy, but about a third of mares will abort both foals in the last trimester. This is distressing for all concerned, as well as being dangerous for the mare, as difficult births and RFM are common.
- Equine Herpes Virus (EHV-1) - this virus causes respiratory disease and is often referred to as 'the cold' in equine circles, but also causes abortion in the second half of pregnancy in mares.
- Equine Viral Arteritis (EVA) - this virus is not normally present in the UK but is occasionally found in imported mares or stallions and is notifiable. A vaccine is available for use in stallions but must be obtained under licence.


Ultrasound of a 40 day pregnancy

## WHAT CAN I DO TO REDUCE THE LIKELIHOOD OF MY MARE ABORTING?

- Arrange a pre-breeding check from your vet to pick up abnormalities that can be addressed before conception
- Two ultrasonographic scans before 35 days gestation to detect twins
- Provide good quality nutrition but avoid too much weight gain
- Encourage regular but not excessive exercise
- Ensure she has a relatively stress-free and hygienic environment
- Keep brood mares separate from horses that are regularly travelling to competitions/riding club
- Vaccinate for EHV-1 at 5, 7 & 9 months of pregnancy

## IF YOU SUSPECT THAT YOUR MARE HAS LOST A FOAL...

If you do suspect that your mare has lost a foal, it is highly recommended that your vet examines the mare for her own safety. If you do find the foal and/or afterbirth, keep them so that your vet can examine them too - it may be possible to make a diagnosis as to the cause of the abortion, or they may be sent to a laboratory for further tests. This is especially important if there are other pregnant mares on the premises.

Depending on the cause of the loss, your vet may be able to advise you as to whether it would be wise to attempt to breed the mare again on another occasion.

Julian Rishworth BVetMed, MRCVS

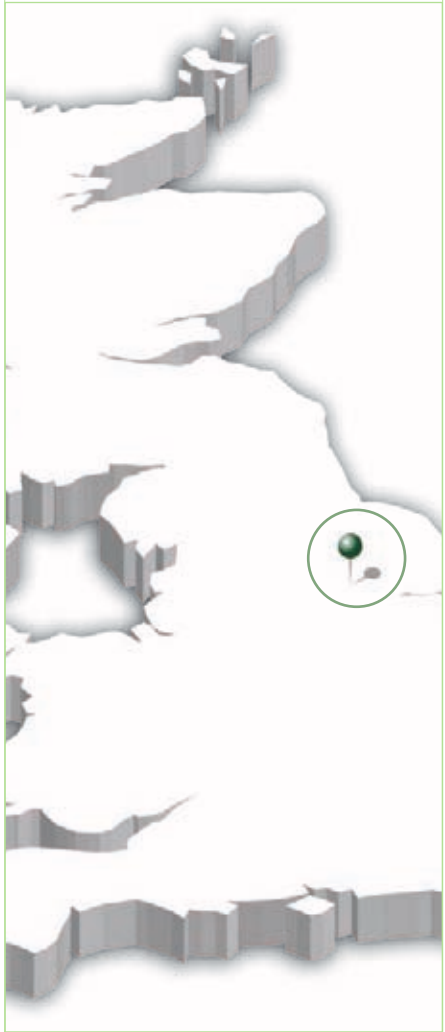
# A modern approach to worming horses

Like the action required to arrest the problems with global warming, we all have a fair idea that it is important, we all would like to do our bit to help but actually doing everything we should do is more difficult to achieve in real life. Worming horses has become such an integral part of the keeping of horses that horse owners have become very entrenched in their own traditional methods of worm control.

Everyone in the horse industry has become too over-reliant on the use of anthelmintics (wormers) as the treatment of choice for controlling worms in our horse population. The drugs we have had available have been a pretty efficient way of removing worms from the horse, however, when you keep attacking a worm population with highly effective products over a long period of time you pressurise that worm population to produce resistance to those products.

We are now at that stage where resistance to the worming medications we have available is becoming more and more common. It is not the worming products that are getting weaker; it is the worm population that is becoming stronger. The other problem we have is that there are not lots of new chemicals being developed that can help deal with these resistant members of the worm population.

It is not total doom and gloom and there are still things we can all do to improve the way we manage the worm burdens in our horses and at the same time ensure that we can extend the effective useful period of the drugs we currently have available.



Veterinary Surgeon Julian Rishworth

XLVets Practice Minster Equine Veterinary Clinic, York

## JULIAN RISHWORTH

...One of the new ideas we need to embrace is the concept of horses having an acceptable level of worm burden. We need to realise that the presence of a few worms in our horses may actually be a good thing.

The XLVets Equine Forum has done a lot of work to develop a modern approach to worm control in the horse, in conjunction with Professor Chris Proudman, a recognised world authority on the subject. There are three main areas where those of us who keep and care for the horse need to alter our approach to worm control;

- Effective pasture management
- Identifying those horses with significant worm burdens
- Appreciating what is an acceptable level of worm burden in the horse

### Effective Pasture Management

Pasture management alone can be a highly effective method of worm control for the horse. The life-cycle of worms requires eggs passed in the faeces to contaminate the pasture, whereby the larvae from the hatched worm eggs can go on to re-infect that, or other horses. Efficient removal of the faeces from the pasture is a great method of breaking that life-cycle. Many owners do clear droppings from the pasture and traditional advice has been that this should be done twice a week. Many owners who, for whatever reason, cannot achieve this rate of pasture clearance may not be motivated to use this highly effective method of control. Recent research has shown that clearing the droppings even on a less frequent basis, up to once per fortnight can still be highly effective at controlling horse worm burdens. If the stocking density is high then more frequent clearance of droppings may be necessary, but, for average stocking densities (1-2 horses per acre) once a fortnight clearance of droppings is highly effective and a much more achievable target for most horse owners.

### Faecal Worm Egg Counts (WEC)

Measuring the concentration of worm eggs in the horse's faeces can not only tell us a how severe an infestation of worms that particular horse has, but it can also be used to measure how effective the anthelmintic (wormers) drugs are being.

In any group of horses there are usually only a few (10-20% or 1 or 2 out of every 10) that are significantly contaminating the pasture with a high concentration of worm eggs in their faeces. Performing WEC's allows us to identify which of the group of horses have these high concentrations of worm eggs in their faeces, so we can target our treatments at these horses. A lot of owners believe that they need to try to keep their horses 'worm-free' and the aim of their worm management programme is to try to achieve this. One of the new ideas we need to embrace is the concept of horses having an acceptable level of worm burden. In the same way that we recognise that trying to rid the human body of all bacteria is not only impossible but also really bad for our health and well-being. We need to realise that the presence of a few worms in our horses may actually be good for them. There is research to suggest that acceptable levels of worms in horses may help prevent nasty conditions such as Grass Sickness and research from human medicine points to low levels of worm burdens being protective against allergic respiratory conditions such as asthma. As more and more work is done in this area, there is likely to be more valuable information like this.

Worm egg count (WEC) results in the region of 200-400 eggs per gram of faeces should be considered as acceptable and only horses returning results higher than this will require treatment with a wormer.

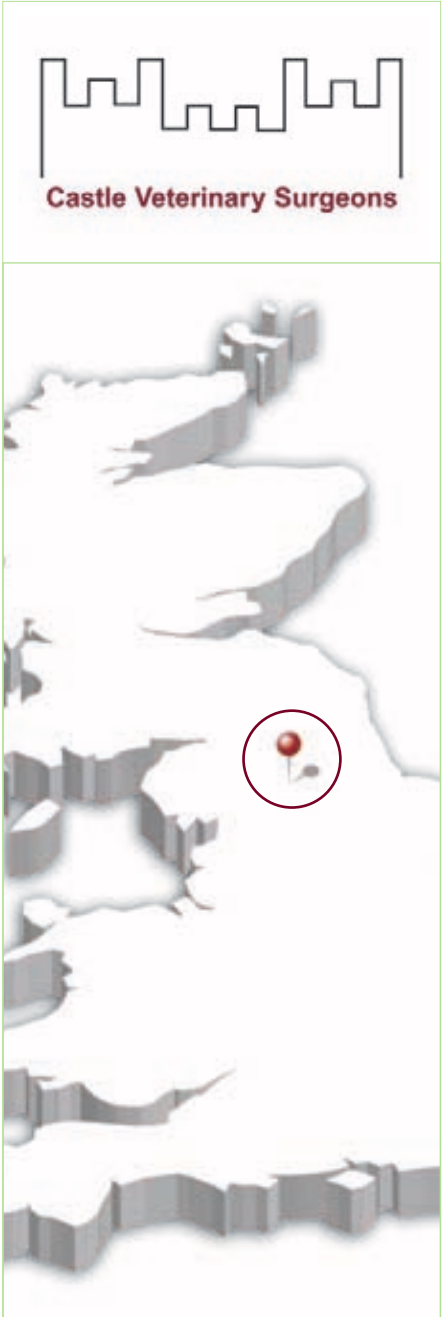
Another use of the WEC tests is to measure the effectiveness of the wormers we use to treat the horses. If a faecal sample is tested 2 - 4 weeks after a treatment with a wormer and the result is not zero, then there is a strong suspicion that there is a resistance problem in the worm population, on that premises, to the wormer used. This is valuable information which vets can use to help formulate and adapt the worm control programme on that premises. Using WEC's as part of the standard worm control programme for our horses is something we are all going to have to get used to and the ability to identify those horses that actually need treatment and only treat those horses is not only a more efficient use of the worming drugs, it also makes financial sense, too. Nobody would think it sensible to treat our horses with antibiotics every 6 weeks just in case there might be an infection, so we need to appreciate the way we have been used to using anthelmintics (wormers) is similarly inappropriate.

The XLVets Equine Forum has produced a booklet entitled 'Effective Worm Control in Horses' which is available from your local XLVets practice. The booklet explains in detail, the modern approach to worm control and shows plans for different age groups of horses. If you need further advice your vet will be happy to discuss a programme with you.

# Splint Bone Fractures

Ben Sturgeon BVM&S, BSc, CertEP, MRCVS Castle Veterinary Surgeons

Metacarpal and metatarsal bones II and IV (splint bones) are rudimentary ancestral structures found pairing each cannon bone. Anatomically the bones support the lower rows of hock and knee bones and are attached to the cannon by a thin interosseous ligament. Fractures of the splint bones are a relatively common injury. They may result from direct external trauma (usually kicks) but may also be secondary to abnormal internal forces, most commonly associated with suspensory ligament desmitis (swelling of the ligament), particularly in horses that race over fences.




| | |
|---|---|
| Veterinary Surgeon | Ben Sturgeon |
| XLVets Practice | Castle Veterinary Surgeons, Durham |

The fractures can theoretically occur on any of the splints, although those associated with internal forces are more commonly found in the forelimbs, with the left fore being more frequent on the outside splint and the right fore on the inside splint. This may be associated with counter-clockwise work (most research has been carried out in racing Thoroughbreds) resulting in increased loading on these areas. Here the distal ends of the splints attach to the proximal sesamoid bones by fibrous bands which may stretch during fetlock hyper or overextension commonly when the leg is fully weight bearing and the fetlock is at its lowest point of the stride. This resulting 'tug of war' stresses the attachments predisposing to fracture generally in the lower third of the bone. Suspensory desmitis may also precede or go hand in hand because of similar stresses being placed on the structure, the resultant swelling creating a 'bowstring' effect from the enlarged suspensory leading to a progressive deviation of the splint away from the cannon. Poor knee and/or foot conformation will further exacerbate or predispose to the condition.

Kicks are the more common presentation with wounds often being open and discharging with heat and swelling and the horse will be obviously and acutely lame. Occasionally, a chronic low grade lameness or discharging tract are found weeks after a trauma which prompts investigation and the finding of a fracture.

Irrespective of the aetiology, wound assessment and classification of the fracture itself, along with any potentially involved surrounding structures are vital before any treatment is discussed and implemented. This is primarily achieved by radiographic evaluation combined with ultrasound of the ligamentous attachments. X-rays will invariably reveal the fracture often in pieces (comminution) although the basic axial alignment of the bone and fragments is still usually present, the presence of infection, displacement of the fractured portion and involvement of the cannon can also be discerned. Furthermore, x-rays may reveal pre-existing abnormalities of the splints (callus formation) suggestive of long-term suspensory ligament problems.

Irrespective, the first and most important consideration to be made (from the radiographs) is whether the affected splint is stable or not. Fractures of the upper portion, invariably due to kicks, may result in instability of the carpus or hock (particularly of the inner splints of the forelimbs), long term resulting in interosseous ligament damage, osteoarthritis of the joints or even avulsion (dislocation) of the upper portion of the splint. In such cases surgical fixation would be necessary to fix the splint to the cannon bone using a combination of screws and steel plate (figures 1 and 2.) Where infection is present or suspected, fixation techniques may be withheld until the infection is cultured and resolved by use of appropriate antibiosis.

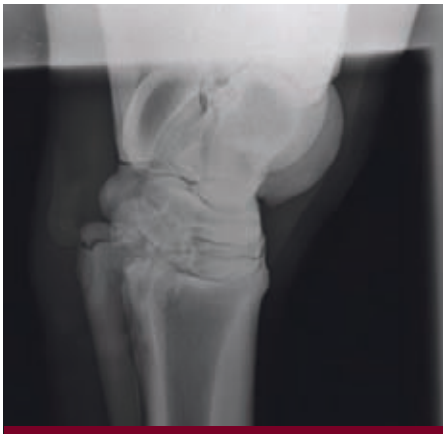


*Figure 1: Fractured head of splint*

*Figure 2: Post-operative radiograph following stabilisation*

## Treatment of a non-infected splint bone fracture

If the fracture does not affect stability, is non-infected, and is simple (the bone fragments are relatively unified) then treatment is generally conservative with heavy supportive bandaging and a period of enforced rest (12-14) weeks with regular radiographic re-evaluations to assess the quality of healing before embarking on a controlled exercise programme following conformation of satisfactory healing figures 3, 4 and 5.)


*Figure 3: Mid body fracture following kick*


*Figure 4: Healing at 6 weeks*

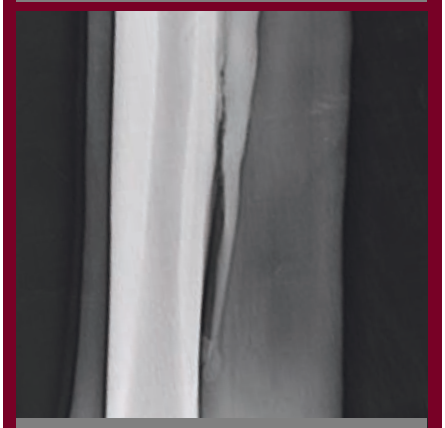


*Figure 5: Healing at 12 weeks*

Occasionally, despite appropriate rest and support the healed fracture callus may still result in a callus which irritates the suspensory ligament causing a mild lameness. Surgical debridement of the callus may be necessary, although injection of local anti-inflammatories may suffice.

Where the fracture is thought to be secondary to internal forces, treatment may be either conservative or surgical, with many advocating rest to allow the often concomitant ligamentous damage to resolve; if however the fractured fragment is avulsed or demonstrating poor quality healing then surgical ostectomy is again advocated with removal of the bottom piece of bone, along with torn ligaments and rounding of the remaining portion. Occasionally, involvement of the splint, suspensory ligament and the proximal sesamoid bones is seen (often called the three S's) and all three need to be evaluated before the appropriate treatment and prognosis is decided upon and given.

Periodically, trauma may result in infection and/or discharge either through introduction of bacteria or through sequestration (bone fragment death). In such cases antibiotics and flushing are advisable although surgical debridement of the wound or removal of the distal fragment and bony pieces may be necessary irrespective of the site of the fracture (figure 6 and 7).


*Figure 6: Unstable mid body fracture*

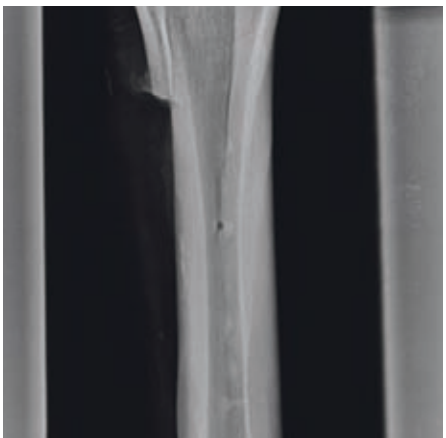


*Figure 7: Intra-operative radiograph following resection*

## THE PROGNOSIS

In the vast majority of cases the prognosis for return to previous work is good, irrespective of whether the treatment employed has been surgical or conservative. The overriding factor affecting prognosis is whether or not the suspensory ligament is damaged highlighting that ultrasonographic evaluation of the suspensory early on in diagnosis and treatment is advisable as well as regular lameness evaluations during the recovery course (3 - 6 months). This may elicit an earlier surgical interference, indicate the need for adjunctive therapies such as extracorporeal shock wave therapy or steroid injections, or simply alter a prognosis and the client/patient expectations.

# Equine Influenza (Flu)

## A viral disease of horses worldwide...

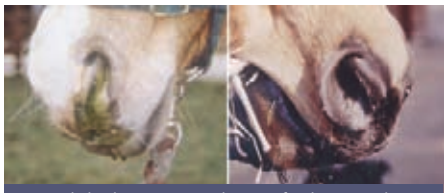
Equine Influenza (Flu) is an important viral disease of horses worldwide. The disease is caused by Equine Influenza Virus, which is related to the virus which causes outbreaks of human flu every year. The virus mainly affects the respiratory system and can cause fever, lethargy, poor appetite, nasal discharge and a harsh dry cough. The majority of affected horses recover within a few weeks. However, secondary complications due to bacterial infection can lead to pneumonia and very severe, even fatal, disease in some horses. In such cases, full recovery can take several months. The disease is highly contagious and can spread rapidly from horse to horse.

## FACT...

The number of horses vaccinated in the UK is less than 40% and is declining. If this continues we will risk more frequent and larger outbreaks. Please talk to your vet about equine flu vaccination for your horse.

## Equine Flu in the UK

Flu is found worldwide, with the exception of a few countries such as Australia and Iceland. Regular outbreaks are reported in the UK, with 10 reports in 2010 (see Table 1). For this reason, it is vital to ensure that all horses are protected against this important disease. Vaccination is the best way of protecting your horse against flu, and is mandatory for any horse competing under Jockey Club or FEI rules.



*Nasal discharge, typical sign of a horse with Equine Influenza.*

## Flu is evolving...

One of the characteristics of the viruses which cause human and equine flu is that they tend to mutate and change over time. This can cause problems with vaccination, as the strains of flu in the vaccines can go 'out of date', which may result in less effective protection against disease. This is the reason why human flu vaccines are updated every year. It is also recommended that equine flu vaccines are updated regularly, to ensure the closest possible match between the vaccine and the strains of flu virus circulating in the environment.

### 'Why should I vaccinate?' I hear you cry!

Firstly your horse will feel exactly the same as we do when we have the flu - rotten. Also, in becoming infected your horse stands a real chance of infecting many others with the virus. Finally, as you are all probably aware, to compete with your horse you will need an up to date passport demonstrating your horse's up to date vaccination status.

**Table 1:** Equine Flu outbreaks in the UK in 2010

| |
|---|
| On **May 11th 2010** |
| Equine flu was diagnosed in LINCOLNSHIRE |
| On **May 21st 2010** |
| Equine flu was diagnosed in SHROPSHIRE |
| On **June 8th 2010** |
| Equine flu was diagnosed in SURREY |
| On **July 15th 2010** |
| Equine flu was diagnosed in NOTTINGHAMSHIRE |
| On **August 13th 2010** |
| Equine flu was diagnosed in NOTTINGHAMSHIRE |
| On **August 16th 2010** |
| Equine flu was diagnosed in WORCESTERSHIRE |
| On **August 25th 2010** |
| Equine flu was diagnosed in SOUTH LANARKSHIRE |
| On **September 2nd 2010** |
| Equine flu was diagnosed in HAMPSHIRE |
| On **September 3rd 2010** |
| Equine flu was diagnosed in CUMBRIA |
| On **November 3rd 2010** |
| Equine flu was diagnosed in LEICESTERSHIRE |

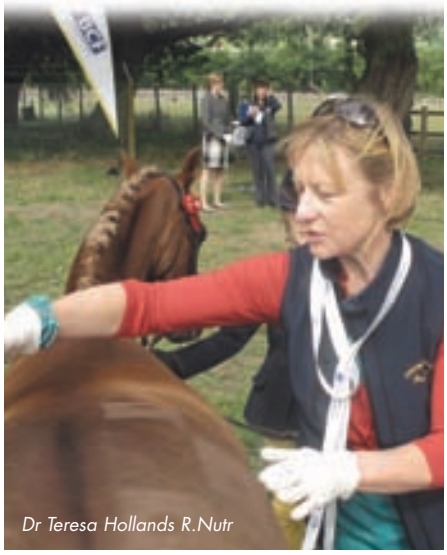
## Benefits of vaccination

The benefits of vaccination were demonstrated very publicly during the 2007 Australian Equine Influenza outbreak. The horse population in Australia had never been exposed to equine flu before and as such, no horses had been vaccinated. Some infected horses entered an Australian quarantine station near Sydney and the virus escaped. The infection spread rapidly and over 76,000 horses became infected, located on more than 10,000 premises throughout Queensland and New South Wales. Vaccination, along with the restriction of horse movement, stopped this infection in its tracks and prevented the flu virus from spreading all over Australia.

PART 2
OF A TWO PART SERIES

An insider's view on the life and management of the mature horse... As told to Dr Teresa Hollands R.Nutr

# An old codger's blog


Dr Teresa Hollands R.Nutr

## Forage and occupational therapy

Something owners need to remember is we do like to be kept occupied. I've more time on my hands now and standing around in a bare paddock, (beats being stuck in a stable, better for my joints and my brain) without some hay is deadly.

I know that there are rumours about hay shortages this year, but we've lived through several of these shortages (1977, 1994, 2006) and it's never as bad as the headlines suggest. BUT, I have a psychological need to chew and if she restricts the grass too much and doesn't give me hay, then I'll eat her fence posts and the bark of the trees. OK I understand why she restricts my grass as I do have a tendency to gain weight now I am no longer hacking to shows.

But the latest research has shown that if you restrict fibre then you increase the risk of

- wood chewing, (Walters)
- gastric ulcers, (Murray)
- colic, (Hillyer)

So what she needs to do is soak my hay for 12hrs and then let me have enough so that there is always a wee bit left when she comes to give me my next lot. Soaking hay for 12hrs gets rid of most of the calories, but it also leaches out the protein, vits and mins…so I need a balancer, (shhhh don't tell anyone but I swear by Ultimate Balancer…..it has loads of stuff in it, but is so low in calories and gives me little or no starch so I can just keep eating my fibre)


The Mature Horse...

## When are we old?

The researcher who found that we need more and different nutrients back in the 80s, (Professor Sarah Ralston) has done more work; she now knows that because we are looked after so much better that the different nutrient requirements don't exist. Really we only need a special feed like 16+ when we show signs of aging such as weight loss, problems chewing and stiffness.

### WHEN WE ARE OLD?

Work carried out by a team at Liverpool University Vet School, Leahurst (supported by The Horses Trust) was presented by Jo Ireland at BEVA. She researched a group of old horses to characterise what being old in horse terms means.....humph

### Did you know?

- 96% of old horses had dental abnormalities (average age = 20yrs but varied between 15-40yrs)
- 26% of us are overweight, with only 4.5% being underweight
- Scarily 49% of us were lame in trot... and our owners often didn't realise
- 18% of us had curly coats (hirustism)
- 80% of us had hoof abnormalities

Guess the most significant effect on us in terms of what makes us old, is when the old teeth wear out. Then we can't eat hay anymore and it doesn't really matter what fancy feed they give us; it is VITAL that they sort out a fibre replacer first.

I've a stablemate, who's 30, and I have to keep an eye out for the old chap, he's started quidding and his muscle tone is going, well his owner doesn't ride him anymore and you know what they say,; 'if you don't use it, you'll lose it'. I'm hoping my 'Mistress' gets her Mum to call the D&H helpline to chat about hay replacers.

### The best one I know about is...

- High Fibre Nuts (damped just to make them soft)
- Kwick Beet or unmolassed sugar beet shreds
- Alfalfa chaff or Just Grass (no straw chaffs, can't chew them well enough)
- Start with a small handful of each in a feed bucket and gradually increase over 14 days
- Probably will need 600g/100kg body weight of each product, so you are eating 1.8% of your bodyweight as forage
- Remind your mum that this is the equivalent of half a bale of hay a day, so there will be loads, but we need that amount!
- If you've got diastemas (and the latest work from Liverpool University found that 43% of us do) then you can't eat short or long fibre - it just gets stuck!!

Don't know if you had time to see the BBC programme on the 'Young Ones'? It followed humans in their 70's and 80's and showed how by taking a positive attitude, moving more, being independent, having to think for oneself and not be mollycoddled, improved their cognitive and fitness levels within just one week!!

So to keep me sprightly, please treat me like a younger horse, whilst keeping an eagle eye for me getting too fat or stiff...

It's not complicated being old really, (middle aged)...just keep us warm and give us shelter, loads of low calorie forage and a decent feed balancer. If we are unable to eat forage then get us onto a hay replacer and an old horse diet. In light of that new survey, then please get my teeth and feet done regularly by a professional; also get the vet to do me an MOT every year, even if there appears to be nothing wrong; prevention is better than cure.

Let us keep moving around and please don't make us fat; it shortens our life. And me? Well I've loads of rosettes yet to win and a filly or two to meet!

Richard Morris BSc, BVetMed, CertVD, MRCVS

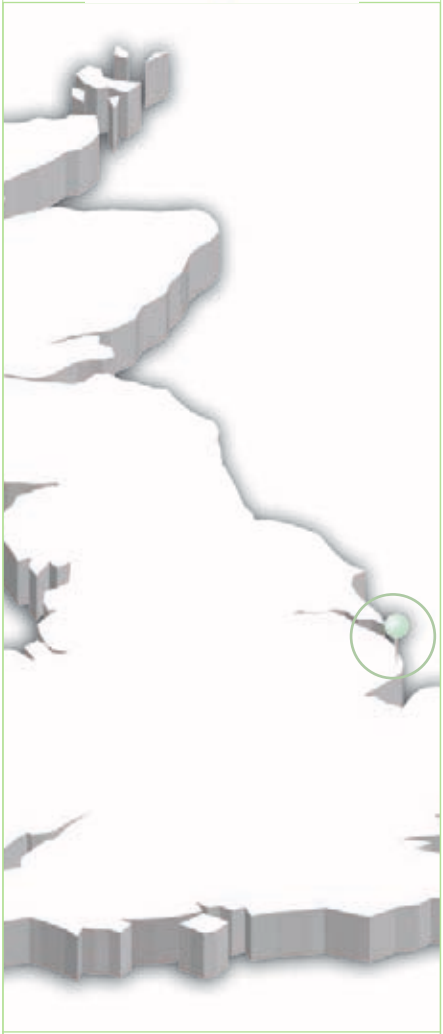
# Allergic Skin Disease in Horses...

An **allergic reaction** is an inappropriate reaction of an individual animal's immune system to a harmless agent that it is exposed to which, the majority of animals would not react to.

There are many agents which cause allergic skin disease in animals but they could be broadly categorised into insect bite reactions, food allergies, contact allergies and allergies to environmental agents such as pollens, dust mites or mould spores.

In most individuals an insect will bite an animal to suck its blood, at the same time it will leave a small amount of its saliva which is normally absorbed by the body in a short period of time. However some individual animals have an immune reaction which causes an excessive reaction to the insect saliva, causing the skin to become very itchy. The animal then rubs and scratches itself making large sore patches. A good example of this in horses is Sweet Itch in which ponies that are allergic to the bites of midges or Black Flies (Culicoides), rub themselves raw on the tail and mane and under the belly.

This has a hereditary component and is seen particularly in certain breeds such as Shires, Icelandic and Welsh ponies. The midges are particularly prevalent near areas of free standing water and when there are low winds in the early morning or late evening in summer and autumn. Management therefore involves preventing the midge from biting so having horses stabled between 4pm and 8am and covering the animal in a shroud/hood can help (e.g. The Boet Blanket). A fine mesh screen over stable windows, having fans in the stable to create a breeze, and using fly repellents can help. Anti-inflammatory medication includes glucocorticoids; oral preparations can precipitate laminitis, but topical preparations can be beneficial. Desensitisation using an allergy vaccine has been investigated and the results are still being analysed so no commercial preparation is available yet.



Veterinary Surgeon Richard Morris

XLVets Practice Fenwold Veterinary Practice, Lincolnshire

*Horse with Sweet Itch*

Another allergic reaction to an insect bite is Hives or Uritcaria in which a sting from a bee or wasp causes large swellings to appear all over the body. In the case opposite the head had swollen up and the nose band of the head collar had left an impression where it had become tight and prevented further swelling. This resolved after being given intravenous medication but caused the horse considerable distress at the time.


*Horse with Uritcaria (Hives)*

## ALLERGIC TO MEDICATION

Some horses can be allergic to certain drugs; when given medications which would not affect normal individuals, they react in an adverse way potentially causing some serious reactions. The following case developed large areas of irregular bumps in the skin following the administration of a routine wormer, the reaction went down after a while but the owner was careful to avoid any similar wormers again.

## ENVIRONMENTAL AGENTS

Allergies to environmental agents can be either from direct contact or by a systemic reaction once the allergen has been inhaled. Some animals develop an allergic reaction to something their skin comes into contact with such as certain types of bedding.

The horse below came out in large skin reactions when its bedding was changed from wheat to barley straw. The lumps went down with treatment and changing the bedding, but relapsed once exposed to Barley Straw again.


*Reaction to a bedding change from wheat to barley straw*

The predisposition to allergic symptoms following repeated exposure to inhalant allergens is called Atopic Dermatitis and Arabians and Thoroughbreds appear to be predisposed to the condition. Common allergens include: pollens, moulds, and Dust Mites, and the reaction causes intense itching. The horse bites at itself and rubs itself on fences and stable walls causing self inflicted damage with hair loss and ulcerated skin lesions. The disease can be investigated by allergy testing where extracts of common environmental agents are injected into the skin and the reaction measured. The following horse was identified as being allergic to Dust Mites and once kept out at grass and the exposure to stable dust reduced its condition improved.

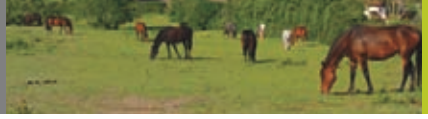

*Horse allergic to dust mites*


*Allergy testing*

Reducing the exposure of an animal to the allergens by regular shampooing with a mild soothing shampoo can also be beneficial and corticosteroids in the short term to suppress the sensitivity of the skin to the allergenic agents is helpful, but long term use can be harmful with side effects including Laminitis and liver damage.

## CONCLUSION

So there are a wide variety of allergic reactions horses can develop producing a range of clinical signs. Painstaking investigation to get to the bottom of the cause can be very helpful in managing the problems and allowing the horse to continue a comfortable life.



Mark Tabachnick BVM&S, BSc, CertEP, MRCVS

# Airway Anatomy

The horse's airway is divided into the upper respiratory tract; which starts at the nostrils and ends at the larynx at the back of the throat, and the lower respiratory tract; the trachea and the lungs.

## The nostrils

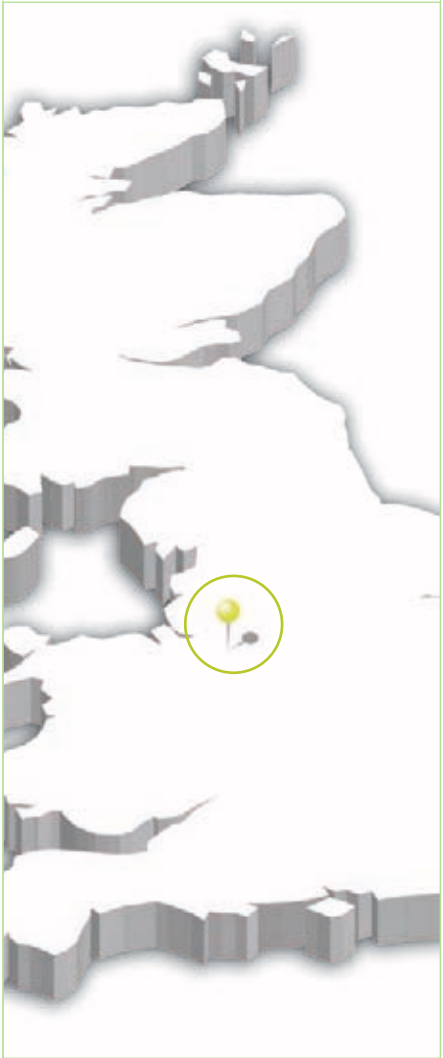
Horses' nostrils are naturally very large, but are also very flexible. They are supported by a cartilage called the alar cartlilage, and have a well developed muscle attachment. This means at strenuous exercise, they are capable of massive dilation to allow in more air. Within the nostril there is a blind ending pouch called the false nostril, which appears to have no anatomical function.

## The nasal cavity

The nasal cavities stretch from the nostrils to the throat. They are divided into a series of narrow passageways by thin strips of bones called turbinates. In between the turbinates are a series of passageways where the air runs freely. The turbinates are lined by a layer of tissue with a good blood supply called mucosa. This functions to warm and moisten the air before it reaches the lungs.

The nasal cavities overlie the tooth roots of the horse's molar teeth, and are closely connected to the sinuses. The sinuses are a series of air filled chambers within the horse's skull. Their exact function is unknown. They may have evolved to allow the bony skull to be relatively light. The sinuses communicate with the nasal cavity via a small opening.

At the back of the nasal passages are a number of mushroom shaped projections called **ethmoturbinates**. These are important for the horse's sense of smell.




| | |
|---|---|
| Veterinary Surgeon | Mark Tabachnick |
| XLVets Practice | Wright & Morten Macclesfield |


MARK TABACHNICK

Fact... At maximal exertion a horse can breathe in as much as 4,500 litres of air in one minute!

## The pharynx

The nasal passages enter the throat into an area called the nasopharynx. The oral cavity enters at the back of the mouth into the oropharynx. These regions then form the pharynx. Here nerve activity controls the movement of food down into the oesophagus, and the movement of air towards the lungs.

At the back of the nasopharynx are small slits, which make the openings of the guttural pouches. Guttural pouches are the enlargements of a tube that starts at the horse's inner ear. They are large cavities, and many of the most important blood vessels and nerves of the head run along their walls. Again, their function remains unknown.

## The larynx

The larynx lies at the back of the pharynx and at the entrance of the windpipe (the trachea). It is a complex arrangement of cartilages controlled by ligaments and nerves. It protects the airway when horses swallow, so stopping food entering the windpipe. It controls the amount of airflow entering the lungs. It is also involved in producing vocal noises.

The larynx does all this by using a pair of cartilages, called the arytenoids. These cartilages can move towards and away from each other to increase or decrease the size of the opening into the trachea. When a horse is eating, the arytenoids will close the opening. When a horse is exercising, the arytenoids will be raised out of the way allowing a resistance free passage for air to travel into the lungs. A cartilage flap called the epiglottis holds the horse's soft palate clear of the breathing hole.

## The trachea

Bifurcation of the trachea into the two bronchi.

The windpipe or trachea is a rigid circular tube that transports air from the larynx to the lungs. It is composed of rings of cartilage joined together by sheets of connective tissue. This means that it is very difficult for the trachea to collapse, whatever position the horse's neck is in. The trachea contains cells which produce mucus, a substance which will trap the inhaled dust and dirt, and specialised cells called cilia which have long tails. These constantly beat the mucus up into the pharynx where it is swallowed.

## The lungs

As the trachea enters the lungs, it splits into two bronchi. One bronchi enters each lung. The bronchi constantly divide into smaller tubes called bronchioles. These bronchi further subdivide rather like the branches of a tree. The smaller airways are again lined with mucus producing cells and cilia to remove trapped dust. The bronchioles can expand and contract slightly to increase or decrease the size of the airway.

At the end of the bronchioles are the alveoli. These are tiny sacs with very thin walls, with a rich blood supply. As the air reaches these sacs, the oxygen is dragged into the red blood cells in the capillary walls and transported around the body. At the same time, the red blood cells release their load of carbon dioxide which is a waste product picked up from the body tissues. The carbon dioxide is released into the alveoli.

## The pleural cavity

The lungs sit within the horse's chest cavity, lined by a thin membrane called the pleura. The pleura forms a closed sac around the lungs. This means the lung space is an area of negative pressure which allows the lungs to easily expand and contract.

The lungs are bordered by the ribs around their outside. The diaphragm is a thick muscular sheet along the bottom of the lungs which separates them from the horse's abdomen.

## Breathing

As a horse breathes, the chest wall and ribs move upwards and outwards, increasing the width of the chest. The diaphragm contracts, moving downwards, increasing the depth of the chest. This allows the lungs to expand as they fill with air, and they can now fill the larger chest cavity. Air is drawn into the lungs, and follows the passageway to the alveoli. Gas exchange occurs - oxygen is exchanged for carbon dioxide.

As the horse breathes out, the chest muscles and the diaphragm both relax. The chest cavity now gets much smaller. The elastic lung tissue now recoils. These actions drive air out of the lungs and back into the atmosphere.

# COMMON RESPIRATORY CONDITIONS

### UPPER RESPIRATORY TRACT

**Idiopathic Laryngeal Hemiplegia (ILH)**

This condition is often known as roaring or whistling. In ILH, horses lose the nerve supply to the left arytenoid cartilage. When horses exercise, they can no longer move this cartilage back and forward. It sits within the airway causing the horse to make a whistling type of noise as they breathe in at the canter. This obstruction will decrease the amount of air a horse takes in at exercise, and so may decrease their athletic performance.

**Dorsal Displacement of the Soft Palate (DDSP)**

DDSP is a condition that occurs at intense exercise, and is commonest in young race-horses and eventers. In this condition the soft palate, which is usually held in place by the epiglottis, flips out of position and billows loosely at the back of the pharynx, often blocking the airway. The condition is usually transient. Riders report that the horse was going well at the gallop until suddenly choking or gurgling and pulling up. The soft palate will often return to its usual position very quickly.

### LOWER RESPIRATORY TRACT

**Recurrent Airway Obstruction (RAO)**

This condition used to be called Chronic Obstructive Pulmonary Disease (COPD). It is often called heaves. Very commonly, this is an allergy to dust in the environment and results from horses being kept in poorly ventilated stables. Horses suffering from RAO have fast shallow breathing, can cough and be quite distressed. It can be treated by using medications which open the airways making breathing easier. Good quality air flow is the key to management. Always ensure the horse is kept in a well ventilated stable.

**Summer Pasture Associated Obstructive Pulmonary Disease (SPAOPD)**

This condition can be similar to RAO, but occurs to horses out at grass often during the summer. Horses show very similar signs to those with RAO, but are allergic to pollens in the atmosphere rather than dust. It can be managed by stabling the horse away from the inciting pollens.

# pony pages

Welcome...
TO THE SPRING 2011
XLVETS PONY PAGES

winner

**CONGRATULATIONS TO...**
COMPETITION 5 WINNER
ScottMitchell Associates Winner:
**Georgina Clarkson** pictured above wearing her pink prize!!

# Top Tips FOR SPRING!

## ...To help you and your pony get in shape for summer

**By Jane King Westmorland Veterinary Group**

- If you have not been able to ride your pony so much over winter remember it will take time to get him fit again. Time spent walking and trotting now will help him stay healthy and sound through the rest of the year.
- Your pony will start to moult and shed his winter coat before he gets all sleek and shiny for the summer. He will need regular grooming to help get rid of that hairy hippo look.
- While he still has his winter coat he will get very sweaty when ridden as the days get warmer. Have him clipped if you are going to be doing a lot of galloping or jumping. Watch out for sweaty hairy ponies getting cold, they take a long time to dry.
- Before you start going to lots of shows check your pony's flu jabs are up to date
- Worms thrive in warm moist conditions so make sure you worm your pony in the spring, write down when you do it on a calendar. Ask your vet what to use.
- Spring means mud, if your pony lives out check his feet daily for thrush, where the bit at the side of the frog goes wet, black and stinky. Watch out too for mud fever and rain scald on the legs and back, where the legs become swollen sore and scabby, be especially careful if your pony has white socks.
- If your pony goes out into a new field for the spring check it is safe, check the fences and hedges for gaps, look out for any poisonous plants coming through. Check the water supply or trough is clean.
- Spring is when the grass starts to grow, to stop your pony getting laminitis make sure he can't spend all day munching. Watch out for him getting a hard cresty neck.
- Too much lush spring grass can also give your pony tummy ache so be careful when letting him out onto grass for the first time - only leave him out for a couple of hours. Remember to make all changes to what he eats gradually.
- Finally this is time for a good spring clean! Check all your tack is safe and in good repair, clean your grooming kit and tidy out all those feed bins to get rid of any old mouldy feed that may be lurking around.

## Fact!

**Did you know - when first born, a foal cannot eat grass because their legs are too long and the foal cannot reach the grass!**

# 1st Competition page

ENTER TODAY
GOOD LUCK...

## Welcome
XLVets Competition

How many differences can you spot between the two pictures below. Circle the differences as you find them, then write how many you can find on the competition entry form below and send it back to us for **YOUR CHANCE TO WIN.**

## Spot THE Difference

WIN an Equestrian Bag, containing six items including a small body brush, dandy brush, flick brush, face brush, hoof pick and sweat scraper.

## WIN!

**Answer to Autumn 2010 competition: Rosette**

A winner will be chosen from all the correct entries received before the closing date, Thursday 21st April 2011. The winner will be revealed in the next issue of Equine Matters. The editor's decision is final, no correspondence will be entered into.

THE NUMBER OF DIFFERENCES: _____

Send your completed entry to: Equine Matters Competition No.6
XLVets, Carlisle House, Townhead Road, Dalston, Carlisle, CA5 7JF

Name

Address

Postcode

Daytime Telephone Number

Email

XLVets Practice Name

☐ I do not wish to receive further information from XLVets

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