

Equine herpesvirus abortion season

With abortion season underway between autumn and spring we would like to ensure that you have the information you need to provide the best service to your clients. Equine herpesvirus (EHV) infection can have devastating effects on stud farms and early diagnosis and appropriate control measures are vital in order to limit losses.

What the AHT offers

Post-mortem services

- Submission of the entire foetus and placenta, where these are available, is always strongly recommended as this provides the best opportunity to most thoroughly investigate the cause of death using gross examination, histopathology, EHV PCR and bacterial culture.
- Post-mortem services are provided seven days a week with experienced duty pathologists and technicians on call on Saturdays, Sundays and Bank Holidays
 - Preliminary reports are issued the same day that the foetus is examined, seven days a week
 - o Preliminary reports provide an initial assessment of the likelihood of EHV infection as well as a preliminary conclusion on the cause of death
 - EHV clearance testing (histopathology and PCR) is prioritised where gross examination is suggestive of EHV infection
 - Final reports are issued as soon as possible when all work is completed
 - o Final reports are usually available the same working week day for foals received by 11am
 - o Final reports are usually available the following working week day for foals received after 11am

Sample collection

- If submission of the entire foetus and placenta is not feasible, we suggest submission of tissue samples collected in the field as an alternative means of excluding EHV infection as a cause of abortion
- Tissues recommended for collection are foetal liver, lung, thymus, spleen, adrenal gland, kidney and placenta
 - o Water resistant reminder cards detailing these tissues are available on request
 - Two sets of tissues recommended:
 - o Formalin-fixed tissues for histopathology (ready to use sample pots with buffered formal saline available on request)
 - o Fresh tissues, including placenta, for EHV PCR

Epidemiology and Pathology support

Support from the AHT's Pathology and Epidemiology teams is only a phone call away. Our pathologists are always happy to answer questions on sample collection or post-mortem procedures for collecting samples in the field.

Advice is available from our epidemiologists regarding the most appropriate means of control of infection in order to reduce risks to other pregnant mares on affected stud farms. Recommendations are made in accordance with the Horserace Betting Levy Board's Code of Practice, whilst being geared to the individual circumstances of each stud.

For further information please visit www.ahtdiagnostics.co.uk, call **01638 552993** or email diagnostics@aht.org.uk



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FREE AHT Equine CPD 2016

Diagnostic analgesia in the forelimb – do we know what we are blocking? (lecture and practical)

Wednesday 27 January 3-7pm Speaker: Dr Annamaria Nagy

Looking at the specificity and potential pitfalls of diagnostic analgesic techniques in the forelimb, based on the latest research studies and clinical observations. Also the technical details of perineural and intra-synovial blocks, followed by a practical session with the opportunity to practice diagnostic analgesic techniques in cadaver limbs.

Diagnostic analgesia in the hindlimb - practical

Wednesday 16 March Speaker: Dr Annamaria Nagy

Looking at technical details of perineural and intra-synovial blocks in the hindlimbs, followed by a practical session with the opportunity to practice diagnostic analgesic techniques in cadaver limbs (up to including the hock region).

Radiography of the equine foot: are my X-rays good enough?

Wednesday 18 May Speaker: Laura Jones

Substandard radiographic quality can lead to misdiagnoses, unnecessary procedures and costs, and even litigation. The importance of 'diagnostic quality' will be illustrated through a series of case presentations, and how additional views can help with interpretation and diagnosis will be discussed.

Equine oncology: 21st century treatment of an age-old problem

Wednesday 20 July Speaker: Anna Hollis

Equine neoplasia is a relatively uncommon diagnosis, but can present specific treatment challenges due to the location and nature of the most common tumours. The diagnosis and management of common equine cutaneous neoplasms will be discussed.

Suspensory desmitis – what do we know?

Wednesday 21st September Speaker: Dr Rachel Murray

Suspensory desmitis is frequently recognised in sport horses. This talk aims to update on our current knowledge with respect to type of injury, mechanisms of injury, risk factors for injury and prevention of injury, as well as diagnosis and management in different types of cases.

Does hindlimb lameness cause back or neck stiffness?

Wednesday 16th November Speaker - Dr Sue Dyson

If a rider complains that a horse is difficult to turn, or is stiff in the neck or back, does this necessarily imply a primary neck or back problem? How should further investigation proceed? Find out more about the far-reaching consequences of hindlimb lameness.

If you would like to attend, please email your name, practice name, the number of people attending and the date of the talk to cpd@aht.org.uk

This is free CPD, however, as we will be providing a light buffet, we are simply requesting that you let us know in advance if you intend to come along so that we can estimate the numbers we need to cater for. Food will be served from 7pm.

Seminars will start at 7.30pm prompt, with the exception of 27 January which will start at 3pm.

There will be 60 minutes of presentations with 10 minutes for questions.

Where: Equine Clinic, Animal Health Trust, Lanwades Park, Kentford, Newmarket, Suffolk, CB8 7UU.



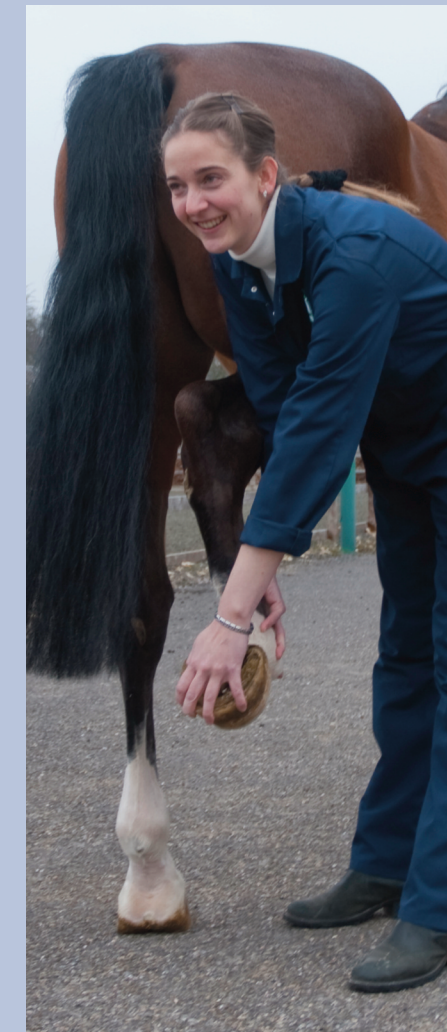
Veterinary News

Autumn 2015

Animal Health Trust Equine Veterinary News

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Welcoming back Dr Annamaria Nagy...

Annamaria Nagy joined the equine orthopaedic team at the beginning of August. She is returning to the AHT after a short spell (and the birth of her second child) in the Middle East.

After internships at the Dubai Equine Hospital and the AHT, Annamaria spent some time in an equine ambulatory practice and then completed a residency in equine diagnostic imaging at the University of Bristol.

Following her residency she worked as an equine orthopaedic clinician at the AHT. Annamaria was awarded a Royal College of Veterinary Surgeons Fellowship for her thesis on magnetic resonance imaging of the carpus and proximal metacarpal region and a PhD for her work on epidemiology of eliminations from international endurance rides. Annamaria has published over 25 scientific articles in peer-reviewed journals and has been a speaker at national and international conferences.

Annamaria is looking forward to investigating lameness and poor performance cases for old and new clients. Annamaria has a special interest in performance horses (particularly endurance) and advanced diagnostic imaging, but she is no less enthusiastic about diagnosing and treating lameness in pleasure horses that are usually of high emotional value. Annamaria is also happy to accept direct diagnostic imaging referrals and advise on further management following diagnostic imaging diagnosis.

Annamaria has an equine background; she started riding as a small child and later competed in show-jumping at national level. Annamaria is a 4* FEI endurance veterinarian and has worked as a team veterinarian for the British Development Squad and the Hungarian Young Rider Team. She has also supported individual endurance riders at international rides and championships. In these roles she has developed a keen interest in lameness and poor performance in endurance horses and has recognised the challenge of diagnosing their underlying causes.

In her new role at the AHT she will be offering comprehensive investigation of lame and poorly performing horses, whether the problem manifests as an overt lameness, lameness only appearing after a long distance or reduced performance with no obvious cause.



New arena lights for our work-up arena

In the spring of 2015 lights were installed around the periphery of the arena and the hard lunge area, through a generous donation from the Margaret Giffen Charitable Trust.

It makes the area look a bit like a football stadium (but without seating) because the lights are very tall in order to fulfil planning regulations and minimise light pollution.

This lighting enables us to continue to evaluate and work up horses on the dark winter afternoons and is of huge benefit.



Strangles: a pathogenic legacy of the war horse

In the largest study ever conducted into *Streptococcus equi* (*S. equi*), the bacteria responsible for the development of Strangles, AHT experts have come one step closer to designing an effective vaccine to prevent this devastating disease.

Despite more than 100 years of research, the disease remains the most frequently diagnosed infection of horses worldwide. In new research, scientists from the AHT, the Wellcome Trust Sanger Institute and the University of St. Andrews joined forces to examine the history and evolution of the disease.

The researchers examined 224 samples of *S. equi* procured from horses around the globe to try and find a common bacterial ancestor from which modern strains would have developed. Despite the disease first being described in 1251, the researchers were surprised at the genetic similarity of the samples and identified a total population replacement at the 19th or early 20th century. This corresponds to a period when horses from around the world were brought together in global conflicts including World War I, where an estimated eight million horses died on the battlefield.

“The mobilisation and mixing of horses in conflicts such as WWI provided perfect conditions for *S. equi* to thrive,” says Dr Simon Harris from the Wellcome Trust Sanger Institute. This combined with high mortality rates among the horses and their replacement with young susceptible horses could explain what we see around the world today.

While loss of diversity could be considered detrimental to bacterial populations, *S. equi* still infects more than 20,000 horses in the UK alone each year. Its success, we believe, is due to its ability to persist in some horses for years after they have recovered from Strangles, where the bug can evolve to evade the horse's immune system.

Dr Andrew Waller, Head of Bacteriology at the Animal Health Trust says, “The data we have gathered in this study has enabled us to pinpoint the genes that help the bacteria to persist, spread and thrive in the horse population. This research provides an unprecedented opportunity to reduce the impact of and prevent Strangles in future generations of horses.”

The ability of *S. equi* to adapt to living in a persistent state within its host and still infect new horses mirrors the situation with HIV and the bacteria that causes tuberculosis in humans. “Unravelling the complex population dynamics of *S. equi* sheds new light on the balancing act between acute and persistent infection that is going on in many pathogens,” says Dr Matthew Holden from the Wellcome Trust Sanger Institute and the University of St Andrews. “Not only does this collection of whole-genome sequences for *S. equi* offer hope for an effective Strangles vaccine, it also provides us with a useful model for understanding persistent infection in humans.”

Exercise-induced changes in back dimensions: the influence of saddle-fit, rider-skill & work quality

Recommendations concerning saddle-fit are empirical and based on anecdotal information. We know that the saddle needs to fit the horse in motion, but there has been no investigation of whether the thoracolumbar region changes in shape in association with exercise, or how improper saddle-fit may influence potential changes.

The aims of the study were to investigate exercise-induced changes in back-dimension in sports horses of variable age, from a range of work disciplines, working at different levels. The objectives were to 1) quantify changes in back-dimension that occur subsequent to ridden exercise, 2) determine the influence of work-quality, 3) determine the influence of saddle-fit, 4) determine the influence of rider skill-level.

We hypothesised that: 1) changes in back-dimension immediately after exercise were quantifiable; 2) horses working ‘on the bit’ would have larger changes than horses not working ‘on the bit’; and 3) an ill-fitting saddle before work would diminish any transient enlargement of the back muscles with work.

Sixty-three sports horses in normal work were assessed prospectively. Thoracolumbar shape/symmetry were measured at predetermined sites (‘shoulder’, T8, 13 and 18) before and immediately after a 30 minute exercise period using a flexible curve ruler. Width ratios for two levels, 3 and 15 cm ventral to the dorsal midline, at each site were calculated.

The work-quality and rider-skill were graded; the presence of lameness and saddle-fit were recorded. Descriptive statistics, univariable and multivariable mixed-effect linear regression were performed to assess the relationship between horse-saddle-rider factors and changes in back dimensions.

The mean back-shape ratio immediately after ridden exercise was greater compared with before work for all sites. The mean difference in width before and after exercise at T13 at 3 and 5 cm ventral to the dorsal midline was 1.24 and 1.32 cm, respectively. Mean changes in back-shape were greater in horses working correctly versus not working correctly, and in horses with correctly-fitting versus ill-fitting saddles at each site. Mean changes were greater in horses ridden by good > moderately > poorly-skilled riders. Mean changes were less in lame horses compared with sound horses.

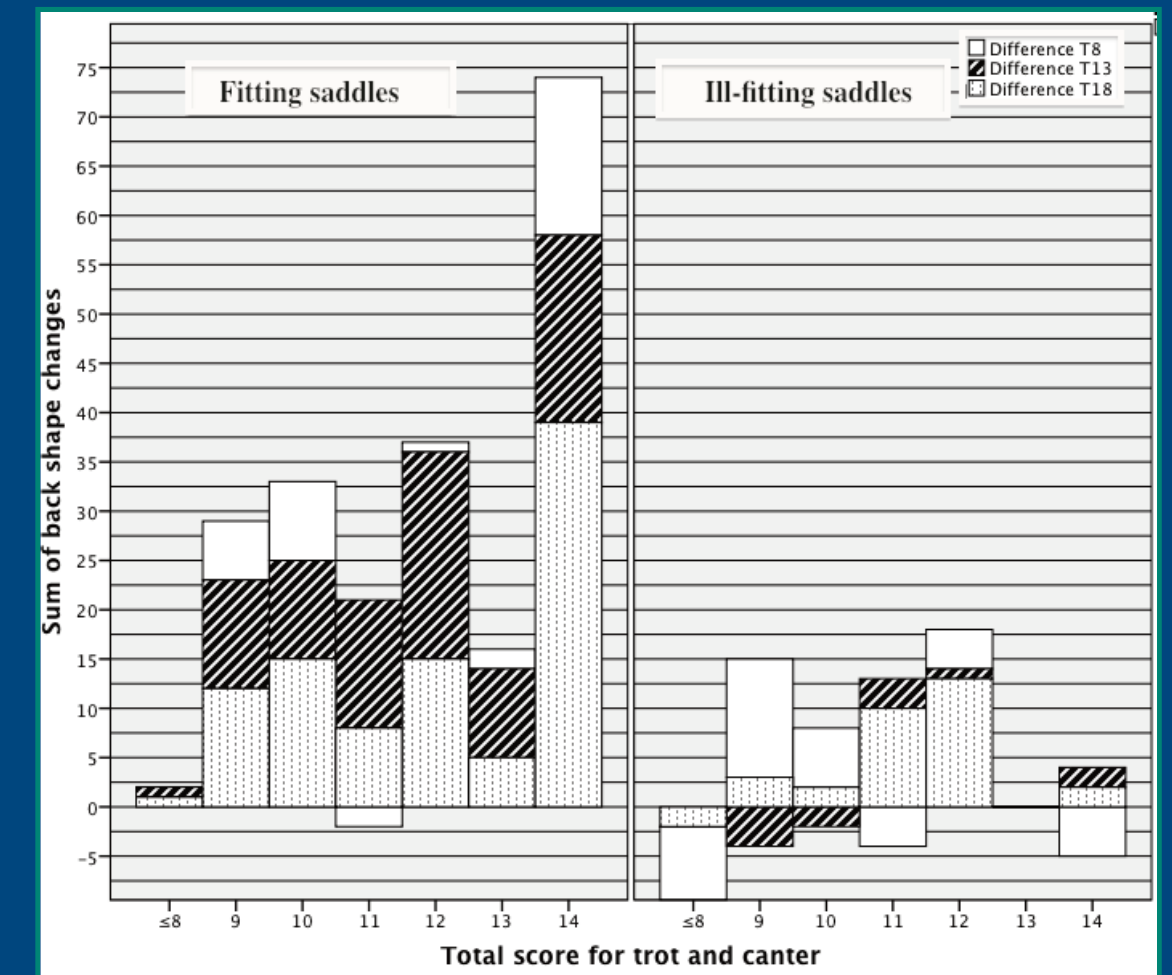


Exercise-induced back-dimension changes varied among predetermined sites. In the saddle region the degree and direction of changes are mainly determined by the saddle-fit, whereas outside the saddle region the work-quality is the most influential factor. A uniformly-flocked saddle, fitted with even contact and fitted in balance, was associated with larger dimension changes in the middle third of the saddle region compared with other saddles. The balance of the saddle was the most influential factor for changes in back width in the cranial third of the saddle region.

A saddle tipping back or forward has uneven contact, causing focal areas of increased pressure, which may restrict the normal back movement. There were decreased exercise-induced width changes at the shoulder region, T8 and T18 with increased convexity (greater ratio) before exercise. This finding supports previous observations that most dramatic changes occur in young horses with a prominent spine (low ratio [concave shape]) that are worked correctly, and that well-muscled advanced horses also worked correctly exhibit less change after exercise.

This is presumably related to a better core strength and muscular support of the thoracolumbar spine in an older advanced horse compared with a young horse. This highlights the importance of correct saddle fit in young horses. A saddle which fits at rest may not fit when the horse is in correct work posture, with increased tightness of the panels, especially in the region of the stirrup bars. This may have implications for movement of the back and thoracic girdle.

We recommend that saddle-fit should be checked on a regular basis both before and after exercise. Early recognition of an ill-fitting saddle may provide an opportunity for owners, trainers and veterinarians to reduce the risk of compromised back movement, development of back pain, muscle atrophy and deterioration in performance because of an ill-fitting saddle.



The sum of back shape ratio changes before & immediately after 30 minutes of exercise for T8, 13 & 18 compared with the total work quality score (maximum possible = 20). Almost all the ratio changes were positive for well-fitting saddles, with the greatest changes at T18 (dots) and T13 (stripes); with ill-fitting the changes were much smaller & were sometimes negative.