

A healthier future for horses

Do horses find classical music relaxing, will they learn better if schooled alongside other equines and are nosebands fastened too tightly? These were some of the topics on the agenda at a conference on equine science. **Justine Harrison reports**

The world's leading equine scientists gathered at the French National Riding School in Saumur, France, to share and discuss the findings of their latest research.

They were presenting at the annual conference of the International Society for Equitation Science (ISES), an organisation set up to promote research that will raise equine welfare and safety standards and improve the horse/human relationship.

The event was held at the home of the Cadre Noir, an equestrian academy famous for classical dressage and 'airs above the ground'.

This year's conference theme was 'Understanding horses to improve training and performance' and the packed programme covered a wide range of topics.

Equine behaviourist and *Horse magazine* contributor Justine Harrison attended the conference to report on the key findings....

How management can affect horse health

Have you ever wondered whether stabling, being shod or training in a specific discipline is bad for a horse's health?

A team of researchers from a German University set out to investigate whether there are links between health problems and how we manage and use horses.

Questionnaires were sent to around 1,600 horse owners. They were asked how their horses were housed, how often they were turned out, whether they were shod, their exercise regime, which discipline they took part in and how often they competed.

The responses were assessed in relation to each horse's veterinary and insurance history, to see if any factors were consistent with various health problems.

The results revealed a number of interesting links:



Dressage horses are most at risk of lameness issues

- Dressage horses were at a higher risk of locomotory (lameness) problems than those competing in other disciplines.
- Shod horses were at a higher risk of locomotory problems than barefoot horses.
- Horses that participated in more than 30 events (shows or training clinics) per year had a significantly higher risk of requiring colic surgery than those travelling less often.



Ponies have been fitted with head cams to record herd activity

"We may call a horse 'naughty' or 'bad' and that can lead to inappropriate and unfair behaviour towards him," she added.

"The horse is a product of his experience and direction. Incorrect responses are often

The conference reported on studies which aim to improve horse welfare



- Horses used for Western riding were at a higher risk of suffering from splint bone fracture. This may be due to the high levels of strain incurred from spinning and sliding.
- Equines kept at facilities managed by people without a relevant qualification (such as a certified groom) were at a higher risk of suffering from a health problem than those kept at a qualified professional's yard.

Project leader Dr Uta König von Borstal reported "We saw clear health benefits in horses living in group housing, those who were barefoot, fed ad-lib roughage, those

with regular or long-term turnout and moderate use".

The horses considered to be at greatest risk of health problems were shod, frequently competing in dressage and had a few hours of daily turnout in summer.

"It's clear that dressage alone is a factor for locomotor injuries," said Dr König von Borstal. "So, we are obviously doing something wrong with the way we ride or keep dressage horses."

"These findings provide great starting points for future studies."

● Research Team: U König von Borstel, C Erdmann, M Maier (University of Goettingen, Germany); F Garlic (Uelzener Allgemeine Versicherungs-Gesellschaft AG, Germany).

Pay attention to tack

As owners and riders, it is our responsibility to ensure our horses are comfortable when ridden, whatever tack and equipment we use.

There are increasing concerns amongst equine scientists - and the public - about how nosebands are fastened. It is felt some riders routinely do up crank, flash or drop nosebands very tightly, to prevent the horse from opening his mouth.

This goes against the recommendation that two fingers can be fitted in the space between the noseband and the nasal midline, so the horse is free to move his jaw.

As a result, questions have been raised as to whether this could be compromising horse welfare, and potentially causing them physical pain.

Two important studies were presented at the ISES conference, looking at different aspects of noseband use:-

Noseband tightness in competition

Dr Orla Doherty and a team of researchers from Ireland and Australia investigated the level of noseband tightness on horses competing in Ireland, England and Belgium.

They assessed the nosebands of 750 horses in dressage, eventing and performance hunter classes, at national and international level.

Noseband pressure was measured immediately before and after a horse competed, using a taper gauge.

The results were classified according to the number of fingers that could fit between the noseband and the bone at the horse's nasal midline, ranging from zero to two fingers.

Only seven per cent of horses examined had nosebands loose enough to fit the recommended two fingers underneath.

Twenty three per cent were found to be at one-finger tightness, and 19 per cent at 1.5 fingers.

On 44 per cent of horses, the noseband was fastened so tightly it was impossible for the taper gauge to be inserted (zero fingers).

There were significant differences between disciplines, with the highest levels of noseband tightness being among eventers, followed by dressage competitors, with the lowest in performance hunter classes.

Dr Doherty said many nosebands had been tightened to a pressure that exceeded

Take nature into account during training

We can become better trainers and improve the partnership we have with our horse or pony by learning about equine behaviour.

According to Dr Sue McDonnell, an equine ethologist from the University of Pennsylvania, USA, we need to take into account the true nature of the horse. He will feel safer and learn better if he has equine company.

"Stable and compatible equine companionship is a basic need," she said. "Horses are a prey species that spend most of the time foraging in the open, so safety in numbers is paramount."

She added that equines have a complex social structure and live in quiet harmony,

forming strong, long-lasting relationships and "separation is particularly stressful for them".

Allowing horses to live a more natural life, maximising turnout and letting them graze in 'stable' groups means they will be less stressed and therefore healthier and easier to train.

Providing social support for horses during training can also be beneficial.

"Having an already trained, relaxed companion present, especially in the early phases of training or in new environments, can really improve a horse's behaviour and speed up the training process," said Dr McDonnell.

All too often, problems can occur because a horse's behaviour is interpreted incorrectly.



A study showed that tight crank nosebands can cause horses stress

that of a human tourniquet, which is used to prevent blood flow.

"The physiological impact of high pressure on the tissue of the horse's face is unknown and needs further research," she said. "However, we know that in humans, similar high pressures are known to cause tissue and nerve damage.

"In addition to possible physical damage, using tight nosebands could impact negatively on the safety of horse and rider. A horse experiencing pain while being ridden is far more likely to display flight and fear responses, such as head tossing or bolting."

● Research Team: Orla Doherty, V Casey, S Arkins (University of Limerick); P McGreevy (University of Sydney).

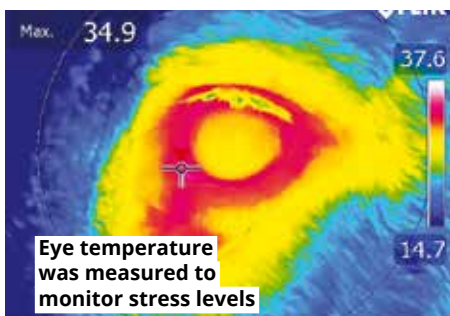
How a tight noseband affects horses

A team of researchers from Australia investigated how noseband tightening affects horse behaviour and physiology.

Twelve horses that had not previously worn a double bridle and crank noseband were tested, using four different levels of noseband tightness: unfastened, conventional (with room for two fingers under the noseband); half conventional (one finger space) and zero space.

The horses were observed while standing still. Behaviour and heart rates were recorded and eye temperature measured using thermographic imaging. An increase in eye temperature is an indicator of stress.

Results showed the tighter the noseband, the higher the horse's heart rate. At the tightest setting, heart rates and eye temperature increased significantly – compared with baseline readings – indicating a stress response.



The team also found tight nosebands reduced yawning, licking, chewing and swallowing behaviour in the horses.

The study's senior author, Professor Paul McGreevy, presented the study at the conference.

He said the research "clearly shows how restrictive nosebands compromise natural behaviours and trigger a significant stress response in horses.

"Tight nosebands can mask unacceptably rough riding. While wearing a bitted bridle, horses are highly motivated to open their mouths to find comfort but in dressage competitions, this response attracts penalties."

Professor McGreevy is calling for stewards in a competition environment to check that every rider is complying with rules that prevent excessive tightening of the noseband, so the welfare of horse is not compromised.

● Research Team: K Fenner (Kandoo Equine Australia); S Yoon, P McGreevy, P White and M Starling (University of Sydney, Australia) ■

● To find out more about ISES, visit: www.equitationscience.com

Classical music – a calming influence?

Many domestic horses are regularly subjected to stressful events. They may be expected to deal with social isolation and being transported, or cope with new stimuli or environments.

Regular stress can be detrimental to a horse's welfare. Over time, the build-up of stress hormones in the body can increase the risk of numerous health problems.

Horses can also become anxious or frightened and this may lead to behavioural issues.

Music has been shown to have a relaxing effect on various animal species. A team in France set out to investigate whether classical music could calm a horse in a stressful situation.

Forty eight horses at the French National Stud were exposed to everyday stressful situations. During each situation, their reactions were tested under three different conditions:-

- While being played classical music – the theme from *Forrest Gump* – via an earpiece;
- Fitted with earplugs to reduce noise;
- As 'normal', without music or noise reduction.

When being transported, the horses showed some behavioural differences when music was played – they had less muscular tension and put their ears forward more and back less. Heart rates recovered more quickly.

During farriery, there were no significant changes in behaviour, but when music was played the horses' heart rates returned to normal faster than under regular conditions.

When comparing the situations, the horses found being transported more stressful than farriery.

● Research Team: C. Neveux (Ethonova, France); M. Ferard, L. Dickel, V. Bouet (Université de Caen-Basse Normandie, France); O. Petit, M. Valenchon (CNRS-Université de Strasbourg, Germany),

