

ESI NEWS

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'A good life for horses' **Conference summary: ISES 2024**

By Sophie Wyllie



Earlier this month a few of the ESI team flew to New Zealand to attend the 2024 International Society for Equitation Science conference, held in Cambridge. These conferences are held annually with each conference being hosted in different country, and they're an opportunity for new research in the field of equitation science to be presented.

For those with an interest in the research, or attending future conferences, I was jotting down notes in a short-hand I was certain I would have no difficulty in translating. I'm pleased to say I can make sense of most of it! I'm not going to summarise each presentation, but I will handpick a few from each day to give you an idea of the breadth of research going into the field of equitation science, from people around the world.

This year, the conference theme was 'a good life for horses'. This theme was driven by an increasing need to justify the human use of horses, whether for research, production, therapy, sport or leisure. The conference was held over three days, with a field day on day two visiting various equine facilities.

Day 1

We arrived at the conference venue which was held on the beautiful Lake Karapiro at the Don Rowlands Centre. Tea and coffee was supplied and we were off to a great start with a Māori cultural welcome by a local school group performing a Karakia, and I'm fairly sure I can speak for all of us in saying it was a really amazing experience.



Above: The venue – Don Rowlands Centre

Onto the science next and the first plenary of the conference was delivered by Professor Paul McGreevy. I always enjoy Paul's presentations, they're a mixture of seriousness (generally on a big impact topic), with subtle humour and a quick wit. Today's covered two huge topics – whip use in racing and tight nosebands.

In racing, the whip is still used in most regions. Although the design of the whip has been changed to supposedly soften the blow, and the name of the whip has been changed to things such

as 'the padded persuader' to improve public acceptance, the science still shows that the whip causes pain, evident in various factors such as strike site swelling and heat, or worse. Different strokes by the jockey can change the impact of the strike. Paul's research indicated that the strongest impact comes from a back-hand strike, which is a very common and accepted application of the whip in racing. Whilst limitations on whip use are in place, further improvement could come from limitations in the type of whip use (or the removal all together!).

On to the next big one, nosebands. There is now plenty of data showing that tight nosebands cause micro fractures on the nasal plane, boney changes under the jaw, and cheek lesions. This is further impacted by the bit, because a tight noseband limits mouth opening, which is the horse's way of coping with the pain of the bit. If the mouth cannot open, the horse will instead draw its tongue back to relieve pressure from the bit, which then restricts the horse from swallowing. Swallowing is a very important component of airway maintenance. It is evident that on every level, a tight noseband is incredibly detrimental, not only to the structure of the face, but the mechanics of the mouth and airways. He ended with - "we need to listen to mouth opening, and learn from it", rather than clamp it shut.



Left: One of Paul's slides - "The standard you walk past is the standard you accept". A strong reminder of the importance to speak up.

Later in the day Orla Doherty's presentation continued the discussion on nosebands where she measured stress indicators according to noseband tightness. Using a taper gauge and a digital gauge to measure noseband tightness on 12 horses from 2 fingers, 1 finger and .5 finger on the nasal plane, she then recorded eye temperature using a FLIR thermographic camera. Her research showed quite a significant increase in eye temperature between loose and 1 and .5 finger, indicating there was a stress response with tight nosebands.

Next up I thought I would share a research presentation by Rachel Annan about implementing a welfare assessment tool for racehorses. Rachel's research focussed on a study of 353 racehorses both at the beginning and mid-season of race-training. Various tests were conducted measuring wellbeing between the start of training and the middle of training. It was shown that the training season did have an impact on increasing Horse Grimace Scale scores (indicating pain/stress) and positive Human Reactivity Tests as well as resting and feeding behaviour.

However, Rachel mentioned a few areas where seemingly small differences in management indicated improved racehorse wellbeing - horses who had a window in their stable spent more time surveying their surroundings than those with bars. Horses who had social contact spent more time laying down, and there was no indication increased nasal discharge with social contact (a common reason for keeping horses separate is the spread of illness). If we're looking from a performance perspective, one would think that a well-rested horse would perform better, so this is a small change trainers could implement which would have big impact both for wellbeing and performance.

Natalie Warren then presented a summary of the work of the FEI appointed equine ethics and wellbeing commission. When discussing the public's perception of equestrianism it was highlighted that surveys indicate a strong majority of people feel there is a problem with the welfare of the sport horse. Whilst 33% feel welfare standards are high, 67% feel it needs improving, and sadly the remaining 15% believe it's not even possible to provide adequate welfare protection.

Public perception matters, because when there is a loss of Social License (a loss of public acceptance), it leads to social control. The result of social control generally results in bans. In other words, the FEI needs to take action before the public do. The work of the ethics and wellbeing commission provided a set of recommendations to the FEI, so it will be interesting to see what comes of it. Nat so pointedly ended with "Evolution, not Revolution".

Towards the end of the day Uta König von Borste presented her research on the effect of hay feeding regimen on the horses' emotional state. Her study involved feeding one group of horses loose hay (restricted to feed-times) and another group adlib hay (fed through haynets to last through the day). The horses were then put through multiple tests to measure emotional state. Initially, in the first round of testing, results showed no great difference between the two groups, however the second round of testing showed significant difference in emotional state (positive) for the adlib group. The lack of difference after the first round was thought to be due to the possible frustration of eating through a slow feeder hay net when horses weren't used to it, however once habituated to the feeding process significant results were shown. The study indicates that adlib hay, as opposed to restricted hay improved emotional state. A positive emotional state is a key component to efficient learning.

There were so many other excellent presentations throughout day one, but I would be writing for days if I was to summarise them all!

Day 2

Day two was the field day. Despite the rain everyone was in good spirits as we loaded onto buses to take us to the first of multiple site visits, Cambridge Stud. Cambridge Stud is a thoroughbred stud, well known for breeding many champion stallions such as Zabeel and Sir Tristram. The grounds are impeccably kept with state-of-the-art infrastructure, and we were toured through the stallion barn, breeding centre and yearling preparation centre.

The foals at Cambridge Stud are born and kept with their mothers in groups of 6 for the first 6 months. After that, they are gradually weaned where a mare is taken away one at a time and the last mare replaced by a nanny. Whilst I think we all understand the benefits of a longer period before weaning (more on this later), it was reassuring to see that the weaning process was conducted with the aim of limiting stress, and that the stud understands the value in grouping the foals together. Many studs do not (or can't) provide such a gradual weaning process for their foals.



Above: The beautiful architecture of Cambridge Stud



Above: Statue of Sir Tristram alongside burial stones of he and his son (Zabeel)

The most unique and wonderful things about Cambridge Stud is the foal handling program they have. Leigh Wills, Sally King and the team at Foal NZ run a really fantastic program where they work with young foals with their mother establishing basic handling and positive human/horse interactions. The foals are taught how to respond to tactile pressures from the hand, as well as feet handling and leading. The foals are never separated from their mother, and the handlers act with utmost empathy for the foal and mare creating positive associations with humans from an early age. The foundation this provides for young horses going into the racing system means that they already have positive human associations, and a basic understanding of how to respond to pressure, providing a much greater chance for successful training, and after-racing careers. Leigh and her team are well-skilled in the application of learning theory, and recognise the importance of the mare and foal bond, not wanting to interfere with that. They work with the foals for just 9-13 minutes a session recognising and responding to signs of mental fatigue and stress through facial expressions. Before training lead-rein pressure, they use a figure-eight soft rope from the halter to the rump, crossing over the withers to train forward signals from rump-pressure rather than pulling on the head, and then through classical conditioning start to train the signals from the halter. It was a really interesting and insightful demonstration. No photos sorry, but I encourage you to go to the Foal NZ website and check out their work.

After lunch we were separated into groups – group 1 went to a racing stable and RDA centre, and group 2 (my group) went to Event Stars and Takapoto Showjumping stables. Event Stars provide life after racing services to NZ thoroughbreds as well as many from Hong Kong, taking them in after racing, providing assessment for talent according to discipline, and training and re-homing. One thing I found really pleasing was that all horses on the property were paddocked in herds. Even those who are shipped from Hong Kong having lived a life in a high-rise stable facility were put straight out to pasture in a group. There was a

strong passion for allowing “horses to be horses” and have companionship. I would absolutely love to sit alongside a paddock to watch the horses integrate into the herd!

Next up it was Takapoto Showjumping Stables – a small scale breeding and training operation of high-level showjumpers. The horses are in an L-shaped barn set-up with day-time pasture, and top-level health care. Unfortunately, as we started to tour the paddocks and jumping demonstration the weather took a turn, and for the horses, a group of umbrellas and rustling rain jackets walking around invoked high levels of arousal, so we ended our visit early. To be honest, we were pretty happy to get back into the dry bus and towards the social event for the evening!

Day 3

The final day was back at the conference centre starting with a plenary by Janne Winther-Christiansen on setting horses up for a good life. Her extensive research showed that even from the very beginning we can have an understanding of the horse we're breeding when it comes down to temperament. Her study showed that whilst the stallion can influence learning ability, the mare has a lot more influence. This could come down to early post-natal behaviour influence but non the less, breeding your difficult mare to a quiet stallion may not dilute that difficult behavioural tendency! She also presented that if a pregnant mother is stressed, this can affect the brain of the progeny. We know with rodents and humans, this can have an increase in fearfulness and stress sensitivity, and a decrease in learning ability, so can we assume the same for horses?

Janne then went on to show her research on mares and foals where she conducted some desensitisation training with the mares, and tested whether that influenced the foal. She worked with 15 mares for 10 minutes per week 5 days after foaling, with the foal at foot. The foals exposed to the mare training showed an increase in desire to approach humans, and were more accepting of a novel stimulus (the placement of a saddle pad) than those in

control group. Foals whose mothers had desensitisation training showed better learning ability.

On to the topic of weaning. Janne showed that naturally occurring weaning happens at 9-10 months, compared to domestic weaning which usually occurs at 4-7 months. A common practice of weaning is abrupt (remove the mare entirely) which can cause developmental problems such as increased stress sensitivity, behavioural issues and stereotypes. Research shows that foals weaned at 4-7 months had a 100% increase in cortisol levels, whereas foals weaned at 7-9 months had a 50% increase. From this, the recommendations for weaning are: introduce fat and fibre rich foods prior to weaning; wean gradually (repeated short-term separations, progressive retrieval of mare); and allow social contact with other foals/horses at the time of weaning (social contact increased handling ability). And finally, whilst handling before weaning is recommended, forced handling (where the foal does not seek contact) is detrimental. Work with the mare and allow plenty of social contact to increase the foals desire to approach humans.

Later, Katrina Merkies presented her findings on the effect of touch in horse-human interactions. Her study tested whether certain locations and types of touch had an effect on heart rate variability. Whilst the location and type of touch resulted in no significant findings, the treatment did. When touching horses who were tethered, behaviours indicating stress increased, as opposed to the horse being loose and choosing to approach the human. When the horse was given a choice to approach the human, there appeared to be more enjoyment. This research is particularly applicable to Equine Assisted Therapy services, where potentially allowing the horse to approach and interact is better for the horse (and therefore safer for the human) than being approached while tethered.

Lastly, we heard from Jane Williams about the observational indicators of fatigue in the horse during cross country. There has been a fair amount of conversation on fatigued horses being pushed through the last half of cross country, sometimes causing falls or injury.

This study looked at whether there are easily observable signs of fatigue to potentially assist stewards in intervening. Footage taken from a horse trials was reviewed looking at horses midway and near the end of the cross-country phase. Signs of fatigue were changes in ear position, head and neck position and rider balance, as well as loss of rhythm. Unfortunately, these were difficult to accurately detect at real-time speed (videos were more easily assessed at a slower play speed). This indicates that stewards may have difficulty in accurately and objectively assessing fatigue. Perhaps this is an area where AI can assist in future.

AI was talked about a lot at the conference and has the potential to measure affective state, pain and many other factors that are not so easy to see to the naked eye. I suspect future conferences will have a lot more about AI and the way it can potentially help detect welfare issues.

I hope I have accurately summarised each presentation! I urge anyone interested to take a look at the conference proceedings to read a more detailed scientific summary, and the many presentations I have not summarised here. All presentations in the proceedings have a 'laymen's message' too so if the science isn't for you, you can still get the key message:

<https://www.equitationsscience.com/19th-ises-conference>

On a personal note for ESI, we were delighted to see so many of our students and graduates at the conference! Our group made up nearly 15% of delegates, and more if you count the many lesson clients of ours too. It's inspiring to see so many people who come to find equitation science continue their learning journey so


so passionately. We absolutely love seeing so many familiar faces!



Above: ESI students and graduates at the conference in front of Lake Karapiro

And finally, I have to mention the food and social events! Conference organisers did a brilliant job selecting the most incredible caterers to feed us all (the food was fantastic), as well as the social events each evening. Each day ended with a very relaxed and enjoyable evening at various locations with plenty of great food and drinks. After a day of presentations everyone is inspired and excited to talk about it all together, it's a really fun time.

Next year the conference will be held in Colorado, USA. We hope to see lots of you there!



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