

The Latest in Saddle-Fit Research

International conference presents new and ongoing findings

By Hilary M. Clayton, BVMS, PhD, Diplomate ACVSMR, MRCVS

The Saddle Research Trust (saddleresearchtrust.com) is a UK-based charitable organization whose mission is to stimulate and support research into the influence of saddles on the welfare, performance, and safety of horses and riders using objective scientific methods.

world. Areas of specific research interest include welfare, performance, and safety issues related to saddle use; the role of the saddle in equine and human back problems; equine behavioral issues associated with saddle-related discomfort; effects of saddle design on rider performance and health; and saddle design saddles for riders with disabilities.

The SRT holds an biennial international conference, the second edition of which was held last November at Anglia Ruskin University in Cambridge, England, with the theme “Horses, Saddles, and Riders: Applying the Science.” Four hundred equestrians, veterinarians, and therapists listened to a series of presentations from experts in the field (including this writer). After the one-day conference, the presenters participated in a two-day workshop that mapped out future plans for fund-raising and research.

In this article, I’ll share highlights of the conference and the findings presented.

Comfort: Not Just for the Horse

The conference began with a lecture from Anne Bondi, founder and trust director of the SRT, who discussed issues faced by competitors in seated sports (including cyclists, rowers, and riders) with specific reference to their interface with the saddle or seat. She showed some graphic photos of injuries sustained during these sports, which certainly made everyone aware of the importance of ensuring that the saddle fits the rider as well as the horse.



AT THE FOREFRONT: Top researcher Dr. Sue Dyson presents the findings of her study on the causes of saddle slip

Causes of Saddle Slip

Dr. Sue Dyson of the Animal Health Trust in Newmarket, UK, presented the results of a series of studies she performed with graduate student Line Greve. Dr. Dyson addressed the causes of saddle slip, in which the entire saddle slides to one side of the horse’s back. Asymmetries in the horse, the rider, or the saddle can contribute to the problem.

The researchers found that lameness is the most common cause of saddle slip, with more than half the horses showing saddle slip having hind-limb lameness. The saddle slip was usually abolished when the lameness was eliminated through nerve blocks. In most cases, the saddle slipped toward the side corresponding with the lame limb (or the more lame limb), but neither the severity of the lameness nor the source of pain within the limb affected the degree of saddle slip. One of the surprising aspects of this study was that most of the riders were not aware that their horses were lame.

When saddle slip was associated with lameness, the amount of slippage was greater with a lightweight rider

AMY DRAGOO/ADDRAGOO/PHOTO.COM; COURTESY OF THE SADDLE RESEARCH TRUST

CRITICAL JUNCTION: *The Saddle Research Trust helps deepen our knowledge of saddle fit and its effects on horses and riders*

The SRT aims to provide a coordinated, focused approach to research in these areas, to publish the findings in scientific journals, and then to disseminate the results to the equestrian

than with a heavier rider. However, the reverse was true when slippage resulted from the saddle's being constructed asymmetrically.

The horse's back shape was also a factor in saddle slip. A horse whose back is wider behind the

Lameness is the most common cause of saddle slip.

saddle than directly under the saddle is more likely to experience saddle slip. One of Dr. Dyson's unanticipated findings was that a saddle that fitted well, made contact evenly with the horse's back, and had uniform flocking was more likely to slip than a poorly-fitting saddle. The most likely explanation is that areas where the saddle is less well fitted offer some resistance to movement, so the saddle is more likely to stay in place. A perfectly fitted saddle presumably has no obstructions to prevent it from sliding over the horse's back.

Rider crookedness was more likely to be an effect rather than a cause of saddle slip. When the saddle shifts to one side, it is almost impossible for the rider to sit vertically in the middle of the horse's back. These findings highlight the importance of having a knowledgeable "eye on the ground" to observe the rider and saddle from the front and rear to assess whether they are centered and symmetrical. If the saddle persistently slips to one side, it may help to have a rider who is known to be symmetrical ride the horse and, if the saddle still slips to the same side, consider having a veterinarian perform a lameness evaluation.

Survey data showed that about a third of riders have their saddles checked annually, but Dr. Dyson sug-

In as little as a few weeks, a saddle that was a perfect fit may no longer fit so well.

gested that more frequent evaluations may be needed because a horse's back shape changes with the seasons, his

body weight, and his workload. In as little as a few weeks, a saddle that was a perfect fit may no longer fit so well.

There was considerable discussion—both at the conference and during the workshop that followed—as to how often saddle fit should

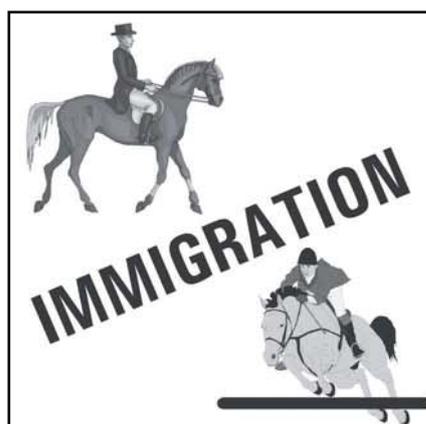
be evaluated. The comfort of the horse is, of course, the main concern; but the expense of frequent saddle-fit evaluations and reflocking is also a consideration. The consensus was that a horse owner can learn to perform a basic saddle-fit evaluation on her own horses, and to recognize the signs that indicate the need to bring in a professional saddle fitter.

Not only does a horse's back shape change during the course of a year; back dimensions also differ before and immediately after exercise. Changes in the horse's back width are greater in sound horses as compared with lame horses, and when the horse is ridden by a more skilled rider. If a saddle fits correctly at the start of exercise, it may become a little tight after exercise, especially if a thick pad is used. Dr. Dyson recommended that riders assess saddle fit before and after exercise to familiarize themselves with changes that occur in their horses.

Ongoing Research: Rider Posture and Saddle Fit

Prof. Lars Roepstorff and graduate student Maria Terese Engell from the Swedish University of Agricultural Sciences in Uppsala introduced the audience to some new studies of rider posture and the

effects of postural aberrations, which may be due to incomplete or improper sensory information being sent to the



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TIME TO NOMINATE CANDIDATES

April 15, 2015

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To accept the nomination, and if elected, a PM delegate nominee must:

- Be a current Participating Member of USDF.
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- Attend the 2015 USDF convention.

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is the deadline for nominations for:
USDF President,
USDF Treasurer,
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Regions 2, 4, 6, and 8

Nominations for USDF President, USDF Treasurer, and Regional Director in Regions 2, 4, 6, and 8 will also be accepted from the floor of the Board of Governors meeting at the 2015 annual convention in Las Vegas, Nevada.

e-mail all nominations to
nominations@usdf.org



CHECKING THE GOODS: Conference-goers enjoy hands-on moments at the trade fair

brain, or to misinterpretation of the information that the brain receives.

A common postural issue is pronation of the foot—inward rolling of the foot while walking. The researchers are evaluating riders with and without foot pronation as they walk barefoot, walk

while wearing running shoes, walk while wearing corrective shoes, sit in a “riding chair,” and ride two horses. Preliminary results indicate that the way a rider sits and rides reflect the way that he or she stands and walks. Information presented in this talk reinforced



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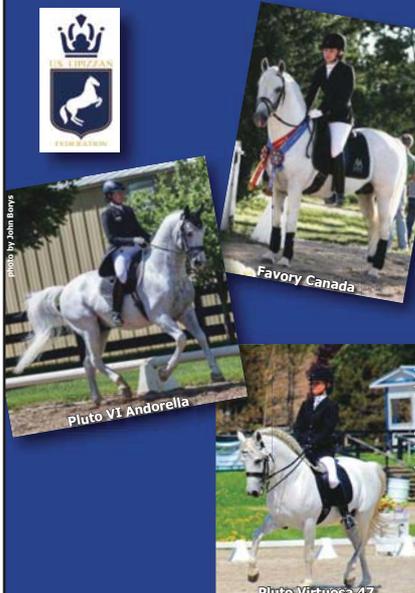
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the belief that riders need good core strength and should be symmetrical in their own bodies and movements in order to make their horses symmetrical. Methods to improve a rider's posture are also under investigation.

Additional Research

Dr. Katja Geser-von Peinen has used saddle pressure-mapping extensively in the veterinary clinic at the University of Zurich, and she spoke about the effects of saddle design and function on the rider and the horse. Dr. Geser-von Peinen showed the audience how to interpret the pressure maps and drew attention to some of the ways in which they can be misinterpreted. Based on her studies, guidelines have been established describing appropriate pressure thresholds for saddle fitting.

My own presentation described some equipment and apps that are intended for use by riders and trainers to evaluate the rider-saddle-horse interaction. These will be the topic of a future column.

Warning Signs of Saddle-Fit Problems

Early detection of signs of saddle slip or saddle-fit problems can help keep your horse as comfortable as possible and your training and riding on track. Rub marks on the hair coat are telltale signs of saddle slip. Red flags for pressure points beneath the saddle are areas where the hair coat becomes wavy; and dry spots within sweaty areas,

Meet the Expert

Hilary Clayton, BVMS, PhD, Diplomate ACVSMR, MRCVS, is the professor and Mary Anne McPhail Dressage Chair emerita. She was the first-ever Mary Anne McPhail Dressage Chair in Equine Sports Medicine at Michigan State University's College of Veterinary Medicine, East Lansing, from 1997 to 2014. At the same time, she was also a professor in MSU's Department of Large Animal Clinical Sciences.

A world-renowned expert on equine biomechanics and conditioning, Dr. Clayton is president of Sport Horse Science, LC, which is dedicated to translating research data into practical advice for riders, trainers, and veterinarians through lectures, articles, and private consultations. A USDF gold, silver, and bronze medalist, she is a member of the US Equestrian Federation Dressage Committee and a *USDF Connection* contributing editor.



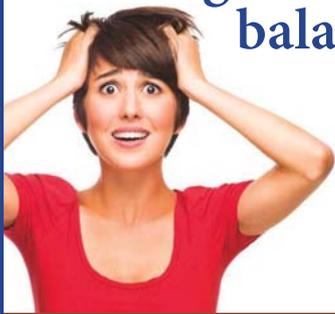
IN ACTION: *Speaking at the Saddle Research Trust International Conference*

which indicate localized areas of pressure high enough to cut off the blood supply to the hair follicles.

Saddle fitting clearly has implications for the horse's welfare and performance, and we must be vigilant in monitoring the development of problems so that they can be detected and remedied at an early stage. Learn how to evaluate the fit of your own saddle and check it frequently, both before

and after you ride. Consult an experienced saddle fitter as needed to perform a saddle-fit evaluation and to make adjustments to the flocking. Take a close look at your horse's back each time the saddle is removed, and note the presence of hair rubs, dry spots, or patches of wavy hair as early warning signs of problems. ▲

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