



## **Centaur Biomechanics “Virtual” Equine Sports Science Summit**

**Saturday 2<sup>nd</sup> October 2021**

### **Talk Summaries**

**Prof. Michael A. Weishaupt:**

**Compensatory strategies in horses with weight-bearing lameness's.**

You know how to recognize the compensatory movements of the head, withers and pelvis caused by weight-bearing lameness's in horses. But how do lame horses redistribute the load between their four limbs? Questions such as "Do horses increase or decrease the weight-bearing time of the painful limb?", "Can limbs be overloaded due to the redistribution strategy?"; or "What are the mechanisms behind the load redistribution?" will be addressed in this presentation.



**Dr. Rikke Schultz:**

**How fascia and myofascial kinetic lines can influence asymmetry in the whole body of the horse.**

The fascinating fascia plays a big role in normal locomotion in the equine; therefore, it is also important to consider in horses with disturbed motion patterns. The importance of a whole-horse approach will be explained through the 3D fascia network in the body with emphasize on the Myofascial Kinetic Lines and how they can be part of body asymmetry and asymmetric motion patterns.



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**Dr. Simon Curtis:**

**Unilateral deviations in foals: assessment, treatment and the long-term effect on equine health and performance.**

There are a number of unilateral limb deformities seen in foals. This makes them more easily identifiable by comparison but where untreated, leaves the mature horse prone to unevenness and unsoundness. This lecture will show how successful farriery treatment can improve conformation in foals and lead sound and healthy mature horses.



**Dr. Sarah Hobbs:**

**Functional consequences of uneven feet.**

Structural asymmetries in the horse population include a difference in dorsal hoof wall angle of the two forefeet, which as previously been defined as unevenness. Depending on the length of time and the severity, uneven horses may noticeably walk with an altered gait pattern but appear sound in trot. They may also be limited in their capacity to compete. This talk will explore how these structural asymmetries influence function through three linked studies that investigated limb forces and motion in uneven horses.



**Prof. Michael A. Weishaupt:**

**Evidence-based shoeing in healthy feet: Biomechanical considerations.**

Various trimming and shoeing routines have been developed empirically over decades and are continuously refined or rejected based on individual experience. This presentation aims to give an overview of the different biomechanical features during the stride cycle of a limb, during the stance and swing phase, and what implications they have on trimming and shoeing.



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**Dr. Elin Hernlund:**

**The hoof surface interaction -Functional characteristics of equine sport surfaces.**

This talk will cover the biomechanical phases of the stride and how both the hoof and the surface react to these events. The functional characteristics of equestrian sport surfaces which are based on horse-surface biomechanics and how we test these in order to provide objective standards for equestrian sport events will be discussed.



**Prof. Marie Rhodin:**

**Movement asymmetries or lameness?**

This talk will discuss movement asymmetry as a sign of lameness and explain how the horses compensate for lameness by changing the movement of head, withers, and pelvis. But are all horses with movement asymmetries lame or how can we detect orthopaedic pain in horses? This talk will feature data from studies where we investigate foals, young horses during their first years of training, analgesic testing, studies on laterality and pain behaviour.



**Haydn Price:**

**Solear packing: More than just a protective measure.**

The use of varying sole packing materials as a protective measure is often common practice, yet there is little evidence to substantiate the claims made by some manufacturers to the benefits or otherwise when applying varying materials during the shoeing process. With the variation in shore ratings between packing materials, might this potentially influence performance? In this session we will look more closely at how packing materials might affect both the internal components during weight bearing, and limb biomechanics during locomotion.

