Interaction between rider and horse: effect of head/neck position on the movement of the horse

Summary / Zusammenfassung
The aim of this study is to evaluate the influence of different head-neck positions on the horses’ movement, the loading of the limbs and the back, and on the centre of gravity of horse and rider. To analyse the effect of the rider, the six different head-neck positions were performed on the unridden and ridden horse. Locomotion analysis included full body 3-dimensional kinematic analysis, ground reaction force measurement of all 4 limbs simultaneously and saddle pressure measurement. Measurements were conducted on a treadmill. All the measuring systems were synchronised which enables a multifaceted approach of the horse-rider model.

A proven or negated relationship between head-neck position on one hand and development of gaits and weight distribution on limbs on the other hand is an important subject in the riding business. Results of this study will help the evaluation of different methods of schooling a horse, enabling an optimal development of its gaits. The findings about the mechanics of limbs and back in different head-neck positions may suggest some of the mechanisms involved in the development of certain pathologies seen in different equine sports disciplines.

This study is a collaboration between the Universities of Utrecht, Uppsala and Zurich.

Keywords / Suchbegriffe
horse, rider, gait analysis, kinematics, kinetics, saddle pressure measurement

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