THE KINEMATIC EVALUATION OF HORSE RIDING: DO THE CURRENT GUIDELINES FOR GOOD RIDING TECHNIQUE RESULT IN BETTER HORSE RIDING?

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Introduction

In horse riding, the rider's seat and posture play an important role in the communication with horse and for balance of the horse and rider. The incorrect seat, whilst being uncomfortable for both the horse and rider, also disrupts effective control over the horse and puts both the horse and rider at risk of injury. A vast amount of literature documenting the "classic riding seat" exists but despite this the efficacy of this correct riding etiquette has essentially not been validated. The aim of the study was therefore to assess current riding principles by testing whether body positions suggested to be good riding practice correlate to subjective rider ratings of comfort and the relationship between the movement of the horse and rider.

Methods

Eight experienced horse riders each rode the same three horses at the trot (sitting and rising) and the canter. Retro-reflective markers were attached to anatomical landmarks of the horse and rider and tracked using a 6 camera kinematic system. The calculated riding variables were: head straightness angle, back straightness angle, ankle angle, the distance of separation between a riders ankles and rein angle (a measure of rein use). Horse-rider movement phase delay (an objective measure of horse-rider synchrony) was determined for each rider and horse combination. Each rider completed a verbal rating scale (0-10) relating to the perceived comfort of the gait, following a set of three repeats for each gait, for each horse.

Results

Spearman's correlation showed that subjective rider comfort ratings and objective horse-rider movement phase delay were strongly related (R^2=0.93, $p<0.0001$), however none of the kinematically derived riding variables were significantly related to either subjective ratings or phase delay. A one way ANOVA between different gaits and between different horses indicated there was no difference in the objective riding variables between different gaits and different horses ($F=0.005$, $p=0.99$).

Conclusion

The comfort of the rider may be improved by maintaining the horse-rider phase synchrony. Maintaining this phase synchrony may be more important in achieving a balanced ride than by optimizing any of the "classic riding seat" body positions.