An investigation into the effectiveness of saddle design and its influence on rider lower leg position when using the light seat.

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Introduction: The saddle is an essential piece of equipment that is utilised and manipulated throughout the top equestrian disciplines (GEF, 2003; BHS, 2007). Rider research has highlighted the negative effect of a poor riding posture on equine biomechanics. Yet, regardless of the saddles role in uniting the horse and rider no research has investigated the effect of saddle design or fit on rider position and biomechanics (Peham et al. 2004; Peham et al. 2010; Tiago et al. 2011). This study aims to investigate the suitability of the Show Jumping (SJ) saddle and General Purpose (GP) saddle with the aim of establishing if the SJ saddles enhanced design benefits the rider when using the light seat and to investigate the suitability of GP saddles use in the jumping disciplines.

Materials & Methods: 8 female riders with a minimum competence level of BHS stage 2; rode the mechanical horse in both the SJ and GP saddle in canter using the light seat. The degree of angle at the hip, knee and ankle was measured 3 times for each data set and the posterior (negative) and anterior (positive) displacement of the lower leg was measured on the sagittal plane using video analysis software. Riders rode at jumping length in both saddles; the suitability of the stirrup length (SL) was established in accordance with a predetermined protocol. After confirmation of normality a paired T-test was used to statistically compare the data sets.

Results: Statistical analysis found that rider SL was significantly greater in the GP saddle with an average increase of 3.13cm. 6 of the 8 participants showed a significant difference in angle size in one or more angle measurements when in the GP saddle compared to the SJ saddle. Posterior displacement was significantly greater in the GP saddle compared to the SJ saddle with displacement values of 10.10cm and 7.11cm respectively.

Discussion & Conclusion: This study determined that the GP saddle cannot accommodate the necessary short SL needed for jumping. Therefore, due to a longer SL having to be used there was an increase in posterior displacement of the lower leg that resulted in the riders balance falling onto the horse’s forehand (Swift 1985; BHS. 2007; Print. 2011). Such occurrence can both impair equine and rider
performance over and between jumps (Peham et al. 2004; Tiago et al. 2011; Print. 2011). Conversely, the SJ saddle could effectively accommodate the shorter SL and increased the stability of the rider’s lower leg; which in turn increased the dynamic balance of the rider.

References:


