

Effects of rider awareness on asymmetrical rein tension

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INTRODUCTION

Riders communicate with the horse via operant conditioning, highlighted by Mclean and Christensen, 2017; through the application of pressure and executing a timely release upon achieving the desired response. Evidence from previous studies by Kuhnke et al., 2010, and Egenvall et al., 2015, found mean rein tensions measured in Newtons, can vary from 7 –43N in walk, 11—51N in trot, and 16—104N in Canter. A rider's ability to use correct and acceptable levels of tension, the understanding of their asymmetries and the timely release of an aid is key to rider performance, with correct practice preventing risk to equine welfare. The aim of this study was to investigate if application of visual feedback to the rider during a ridden session would reduce asymmetry and rein tension application, with the addition of the comparison of riders perceived asymmetries to recorded data using a Visual Analogue Scale (VAS).

METHODOLOGY

- Quantitative study with purposive sampling of 18 riders of 18 years +, at ridden level BHSQ Level 2 or above.
- Data captured for 1 minute in walk, trot and canter on the Racewood Equestrian Simulator. The last 30 seconds of each minute of data used for analysis
- Rein tension and asymmetry were recorded using the Racewood built in Rein Tension Gauge.
- Riders completed a preset habituation ride, a recorded ride with no visual feedback (simulator screen covered) and repeated with the data screen available.
- After the ridden session, riders completed a VAS score for asymmetry.



Figure 1: Participant riding without visual feedback



Figure 2: Participant riding with visual feedback

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DISCUSSIONS AND CONCLUSIONS

Visual feedback did reduce mean rein tensions applied, compared to without visual feedback. Results are comparable to Kuhnke et al., (2010) and Egenvall et al., (2015). The addition of visual feedback via a screen reduced asymmetry of the left and right contact, producing a more symmetrical ridden performance. The Racewood simulator was beneficial to enhance rider awareness of contact without compromising equine welfare. Development and understanding of rider asymmetry and awareness of tensions will improve the welfare of the horse and increase performance of the horse and rider. Further research could progress into the effects of visual feedback on a live horse using equipment such as the Centaur Rein Gauge, enabling real time feedback.

RESULTS

- Despite the change of gait, there was no statistically significant difference between the rein tension asymmetry between the left and right rein, or with and without visual feedback ($p=0.540$).
- Mean tensions varied with visual feedback (58.84 ± 0.3), ($p = 0.97$) and non-visual feedback (58.85 ± 0.18), ($p = 0.259$).
- When testing for asymmetry between nonvisual and visual feedback, there was no significant difference ($p = 0.540$) between the symmetry indices recorded.
- Despite results being non-significant, there was similarity in the predicted asymmetry from the VAS score to the ridden recordings from each rider.

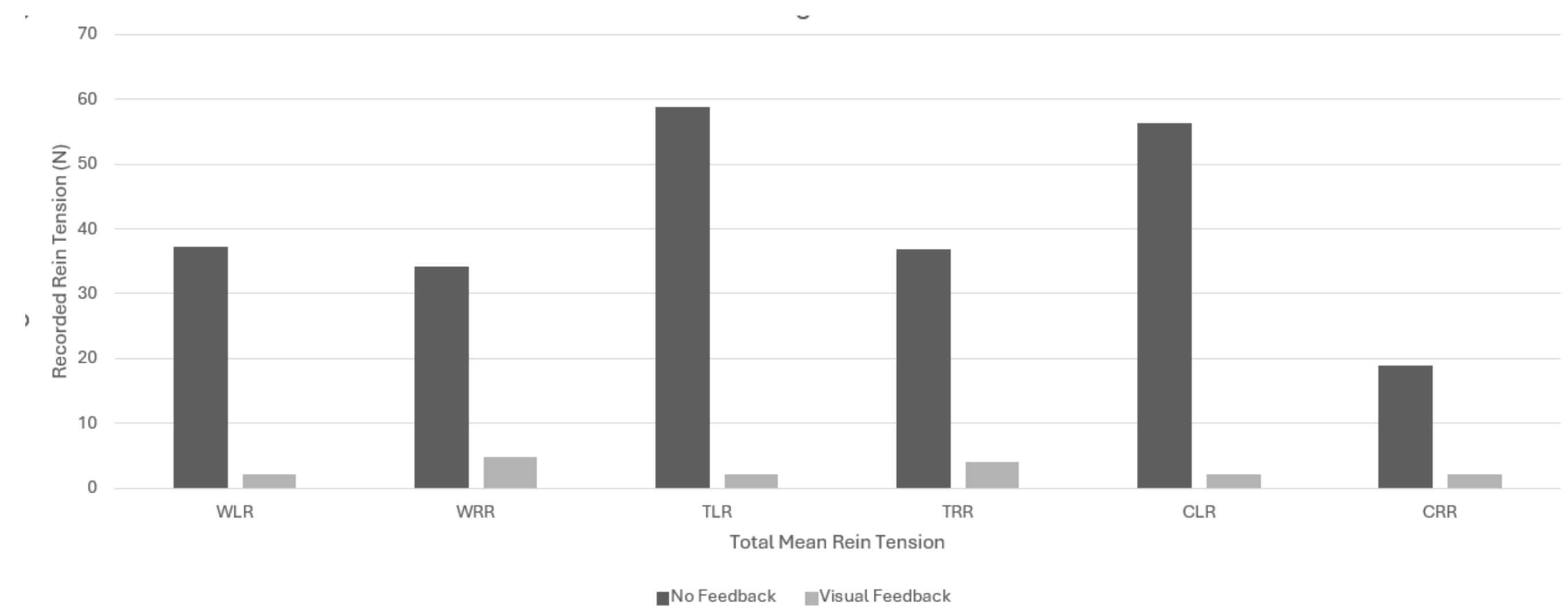


Figure 3: Graph of the Mean Rein Tension data from left and right rein between visual and no feedback in each gait. WLR=Tensions in walk down left rein, WRR=Tensions in walk down right rein, TLR=Tensions in trot down left rein, TRR=Tensions in trot down right rein, CLR=Tensions in canter down left rein, CRR=Tensions in canter down right rein.

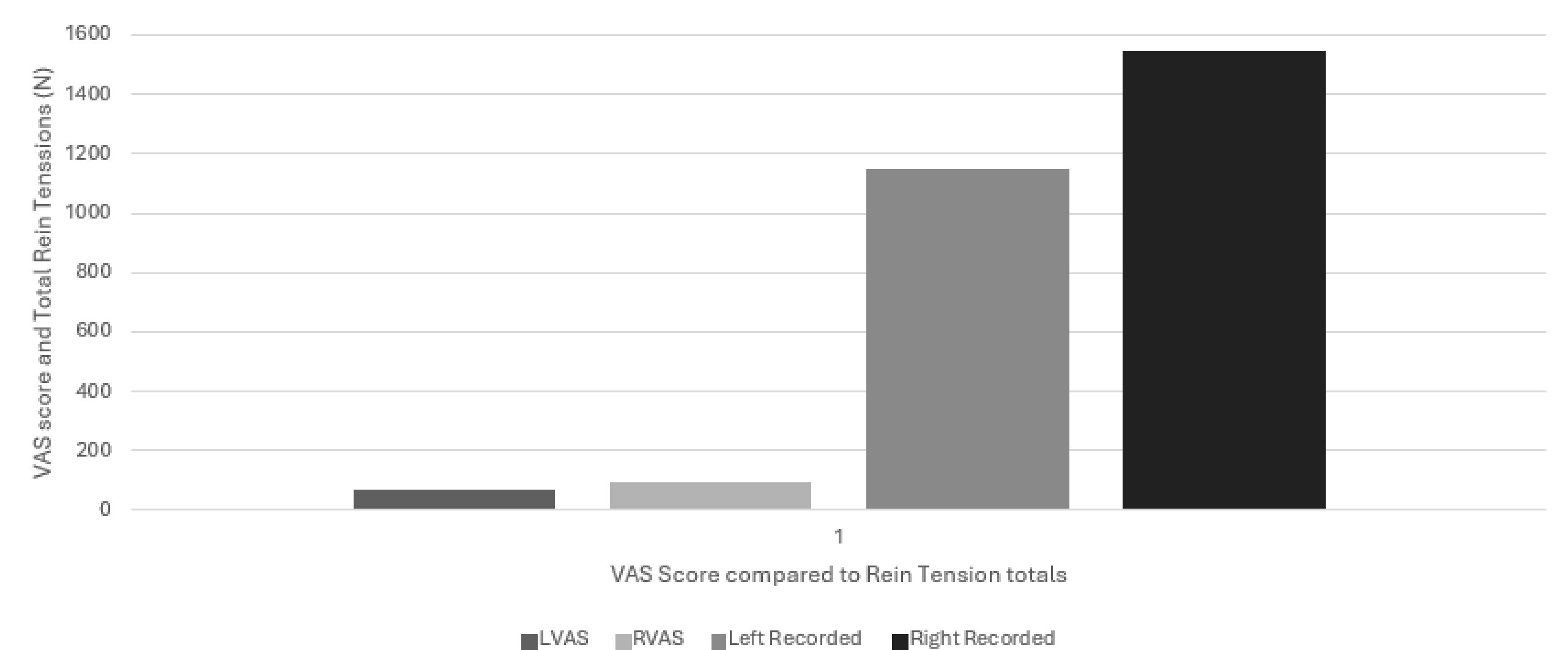


Figure 4: Graph of comparison of overall combined mean VAS recorded scores to the overall mean rein tension recordings from all participants (n=18). LVAS=Left rein VAS score, RVAS=Right VAS score, Left Recorded=Total left rein tension recordings from all gaits, Right Recorded=Total right rein tension recordings from all gaits.

APPLICATION TO INDUSTRY

This research suggests when riding with access to visual feedback, that there is potential for rider technique and performance to increase with a reduction of asymmetry and awareness of pressure applied within the aid.

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