

The Effects of the iJoy Ride™ on the Core Strength of the Female Horse Rider

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Introduction: Over recent years, rider injury and physical strains have received more interest with an increase in riders that have reported the instance of lower back pain, whilst riding (Havlick, 2010). The core muscles surround the abdominals and continue around the back and support the spinal structure and hip girdle and relieving pain whilst strengthening preventing further injury. The aim of this study was to establish if the use of the iJoy Ride™ could be used to increase the core strength of female horse riders.

Methodology: Horse riders (n=23) were divided into two groups, treatment (n=13) and control (n=10). Prior to the study, a questionnaire was given to participants and was used to group riders based on activity level, lifestyle and riding routine. The treatment group received three 15-minute sessions a week on the iJoy Ride™; a horse riding simulator over a six week period and continued daily riding and activity. The control group continued normal riding and activity. In week zero and six, core stability plank tests times (seconds) commonly used in fitness assessment were used, riders performed the test until fatigue and transverse abdominal (TrA) feedback readings using a 66fit™ biofeedback unit (mm/Hg) were obtained, the unit was inflated whilst riders activated the transverse abdominal muscles and a reading from the unit was recorded.

Results: All data was tested using an Anderson-Darling normality test and was deemed not normal ($P>0.05$). The mean TrA reading improved by 7.16 mm/Hg between week 0 and week 6 as shown in table 1. A Mann-Whitney U test indicated that there was a significant difference in the Transverse Abdominal Feedback from week one and week 6 ($U=44.5$, $p<0.05$), however, no significant difference was found in the plank ($U=63$, $p>0.05$). No significant difference was seen in the control group ($U=47$, $P>0.05$: $U=45.5$, $P>0.05$).

Table 1: Descriptive statistics week zero and six, TrA Readings and Core stability times

| | | Mean | | Median | | Standard Deviation | |
|--------|----------------------------|-----------|---------|-----------|---------|--------------------|---------|
| | | Treatment | Control | Treatment | Control | Treatment | Control |
| Week 0 | TrA Reading (mm/Hg) | 88.31 | 87.2 | 91.5 | 91 | 7.43 | 10.03 |
| | Core stability Time (Secs) | 66.85 | 89.3 | 65 | 71.5 | 43.09 | 51.58 |
| Week 6 | TrA Reading (mm/Hg) | 81.15 | 87.40 | 87 | 91 | 11.07 | 9.69 |
| | Core stability time (Secs) | 78.08 | 87.10 | 83 | 70 | 41.07 | 53.07 |

Conclusion: This study suggests a significant difference could be seen in the treatment group and that over a six week period the core strength of the rider can be increased, anecdotally decreasing the chance of injury. However, more specific regimes should be researched to ensure riders are fit for riding and aid prevention of injury.

Key Words: *Fitness, Rider Training, Core Strength, Novel Technique*

References:

- Havlick, H.S. (2010). Equestrian related sports injuries: A review of current literature. *Current sports medicine*. **9(5)**, 299-302.