

A PRELIMINARY STUDY OF THE EFFECT OF MANUAL CHIROPRACTIC TREATMENT ON LATERALITY OF MECHANICAL NOCICEPTIVE THRESHOLDS (MNTS) IN THOROUGHBRED RACEHORSES

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Background: Spinal manipulation using chiropractic techniques aims to improve joint function and the symmetry balance of the musculoskeletal system. Research into effects of chiropractic techniques on horses is limited. Pressure algometry is an established measure of mechanical nociceptive thresholds (MNTs) to quantify musculoskeletal responses [1].

Aim: To objectively assess and compare the influence of manual chiropractic on left and right side MNT measures of the thoracolumbar musculature for thoroughbred racehorses in training.

Methods: Thoroughbred point to point racehorses (n=16) from the same yard, in similar training were randomly assigned into 2 equal groups (n=8). Treatment group received manual chiropractic by an experienced McTimoney animal practitioner. Control group received no intervention. Triplicate MNTs were measured 8-10cm lateral to the dorsal midline at five bilateral anatomical sites (T9,T13,T18,L3,L6) along the thoracic and lumbar musculature using a digital pressure algometer by a single examiner blinded to the groups. Measurements were taken before treatment, 2hr post and at 2, 7 and 14 days post treatment. Komolgorov-Smirnov test assessed data normality. Paired T-tests compared laterality.

Results & Discussion: There were no significant left-right differences in 38 of 50(76%) measurement sites. Combining left/right datasets, significant difference between groups only occurred at T13, L6(p<0.05) pre-Tx; L6(p<0.05) d7. For right side, significant differences between treatment and control MNTs occurred post-Tx@L6(p=0.02); day 2@T18, L3, L6(p=0.02,0.02,0.03) and day 7@T13 T18, L3, L6(p=0.007, 0.04,0.01, 0.007). For left side there was no significant difference in MNTs between control and treatment except post Tx@ T13(p=0.04).

Limitations: The number of subjects, pressure algometry experience, time longevity

Conclusions: This study suggests, when assessing chiropractic effects on back musculature, that left and right MNT measures should be assessed independently and important to consider. Further research is warranted with larger cohorts.

References

1. Haussler, K.K. & Erb, H.N. (2003). American Association of Equine Practitioners. 49: 66-70.

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Declarations

Ethical code: Legal and ethical requirements have been met with regards to the humane treatment of animals described in the study, reviewed by the McTimoney Chiropractic College Ethical Review Committee before commencement of the study.

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