

The effects of manual chiropractic and instrument assisted chiropractic on spinal mechanical nociceptive thresholds (MNTs) in flat racehorses without clinical signs

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OBJECTIVE: To assess chiropractic (McTimoney approach) compared with instrument assisted chiropractic using an Integrator on the mechanical nociceptive thresholds (MNTs) of the thoracolumbar musculature of thoroughbred racehorses.

OUTCOME: Equine treatment by manual chiropractic and instrument assisted chiropractic using an Integrator reduced sensitivity to pain compared to no treatment.

INTRODUCTION

- Research into the therapeutic effect of correcting spinal joint misalignments using chiropractic techniques on horses is limited.
- The aim of this study was to objectively assess the influence of chiropractic techniques on pain perception levels using pressure algometry as an established method for the measurement of MNTs to indicate pain perception. (Haussler and Erb, 2003).

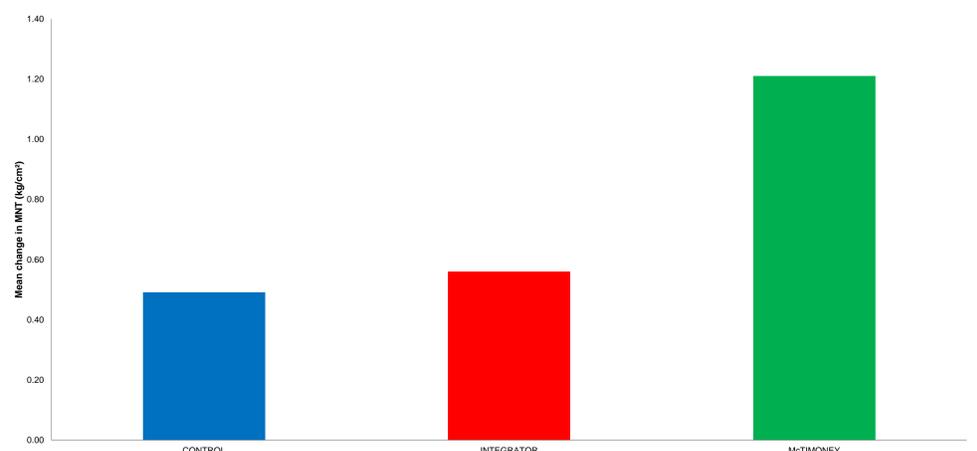
METHODOLOGY

- 24 flat racehorses with no history of pre-existing back problems were randomised into 3 equal groups, a control group (no intervention) and two treatment groups (manual chiropractic-McTimoney approach or instrument assisted chiropractic using an Integrator).
- Triplicate MNTs were measured, 8-10cm lateral to the dorsal midline at five bilateral anatomical sites along the thoracic and lumbar musculature using a digital pressure algometer.
- Measurements were taken before treatment, immediately after treatment, and at 1, 3, 7 and 10 days post treatment.
- Following assessment of normality, the data was analysed using Students t-test and ANOVA.

RESULTS:

- There were no significant left to right side differences in 28 out of 30 (93%) measurement sites.
- Both treatment groups showed significant increases in post-treatment MNTs on days 1 ($p<0.0001$), 3($p<0.01$), 7($p<0.01$) and 10($p<0.05$) compared to pre-treatment MNTs.
- The control group only presented a significant increase in MNTs Pre-Tx to day 1 ($p=0.015$).
- There was a significant difference in MNTs between treatment groups at day 10 post treatment ($p=0.035$). McTimoney group had significant increase MNTs ($P<0.05$) compared to Integrator group (figure 1).

Figure 1: Mean change in MNTs from Pre-Treatment to day 10



CONCLUSIONS

- Horses treated with chiropractic (McTimoney approach) and instrument assisted chiropractic using an Integrator show a statistically significant reduction in sensitivity to pain (indicated by increased MNTs) across measurement sites compared with the control group on Days 1, 3, 7 and 10 post treatment.
- McTimoney treatment appears to have a longer lasting effect (day 10) on increasing MNTs compared to treatment with the Integrator.
- Further research to evaluate effects of the different treatments on horses with back pain would be of interest.

REFERENCES

Haussler, K.K. & Erb, H.N. (2003). Pressure Algometry: Objective assessment of back pain and effects of chiropractic treatment. Proceedings of American Association of Equine Practitioners. 2003; 49: 66-70.