

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

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Summary:

Implications McTimoney chiropractic technique and instrument assisted chiropractic using an Integrator both reduce sensitivity to pain compared to no treatment on thoroughbred racehorses.

Introduction Chiropractor's core clinical action is spinal adjustments aiming to correct spinal joint misalignments. Research into the therapeutic effect of correcting spinal joint misalignments using chiropractic techniques on horses is limited. Numerous adjusting 'techniques' exist and various adjusting instruments have been developed over the years. The aim of this study was to objectively assess the influence of McTimoney chiropractic technique compared with instrument assisted chiropractic using an Integrator on pain perception levels using pressure algometry as an established method for the measurement of mechanical nociceptive thresholds (MNTs) to indicate pain perception (Haussler and Erb, 2003).

Material and methods 24 thoroughbred flat racehorses from the same yard on the same training schedule were selected (mean bodyweight 461kg \pm 69kg, mean wither height 15.3hh \pm 1/2 hh). The horses were clinically sound with no history of pre-existing back problems. They were randomly assigned into 3 equal groups, a control group (no treatment intervention) and two treatment groups (McTimoney chiropractic or instrument assisted chiropractic using an Integrator). Treatments were undertaken by a qualified, experienced McTimoney Animal Practitioner and McTimoney Chiropractor. 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 by a single examiner blinded to the groups. Measurements were taken before treatment, immediately after treatment, and at 1, 3, 7 and 10 days post treatment on all animals between 2pm and 5pm.

Laterality of measurement and comparisons were made between the groups statistically. Normal distribution of data was assessed using the Komolgorov-Smirnov test. Data was subsequently 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 the Integrator and McTimoney groups showed significant increases in post-treatment MNTs over time compared to pre-treatment MNTs. A significant increase in MNTs, for the control group only occurred pre-treatment to day 1.

Table 1: Statistical increase in post treatment MNTs compared to pre treatment MNTs at each time point

Group	Pre-Tx to day1	Pre-Tx to day 3	Pre-Tx to day 7	Pre-Tx to day 10
Integrator	P<0.0001	P<0.0001	P<0.0001	P<0.05
McTimoney	P<0.0001	P<0.01	P<0.01	P<0.01
Control	P<0.05	NS	NS	NS

Significant differences in MNTs between the treatment groups were found at S2 (p=0.039) and on Day 10 (p=0.035) after treatment. The McTimoney group had significantly increased MNTs (p<0.05) compared to the Integrator group (figure 1).

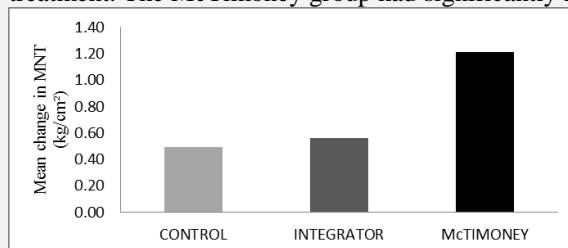


Figure 1: Mean change in MNTs from Pre-Treatment to day 10

Conclusion Horses treated with McTimoney chiropractic 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. There was a significant difference in reduction in sensitivity to pain between treatment groups at 10 days post treatment. The McTimoney treatment appears to have a longer lasting effect 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.

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References: Haussler, K.K. & Erb, H.N. 2003. Proceedings of American Association of Equine Practitioners. 49: 66-70.