



# Investigation into the effects of McTimoney chiropractic treatment, Static Magnetic therapy and a combined treatment intervention on the Mechanical Nociceptive Threshold values in Thoroughbred Racehorses.

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## INTRODUCTION

Equine back pathologies are an ongoing concern within the equine industry, impacting negatively on performance and welfare longevity (De Heus et al., 2010). Chiropractic techniques focus on correction of joint dysfunction of the spine and pelvis to restore optimal nerve and muscle function and the symmetry of the musculoskeletal system.

This study aims to objectively assess the influence of McTimoney chiropractic compared with a static magnetic rug treatment and a combined chiropractic and static magnetic rug treatment on MNTs of the thoracolumbar musculature of thoroughbred racehorses. Increased MNTs suggest a reduction in sensitivity to musculoskeletal tenderness (Hausler and Erb, 2006).

## METHODOLOGY

A controlled, randomised study using 40 sound, healthy 2 year old Thoroughbred race horses from the same yard and training schedule. 4 groups(n=10):

- G1- Control(no intervention),
- G2- Chiropractic (McTimoney method for neck, back, pelvis)
- G3- Magnetic (rug, 20 fixed uni-polar magnets(1000 gauss), for 60min/day)
- G4- Combined intervention (G2+G3)

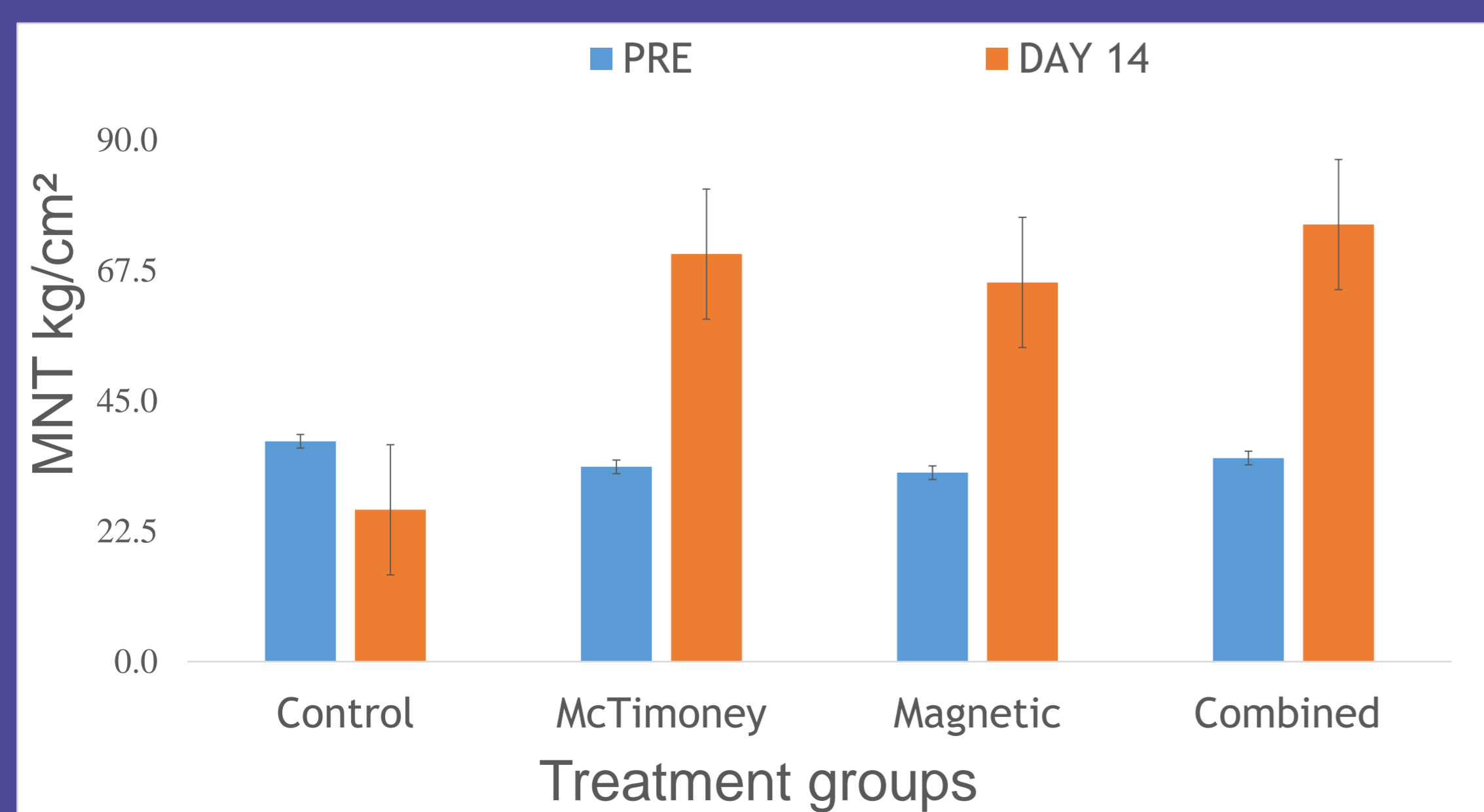
Whilst stood square, triplicate MNTs were measured, using a pressure algometer, at five bilateral anatomical sites (T9, T13, T18, L3, L6) 10cm lateral to dorsal midline by the same examiner.

MNT measurements were repeated Pre-Tx, Post-Tx, Days 1,7 and 14 post treatment.

Repeatability of MNT measurement was evaluated. Data tested for normality by KS test. Group data analysed over time points using repeated measures ANOVA with T- tests. Significance level set at  $p < 0.05$ .

## RESULTS

- No significant difference ( $p > 0.05$ ) between L and R mean MNTs for all measurement sites.
- ALL treatment groups = SIGNIFICANT increase in mean MNTs Pre-Tx to Day 14 ( $p < 0.001$ )
- G1 (control-no intervention) = SIGNIFICANT decrease in MNTs Pre-Tx to Day 14 ( $p < 0.001$ )



- Post Tx - significant difference in mean MNTs between control group and each treatment group
- Post Tx - SIGNIFICANT change in mean MNTs day 7 & day 14 for G2 (McT) and G4 (COMBINED) but for G3 (Magnetic) only day 14.

Group	Pre-Tx-> post-Tx	PostTx-> day 7	Post-Tx-> day14
Control	P>0.05	<b>P&lt;0.001</b>	<b>P&lt;0.001</b>
McTimoney	<b>P&lt;0.001</b>	<b>P&lt;0.01</b>	<b>P&lt;0.001</b>
Magnetic	<b>P&lt;0.001</b>	P>0.05	<b>P&lt;0.001</b>
Combined	<b>P&lt;0.001</b>	<b>P&lt;0.001</b>	<b>P&lt;0.001</b>

## DISCUSSION & CONCLUSIONS

- Positive evidence that horses treated with manual chiropractic (McTimoney), magnetic(1000gauss) and combined Tx's show a significant reduction in sensitivity to pain (indicated by increased MNTs) of the back musculature compared with no intervention (control) for up to 14 days.
- Further research is required on the differences between the treatments on muscle tonicity effects and performance parameters and horses with back pain.

## APPLICATION TO INDUSTRY

- Provides support evidence of an effect of McTimoney Chiropractic and Magnetic rugs on the horses' back muscle sensitivity to pain
- Has implications in assisting horse management for performance and welfare

## REFERENCES

- De Heus, P., Van Oossanen, G., Van Dierendonck, M. and Back, W. (2010). A pressure algometer is a useful tool to objectively monitor the effect of diagnostic palpation by a physiotherapist in Warmblood horses. *Journal of equine veterinary science*, 30(6), pp. 310–321
- Hausler, K.K. & Erb, H.N. (2006). Mechanical nociceptive thresholds in the axial skeleton of horses. *Equine Veterinary Journal*. 2006; 38: 70-75