The Effects of Dynamic Tape on Delayed Onset Muscle Soreness within the Hamstring Complex

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BACKGROUND

The main known causes of Delayed Onset Muscle Soreness (DOMS) are eccentric exercise and unaccustomed loads (Kanda et al., 2013). DOMS have many adverse impacts on sporting performance which can lead to injury (Smith, 1992). Many different modalities are used by physical therapists with varying amounts of success (Cheung, Hume & Maxwell, 2003). Dynamic Tape is a new biomechanical tape which is designed to offload musculature over a joint line through its high recoil (McNeil & Pedersen, 2016). If this is applied before eccentric exercise or unaccustomed loads it could prevent trauma and minimize the known adverse effects of DOMS.

AIM(S)

The aim of this study is to see if by applying Dynamic Tape prior to an eccentric exercise protocol an impact can be seen on the known clinical markers associated with DOMS.

RESULTS

Repeated Measures ANOVA where run between tape, time and the interaction between time and tape for each clinical measure. The interaction was seen to be significant within both limbs for pressure algometer and the dominant leg for muscle girth.

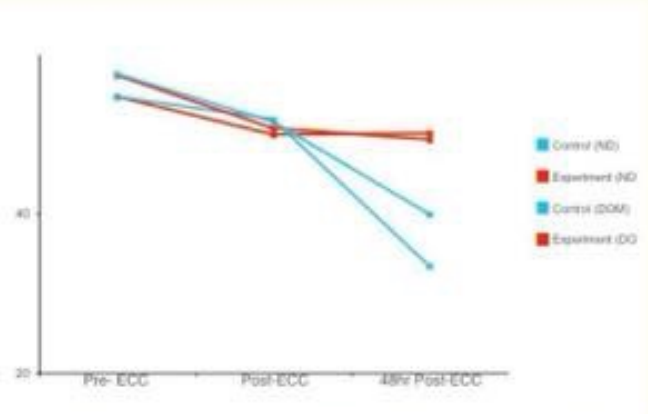

Figure 1: Pressure Algometer (M ± SD) for Dominant and Non-Dominant Experimental (Taped) and Control (Not Taped) conditions. (Pre-ECC, baseline measure; Post-ECC, immediately after muscle soreness induction; 48hr Post-ECC, 48 hours after muscle soreness induction; M, mean; SD, standard deviation).

Paired sample t-tests of special interest for pressure pain scores are the significant difference seen between post/48post control condition and the non significant difference seen post/48post for the experimental condition. This was the case for both dominant and non-dominant leg.

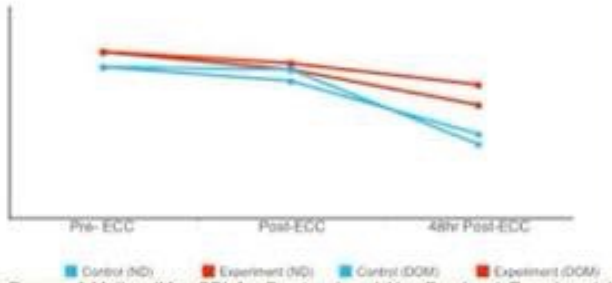

Figure 2: Range of Motion (M ± SD) for Dominant and Non-Dominant Experimental (Taped) and Control (Not Taped) conditions. (Pre-ECC, baseline measure; Post-ECC, immediately after muscle soreness induction; 48hr Post-ECC, 48 hours after muscle soreness induction; M, mean; SD, standard deviation).

Paired sample t-tests of special interest for range of motion are the significant differences seen between post/48post control condition and the non significant differences seen post/48post for the experimental condition. This was the case for both dominant and non-dominant leg.

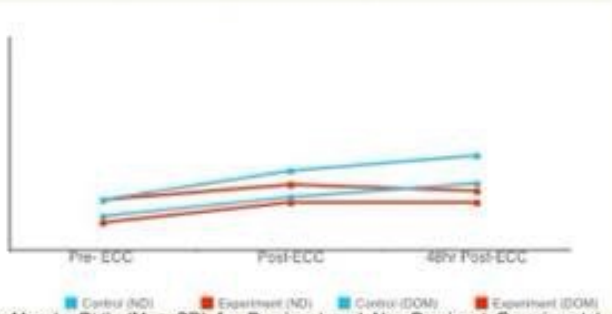

Figure 3: Muscle Girth (M ± SD) for Dominant and Non-Dominant Experimental (Taped) and Control (Not Taped) conditions. (*Pre-ECC, baseline measure; Post-ECC, immediately after muscle soreness induction; 48hr Post-ECC, 48 hours after muscle soreness induction; M, mean; SD, standard deviation)*

Paired sample t-tests of special interest for muscle girth are the significant difference seen between post/48post control condition and the non significant result seen for the experimental group. This was only the case within the dominant leg. No significant difference was found within the control condition between post/48post.

CONCLUSION(S)

In conclusion, the clinical markers associated with DOMS can be seen to have been reduced through the application of Dynamic Tape.

KEY REFERENCES

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