

SEMG: spinal stability post manual facilitation

K.J. Jones*¹, J. Wray¹, M. McBride¹, N. Ellis¹, C. Harraway¹
¹ Cardiff University, UK.

Introduction

The importance of stabilising the spine is heightened in athletes, with a weak core leading to less efficient movement and potential injury. Evidence indicates that spinal stability training could prevent injury, enhance performance and accelerate post injury rehabilitation.

Aim

To investigate the change in average muscle activity of bilateral Multifidus (MT), Transverse Abdominus/ Internal Oblique (TA/IO), External Oblique (EO), Erector Spinae (ES) following a manual facilitation technique.

Method

A healthy convenience sample was recruited for a same subject experimental design (age 26.45 years (± 5.25); n = 22; 13 female). The baseline posture was upright sitting/standing. The intervention is a specific manual facilitation applied to MT. The aim being to facilitate an active neutral alignment of the lumbar spine by enhancing proprioceptive awareness.

Surface Electromyography was used to evaluate average muscle activity. Data was analysed using a paired t test ($\alpha \leq 0.05$). The protocol was repeated in sitting and standing. Local ethical approval was obtained from the School of Healthcare Studies ethics committee, Cardiff University.

1. Relaxed posture



2. Therapist initiates movement



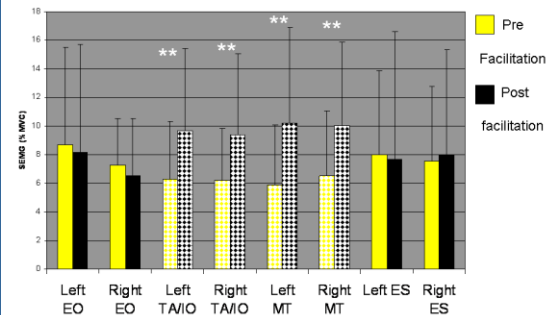
3. Proprioceptive and verbal feedback is continued.



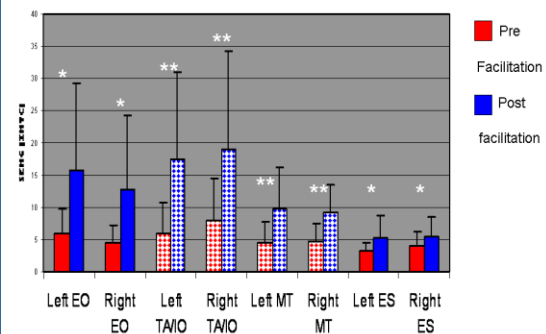
4. Active neutral Lumbar spine

Results

SEMG investigation of facilitation technique in sitting



SEMG investigation of facilitation technique in standing



The results indicate that post intervention there was a statistically significant increase in the activity of all eight target muscles in standing and a highly significant increase of the deep spinal stabilisers in both sitting and standing postures.

Conclusion

These results are interpreted as indicating that this technique results in a preferential recruitment of the deep spinal stabilisers in both sitting and standing. Clinically this technique has potential to be useful in retraining individuals to isolate the deep stabilisers prior to progressing on to independent exercises and ultimately more challenging sporting activities.

Contact:
Karen Jones. Physiotherapy Dept.
Cardiff University.
Tel: 02920 687730
E Mail: joneskj@cf.ac.uk

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Research Centre for Clinical Kinesiology, Cardiff University