

## **Influence of compression therapy on symptoms following soft tissue injury from maximal eccentric exercise.**

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- STUDY DESIGN:** A between groups design was used to compare recovery following eccentric muscle damage under 2 experimental conditions.
- OBJECTIVE:** To determine if a compression sleeve donned immediately after maximal eccentric exercise would enhance recovery of physical function and decrease symptoms of soreness.
- BACKGROUND:** Prior investigations using ice, intermittent compression, or exercise have not shown efficacy in relieving symptoms of delayed onset muscle soreness (DOMS). To date, no study has shown the effect of continuous compression on DOMS, yet this would offer a low cost intervention for patients suffering with the symptoms of DOMS.
- METHODS AND MEASURES:** Twenty nonimpaired non-strength-trained women participated in the study. Subjects were matched for age, anthropometric data, and one repetition maximum concentric arm curl strength and then randomly placed into a control group (n = 10) or an experimental compression sleeve group (n = 10). Subjects were instructed to avoid pain-relieving modalities (eg, analgesic medications, ice) throughout the study. The experimental group wore a compressive sleeve garment for 5 days following eccentric exercise. Subjects performed 2 sets of 50 passive arm curls with the dominant arm on an isokinetic dynamometer with a maximal eccentric muscle action superimposed every fourth

passive repetition. One repetition maximum elbow flexion, upper arm circumference, relaxed elbow angle, blood serum cortisol, creatine kinase, lactate dehydrogenase, and perception of soreness questionnaires were collected prior to the exercise bout and daily thereafter for 5 days.

**RESULTS:** Creatine kinase was significantly elevated from the baseline value in both groups, although the experimental compression test group showed decreased magnitude of creatine kinase elevation following the eccentric exercise. Compression sleeve use prevented loss of elbow motion, decreased perceived soreness, reduced swelling, and promoted recovery of force production.

**CONCLUSIONS:** Results from this study underline the importance of compression in soft tissue injury management.

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