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The effect of intermittent lower limb occlusion on recovery following exercise-induced muscle damage: a randomized controlled trial

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Abstract

Objectives: The purpose of this investigation was to examine the effectiveness of intermittent lower limb occlusion in augmenting recovery from exercise induced muscle damage (EIMD) in physically active males.

Design: Randomized Controlled Trial, double blind

Methods: Sixteen healthy recreationally active male participants were randomly assigned to an intermittent occlusion (OCC; n = 8) or control (SHAM; n = 8) group. The EIMD protocol comprised of 100 drop-jumps, from a 0.6m box. Indices of muscle damage were creatine kinase (CK), thigh-circumference (TC), muscle soreness (DOMS), counter-movement jump (CMJ) and maximal isometric voluntary contraction (MIVC). Measurements were assessed pre, 24h, 48h and 72h following exercise.

Results: There was a significant time effect for all indices of muscle damage suggesting EIMD was present following the exercise protocol. The decrease in MIVC was significantly attenuated in the OCC group compared to the SHAM group at 24 (90.4 ± 10.7 vs 81.5 ± 6.7%), 48 (96.2 ± 6.1 vs. 84.5 ± 7.1%) and 72h (101.1 ± 4.2 vs. 89.7 ± 7.5%). The CK response was reduced in the OCC group at 24 (335 ±