Effects of a Combined Protein and Antioxidant Supplement on Recovery of Isometric Muscle Function in College-aged Males

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Abstract

Background: It is well known that dynamic high-intensity exercise involving eccentric muscle contractions cause fatigue and muscle damage. Recovery strategies have become a co=on addition to performance nutrition as athletes must perform in successive events or competitions. **Objective:** To determine the effects of a protein and antioxidant (PRO+AO) supplement on recovery of isometric function within a 24 hours. **Methods:** This study was a randomized, single-blinded, placebo controlled, and parallel design. Thirty-six college-aged males underwent 100 maximal eccentric contractions of the right knee extensor muscle then ingested either a PRO+AO, PRO only, or a placebo supplement 0, 6, and 22 hours post exercise. Isometric muscle function and muscle soreness were measured at baseline, 0, 1, 2, 6, and 24 hours post eccentric exercise. **Results:** PRO+AO did not significantly increase recovery of isometric muscle function over 24 hours. **Conclusions:** The lack of any effect on isometric muscle function and recovery present questions about the validity of using a combined protein and antioxidant supplementation as a new recovery strategy. Therefore, additional research is necessary to confirm the beneficial effects of PRO+AO within 24 hours.

Keywords: antioxidants; protein; supplementation; muscle recovery; eccentric exercise; isometric torque