SWACSM Abstract

The Effects of Eight Weeks of Leucine/Whey Protein Supplementation and Resistance Training on Isokinetic Peak Torque

ALAYNE J. THOMPSON, TREVOR D. ROBERTS, & JARED W. COBURN, FACSM

Exercise Physiology Laboratory; Department of Kinesiology; California State University; Fullerton, CA

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Advisor / Mentor: Coburn, Jared (jcoburn@fullerton.edu)

ABSTRACT

Resistance training can lead to significant increases in muscle size and strength. Supplementing the diet with leucine and whey protein purportedly increases protein synthesis, potentially accelerating the processes involved with hypertrophy and strength increases. **PURPOSE**: To examine the effects of leucine and whey protein supplementation during 8 weeks of unilateral dynamic constant external resistance (DCER) training on isokinetic peak torque. **METHODS**: Thirty-five men (mean age ± SD = 22.3 ± 2.3 y) volunteered to participate in this investigation. Participants were randomly assigned to one of three groups: supplement (SUPP), placebo (PLA), or control (CON). The SUPP and PL participants then trained the leg extensors of the dominant limb (based on kicking preference) three times per week for eight weeks. Leg extension peak torque was determined for all participants pretraining and post training at 0, 60, 120, 180, 240, and 300°·s^{-1} using an isokinetic dynamometer. **RESULTS**: The results indicated there was no significant time × velocity × group interaction (p = 0.55). There was, however, a significant time × group interaction. Both the SUPP group (p < 0.001) and the PLA group (p = 0.02) demonstrated significant increases in peak torque from pretraining to post training, while the CON group did not (p = 0.59). There was no difference in the magnitude of the gain in isokinetic peak torque between the SUPP and PLA groups (p = 0.62). **CONCLUSION**: Isokinetic peak torque increased significantly following 8 weeks of DCER training. However, the increase in peak torque was not augmented by leucine and whey protein supplementation.