TACSM Abstract

The Effect of Acute Consumption of Overtime Essential Amino Acids Sports Drink on Delayed Onset Muscle Soreness in the Older Sedentary Population

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ABSTRACT

Essential amino acids are necessary for nutrition whether obtained by digestion of proteins or by oral supplementation of amino acids. The elderly experience loss of skeletal muscles and decrease in their strength and function, which can lead to poor quality of life. Increased quantity and quality of proteins stimulates muscle protein synthesis that can help combat this natural aging process. **PURPOSE:** The aim of this study was to see if consumption of essential amino acid drink high concentrations of leucin (2040 mg/serving) during exercise will attenuate the condition of Delayed Onset Muscle Soreness in the elderly. Also, we aimed to assess the degree of muscle flexibility and endurance followed the three-day exercise protocol. We hypothesized that the older participants acutely ingesting the essential amino acid supplement during the exercise regime will have increased physical performance and diminished symptoms of DOMS. **METHODS:** In this study, 16 participants (6 P, 10 EAA-O) completed a health screening visit and an exercise routine (sit, stretch and reach, shoulder flexibility distance, MVC isometric handgrip, push-ups (reps), flexed arm hang (time), cable triceps extension (50% of one repetition max until failure), and a 1.5-mile run, with intermittent consumption of the sports drink) for three consecutive days. The study participants were randomly assigned to either the EAA-O group (6.6g of EAA-O + Gatorade) or the control group (Gatorade-only). The study design is a double blinded study as neither the recording analysis researchers nor study participants were aware of the assigned group. **RESULTS:** The EAA-O group improved significantly from day one to two in flexed arm hang ($p = 0.036$) and the 1.5-mile run ($p = 0.040$). The EAA-O group improved significantly from day two to three in push-ups ($p = 0.002$), flexed arm hang ($p = 0.035$), and 1.5-mile run (0.001). The EAA-O group improved significantly from day one to three in push-ups ($p = 0.045$), flexed arm hang ($p = 0.006$), 1.5-mile run ($p = 0.0003$), and the top speed ($p = 0.026$). The placebo group did not improve significantly in any of the exercise parameters. **CONCLUSIONS:** Results suggest that the Overtime essential amino acid supplementation combined with training improves overall athletic performance in the older sedentary population. Research reported in this publication was supported by a research contract with Calwood Nutritionals and was approved by the ENMU IRB.