**Abstract:**

The three branched chain amino acids (BCAAs), leucine, isoleucine and valine, are the amino acids that are metabolized in the greatest quantity by skeletal muscle during exercise. Supplementation with BCAAs has been used to stimulate muscle protein synthesis following exercise. The purpose of this study was to determine if supplementation of BCAAs in combination with glucose would reduce exercise-induced delayed onset muscle soreness (DOMS). Using a double-blind crossover design, 20 subjects (11 females, 9 males) were randomly assigned to either BCAA (n=10) or placebo (n=10) groups. Subjects performed a squatting exercise to elicit DOMS and were required to rate their muscle soreness every 24 hours for four days following exercise while continuing to consume the BCAA or placebo over the same period. Following a three-week recovery period, subjects returned for a second visit, receiving the alternate BCAA or placebo treatment and repeating the same exercise and DOMS rating protocol for next four days. When male and female results were analyzed together, BCAA supplementation resulted in an overall trend of decreased DOMS with a 33% decrease in the BCAA group versus placebo at 24 hours following exercise. However, this observation was not statistically significant ($p = 0.1057$). When female subjects (n=11) were analyzed separately, BCAA supplementation resulted in a significant decrease in DOMS versus placebo at 24 hours following exercise ($p = 0.018$). No significant effect of BCAA supplementation versus placebo was noted in male subjects.

Danie Leahy

Branched Chain Amino Acid Plus Glucose Supplement Reduces Exercise-Induced Delayed Onset Muscle Soreness