51. SWACSM Abstract

Effect of 4-week Creatine Monohydrate Supplementation on Absolute Strength in Trained and Untrained Healthy Adults

C. VOLLMER & B. SANCHEZ, PHD

Human Performance Laboratory; Kinesiology; California State University, Bakersfield; Bakersfield, CALIFORNIA

Category: Undergraduate

Advisor: Sanchez, Brittany (bksanchez@csub.edu)

ABSTRACT

Creatine monohydrate (CrM) is a synthetic form of creatine which has similar effects on the body as compared to the endogenous form. Creatine is used by the body to supply rapid ATP to muscles for contractile movements and is regularly obtained in the diet, primarily from meat products, or synthesized by the liver at a 24-hour turnover rate of approximately 1-2 g/day. Creatine supplementation is commonly used with the intention of improving muscular strength and hypertrophy for athletic performance along with enhanced recovery time, injury prevention, rehabilitation, and potential neuroprotective benefits. **PURPOSE**: The specific aim of this study is to measure the effect of CrM supplementation on absolute strength after a bout of maximal resistance exercise in trained and untrained healthy adults. **METHODS**: 18 females (F) and 25 males (M) (23 ± 4.7 yr, 26.7 ± 5.3 BMI) participated in a 4-week CrM (BodyTech®) supplement intervention. Week 1 dosage was 20g/day, followed by 10g/day for the remaining 3 weeks. One repetition max (1RM) bench press and squat (Rogue Fitness®) resistance tests were performed to assess absolute strength at baseline (week 0) and post-intervention (week 4). Participants did not alter their current regimen of physical activity or dietary intake throughout the 4-week trial. Data are presented as changes from baseline through week 4 to determine strength outcomes before and after CrM supplementation. **RESULTS**: Paired sample t-Tests revealed significant increases in 1 RM bench press (F 2.76 ± 0.72 kg, p=0.001; M 5.16 ± 0.89 kg, p<0.001). Additionally, significant increases in 1 RM squat were observed (F 6.5 ± 2.1 kg, p=0.006; M 9.53 ± 1.91 kg, p<0.001). **CONCLUSION**: These results indicate the given quantity of CrM supplementation improves upper and lower extremity maximal strength outputs independent of training status, sex, or current activity levels in young healthy adults.