

Creatine supplementation combined with resistance training in older men.

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Source

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Abstract

PURPOSE:

To study the effect of creatine (Cr) supplementation combined with resistance training on muscular performance and body composition in older men.

METHODS:

Thirty men were randomized to receive creatine supplementation (CRE, N = 16, age = 70.4 +/- 1.6 yr) or placebo (PLA, N = 14, age = 71.1 +/- 1.8 yr), using a double blind procedure. Cr supplementation consisted of 0.3-g Cr.kg⁻¹ body weight for the first 5 d (loading phase) and 0.07-g Cr.kg⁻¹ body weight thereafter. Both groups participated in resistance training (36 sessions, 3 times per week, 3 sets of 10 repetitions, 12 exercises). Muscular strength was assessed by 1-repetition maximum (1-RM) for leg press (LP), knee extension (KE), and bench press (BP). Muscular endurance was assessed by the maximum number of repetitions over 3 sets (separated by 1-min rest intervals) at an intensity corresponding to 70% baseline 1-RM for BP and 80% baseline 1-RM for the KE and LP. Average power (AP) was assessed using a Biodex isokinetic knee extension/flexion exercise (3 sets of 10 repetitions at 60 degrees.s⁻¹) separated by 1-min rest). Lean tissue (LTM) and fat mass were assessed using dual energy x-ray absorptiometry.

RESULTS:

Compared with PLA, the CRE group had significantly greater increases in LTM (CRE, +3.3 kg; PLA, +1.3 kg), LP 1-RM (CRE, +50.1 kg; PLA +31.3 kg), KE 1-RM (CRE, +14.9 kg; PLA, +10.7 kg), LP endurance (CRE, +47 reps; PLA, +32 reps), KE endurance (CRE, +21 reps; PLA +14 reps), and AP

(CRE, +26.7 W; PLA, +18 W). Changes in fat mass, fat percentage, BP 1-RM, and BP endurance were similar between groups.

CONCLUSION:

Creatine supplementation, when combined with resistance training, increases lean tissue mass and improves leg strength, endurance, and average power in men of mean age 70 yr.