Abstract

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l-Carnitine l-tartrate supplementation favorably affects biochemical markers of recovery from physical exertion in middle-aged men and women.

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OBJECTIVE: The purpose of this study was to examine the effects of Carnipure tartrate (Lonza, Allendale, NJ) supplementation (total dose of 2 g/d of l-carnitine) on markers of performance and recovery from physical exertion in middle-aged men and women.

METHODS: Normally active and healthy men (n = 9, 45.4 +/- 5.3 years old) and women (n = 9, 51.9 +/- 5.0 years old) volunteered to participate in the investigation. Double-blind, placebo, balanced treatment presentation and crossover design were used with 3 weeks and 3 days of supplementation followed by a 1-week washout period before the other counterbalanced treatment was initiated. After 3 weeks of each supplementation protocol, each participant then performed an acute resistance exercise challenge of 4 sets of 15 repetitions of squat/leg press at 50% 1-repetition maximum and continued supplementation over the recovery period that was evaluated. Blood samples were obtained at preexercise and at 0, 15, 30, and 120 minutes postexercise during the acute resistance exercise challenge and during 4 recovery days as well.

RESULTS: Two grams of l-carnitine supplementation had positive effects and significantly (P </= .05) attenuated biochemical markers of purine metabolism (ie, hypoxanthine, xanthine oxidase), free radical formation (malondialdehyde), muscle tissue disruption (myoglobin, creatine kinase), and muscle soreness after physical exertion. However, markers of physical performance (ie, strength, power, get up and go) were not affected by supplementation.

CONCLUSIONS: These findings support our previous findings of l-carnitine in younger people that such supplementation can reduce chemical damage to tissues after exercise and optimize the processes of muscle tissue repair and remodeling.

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