The Journal of Sports Medicine and Physical Fitness 2018 June;58(6):889-94

DOI: 10.23736/S0022-4707.17.07146-8

language: English

Coenzyme Q10 does not prevent exercise-induced muscle damage and oxidative stress in sedentary men

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BACKGROUND: The objective of this study was to examine the effects of coenzyme Q10 (CoQ10) supplementation on exercise-induced muscle damage and oxidative stress in sedentary young men. In this study, a total of 21 sedentary and healthy young men participated.
METHODS: Participants were assigned at random to a CoQ10 or a placebo group employing a double-blind method. Those in the CoQ10 group ingested 200 mg CoQ10 per day for 4 weeks. Those in the placebo group ingested the same dosage of a placebo. After the 4-week period, the same measurements and blood sampling were taken. At this point, eccentric exercise protocols (90° flexion and 180° extension, velocity 60°/s) were instigated for all subjects in isokinetic exercise dynamometry. After exercise, blood samples were taken immediately, 24, and 48 hours later. Blood samples were analyzed for plasma CoQ10 levels, serum creatine kinase (CK) activities, myoglobin (Mb) levels, plasma total superoxide dismutase (SOD) activities and malondialdehyde (MDA) levels.
RESULTS: Plasma CoQ10 levels were higher in the CoQ10 supplemented group than in the placebo group ($P<0.05$). CK activities and levels of Mb increased in both groups 24 and 48 hours after exercise ($P<0.05$), but no significant difference between the groups was observed ($P>0.05$). Plasma total SOD activity and MDA levels were not significantly different in both groups 24 and 48 hours after exercise ($P>0.05$).
CONCLUSIONS: CoQ10 supplementation does not prevent exercise induced muscle damage and oxidative stress in sedentary young men.

KEY WORDS: Coenzyme Q10 - Muscles - Oxidative stress - Exercise