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The Effect of Short Term Yoga and Tai-Chi Education Exercise on Antioxidant Capacity and Oxidative Stress Measures

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ABSTRACT This study aims to evaluate the effect of two exercise approaches, Yoga and Tai-Chi educational exercises, on antioxidant capacity and oxidative stress measures. For this study thirty-six female ages 18 to 20 were recruited from university and were randomly assigned to three groups: two experimental groups (Yoga and Tai-Chi groups) and one control group. Experimental groups practiced Yoga and Tai-Chi 3 times per week for 10 weeks. Each session included 10 min of warm-up, 40 min of Yoga or Tai-Chi practice, and 10 min of cool-down. Antioxidant capacity and oxidative stress measures were evaluated before and at the end of this study. Antioxidant capacity includes superoxide dismutase (SOD) and glutathione peroxidase (GSHPx). Oxidative stress measures include creative kinase (CK), lactate dehydrogenase (LDH) and malondialdehyde (MDA). The results show that Tai-Chi and Yoga educational exercise have significant influence on most of antioxidant capacity and oxidative stress measures. The Tai-Chi group showed 11.2 % decrease in LDH ($P< 0.01$), 15.4 % decreases in MDA ($P < 0.05$), as well as 4.8 % decrease in SOD ($P < 0.05$) and 7.5 % decrease in GSHPx ($P < 0.05$). The Yoga group showed 9.5 % decrease in LDH ($P< 0.01$). The control group showed no significant change in these variables. The results indicate that a 10-week Tai-Chi and Yoga educational training program have a positive influence on antioxidant capacity and oxidative stress measures and is effective for improving health fitness for females.