



## The Effect of Nigella Sativa extract with Tai Chi exercises on serum levels of IL-6 and TNF- $\alpha$ of Tai Chi female athletes

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### Abstract

**Introduction:** The purpose of this study is to investigate the effect of Nigella Sativa extract with Thai chi exercises on serum levels of IL-6 and TNF- $\alpha$  of Tai Chi female athletes. 40 female Tai Chi athletes aged 18 to 33 years in Tehran were randomly assigned into 4 groups of placebo, Tai Chi training, Nigella Sativa and Nigella Sativa + Tai Chi training (each group included 10 participants). Interventions were carried out for 8 weeks. Nigella Sativa extract was given daily in the form of 1 gram of Nigella Sativa capsule at doses of 250 milligrams, 4 times per day for 8 weeks. 24 hours before and 48 hours after interventions, 12-hour fasting blood samples were taken from the participants to measure IL-6 and TNF- $\alpha$ . The results of this study showed that Tai Chi exercises reduced the inflammatory factors of IL-6 and TNF- $\alpha$ , and the use of Nigella Sativa extract resulted in a decrease in the inflammatory factors compared to Tai Chi exercises without supplementation, but these changes didn't have any significant difference ( $P = 0.001$  and  $P = 0.001$  for IL-6 and TNF- $\alpha$  respectively). **Conclusion:** Possibly, because of the fact that the participants were athletic and had regular weekly exercises, they had the optimal levels of inflammatory factors, and so the Tai Chi exercises and the use of Nigella Sativa extract with these exercises did not have significant anti-inflammatory effects.

**Keywords:** Inflammation, Nigella Sativa, Tai Chi, Exercise, Interleukin 6