

Effects of Endurance Training on the Serum Levels of Tumour Necrosis Factor- α and Interferon- γ in Sedentary Men.

[Jahromi AS¹](#), [Zar A²](#), [Ahmadi F³](#), [Krustrup P⁴](#), [Ebrahim K⁵](#), [Hovanloo F⁵](#), [Amani D⁶](#).

Abstract

Physical activity could be considered one of the factors that affect the immune system status and function. To find the relation between exercise and cytokines, we examined the possible effects of an 8-week endurance training program on the serum levels of cytokines, including tumour necrosis factor-alpha (TNF- α) and interferon-gamma (IFN- γ) in sedentary men. A total of 30 healthy young male volunteers were randomly divided into an endurance training group and a control group. The training group followed a specific exercise protocol (running on a treadmill for 15~30 min at 50~70% maximal heart rate) for 8 weeks and the control group did not participate in any exercise program. Venous blood samples were collected from both the groups 24 h before and 24 h and 48 h after the exercise. Repeated ANOVA was used for statistical purposes. The serum levels of TNF- α and IFN- γ were determined by ELISA. Significant ($p < 0.05$) and non-significant ($p > 0.05$) decreases were observed in the serum levels of IFN- γ and TNF- α , respectively, after the 8-week endurance training program. Our findings indicated that an 8-week endurance exercise may affect the serum levels of some inflammatory cytokines, suggesting the beneficial role of this training protocol in elderly population and people with certain conditions (inflammation of the vertebrae or other inflammatory diseases).

KEYWORDS:

Cytokine; Endurance exercise; IFN- γ ; TNF- α