

## The effects of 8 week aerobic exercises on plasma levels of leptin and adiponectin in type 2 diabetic females

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### Abstract:

**Objective:** Leptin and adiponectin are some kind of adipositocin which are secreted from adipose tissue and are involved in pathogenesis of diabetes. Mellitus diabetes is a group of metabolic disorders due to aging, obesity, sedentary life style that has become increasingly prevalent. Several investigations have mentioned the beneficial role of physical activity in reducing fatty tissue in diabetic patients. For this reason, the purpose of present study was to effects of 8 week aerobic exercises on leptin and adiponectin levels in type 2 diabetic females.

**Methodology:** 30 diabetic females were voluntarily selected and randomly divided into two experimental group and the control group. Subjects in the experimental group (15 people with the average age of  $51 \pm 2.1$  years and BMI  $28.5 \pm 2.8$  kg/m<sup>2</sup>) received 8 weeks of aerobic exercises with the intensity of 60 to 70 percent of maximum heart rate and the control group (15 people with the average age of  $52.4 \pm 4.1$  years and BMI  $28.6 \pm 3.1$  kg/m<sup>2</sup>) had no training. 48 hours before the start of the period and after the last training session and after 12 hours fasting, blood test was performed and the changes in levels of leptin and adiponectin were measured by ELISA method. Also the fat percent was calculated by the method of three-point equation of Jackson and Pollock. For data analysis, inferential statistics of Kolmogorov-Smirnov and t-test were used.

**Statistical Result:** The result shows that there were significant reduction in body fat mass (BFM), percent body fat (PBF) and body mass index (BMI) and leptin levels was observed in the experimental group ( $P=0/005$ ). But, adiponectin levels significantly increased in the experimental group ( $P=0/001$ )

**Discussion & Conclusion:** Our finding show that aerobic exercise for 8 week has led to a decrease significant of body fat mass (BFM), percent body fat (PBF) and body mass index (BMI) and leptin levels and increase adiponectin. So exercises can be added as a useful strategy to the daily schedule of these kinds of diabetic females.