Physical activity, lipid profiles, and serum leptin concentration in young females

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Abstract

Introduction: The components of body composition can determine lipid profiles plasma, and leptin concentration plasma.

Methods: Thirty-two untrained girls (20-25 yrs) (aged 20.9 ±1.33 y, Weight 57.50 ± 7.52 Kg, Height 159.56± 4.97 cm, and BMI 22.55 ±2.51 kg.m-2), participated in our study. They randomly divided into two equal groups, trained and control group (n=16). The trained group was assigned to a five week aerobic training program (three times/week), with severity 50-70% HRR (Heart Rate Reserve). The control group continued their normal lifestyle. Body Fat Percent (BFP) and Fat Mass (FM), Fat Free Mass (FFM) were assessed, and the concentration of Triglycerides, Total Cholesterol (TC), Low Density Lipoprotein (LDL) and High Density Lipoprotein (HDL), leptin were measured.

Results: Analysis of covariance (ANCOVA) indicated that body weight (F=4.20, p=0.05) significantly decreased and HDL (F=43.32, p=0.01) significantly increased in the trained group (p-value<0.05), whereas we had no significant change in BMI, BFP, BFM, FFM, and the serum concentration of Leptin, LDL, TG, TC between groups or time × group interaction, after the five weeks aerobic training period ( P<0.05).

Conclusion: These results suggest that aerobic training in moderate severity had a significant change in weight and LDL in young female, but to have significant impact on BMI, FM, FFM, TG, TC, HDL, leptin concentration, requires to increase high intensity physical activity and fitness.

Keywords: aerobic training, Triglycerides, Total Cholesterol, LDL, HDL, leptin