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The effect of short – term exercise on nitric oxide (NO) serum concentrations in overweight and obese women

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Objective: The aims of the present study was to examine the effect of overweight and obesity on serum concentrations of nitric oxide metabolites and evaluate the differences of exercise induced NO production in obese and lean women. **Materials and Methods:** The study groups consisted of 154 women including 102 obese and 24 overweight patients and 28 lean controls. Serum concentrations of nitric oxide metabolites were measured before and after exercise with the use of ELISA kits. The serum concentrations of lactate before and after exercise were measured with the use of strip test (ACCUSPORT analyzer). Serum concentration of insulin was measured with the use of RIA. Plasma glucose, cholesterol, HDL cholesterol and triglicerydes were determined by enzymatic procedure. Impedance analysis (Bodystat) was used to determine body composition. **Results:** Serum concentration of NO in overweight group and obese group was significantly higher when compared to controls, $p < 0.05$ and $p < 0.01$, respectively. There was no difference in levels of NO between overweight and obese groups. During exercise NO concentrations increased significantly in all groups and the post- exercise levels did not differ statistically in overweight and obese groups from that in controls. The value of D NO was the lowest in obese group but there were no significant differences between obese, overweight and control groups. **Conclusions:** Obesity may attenuate the exercise - induced endothelial NO release.

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