Short-Term Changes in LDL Density and Lipoprotein Particle Number in Trained Men After 3 Different Modes of Exercise

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Int J Exerc Sci 2(1): S40, 2009. **PURPOSE:** To determine the short-term changes in LDL density and lipoprotein particle number after three different modes of exercise in trained men. **METHODS:** Twenty seven subjects were randomly assigned to complete either (resistance [RE], endurance [EE], or combination resistance/endurance [CE]) exercise. Fasting blood samples were obtained 24 h before (baseline) and 24 h after exercise. The average group characteristics were as follows: [**RE**: n = 9, age = 22 $\pm$ 1 yr, weight = 75.7 $\pm$ 4 kg, %fat = 14 $\pm$ 1, $\dot{V}O_{2peak}$ = 3.43 $\pm$ 0.1 L/min], [**EE**: n = 9, age = 23 $\pm$ 1 yr, weight = 87.7 $\pm$ 4 kg, %fat = 17 $\pm$ 3, $\dot{V}O_{2peak}$ = 4.0 $\pm$ 0.10 L/min], [**CE**: n = 9, age = 22 $\pm$ 1 yr, weight = 99.7 $\pm$ 5 kg, %fat = 21 $\pm$ 3, $\dot{V}O_{2peak}$ = 3.94 $\pm$ 0.10 L/min]. **RESULTS:** of a 3 (GROUP) x 2 (TIME) ANOVA (repeated for TIME) for all dependent variables were as follows: No significant GROUP x TIME interactions were determined for any of the plasma volume adjusted dependent variables. A GROUP main effect was observed for LDL density. LDL density was significantly higher in both RE and EE groups compared to the CE group. A TIME main effect was observed for LDL density and the number of LDL_3 and LDL_4 particles. Significant increases in LDL density (1.0314 g/cm^2 to 1.0316 g/cm^2), and the number of LDL_3 (7.8%), and LDL_4 (7.1%) particles occurred 24 h after exercise compared to baseline values. **CONCLUSION:** These data show that regardless of exercise group, LDL density and the number of LDL_3 and LDL_4 particles were significantly elevated 24 h after a single exercise session in trained men.