Abstract


Low and moderate, rather than high intensity strength exercise induces benefit regarding plasma lipid profile.

Lira FS, Yamashita AS, Uchida MC, Zanchi NE, Gualano B, Martins E Jr, Caperuto EC, Seelaender M.

Molecular Biology of the Cell Group, Institute of Biomedical Sciences, Department of Cell and Developmental Biology, University of São Paulo, Brazil.

BACKGROUND: The effects of chronic aerobic exercise upon lipid profile has been previously demonstrated, but few studies showed this effect under resistance exercise conditions.

OBJECTIVE: The aim of this study was to examine the effects of different resistance exercise loads on blood lipids.

METHODS: Thirty healthy, untrained male volunteers were allocated randomly into four groups based at different percentages of one repetition maximum (1 RM); 50%-1 RM, 75%-1 RM, 90%-1 RM, and 110%-1 RM. The total volume (sets x reps x load) of the exercise was equalized. The lipid profile (Triglycerides [TG], HDL-cholesterol [HDL-c], LDL-cholesterol, and Total cholesterol) was determined at rest and after 1, 24, 48 and 72 h of resistance exercise.

RESULTS: The 75%-1 RM group demonstrated greater TG reduction when compared to other groups (p < 0.05). Additionally, the 110%-1 RM group presented an increased TG concentration when compared to 50% and 75% groups (p = 0.01, p = 0.01, respectively). HDL-c concentration was significantly greater after resistance exercise in 50%-1 RM and 75%-1 RM when compared to 110%-1 RM group (p = 0.004 and p = 0.03, respectively). Accordingly, the 50%-1 RM group had greater HDL-c concentration than 110%-1 RM group after 48 h (p = 0.05) and 72 h (p = 0.004), respectively. Finally, The 50% group has showed lesser LDL-c concentration than 110% group after 24 h (p = 0.007). No significant difference was found in Total Cholesterol concentrations.

CONCLUSION: These results indicate that the acute resistance exercise may induce changes in lipid profile in a specific-intensity manner. Overall, low and moderate exercise intensities appear to be promoting more benefits on lipid profile than high intensity. Long term studies should confirm these findings.

PMID: 20492685

FREE FULL TEXT