Background and aim: Many exercise studies, although generally showing the beneficial effects of supervised aerobic, resistance or combined exercise on blood lipids, have sometimes reached equivocal conclusions. The aim of this study is to evaluate the impact of different programs that combined exercise and dietary restriction on blood lipids versus a clinical practice intervention for weight loss, in overweight adults.

Methods: For this study 66 subjects participated in a supervised 22 weeks training program, composed of three sessions per week and they were randomized in three groups: strength training (S; n = 19), endurance training (E; n = 25), a combination of E and S (SE; n = 22). Eighteen subjects served as physical activity group (PA) that followed a clinical intervention consisted of physical activity recommendations. All groups followed the same dietary treatment, and blood samples were obtained for lipids measurements, at the beginning and end of the study.

Results: Lipid profile improved in all groups. No significant differences for baseline and post-training values were observed between groups. In general, SE and PA decreased low-density lipoprotein cholesterol (LDL-C) values (p < 0.01). S decreased triglyceride levels (p < 0.01) and E, SE, and PA decreased total cholesterol levels (p < 0.05, p < 0.01 and p < 0.01, respectively).

Conclusions: These results suggest that an intervention program of supervised exercise combined with diet restriction did not achieved further improvements in blood lipid profile than diet restriction and physical activity recommendations, in overweight adults. (Clinical Trials gov number: NCT01116856).

Keywords
Lipoprotein, Overweight, Strength training, Aerobic training, Combined training, Supervised exercise, Physical activities recommendations.