

Effects of different circuit training protocols on body mass, fat mass and blood parameters among overweight adults

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Introduction. The benefits of regular exercise are known for a long time, but the mechanisms underlying the exercise mode recommendations for specific chronic cardiovascular diseases remains unclear. The aim of this study was to evaluate and compare the effects of different circuit training protocols in sedentary overweight adults.

Materials and methods. Fortyfive overweight participants (BMI>25) from 20 to 50 years old were enrolled in the study and were assigned to three different groups, according to several key physiological health markers: high body fat mass (BF), high total body mass (BM) and mild/moderate dyslipidemia (MD). Each group was compared with a control normal-weight group (CG) (BMI<25).

The groups were randomly assigned to one of the four different circuit protocols: Circuit Weight Training (CWT), Aerobic-Tone-Aerobic (ATA), Aerobic-Circuit-Aerobic (ACA) and Mini-Trampoline Circuit (MTC). Each group exercised three times per week, 50 minutes per session, for 12 weeks.

Results. In every group we analyzed total body mass, body fat and lipid profile and the results show that the BF group (performed ATA protocol) reduced body fat more than other groups ($p < 0,001$) and total body mass too ($p = 0.007$).

The BM group (performed ACA protocol) reduced total body mass in significant statistical way ($p = 0.032$), as well as body fat ($p < 0,001$) and LDL cholesterol ($p = 0.013$).

Concerning the MD group (performed MTC protocol), there was a significant reduction in every parameters we analyzed (total body mass, body fat and lipid profile: $p < 0,001$).

The CG (performed CWT protocol) has shown a significant loss only in body fat ($p < 0,001$).

Conclusions. In conclusion, it appears that all the circuit protocols are optimal exercises for reducing body fat and total body mass: however, MTC protocol have shown the best results on lipid profile.