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SEX AND AGE DIFFERENCES ON LIPID PROFILE CHANGES AFTER INTERVENTION OF WEIGHT LOSS: THE PRONAF STUDY.

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Introduction Cardiovascular disease (CVD) is markedly more common in men than in women [1, 2]. In both sexes, CVD risk increases with age, but the increase is sharper in women [3]. Clinical trials have already shown the relevant role of healthy habits as balance diet, no smoke and regular physical activity to protect and decrease CVD risk [4, 5]. However, there are few studies that compare men and women response of the lipid profile to a weight loss intervention. Objective The aim of this study was to compare men and women response of the lipid profile to a weight loss intervention. The secondary aim was to determine if aging influences also on the effect of weight loss on the lipid profile. Methods One hundred and eighty (96 women and 84 men) overweight and obese participants aged 18–50 years participated in a weight loss intervention program based on diet and exercise (PRONAF Study). The intervention period was 22 weeks (3 times/wk of training for 22 weeks and 2 weeks for pre and post evaluation). All subjects followed a hypocaloric diet (25-30% less energy intake than the daily energy expenditure estimated by accelerometry). Multivariate analysis of variance (MANOVA) was used to compare for sex and age and differences in baseline and post-training values. Bonferroni's post-hoc test was employed to locate specific differences.To analyze the gender and age specific interaction the sample was classified by sex and age into responders or no-responders group. Results: There were significant differences between men and women to HDL levels. Women decreased HDL concentrations significantly. Men obtained a significant increase for HDL values. In baseline, LDL values showed differences between men and women ($p=0.001$). For TG concentrations there were significant differences between men and women in baseline and trend to significant in post-training ($p=0.001$; $p=0.082$). TC showed significant differences between men and women in baseline ($p=0.013$). After intervention, men and women showed a significant decreased to TC. Discussion When the response on lipid profile is compared by sex after weight loss intervention in our study, men achieved a better change than women. In the literature, we found reviews and epidemiological studies that try to explain the gender-specific differences to lipid profile abnormalities treatment. Due to fat distribution there is different response on lipid profile in men that in women [1, 6]. In conclusion, men achieved a positive greater change on lipid profile than women. Moreover, the favorable lipid profile response decreases with increasing age.