

Circuit Resistance Training in women: body composition and serum cytokines levels #72

Fabiano Candido Ferreira¹; Alexandra Medeiros², Cristiane Nicioli¹; João Nunes¹; Richard Leite¹, Jonato Prestes¹; Gilberto Shiguemoto¹; Grazielle Oliveira¹, Gabriela Bombarda¹, Patrícia Bueno¹, Guilherme Pereira¹, Grace Dourado¹, Roberto Verzola¹; Vilmar Baldissera¹ and Sérgio E. Andrade Perez¹

¹Department of Physiological Sciences, Federal University of São Carlos, São Carlos/SP, Brazil; ²Department of Internal Medicine, University of Michigan Health Systems, Ann Arbor, MI 48109.

E-mail: facanfe1974@terra.com.br

Exercise can generate adjustments on body composition and elicit benefits or downregulation on the immunologic system. The aim of this study was to analyze the effects of circuit resistance training (CRT) on fat free mass (FFM), fat mass (FM) and cytokine responses in sedentary women, 39.71 ± 3.8 years old (n=14). The protocol consisted of 3 sessions/week of a circuit training of 9 stations with alternating muscle groups. In each session, the subjects performed the circuit 2 times with one set of 8-12 maximal repetitions (RM) in each station, during 10 weeks. The body composition was analyzed by DXA and, the inflammatory cytokines by flow cytometry (IL-1 β ; IL-6; IL-8; IL-10, IL-12p70 and TNF). Blood samples were collected from the antecubital vein in 8 moments: before the training; 5 min, 24h and 48h post-second session of training; and 5 min, 24, 48 and 96h post-last session of training. Student's *t* or Wilcoxon paired tests compared the pre versus post values of body composition and cytokines; and the Friedman's with Tukey post hoc tests were applied for cytokines levels of blood samples collected in the start of training and also for the collected in the ending of the training ($\alpha=0.05$). There was an increase in the FFM and a decrease in the FM, and no alterations of cytokines. These results showed what the proposed CRT improved body composition and did not induce pro-inflammatory effects indicated by serum cytokines levels in women.

Key words: circuit resistance training; body composition; cytokines; women