

High-Intensity Interval Training versus Moderate-Intensity Interval Training: Anthropometrics, Inflammation, Stress Markers and Exercise Enjoyment

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ABSTRACT

Exercise as a key component of healthy living can be done at variable intensities with different types of training. Knowledge of specific benefits is useful to an individual in selection of an exercise routine.

PURPOSE: This study aimed to compare the effects of high-intensity interval training (HIIT) versus moderate-intensity interval training (MIIT) in a college-aged population on inflammation, cortisol markers, anthropometric measurements and exercise enjoyment. **METHODS:** Participants (n=28) were randomized into two groups: HIIT (20 mins at $\geq 90\%$ of HRR, 4x/wk) or MIIT (40 mins at 40-59% HRR, 4x/wk). C-reactive protein (CRP) and cortisol levels were analyzed via enzyme-linked immunosorbent assay. Anthropometrics collected were height, weight, heart rate (HR), O₂ saturation, blood pressure, and body fat percentage. Estimated VO_{2max} was determined via the Chester Step Test. Exercise enjoyment was assessed using the Physical Activity Enjoyment Scale (PACES). All participants filled out the Paffenbarger Physical Activity Questionnaire (PPAQ) weekly to ensure compliance with the exercise programs.

RESULTS: Overall, there were no significant differences between groups at baseline. There were no significant GROUP X TIME interactions for the dependent variables studied. No GROUP main effects were significant for the dependent variables studied. A TIME main effect was significant for the following variables: estimated VO_{2max} in ml/kg/min ($p=.038$: Time 1: 38.64 ± 6.83 ; Time 2: 39.75 ± 9.30 ; Time 3: 42.73 ± 8.27); body fat percentage in % ($p=.011$: Time 1: 23.15 ± 5.62 ; Time 2: 23.95 ± 6.02 ; Time 3: 22.38 ± 6.29) and resting systolic blood pressure in mmHg ($p=.005$: Time 1: 126.65 ± 12.11 ; Time 2: 124.85 ± 8.01 ; Time 3: 118.75 ± 9.14). **CONCLUSIONS:** HIIT or MIIT could be proposed to college-aged students who would like to improve their VO_{2max}, body fat percentage, or systolic blood pressure, particularly if time constraints are a concern.