

The Effects of Interval Training and Steady-State Exercise on Fat Oxidation and VO_{2max} in Recreationally Active, College Aged Males

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In the last century, Americans have become increasingly unhealthier. Many cross sectional studies have shown a strong correlation between physical inactivity and noncommunicable diseases such as obesity and coronary heart disease. **PURPOSE:** To examine the effects of high intensity interval training (HIIT) and steady-state exercise (SS) on fat oxidation and VO_{2max} in recreationally active, college aged males. **METHODS:** Recreationally active males (n=16) participated in the present study which lasted a total of 12 sessions, completed every 48 hours. Subjects were randomly placed in either a HIIT or SS group. The HIIT group (N=8) completed 6 sets of all-out treadmill sprints for 30 seconds separated by 4.5 minutes of a self-paced walk. SS group (N=8) completed a 30 minute treadmill jog at 65% VO_{2max} . Pre-mid-and post values for VO_{2max} , fat oxidation, resting metabolic rate (RMR), percent body fat, and respiratory exchange ratio (RER) were evaluated using a repeated measures ANOVA model on one factor (time: 3 levels) and between subject factor of groups. **RESULTS:** An ANOVA model for VO_{2max} values revealed a main effect for time (F=8.712, p=0.011) but not for group (F=0.984, p=0.338) or groups x time interaction (F=2.743, p=0.120). Also, an ANOVA model representing values of percent body fat revealed a main effect for time (F=6.225, p=0.006). A tukey post hoc showed a significant decrease in percent body fat (HIIT=3.6%, SS=2.4%) between pre and midway testing. However, there was no main effect for group (F=0.099, p=0.758). ANOVA models were run for fat oxidation, RMR, and RER, however no difference between testing times were observed. **CONCLUSION:** The HIIT and SS protocols used in the present study were effective in improving VO_{2max} and percent body fat in recreationally active, college aged males. However, no significant difference between either protocol was demonstrated in values of fat oxidation, RMR, and RER. Thus, individuals should experiment with both designs to determine which best optimizes their health goals.