

POSTER PRESENTATION

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The effect of moderate- and high-intensity interval training on substrate oxidation and nutrient preferences in obese men

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Background

This study compared the influence of 12 sessions of moderate- and high-intensity interval training on substrate oxidation and nutrient preferences.

Methods

Ten obese men participated in cross-over 4-week moderate- (MIIT) and high- (HIIT) intensity interval cycling. MIIT consisted of 5-min stages at $\pm 20\%$ of mechanical work at $45\% \text{VO}_{2\text{peak}}$, and HIIT consisted of 30-sec work at $90\% \text{VO}_{2\text{peak}}$ and 30-sec rests for 30-45 min. The assessments included a constant-load test consisted of 5-min rest, 45-min cycling at $45\% \text{VO}_{2\text{peak}}$ followed by 60-min recovery. Intermittent measures of gas exchange using indirect calorimetry were undertaken, and *ad libitum* meal was provided after the test. Consent to publish the results was obtained from all participants.

Results

Changes in fat oxidation were +19% at rest, +96% during exercise and +59% during recovery in MIIT, and were -7% at rest, +43% during exercise and -13% during recovery in HIIT. Changes in CHO oxidation were +6% at rest, -13% during exercise and -2% during recovery in MIIT, and were +46% at rest, -7% during exercise and +32% during recovery in HIIT. The amount of meal, fat and CHO eaten decreased by 24, 16 and 13% respectively after HIIT, and increased by 3, 38 and 14% respectively after MIIT. The intervention explained 12.4% of the changes in fat intake ($p = 0.07$). The interaction of fat oxidation*intervention did not significantly explain the change in fat eaten ($p > 0.05$).

Conclusion

The change in fat oxidation did not explain the change in fat eaten after interval training.

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