Obesity

Body Composition and Insulin Sensitivity After High-Intensity Interval Training in Overweight/Obese Patients

Mathieu Gayda[1,2,3], Anil Nigam[1,2,3] and Martin Juneau[1,2,3]

TO THE EDITOR: We have read with a great interest the article of Gillen et al. (1) recently published in *Obesity* on the short-term effects of high-intensity interval training (HIIT) in obese women. They reported similar skeletal muscle adaptations (increased mitochondrial capacity) and similar (but modest) body composition improvement after short-term HIIT (6 weeks) in fasted or fed state obese women. Surprisingly, insulin sensitivity was not improved after 6 week of HIIT in both groups probably due to potential influence of patient's diet (not reported in the article) and/or short-term training period. We would like to underlie the importance of patient's diet and nutritional aspects (with exercise intervention) for body composition and insulin sensitivity improvements in obese population. Previous studies demonstrated that HIIT combined with Mediterranean diet (diet focused on nutrient quality, satiety, and palatability) optimally improved body composition and insulin sensitivity in obese patients (2-5). Those studies have found an improved body composition after shorter and longer term HIIT combined with Mediterranean diet (2-5), as well as an improved insulin sensitivity in obese patients (4,5). We have also developed an optimized, time efficient model of HIIT in obese patients (2,3,5), and HIIT combined with Mediterranean diet have superior effects on body composition and insulin sensitivity improvement compared to moderate intensity continuous exercise (3) or mediterranean diet alone (4). As the authors stated (1), compared to sprint interval training, HIIT is more adapted to obese population that often present comorbidities and low levels of fitness. We demonstrated that two 10-min sets of repeated bouts of 15-30 s at 80% of maximal aerobic power interspersed by 15-30 s passive recovery periods (representing 10 min of real exercise), 2-3 time/week are enough to improve body composition, insulin sensitivity, and cardiometabolic risk factors in obese patients. Regarding potential sex differences adaptations to HIIT, we showed similar improvement in body composition, fitness, and cardiometabolic risk factors in obese men and women (metabolically healthy or not) after 9 months of HIIT combined with Mediterranean diet (5). Similarly, we found that insulin sensitivity was similarly improved after the same intervention in obese men and women (Figure 1). In conclusion, intensive exercise intervention such as HIIT combined with Mediterranean diet can optimize health benefits (body composition, insulin sensitivity, and cardiometabolic risk factors) in obese patients, independently of their gender and/or obesity phenotype. O

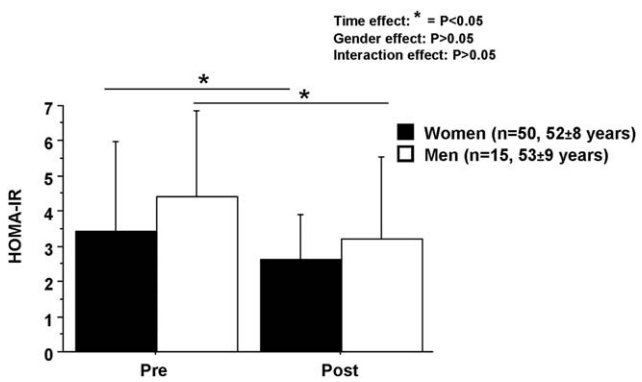

Figure 1 Insulin sensitivity before and after 9 months of HIIT combined with Mediterranean diet counseling in obese men and women.

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[1]Cardiovascular Prevention and Rehabilitation Centre (ÉPIC), Montreal Heart Institute and University of Montreal, Montreal, Quebec, Canada
[2]Research Center, Montreal Heart Institute and University of Montreal, Montreal, Quebec, Canada
[3]Department of Medicine, University of Montreal, Montreal, Quebec, Canada
Correspondence: Mathieu Gayda (mathieu.gayda@icm-mhi.org)

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