Letter by Poelkens et al Regarding Article, “Aerobic Interval Training Versus Continuous Moderate Exercise as a Treatment for the Metabolic Syndrome: A Pilot Study”

To the Editor:

We read with great interest the article by Tjønna et al1 that addressed the efficacy of different modes of exercise training to reverse features of the metabolic syndrome. The metabolic syndrome, considered an ailment of the 20th century, consists of a clustering of risk factors, with insulin resistance still viewed as the common pathophysiological pathway.2 We were intrigued by the fact that in patients with the metabolic syndrome, aerobic interval training substantially improved insulin sensitivity (homeostatic model assessment score increasing from 62.2±8.0% to 77.2±4.9%), whereas continuous moderate exercise seemed to decrease insulin sensitivity (64.4±5.7% versus 50.2±4.9% before and after training, respectively). It should be noted that the homeostatic model assessment score as a derivate index for insulin sensitivity has clear limitations.3 The gold standard for measuring insulin sensitivity is the euglycemic hyperinsulinemic clamp, with the frequently sampled intravenous glucose tolerance test as the second best. Houmard et al4 and Johnson et al5 studied the effects of different aerobic training volumes and intensity on insulin sensitivity in 154 overweight/obese individuals and 171 individuals with the metabolic syndrome, respectively. Both studies demonstrated a clear improvement in insulin sensitivity shown by frequently sampled intravenous glucose tolerance test after continuous moderate exercise training. These studies4,5 provide clear evidence that training volume is more important than exercise intensity for improvement of insulin sensitivity. Although we are still excited about the efficacy of the type of aerobic interval training used by Tjønna et al1 on the maximal oxygen uptake (exercise capacity) compared with continuous exercise, we think there is currently no conclusive evidence for a more favorable effect of aerobic interval training on insulin sensitivity in comparison to aerobic continuous exercise. Clearly, additional studies comparing the effect of different modes of exercise on insulin sensitivity measured by reliable methods are needed.

Disclosures

None.

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References

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