

Personalised exercise – time to HIIT the right balance

Jamie K. Pugh and Steve H. Faulkner

School of Sport, Exercise and Health Sciences, Loughborough University, and the NIHR Leicester-Loughborough Diet, Lifestyle and Physical Activity Biomedical Research Unit, Leicester & Loughborough, UK

Comments

This topical CrossTalk sparks important debate on the role for high intensity interval training (HIIT) in risk reduction and treatment of disease. Wisløff *et al.*, (2015) suggest HIIT appears highly effective at reducing disease risk. Furthermore, a recent meta-analysis highlights important benefits to cardio-metabolic health following HIIT (Jelleyman *et al.*, 2015), particularly in those at risk of or with type 2 diabetes (T2DM). Specifically, HIIT resulted in a superior reduction in insulin resistance and increase in $\dot{V}O_{2\text{ max}}$ compared to continuous exercise and non-exercise control groups.

In contrast to the point of Holloway and Spriet (2015), HIIT promotes improvements to cardiac structure and function, highlighting the potential of HIIT to reduce cardiac risk factors in clinical and pre-clinical populations. The feasibility of HIIT in a 'real world' context is often questioned. However, high rates of adherence to unsupervised training, without either preconditioning exercise or any adverse cardiac events, has been reported (Cassidy *et al.*, 2016). Similarly, high adherence rates to group cycling, which incorporates HIIT, led to marked improvements in cardio-metabolic health in overweight physically inactive individuals (Faulkner *et al.*, 2015).

Despite this evidence, the importance of alternative exercise activities cannot be ignored. For example, resistance-based exercise may provide additional benefits that would otherwise be missed if endurance exercise were performed in isolation (Shaw *et al.*, 2015). Therefore, we suggest that while HIIT elicits several health benefits, HIITing the intensity balance is critical in order to optimise personalised exercise interventions and benefit both individual and public health.

Words: 250 (250 max)

References

- Cassidy S, Thoma C, Hallsworth K, Parikh J, Hollingsworth KG, Taylor R, Jakovljevic DG & Trenell MI (2016). High intensity intermittent exercise improves cardiac structure and function and reduces liver fat in patients with type 2 diabetes: a randomised controlled trial. *Diabetologia* **59**, 56–66.
- Faulkner S, Pugh J, Hood T, Menon K, King J & Nimmo M (2015). Group Studio Cycling; an Effective Intervention to Improve Cardio-Metabolic Health in Overweight Physically Inactive Individuals. *J Fit Res* **4**, 16–25.
- Holloway TM & Spriet LL (2015). Rebuttal from Tanya M. Holloway and Lawrence L. Spriet. *J Physiol* **593**, 5225.
- Jelleyman C, Yates T, O'Donovan G, Gray LJ, King JA, Khunti K & Davies MJ (2015). The effects of high-intensity interval training on glucose regulation and insulin resistance: a meta-analysis. *Obes Rev* **16**, 942–961.
- Shaw BS, Shaw I & Brown GA (2015). Resistance exercise is medicine: Strength training in health promotion and rehabilitation. *Int J Ther Rehabil* **22**, 385–389.
- Wisløff U, Coombes JS & Rognmo Ø (2015). High intensity interval training does have a role in risk reduction or treatment of disease. *J Physiol* **593**, 5215–5217.