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Not just a one HIIT wonder: two popular HIIT protocols elicit similar health benefits in a controlled but real world environment.

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Objective Currently 40% of the UK do not meet the physical activity guidelines with a 'lack of time' the most commonly cited barrier to sufficient physical activity. In laboratory based training interventions, high intensity interval training (HIT) offers a time-efficient alternative to moderate intensity continuous training (MICT) but its success requires expensive specialised cycle ergometers and vigorous encouragement from the researchers. To investigate whether two popular HIT protocols, performed using readily available cycle ergometers and without encouragement, can improve aerobic exercise capacity, arterial stiffness and body composition.
Methods Eighty-two sedentary males (n=26) and females (n=56) aged 18-65 participated in the study (28±1 y, BMI 25±0.4 $kg.m^{-2}$). In a randomised cross-over design, participants completed either 6 weeks of 30HIT (4-8x30s sprint with 120s active recovery) or 60HIT (6-10x60s sprint with 60s active recovery). Training sessions were completed on a Wattbike, 3 times per week. VO_{2peak}, body composition (DXA scan), blood glucose (oral glucose tolerance test (OGTT)) and arterial stiffness (pulse wave velocity (PWV)) were assessed pre and post each 6-week training phase, with 4-6 weeks washout period between interventions.
Results VO_{2peak} increased post intervention in 30HIT (36±1 to 39±1 $ml.min^{-1}.kg^{-1}$) and 60HIT (36±1 to 39±1 $ml.min^{-1}.kg^{-1}$) (P<0.001), with no difference between intervention group (P=0.208). Body fat percentage decreased pre to post training in both conditions (P=0.001). PWV decreased in 30HIT (2%) and 60HIT (4%) (P<0.005). During the OGTT, there was a trend towards decreasing area under the curve pre to post (P=0.083). When normalized to Watt $_{max}$ the participants producing a higher mean power output improved their VO_{2peak} more than those producing a low MPO (P<0.05). Following further analysis this was only true in 60HIT (P<0.05).
Conclusions Both 30HIT and 60HIT could be effective real world strategies to improve aerobic capacity, body composition, arterial stiffness and insulin sensitivity. Improvements were seen even though the time spent sprinting was less in 30HIT (4mins compared to 10mins in 60HIT). In addition, how the 30HIT protocol is executed does not seem to have an effect on physiological outcomes. This suggests 30HIT may be a more applicable training intervention in the real world.