

Intensive exercise with intervals 'more effective'

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Credit: Peter Griffin/Public Domain

Short bursts of intensive exercise provide a more "time-efficient" and realistic way of preventing, delaying and managing Type 2 diabetes and also losing weight, a study has found.

Small amounts of [vigorous activity](#) in quick successions are more "effective" compared to longer forms of exercise optimising the body's

ability to use and store blood sugar, the research by the University of Leicester and the NIHR Leicester-Loughborough Diet, Lifestyle and Physical Activity Biomedical Research Unit (BRU) has found.

The paper 'The effects of high-intensity interval training on glucose regulation and insulin resistance: a meta-analysis' has been published in the journal *Obesity Reviews*.

Obesity and Type 2 diabetes are linked, with over 80 per cent of people with the condition classed as overweight or obese – diet and physical activity interventions are the cornerstones for management of both conditions.

The effects of exercise on Type 2 diabetes and improving the body's ability to use insulin to absorb [blood sugar](#) are well established, but its impact on weight regulation is more controversial.

The guidelines for [weight loss](#) suggest that 200 to 300 minutes of moderate to vigorous activity per week are required for long-term reductions, but previous research found that only five per cent of people in some industrialised countries achieve this amount. Recently, however, effects of physical activity on health in the absence of weight loss, have emerged.

In response, the study has proposed high-intensity interval training (HIIT) as an alternative: "time-efficient exercise intervention that may bring about similar benefits to moderate-intensity aerobic exercise".

Researcher Charlotte Jelleyman said: "This study involved a meta-analysis of experimental research, allowing us to pull together evidence and establish cause and effect. We have demonstrated that HIIT conveys benefits to cardiometabolic health which in the cases of [insulin resistance](#) and aerobic fitness may be superior to the effect of traditional

continuous training.

"HIIT may therefore be suitable as an alternative to continuous exercise training in the promotion of metabolic health and weight loss, particularly in those with Type 2 diabetes or metabolic syndrome. However, given the identified limitations, more research is needed to determine both behavioural responses and clinical benefits over the longer term."

The NIHR Leicester-Loughborough Diet, Lifestyle and Physical Activity BRU is a national centre of excellence in diet, lifestyle and [physical activity](#) based in Leicester and Loughborough. It harnesses the power of experimental science to explore and develop ways to help prevent and treat chronic disease.

More information: C. Jelleyman et al. The effects of high-intensity interval training on glucose regulation and insulin resistance: a meta-analysis, *Obesity Reviews* (2015). [DOI: 10.1111/obr.12317](https://doi.org/10.1111/obr.12317)

Provided by University of Leicester

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