

CrossFit improves how people with type 2 diabetes can control blood sugar levels

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New research published in *Experimental Physiology* has suggested a 6-week CrossFit exercise programme can lead to improved control of blood sugar levels and decreased risk of heart disease in people with Type 2 diabetes.

Diabetes is a lifelong condition that causes a person's blood [sugar](#) level to become too high. Type 2 [diabetes](#) is the most common form, which is where the body doesn't produce enough of the hormone that controls sugar levels, called insulin. People with Type 2 diabetes are at significantly higher risk of [heart disease](#). A primary focus for managing diabetes is exercise, as it has been shown to improve the body's ability to control sugar levels by making the body more sensitive to the insulin produced.

However, adherence to exercise advice is particularly low amongst those with Type 2 diabetes, who are mostly overweight or obese, with lack of time being cited as one of the greatest barriers to regular exercise. This new research suggests that a high intensity exercise programme such as CrossFit improves the ability of the body to

control [blood sugar levels](#) by reducing the amount of insulin required. Importantly, these improvements appear to be similar to the sort of change we would expect from more traditional exercise interventions, despite participants spending considerably less time exercising than health guidelines recommend. CrossFit therefore offers a time-effective exercise approach for people with Type 2 diabetes who struggle to maintain daily exercise.

CrossFit is a high intensity training intervention incorporating both endurance and strength training. Sessions range from 8-20 minutes in duration and represent a far more time-effective form of exercise than traditional exercise interventions. CrossFit has been growing in popularity over the past decade, although until now it was not clear whether such forms of exercise would improve the ability of individuals with Type 2 diabetes to control their sugar levels.

For this research, thirteen overweight/obese patients with Type 2 diabetes were recruited to participate in a 6-week CrossFit exercise programme. Participants' blood sugar levels and insulin sensitivity (an individual's ability to reduce high blood sugar levels effectively) were assessed both before and after the exercise programme, in addition to their blood chemistries and blood pressure, which were tested to predict heart disease risk. The post-exercise intervention test results showed significant improvements in insulin sensitivity and heart disease risk factors. Importantly, these improvements appeared to be similar to the sort of changes expected from more traditional exercise interventions, despite participants spending considerably less time exercising than such guidelines recommend.

The limitations of this study are that it tested a relatively small number of patients, the duration of the [exercise](#) intervention was short, and the subject population was relatively young. As such, caution should be applied when extending these results,

especially to more elderly patients with Type 2 diabetes. However, the results pave the way for larger studies to assess the efficacy, feasibility and durability of this study's approach. Such studies might need to take more definitive measures of insulin resistance, which would require sophisticated clinical approaches that include infusion of glucose and [insulin](#).

Professor John Kirwan, co-author of the paper, shared a story about one participant's involvement in the intervention which had particularly surprised him:

"One lady started the intervention clearly motivated, and ended it quite exhilarated by the experience. The [intervention](#) had a surprisingly large effect on her fasting [blood](#) sugar, which fell from 250 mg/dL to around 90 mg/dL (normal range) - effectively remission of her diabetes! She has since continued with CrossFit, and we hope it will serve her well into the future. Whilst an outlier, such an example provides promise to those who may be pessimistic about the possibilities of these types of interventions."

More information: Ciarán E Fealy et al, Functional high intensity exercise training ameliorates insulin resistance and cardiometabolic risk factors in type 2 diabetes, *Experimental Physiology* (2018). [DOI: 10.1113/EP086844](https://doi.org/10.1113/EP086844)

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