

Brief, high-intensity workouts show promise in helping diabetics lower blood sugar: study

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Researchers at McMaster University have found that brief high intensity workouts, as little as six sessions over two weeks, rapidly lower blood sugar levels in type 2 diabetics, offering a potential fix for patients who struggle to meet exercise guidelines.

The small proof-of-principle study, conducted on eight diabetics, appears in the latest edition of the [Journal of Applied Physiology](#).

It found that a total of 30 minutes of high-intensity intermittent exercise per week, involving a total time commitment of 75 minutes, lowered 24-hour blood sugar concentrations, reduced blood sugar spikes after meals, and increased [skeletal muscle](#) mitochondrial capacity, a marker of metabolic health.

"These findings are intriguing because they suggest that exercising very strenuously for short periods of time, may provide many of the same health benefits as traditional [exercise training](#)," says Martin Gibala, professor in the Department of Kinesiology at McMaster and supervising author of the study. "This is the first study to show that intense [interval training](#) may be a potent, time-efficient strategy to improve glycemic regulation in people with [type 2 diabetes](#)."

Current guidelines from the Canadian Diabetes Association call for 150 minutes of moderate to [vigorous exercise](#) per week—twice the training time commitment of study participants—which can be tough to manage for many people including those with diabetes, adds Gibala.

He is quick to point out that larger studies are needed to comprehensively examine the potential benefits of this type of training, especially compared to traditional exercise guidelines.

For the study, researchers gave each volunteer a baseline exam to test blood sugar over a 24-hour period, assess fitness levels and take biopsies of thigh muscle to measure proteins linked to health status.

Each workout involved riding a stationary bike for 10 bouts of 60 seconds at roughly 90 percent of maximal heart rate, with one minute between each burst of exercise. The routine also included a warm up and cool down such that each training session lasted 25 minutes in total.

Participants showed improved [blood sugar levels](#) even though they did not lose weight during the short two-week study.

"The improved glycemic control may be linked to changes in the subjects' muscles, such as an improved ability to clear glucose from the blood after meals", says Gibala. "We need to conduct further research to identify the mechanisms behind these results."

Provided by McMaster University

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