

Type 2 diabetes patients find exercise more difficult, study says

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Credit: Peter Griffin/Public Domain

Women with Type 2 diabetes experience a barrier to physical activity that threatens to make them more sedentary and cause their health to worsen, according to a new study by Amy Huebschmann, MD, MS of the University of Colorado Anschutz Medical Campus.

"We know [regular physical activity](#) prevents premature disability and

mortality from Type 2 diabetes mellitus and is a critical part of disease management," said Huebschmann, associate professor of medicine at the CU School of Medicine's Center for Women's Health Research and Division of General Internal Medicine. "However, many people with the disease are generally sedentary for reasons that are not fully established."

But researchers may now be getting closer to an answer.

The study looked at 54 overweight women between 50 and 75 years old who reported doing less than one hour of physical activity per week. Approximately half of them had Type 2 diabetes while the others did not. Women were studied because the effects of Type 2 diabetes on exercise and cardiovascular function are typically worse among females than males.

All of the women exercised on a stationary bicycle at a low to moderate intensity similar to the work needed to walk one mile in 25 minutes. During the exercise, women reported how difficult it felt while also having blood drawn to test for lactate levels. Those levels are an important measure of effort because they increase in proportion to the level of exertion.

The researchers found significantly higher lactate levels during low to moderate intensity exercise in people with Type 2 diabetes than their counterparts without the disease. They also tended to score higher on the Rating of Perceived Exertion that measures how difficult people rate the exercise.

"Exercise effort is an important barrier to physical activity because it is modifiable," the study said, "and the perception of more intense effort during exercise has been associated with lower levels of usual physical activity."

According to Huebschmann, these findings suggest that common household activities like climbing stairs or carrying groceries would feel more difficult to people with Type 2 diabetes than to their counterparts without diabetes.

While further studies are necessary to identify the specific culprits, one potential reason why the exercise feels more difficult is related to abnormalities with fuel metabolism. For example, people with Type 2 diabetes have more difficulties converting dietary nutrients to fuel for exercising muscles than those without diabetes. Another possible culprit is the abnormal way the body responds to exercise in those with Type 2 diabetes, including problems redirecting blood flow towards the muscles used during exercise.

"Problems with metabolism and the body's response to exercise may be an important driver behind both lower fitness levels and greater effort during exercise for people with diabetes," Huebschmann said. "However, we need further studies to clarify the key culprits and inform the most helpful treatments."

The discovery that Type 2 [diabetes](#) patients perceive [exercise](#) as more difficult is critical in helping them find a [physical activity](#) that won't leave them exhausted and reluctant to move.

"An important take-home point for clinicians is to encourage patients to be physically active at a pace that is personally comfortable—this should lead to good adherence and health benefits," Huebschmann said. "If possible, all adults should gradually increase their activity to target at least 30 minutes of activity on most days, as this leads to many major health benefits. It's fine if people reach these goals in short intervals, such as 10-minute brisk walks."

The study was published in the latest edition of the journal *BMJ Open*

Diabetes Research & Care. The co-authors include Judy Regensteiner, PhD, Wendy Kohrt, PhD, Leah Herlache, MS, Pamela Wolfe, MS, Stacie Daugherty, MD, Jane Reusch, MD, and Tim Bauer, PhD, all from the University of Colorado Anschutz Medical Campus.

Provided by University of Colorado Denver

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