

Cutting breakfast carbs can benefit people with type 2 diabetes, study confirms

May 31 2023



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An international team, led by UBC Okanagan researchers, suggests a simple tweak to the first meal of the day might help people living with type 2 diabetes (T2D) better control their blood sugar levels.

Dr. Barbara Oliveira conducts research with Dr. Jonathan Little's Exercise, Metabolism and Inflammation Lab in UBCO's Faculty of Health and Social Development. Their latest study, published in the *American Journal of Clinical Nutrition*, confirms that switching from a traditional western-style low-fat breakfast, like oatmeal, toast and fruit, to a [low-carb](#) meal higher in protein and fat, like eggs with bacon or cheese, can help people with T2D better manage their blood sugar for most of the day.

In fact, changing just one meal helped keep the blood sugar in check.

"We're not talking about a complete diet overhaul," says Dr. Oliveira. "One of many complications for people living with T2D is rapid or large increases in blood [glucose levels](#) after a meal. Our research indicates a low-carbohydrate meal, first thing in the morning, seems to help control blood sugar throughout the day."

Controlling glucose levels is critical for reducing the complications of T2D including inflammation and [cardiovascular disease](#)—the major cause of morbidity in patients with T2D.

"Treatment strategies that can help lower post-meal glucose swings and rapid changes in glucose are crucial to managing this condition," she adds. "We've determined that if the first meal of the day is low-carb and higher in protein and fat we can limit hyperglycemic swings."

Low-carb diets have become trendy in recent years and have been recognized as a dietary strategy to improve glucose control, Dr. Oliveira explains. However, similar to all diets, it's tough to follow, especially long term. Instead of asking patients to commit to every meal being low-carb, she and Dr. Little examined the idea of making just the first meal of the day low-carb to see how that impacts diet adherence, and more importantly, blood glucose levels.

Their 12-week study had 121 participants split into two groups. One was advised to eat from a selection of low-carb breakfasts containing approximate amounts of 8g of carbohydrate, 25g of protein and 37g of fat while the other was advised to eat from a selection of low-fat higher-carb options containing about 56g of carbohydrates, 20g of protein and 15g of fat. All the breakfast options in both groups provided 450 calories.

Participants had a variety of breakfast choices and were required to upload a photo of their meal, which was reviewed by a study dietitian to confirm compliance.

All participants were provided with a continuous glucose monitoring device they wore throughout the study and also undertook A1C blood tests, before and after the 12 weeks, to measure their average [blood sugar](#) levels. They also measured their weight and [waist circumference](#) at the beginning and end of the trial. As the study continued they reported feelings of satiety, energy and activity levels.

Dr. Oliveira notes while there were no significant differences between the low-carb and other group for weight, body mass index or waist circumference, the low-carb group did see a reduction in [blood sugar levels](#) and some were able to reduce their glucose-lowering medication. The upward and downward swings in [blood glucose levels](#), known as glycemic variability, with the low-carb group was also significantly lower, suggesting the benefits of a low-carbohydrate breakfast for stabilizing blood sugars throughout the day.

One additional interesting finding was that people who had the low-carb breakfast self-reported lower calorie and carbohydrate intake at lunch and during the remainder of the day. This could suggest that a breakfast rich in fat and protein, while lower in carbs, can impact daily eating habits.

"Having fewer carbs for breakfast not only aligns better with how people with T2D handle glucose throughout the day, but it also has incredible potential for people with T2D who struggle with their [glucose](#) levels in the morning," she adds. "By making a small adjustment to the carb content of a single meal rather than the entire diet, we have the potential to increase adherence significantly while still obtaining significant benefits."

More information: Barbara F. Oliveira et al, Impact of a Low-Carbohydrate Compared with Low-Fat Breakfast on Blood Glucose Control in Type 2 Diabetes: A Randomized Trial, *The American Journal of Clinical Nutrition* (2023). [DOI: 10.1016/j.ajcnut.2023.04.032](https://doi.org/10.1016/j.ajcnut.2023.04.032)

Provided by University of British Columbia

Citation: Cutting breakfast carbs can benefit people with type 2 diabetes, study confirms (2023, May 31) retrieved 4 May 2024 from <https://medicalxpress.com/news/2023-05-breakfast-carbs-benefit-people-diabetes.html>

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