

Nearly Half of Adults with Type 2 Diabetes Saw Remission with Calorie Restriction

Nearly half of a cohort of adults with type 2 diabetes participating in a calorie-restricted intermittent fasting intervention achieved diabetes remission, according to findings from a randomized controlled trial in China.

In a study published in *The Journal of Clinical Endocrinology & Metabolism*, adults who participated in the Chinese Medical Nutrition Therapy dietary approach that encompassed 5 days of intermittent fasting followed by 10 days of eating ad libitum had greater reductions in fasting blood glucose and HbA1c than adults eating an ad libitum diet alone 3 and 12 months after the trial ended.

Percentage of adults with type 2 diabetes achieving remission:



Data were derived from Yang E, et al. *J Clin Endocrinol Metab.* 2022;doi:10.1210/clinem/dgac661.

“This study was performed under real-life conditions, and the intervention was delivered by trained nurses in primary care rather than by specialized staff at a research institute, making it a more practical and achievable way to manage type 2 diabetes,” Dongbo Liu, PhD, director of the Subhealth Intervention Technology Laboratory at the State Administration of Traditional Chinese Medicine, China, told Healio. “It could be a shift in the paradigm of management goals in diabetes care.”

Liu and colleagues conducted a parallel-design, open-label, randomized controlled trial in which 72 adults aged 18 to 75 years diagnosed with type 2 diabetes and taking at least one diabetes medication were enrolled. Half the participants were randomly assigned to a control group eating an ad libitum diet for the entire trial. The rest were

randomly assigned to eat about 840 kcal per day in an intermittent fasting regime with breakfast between 6:30 and 8:30 a.m., lunch between 11 a.m. and 1 p.m., and dinner between 5 and 7 p.m. The intervention group completed 5 days of intermittent fasting followed by 10 days of an ad libitum diet. The intervention cycle was completed six times in 90 days.

“The Chinese Medical Nutrition Therapy diet is a food-based diet instead of meal replacement products,” Liu said. “It allowed the participants to follow their habitual social eating patterns, which avoided discontinuing treatment due to difficulty in maintenance. The trial was designed to be pragmatic in nature and could be beneficial for implementing similar interventions in the community.”

Diabetes medications were adjusted during the trial based on blood glucose levels. The primary outcome was diabetes remission, defined as a stable HbA1c of less than 6.5% for at least 3 months without taking a diabetes medication. Anthropometric measures, blood pressure and biochemical assessments were performed at baseline, the end of the intervention and at follow-up 3 and 12 months after the intervention concluded.

At the end of the trial, 50% of the intervention group had stopped using diabetes medications, and 68.4% reduced their medication dose compared with 2.8% of the control group. The intervention group had a lower FBG (6.3 vs. 7.66 mmol/L; $P < .0001$) and a greater body weight reduction (5.93 kg vs. 0.27 kg; $P < .0001$) than the control group.

At the 3-month follow-up, 47.2% of the intervention group achieved diabetes remission compared with 2.8% of the control group ($P < .0001$). The intervention group had a lower HbA1c (5.66% vs. 7.87%; $P < .0001$) and FBG (5.84 mmol/L vs. 7.64 mmol/L; $P < .0001$) than controls.

At the 12-month follow-up, 44.4% of the intervention group achieved diabetes remission compared with none in the control group. The intervention group continued to maintain a lower HbA1c (6.33% vs. 7.76%; $P < .0001$) and FBG (6.17 mmol/L vs. 7.47 mmol/L; $P < .0001$) than the control group.

“These participants have been followed up for 1 year and a follow-up of 5 years or more is ongoing to explore the stability of the Chinese Medical Nutrition Therapy diet and its impact on complications,” Liu said. “An experiment with more participants and a wider area is being pushed forward to further explore the effectiveness.”

For more information:

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