

### A Scalable, Weight Management Program Tailored for Adults with Type 2 Diabetes: Effects on Glycemic Control, Weight, Hunger, and Quality of Life

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**Objectives:** Over 26 million people in the United States have type 2 diabetes (T2D) and 89% of those living with diabetes have overweight or obesity. Weight loss improves glycemic control and scalable weight management programs tailored for those living with diabetes are critically needed. The objective of this trial was to test the efficacy of a scalable and widely available diabetes-tailored weight management program (WW, formerly Weight Watchers) on glycemic control, weight, hunger, and quality of life (QOL) in adults with T2D and overweight/obesity.

**Methods:** This was a prospective 24-week single arm, three-site clinical trial. Participants ( $n = 136$ ) had T2D, a baseline HbA1c between 7–11%, and a BMI between 27–50 kg/m<sup>2</sup>. All participants received the 24-wk WW intervention, tailored for people with T2D, that included weekly virtual workshops and use of the WW App.

Assessments occurred at baseline, wk 12 (83.8% retention), and wk 24 (83.1%). Change in HbA1c at 24 weeks was the primary outcome. Secondary outcomes were changes in body weight, hunger (assessed with visual analog scale), and quality of life (assessed with Impact of Weight on QOL-Lite) at 24-weeks. All analyses adhered to the intent-to-treat principle with maximum likelihood estimation used for missing data. Generalized linear effects models were used to examine change over time for all outcome variables.

**Results:** Participants were  $56.8 \pm 0.8$  y (Mean  $\pm$  SEM),  $36.2 \pm 0.6$  kg/m<sup>2</sup>, 80.2% Female, and 62.2% non-Hispanic white. Baseline HbA1c, weight, hunger, and IWQOL-Lite were  $7.9 \pm 0.1\%$ ,  $104.3 \pm 1.8$  kg,  $55 \pm 2$  units, and  $76 \pm 2$  points, respectively. At week 24, HbA1c decreased by  $0.8 \pm 0.1\%$  and body weight decreased by  $5.7 \pm 0.5\%$  (both  $p < .0001$ ). A majority of participants achieved clinically significant weight loss, with 59.3% losing  $\geq 3\%$ , 42.5% losing  $\geq 5\%$ , and 15.0% losing  $\geq 10\%$  at 24-weeks. At 24 weeks, hunger decreased by 13.2% ( $p = 0.0125$ ) and QOL improved by 13.6% ( $p < .0001$ ), with significant improvements in the domains of physical function, self-esteem, sexual life, public distress, and work (all  $p$ -values  $< .05$ ).

**Conclusions:** The widely available and scalable WW program, modified for those with T2D, had favorable and clinically meaningful effects on glycemic control, body weight, hunger, and quality of life.

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