

Intensive weight-loss intervention linked with increased chance of partial remission from diabetes

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Among overweight adults, participation in an intensive lifestyle intervention (that included counseling sessions and targets to reduce caloric intake and increase physical activity) was associated with a greater likelihood of partial remission of type 2 diabetes, however the absolute remission rates were modest, according to a study in the December 19 issue of *JAMA*.

"Diabetes traditionally has been considered a progressive, incurable condition wherein the best case scenario after diagnosis is tight metabolic and risk factor management to forestall vascular and neuropathic complications," according to background information in the article. Some bariatric surgery studies have suggested that many diabetes cases among obese patients can be resolved. "Patients diagnosed as having type 2 diabetes frequently ask their physicians whether their condition is reversible, and some physicians may provide hopeful advice that lifestyle change can normalize glucose levels," the authors write. "However, the rate of remission of type 2 diabetes that may be achieved using non-surgical approaches has not been reported."

Edward W. Gregg, Ph.D., of the <u>Centers for Disease Control and</u> <u>Prevention</u>, Atlanta, and colleagues conducted a study to examine the association of an intensive <u>lifestyle intervention</u> with frequency of partial and complete remission of type 2 diabetes. The study consisted of an ancillary observational analysis of a 4-year randomized controlled trial



(baseline visit, August 2001-April 2004; last follow-up, April 2008) comparing an intensive lifestyle intervention (ILI) with a diabetes support and education control condition (DSE). The study included 4,503 U.S. adults with <u>body mass index</u> of 25 or higher and type 2 diabetes.

Participants were randomly assigned to receive the ILI, which included weekly group and individual counseling in the first 6 months followed by 3 sessions per month for the second 6 months and twice-monthly contact and regular refresher group series and campaigns in years 2 to 4 (n = 2,241); or the DSE, which was an offer of 3 group sessions per year on diet, physical activity, and social support (n = 2,262). The ILI aimed to reduce total caloric intake to 1,200 to 1,800 calories a day through reductions in total and saturated fat intake and by increasing physical activity levels to a goal of 175 minutes/week. Liquid meal replacements were provided to assist dietary goals.

Participants in the ILI group lost significantly more weight than DSE participants at year 1 (-8.6 percent vs. -0.7 percent) and at year 4 (-4.7 percent vs. -0.8 percent) and had greater increases in fitness at both year 1 (20.6 percent vs. 5.3 percent) and year 4 (4.9 percent vs. -1.5 percent). The researchers found that the prevalence of complete remission (i.e., glucose normalization without medication) was more common in the ILI group than in the DSE group across all years of the study. However, the absolute prevalence was low, ranging from 1.3 percent for ILI vs. 0.1 percent for DSE in year 1; to 0.7 percent for ILI vs. 0.2 percent for DSE in year 4.

Additional analyses indicated that ILI participants were significantly more likely to experience any remission (partial or complete), with a prevalence of 11.5 percent during the first year, decreasing to 7.3 percent during year 4, compared with 2.0 percent in the DSE group at both time points. Rates of any remission were notably higher (15 percent



- 21 percent) among persons with substantial weight loss or fitness change, shorter duration of extant diabetes, or a lower HbA1c level (a measure of blood glucose) at entry and those not using insulin.

"The ILI group was significantly more likely to have continuous, sustained remission, as 9.2 percent experienced at least a 2-year remission (vs. for DSE, 1.7 percent) at some point during follow-up, 6.4 percent had at least a 3-year remission (vs. DSE, 1.3 percent), and 3.5 percent had a continuous 4-year remission (vs. DSE, 0.5 percent). The results from the complete case analyses were similar," the authors write.

"The increasing worldwide prevalence of type 2 diabetes, along with its wide-ranging complications, has led to hopes that the disease can be reversed or prevented. These analyses of more than 4,500 <u>overweight</u> adults with type 2 diabetes confirm that complete remission associated with an intensive life-style intervention, when defined by glucose normalization without need for drugs, is rare. However, partial remission, defined as a transition to prediabetic or normal glucose levels without drug treatment for a specific period, is an obtainable goal for some patients with <u>type 2 diabetes</u>."

David E. Arterburn, M.D., M.P.H., of the Group Health Research Institute, Seattle, and Patrick J. O'Connor, M.D., M.A., M.P.H., of the HealthPartners Institute for Education and Research, Minneapolis, write in an accompanying editorial that "evidence-based and cost-effective diabetes prevention strategies should be more broadly applied using the full range of available technologies and incentives."

"But that is not enough. Research, education, and policy efforts need to be focused further upstream, toward primary prevention: reducing incident obesity in children, adolescents, and adults, especially among those with a family history of obesity or diabetes. Prevention of diabetes and obesity should be a rallying cry for all clinicians who care about the



health of the nation."

More information: *JAMA*. 2012;308(23):2489-2496 *JAMA*. 2012;308(23):2517-2518

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