

Lifestyle changes, drug lower type 2 diabetes risk

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Intensive lifestyle changes aimed at modest weight loss reduced the rate of developing type 2 diabetes by 34 percent over 10 years in people at high risk for the disease.

Researchers at Washington University School of Medicine in St. Louis and 26 other sites nationwide determined the results from the [Diabetes Prevention Program Outcomes Study \(DPPOS\)](#), a 10-year follow-up study of patients who participated in the Diabetes Prevention Program (DPP). The results appear in the Oct. 29, 2009, online edition of *The Lancet*.

The DPPOS found that patients at high risk for developing [type 2 diabetes](#) who made [lifestyle changes](#) also had lower [blood pressure](#) and triglyceride levels.

The study also found that those treated with the oral diabetes drug metformin, rather than intensive lifestyle changes, reduced the rate of developing diabetes by 18 percent after 10 years compared with a placebo.

Completed in 2001, the DPP was a three-year, randomized trial in more than 3,200 overweight or obese adults with elevated [blood glucose levels](#), putting them at high risk to develop type 2 diabetes. Forty-five percent of participants were from minority groups disproportionately affected by type 2 diabetes: African-Americans, Hispanic Americans, Asian Americans, Pacific Islanders and American Indians.

The DPP results showed that intensive lifestyle changes, including exercise, reducing calories and fat intake and frequent interaction with health-care professionals, reduced the development of type 2 diabetes by 58 percent after three years. Those assigned to two daily doses of metformin but no lifestyle changes reduced the development of the disease by 31 percent over the same period.

Neil H. White, M.D., a Washington University pediatric diabetes specialist at St. Louis Children's Hospital, was the principal investigator of both studies at the Washington University School of Medicine site, which had about 170 adult patients in the DPP and 140 in the DPPOS.

"Changing one's lifestyle to better health habits, including those aimed at reduced weight, a better diet and more exercise, will have long-term and sustained impact on overall health, at least in preventing diabetes and hopefully in preventing complications associated with diabetes and prediabetes," White says. "Even if the weight loss is slight, it will have huge benefits."

In the United States, about 24 million adults have diabetes, and up to 95 percent of them have type 2 diabetes. This type of diabetes is strongly associated with obesity, inactivity, family history of diabetes, history of gestational diabetes, impaired glucose metabolism and racial or ethnic background. The prevalence of diabetes has more than doubled in the last 30 years, due in large part to the upsurge in obesity.

An additional 57 million overweight adults have glucose levels that are higher than normal but not yet in the diabetic range, a condition that substantially raises the risk of a heart attack or stroke and of developing type 2 diabetes.

"In 10 years, participants in the lifestyle changes group delayed type 2 diabetes by about four years compared with placebo, and those in the metformin group delayed it by two years," said study chair David M. Nathan, M.D., of Massachusetts General Hospital. "The benefits of intensive lifestyle changes were especially pronounced in the elderly. People age 60 and older lowered their rate of developing type 2 diabetes in the next 10 years by about half."

White said the participants in the DPPOS will be

followed for another five years to get information on complications associated with diabetes and prediabetes over time, including eye, kidney and heart disease.

Source: Washington University School of Medicine
([news](#) : [web](#))

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