New Data from Diabetes Prevention Program Outcomes Study Shows Persistent Reduction of Type 2 Diabetes Development Over 22-Year Average Follow-Up

Latest results report long-term impacts of lifestyle intervention and metformin treatment on people enrolled in the NIDDK-supported study

CHICAGO (June 16, 2020) — Long-term follow-up of more than 2,000 people enrolled in the Diabetes Prevention Program Outcomes Study (DPPOS) indicates a continued significant reduction in the participants’ risk of developing type 2 diabetes (T2D). Today’s “New Data on Clinical Outcomes from the Diabetes Prevention Program Outcomes Study (DPPOS)” symposium outlined the latest research results of the study at the American Diabetes Association’s® (ADA’s) 80th Virtual Scientific Sessions.

The DPPOS1 is the long-term follow-up of the Diabetes Prevention Program (DPP), a multicenter trial conducted from 1996 to 2001 that established the success of either an intensive lifestyle program or treatment with metformin to prevent or delay the development of T2D in individuals who were considered at high risk for developing the disease. The DPP demonstrated lifestyle intervention, aimed at achieving weight loss, and metformin treatment reduced the risk of T2D development by 58% and 31%, respectively, compared to placebo after an average of three years. Metformin, one of the most commonly used medications worldwide for the treatment of T2D, is currently not labeled by the FDA for prevention purposes, although it is approved in other countries.

At the conclusion of the DPP study, 88% of the original 3,234 participants enrolled in the DPPOS, including the DPP participants who had developed T2D and those who still had not developed diabetes. The DPPOS sought to evaluate the long-term effects of the DPP interventions on the further development of T2D and its complications, including retinopathy, nephropathy and cardiovascular disease.

Currently, after an average of 22 years of study, 75% of the participants who enrolled in the DPP who are still alive have continued to be evaluated. The follow-up population includes the participants who have developed diabetes and those who have not. Since metformin was continued in the original metformin treatment group over time, the current results examine whether metformin has beneficial effects on major cardiovascular disease, such as fatal and non-fatal heart attacks and stroke, or on cancer, compared with the original placebo group. In addition, since the mean age of the participants is now 72 years, DPPOS has started to investigate contributors to healthy aging and comorbidities.

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1 DPPOS is supported by NIDDK, NCI, NHLBI, NIA, NEI, ORWH and CDC. Merck & Co. supplied the metformin.

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The newest results indicate:

- Prevention effects in the original lifestyle group and metformin treatment group remain 22 years after the start of the study with a 25% and 18% reduced risk of diabetes development, respectively, compared with the original placebo group.
- Those participants who did not develop diabetes had a significant 57% and 37% lower risk of developing early changes of eye and kidney disease, respectively, and a 39% lower risk of major cardiovascular disease endpoints, such as heart attacks and stroke.
- Despite the benefits seen with diabetes prevention overall, there was no significant benefit seen with the individual interventions—metformin or the lifestyle intervention—with regard to heart disease or the development of kidney disease or diabetic retinopathy.
- However, there were favorable trends with metformin in stroke reduction and for cardiovascular events in the subgroup of people who started the study before age 45.
- Metformin was associated with a non-significant 12% lower risk of cancer compared with the placebo group.
- The most recent results also showed the intensive lifestyle intervention group had a long-term reduction in the development of frailty.
- The only long-term negative effect observed with any of the interventions was a modest increase in kidney disease with metformin, which appeared only in the oldest group of participants.

“The DPP/DPPOS is the longest duration and largest prevention study that continues to actively follow its participants,” said DPPOS chair David M. Nathan, MD, director of the Clinical Research Center and Diabetes Center at Massachusetts General Hospital and professor of medicine at Harvard Medical School. “The current results indicate that prevention of type 2 diabetes is possible and has important clinical benefits. The long-term benefits of the two DPP interventions on diabetes development, still present many years after they were started, are a testament to the power of these interventions and reinforce their importance in the reduction of diabetes.”

Dr. Nathan noted the DPP lifestyle intervention program is now offered in communities across the United States through the National Diabetes Prevention Program (NDPP) by the Centers for Disease Control and Prevention and through The Medicare Diabetes Prevention Program (MDPP), supported by the Center for Medicare and Medicaid Services, for Medicare beneficiaries.

Research presentation details:

- Dr. Nathan and other DPPOS investigators will present the latest research in the symposium, New Data on Clinical Outcomes from the Diabetes Prevention Program Outcomes Study (DPPOS)
- Date: Tuesday, June 16, 8:00 – 10:00 a.m. CT

For more information or to schedule an interview with Dr. Nathan, please contact Daisy Diaz by phone at (703) 253-4807 or by email at SciSessionsPress@diabetes.org.

About the ADA’s Scientific Sessions
The ADA’s 80th Scientific Sessions, the world’s largest scientific meeting focused on diabetes research, prevention and care, will be held virtually June 12-16, 2020. Leading physicians, scientists and health care professionals from around the world will unveil cutting-edge research, treatment recommendations and advances toward a cure for diabetes. Though the conference will be remote this year, attendees will receive exclusive access to nearly 2,000 original research presentations and take part in provocative and engaging
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About the American Diabetes Association
Every day more than 4,000 people are newly diagnosed with diabetes in America. More than 122 million Americans have diabetes or prediabetes and are striving to manage their lives while living with the disease. The American Diabetes Association (ADA) is the nation’s leading voluntary health organization fighting to bend the curve on the diabetes epidemic and help people living with diabetes thrive. For nearly 80 years the ADA has been driving discovery and research to treat, manage and prevent diabetes, while working relentlessly for a cure. We help people with diabetes thrive by fighting for their rights and developing programs, advocacy and education designed to improve their quality of life. Diabetes has brought us together. What we do next will make us Connected for Life. To learn more or to get involved, visit us at diabetes.org or call 1-800-DIABETES (1-800-342-2383). Join the fight with us on Facebook (American Diabetes Association), Twitter (@AmDiabetesAssn) and Instagram (@AmDiabetesAssn).

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