NIH study shows big improvement in diabetes control over past decades

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More people are meeting recommended goals in the three key markers of diabetes control, according to a study conducted and funded by the National Institutes of Health and the Centers for Disease Control and Prevention.

The report, published online February 15 in Diabetes *Care*, shows that, from 1988 to 2010, the number of people with diabetes able to meet or exceed all three of the measures that demonstrate good diabetes management rose from about 2 percent to about 19 percent. Each measure also showed substantial improvement, with over half of people meeting each individual goal in 2010.

The measures are A1C – which assesses blood sugar (glucose) over the previous three months – blood pressure and cholesterol. They are often called the ABCs of diabetes. When these measures fall outside healthy ranges, people are more likely to be burdened by complications of diabetes, including heart disease, stroke, kidney disease, blindness, and amputation.

Despite improvement, the results show continued need for better diabetes control. In particular, young people and some minority groups were below average in meeting the goals.

To gauge diabetes management, researchers analyzed data from the National Health and Nutrition Examination Surveys from 1988-1994 and 1999-2010.

"The most impressive finding was the significant improvement in diabetes management over time across all groups," said Catherine Cowie, Ph.D., the study's senior author and director of the Diabetes Epidemiology Program at the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), which conducted and funded the study. "However, we see a lot of room for improvement, for everyone, but particularly for younger people and some minority groups."

According to 2007-2010 data on Americans with diabetes:

- 53 percent met A1C goals, compared to 43 percent in 1988-1994 data
- 51 percent met blood pressure goals, compared to 33 percent in 1988-1994 data
- 56 percent met cholesterol goals, compared to 10 percent in 1988-1994 data

Improved cholesterol control was likely due to the increase in the use of statins, a type of cholesterol-lowering drug, from about 4 percent of people with diabetes during 1988-1994 to 51 percent during 2007-2010. Glucose control was worse in Mexican-Americans and in younger adults. Only 44 percent of Mexican-Americans met A1C goals, versus 53 percent of whites and blacks in 2007-2010 data. People between 20-49 years old were less likely to meet A1C goals than older people.

"It is particularly disturbing that good control was seen less frequently in young people," said Judith Fradkin, M.D., director of the NIDDK Division of Diabetes, Endocrinology, and Metabolic Diseases. "Research has shown that good diabetes control early in the course of disease has long-lasting benefits reducing the risk of complications. For people with long life expectancy after diagnosis of diabetes, it's especially important to focus on meeting diabetes management goals as early as possible, because with that longer life comes a greater chance of developing complications if they do not control their diabetes."

"Not only do Mexican-Americans and non-Hispanic blacks have higher rates of diabetes, members of these groups who develop diabetes also have poorer health outcomes," said the paper's first author, Sarah Stark Casagrande, Ph.D., an epidemiologist from Social & Scientific Systems Inc., Silver Spring, Md., whose work is supported by NIDDK. "While diabetes control has improved in these populations, some disparities remain,

demonstrating the need for improved management of the disease to prevent its devastating complications."

Goals for A1C, blood pressure, and cholesterol must be individualized for people with diabetes, as effects of diabetes can differ depending on a person's age, type of diabetes, diabetes medications, complications from diabetes, and other factors.

For A1C, a goal for many people is below 7 percent. It is particularly important for people with long life expectancies to control A1C to protect against eye, nerve, and kidney disease in the future. Goals can be less stringent for people with limited life expectancy, since complications develop over time. For blood pressure, the goal for most people is 130/80. Moderate- or high-dose statin therapy is recommended for people over 40 with diabetes, with a goal of keeping the low-density lipoprotein (LDL) – sometimes called bad cholesterol – less than 100 milligrams per deciliter. Control of blood pressure and cholesterol are particularly important for lowering cardiovascular risk.

About 26 million Americans have diabetes, and another 79 million have prediabetes, a condition that places them at increased risk for developing type 2 diabetes and heart disease. Between 1988 and 2012, the prevalence of diagnosed diabetes has more than doubled, from nearly 4 percent of the U.S. population to nearly 9 percent, according to data from the Centers for Disease Control and Prevention.

To help people improve their health, the National Diabetes Education Program (NDEP), an initiative of the NIH and the Centers for Disease Control and Prevention, is working to assist people in making positive, lasting changes to improve their health. NDEP's Make A Plan tool can help make these changes become part of a daily routine to support people in reaching their health goals. The NIDDK's National Diabetes Information Clearinghouse creates and promotes research-based health information and campaigns for the public. Among many publications, the A1C Test and Diabetes explains how this important test can help with diagnosis and management of diabetes.

Provided by National Institute of Diabetes and Digestive and Kidney Diseases