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## First-of-its-Kind National Report Reveals Estimated High Prevalence and Heavy Cost of Type 2 Diabetes Complications in America

*In Response, Health Organizations Unite to Help Educate on Good Diabetes Management and How to Reduce the Risk of Other Serious Health Problems*

**Seattle, WA, April 10, 2007** – A first-of-its-kind report looking at the prevalence and cost of type 2 diabetes complications shows that an estimated three out of five people (57.9 percent) with type 2 diabetes have at least one of the other serious health problems commonly associated with the disease, and that these health problems are taking a heavy financial toll on the United States. In 2006, the nation spent an estimated \$22.9 billion on direct medical costs related to diabetes complications.\*

The new report, titled *State of Diabetes Complications in America*, also shows that estimated annual healthcare costs for a person with type 2 diabetes complications are about three times higher than that of the average American without diagnosed diabetes. These complications, which can include heart disease, stroke, eye damage, chronic kidney disease and foot problems that can lead to amputations, cost a person with type 2 diabetes almost \$10,000 each year.\* People with diabetes complications pay nearly \$1,600 out of their own pockets for costs that are not reimbursed by insurance, such as co-payments and deductibles.\* This amount is significant, considering that according to the National Health Interview Survey, an estimated 40 percent of adults with diabetes reported a family income of less than \$35,000 per year in 2005.

Results from the report were released today at the American Association of Clinical Endocrinologists' (AACE) 16th Annual Meeting and Clinical Congress, by AACE in partnership with the members of a diabetes complications consortium: the Amputee Coalition of America, Mended Hearts, the National Federation of the Blind and the National Kidney Foundation, and supported by GlaxoSmithKline.

\* Cost estimates in this report were adjusted for inflation to reflect 2006 costs.



The *State of Diabetes Complications in America* is an analysis of national health and economic data specific to type 2 diabetes complications, and was developed as a follow-up to a 2005 AACE study showing that two out of three Americans with type 2 diabetes analyzed in a study had elevated blood sugar levels, which can lead to diabetes complications.

Many people with type 2 diabetes develop more than one health complication associated with the disease. The new report shows that an estimated one out of three people (33.3 percent) with the disease has one other serious health problem; one out of ten people (10.3 percent) with the disease has two other serious health problems; one out of 15 people (6.7 percent) with the disease has three other serious health problems; one out of 13 people (7.6 percent) has four or more other serious health problems.

“The report makes it clear that we have a major national issue when it comes to diabetes management, and that urgent action is needed,” said Daniel Einhorn, MD, FACE, and Secretary of the Board of Directors of AACE. “People with type 2 diabetes need to achieve and maintain good blood glucose levels over time to improve their chances of reducing the risk of these serious complications.”

The *State of Diabetes Complications in America* report synthesizes data from two large national studies to examine the issue of diabetes-related complications in the United States. Data on the prevalence of diabetes-related complications were derived from the National Health and Nutrition Examination Survey (NHANES) and combined with economic data from the Medical Expenditure Panel Survey (MEPS).

The report estimates that in people with diabetes, there are specific health problems that are more prevalent than in people with normal blood sugar levels. The prevalence of macrovascular problems, or those related to the heart and large blood vessels, in people with diabetes vs. people with normal blood sugar levels is as follows:

- Congestive heart failure occurs in 7.9 percent of people with diagnosed diabetes vs. 1.1 percent of people without diabetes
- Heart attack occurs in 9.8 percent of people with diabetes vs. 1.8 percent without diabetes
- Coronary heart disease occurs in 9.1 percent of people with diabetes vs. 2.1 percent without diabetes
- Stroke occurs in 6.6 percent of people with diabetes vs. 1.8 percent without diabetes

In terms of microvascular complications, which relate to small blood vessels, the prevalence is as follows:

- Chronic kidney disease<sup>1</sup> occurs in 27.8 percent of people with diabetes vs. 6.1 percent without diabetes
- Foot problems such as foot/toe amputation, foot lesions and numbness in the feet occur in 22.8 percent of people with diabetes vs. 10 percent without diabetes
- Eye damage<sup>2</sup> occurs in 18.9 percent of people with diabetes (figures for eye damage in people without diabetes are not available in NHANES)

While type 2 diabetes is closely tied to the development of these complications, it is possible that some people may have developed these health problems independent of their diabetes, due to family history or other underlying medical conditions.

“Beyond the impact on quality of life, health complications from type 2 diabetes also contribute to substantial national and individual healthcare costs,” said Willard G. Manning, PhD, Professor, Harris School of Public Policy Studies at the University of Chicago. “My hope is that the report will call attention to the issue of diabetes-related complications and bring about change in the way we manage type 2 diabetes to help reduce both the physical and financial burdens.”

Regarding annual healthcare costs for people with type 2 diabetes, heart attack is the most costly complication, at \$14,150 per person, followed by chronic kidney disease<sup>3</sup> (\$9,002); congestive heart failure (\$7,932); stroke (\$7,806); coronary heart disease (\$6,062); foot problems<sup>4</sup> (\$4,687); and eye damage<sup>5</sup> (\$1,785).\*

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<sup>1</sup> In the NHANES study, “chronic kidney disease” refers to people with microalbuminuria (albumin:creatinine ratio >30 ug/mg).

<sup>2</sup> “Eye damage” includes a positive response by NHANES participants to the question, “Have you been told diabetes has affected your eyes/had retinopathy?” Retinopathy is damage to the eye’s retina.

<sup>3</sup> Costs for kidney disease in MEPS do not include the institutionalized population. Costs do include dialysis patients.

<sup>4</sup> In the MEPS analysis, “foot problems” does not include costs for foot/toe amputations as these could not be identified in the MEPS public-use database. Additionally, costs for prosthetics are not included.

<sup>5</sup> In the MEPS economic analysis, “eye damage” includes retinopathy, glaucoma, cataracts and blindness.

\* Cost estimates in this report were adjusted for inflation to reflect 2006 costs.

“As great as these financial burdens are, this is a conservative estimate, as it only includes direct medical costs,” adds Manning. “Costs attributed to lost employment or productivity, premature death and disability have not been included, and if we factor in those costs, the overall burden would be far greater.”

### **About Good Diabetes Management**

The risk of developing the serious health complications associated with type 2 diabetes can be reduced. People with type 2 diabetes should work with their healthcare provider to develop a personal diabetes management plan. A good plan includes healthy eating and regular physical activity, but these lifestyle changes alone may not be enough to lower blood sugar adequately. Many people with type 2 diabetes also may need one or more medicines. Some medicines work together in different ways to control blood sugar levels. People should track how their diabetes plan is working by monitoring their blood sugar regularly and checking with their doctor to see if lifestyle or medicine changes need to be made. Blood sugar monitoring should be done with a blood glucose meter and by getting an A1c test. AACE recommends an A1c target level of 6.5 percent or lower. Reaching this target is important since every one percent increase above six percent significantly elevates a person’s risk of serious complications.

### **About the Diabetes Complications Consortium**

The diabetes complications consortium was formed to provide helpful information to people with type 2 diabetes about how to reduce the risk of the health complications associated with the disease, as well as support and encouragement to people who have experienced these serious health problems. The members of the diabetes complications consortium include the Amputee Coalition of America, the National Federation of the Blind, the National Kidney Foundation and Mended Hearts, a nationwide heart patient support group affiliated with the American Heart Association. Through distribution and awareness of the report, the diabetes complications consortium hopes to help people with type 2 diabetes, especially those at high risk for developing diabetes-related complications, recognize the importance of controlling their blood sugar levels and working with their doctor to develop a good diabetes management plan.

People can learn more about managing type 2 diabetes and how to reduce the risk of diabetes-related complications by visiting [www.stateofdiabetes.com](http://www.stateofdiabetes.com).

## **About Type 2 Diabetes**

Type 2 diabetes accounts for 90 to 95 percent of all diagnosed diabetes cases and affects more than 18 million people in the United States. Type 2 diabetes is a chronic, progressive and serious disease that occurs either when the body does not produce enough insulin or when the body does not respond properly to its natural insulin. As a result, sugar builds up in the blood and over time, high levels of blood sugar can lead to a variety of serious diabetes-related complications including: heart disease, stroke, eye damage, kidney disease and foot problems that can lead to amputations.

## **About the Campaign Sponsor**

GlaxoSmithKline has provided funding and other support for the *State of Diabetes Complications in America* campaign to the American Association of Clinical Endocrinologists and members of the consortium. GlaxoSmithKline, one of the world's leading research-based pharmaceutical and healthcare companies, is committed to improving the quality of human life by enabling people to do more, feel better and live longer.

**Note to Editor:** *To assess the prevalence of complications, data for the State of Diabetes Complications in America report were taken from the National Health and Nutrition Examination Survey (NHANES) 1999-2004, a nationally representative survey of non-institutionalized, U.S. civilians. NHANES is a major program of the National Center for Health Statistics (NCHS), which is part of the Centers for Disease Control and Prevention (CDC). NHANES collects detailed medical information from roughly 5,000 people each year. For the report, the NHANES data are combined with economic information from the 2000, 2002 and 2004 Medical Expenditure Panel Survey (MEPS), which is cosponsored by the Agency for Healthcare Research and Quality and the NCHS. MEPS began in 1996 compiling detailed information on healthcare utilization and expenditures. Data has been collected by MEPS through 2004. Cost estimates in this report were adjusted for inflation to reflect 2006 costs. Adults over the age of 20 were included in the NHANES and MEPS analyses and no distinction could be made between type 1 and type 2 diabetes populations. However, because type 2 diabetes accounts for 90-95 percent of diagnosed diabetes cases, results from the NHANES and MEPS analyses include mostly people with type 2 diabetes. By examining both studies together, the State of Diabetes Complications in America report gives a comprehensive overview of the impact of diabetes-related complications in the U.S.*

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