

## The Global Increase in Diabetes

Diabetes mellitus type 2 is the most common form of diabetes in the world today and is due to a progressive exhaustion over decades of the secretion of insulin from the pancreas. The pancreas releases insulin in response to increases in blood sugar levels. The increase in blood sugar levels after meals is affected by the amount and type of carbohydrate in the food eaten. Regular physical activity by increasing muscle mass promotes the disposal of sugar from the bloodstream, since muscle takes up glucose independent of insulin. Obesity interferes with the actions of insulin and affects its secretion from the pancreas. The increased intake of processed snack foods high in sugar and fat and beverages high in sugar have been associated with an increased incidence of obesity and diabetes when coupled with a sedentary lifestyle.

A 2016 study conducted by the UCLA Center for Health Policy Research found that nearly half of California adults, including one out of every three young adults, have either prediabetes — a precursor to type 2 diabetes — or undiagnosed diabetes. The research provided the first analysis and breakdown of California prediabetes rates by county, age and ethnicity, and offers alarming insights into the future of the nation's diabetes epidemic. The study estimated that some 13 million adults in California, or 46 percent of the population, have prediabetes or undiagnosed diabetes, while another 2.5 million adults, or 9 percent, have already been diagnosed with diabetes. Combined, the two groups represent 15.5 million people — 55 percent of the state's population. Because diabetes has more commonly been found among middle-aged and older adults, the study's finding that 33 percent of young adults aged 18 to 39 have prediabetes is of particular concern.

Global surveys also point out disturbing trends in the number of people affected by diabetes. According to the Non-Communicable Disease Collaboration published in the journal *Lancet* in 2016, diabetes accounts for more than 2 million deaths yearly with associated expenditures for health care estimated at \$825 billion per year. A meta-analysis, which pooled together data from 751 population-based studies and included 4.4 million adults, was used to investigate global trends in diabetes since 1980. Global diabetes prevalence increased from 4.3% in 1980 to 9.0% in 2014 in men, while increasing from 5.0% to 7.9% in women during the same time period. In total, the number of adults with diabetes increased from 108 million in 1980 to 422 million in 2014.

No country experienced a statistically significant decrease between 1980 and 2014, and the prevalence of diabetes at least doubled in 120 countries for men and in 87 countries for women. Additionally, half of all adults with diabetes in 2014 lived in five countries: China, India, the United States, Brazil and Indonesia. Global efforts to address this problematic trend in diabetes emphasize disease prevention through modification of diet and lifestyle behaviors, early detection, and management of high-risk individuals.

**NCD Risk Factor Collaboration. (2016). Worldwide trends in diabetes since 1980: a pooled analysis of 751 population-based studies with 4· 4 million participants. *The Lancet*, 387(10027), 1513-1530.**