

Diabetes in Michigan 2010 – The Facts

What is Diabetes?

Diabetes mellitus, a disease of metabolism, is widespread and very costly. There are three main types of diabetes: type 1, type 2, and gestational. Diabetes means the body is poorly regulating the amount of glucose (sugar) in the bloodstream. The resulting high glucose levels cause damaged blood vessels, health complications and increased medical expenditures. Roughly 90% of diabetes is type 2 and therefore preventable.

Diabetes is Common

- Michigan ranks 15th highest in the nation for diabetes prevalence.¹
- Diabetes prevalence in Michigan has increased 15% over the past 5 years.
- Just over 9% of Michigan adults have been diagnosed with diabetes – an estimated 701,000 people.²
- An additional 364,400 Michigan adults are estimated to have diabetes but are currently undiagnosed.³
- In recent years, men have reported significantly higher rates of diabetes than women – especially in African American and other non-White races.
- **Health Disparities** compared to White, non-Hispanic adults:⁴
 - African Americans and Native Americans have twice the prevalence of diagnosed diabetes.
 - Hispanics have 75% more diagnosed diabetes.
 - Asians and Pacific Islanders have 55% more diagnosed diabetes.
 - “Other” races (which includes multiracial but excludes Arab ancestry) have double the prevalence of diagnosed diabetes.

Diabetes is Serious

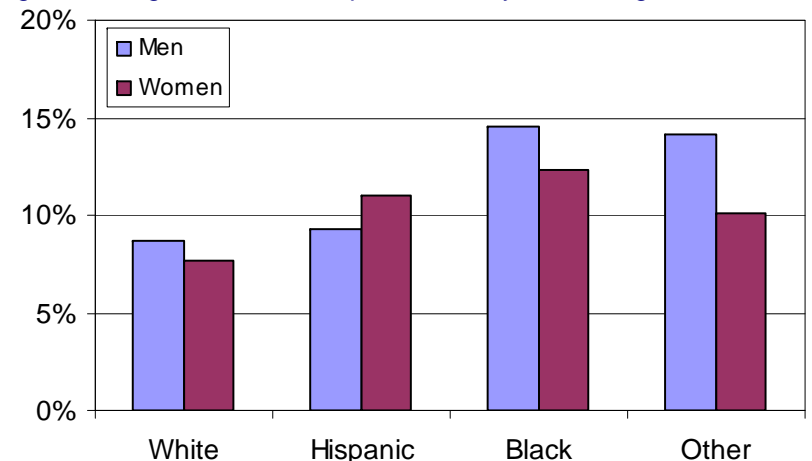
- Nationally, 6 in 10 people with diabetes have one or more diabetes-related complications.⁵
- Risk of heart attack/stroke is 2-4 times higher among people with diabetes.⁶
- Diabetes is the leading cause of kidney failure, blindness and lower-limb amputation.⁶
- Keeping A1C test values below 7% can prevent or delay complications.⁷

Diabetes is Costly

- Nationally, 1 in 10 health dollars is spent on diabetes.⁸
- The cost of treating diabetes is expected to triple over the next 25 years.⁹
- It is estimated Michigan can save \$545 million across all chronic disease by investing \$10 in preventive care per person per year.¹⁰

**Diabetes is common,
serious, costly, and
controllable**

Figure 1. Diagnosed diabetes prevalence by race and gender.*



* 2007-2009 Michigan Behavioral Risk Factor Survey, MDCH.

Table 1. Morbidity rates, general population & persons with diabetes.*

Condition	General Pop.	With Diabetes
Heart disease/Stroke	85 per 1,000	279 per 1,000
Eye disease	88 per 1,000	209 per 1,000
Kidney failure	3 per 1,000	11 per 1,000
Lower limb amputation	< 1 per 1,000	4 per 1,000

* 2007-2009 Michigan Behavioral Risk Factor Survey, MDCH. 2007-2008 NHANES, CDC. 2009 U.S. Renal Data System Report, NIH. 2008 Michigan Inpatient Database, MHHA.

Table 2. Per person and state-level diabetes costs, Michigan.*

	Per Person Cost	Cost to Michigan
Diagnosed diabetes	\$9,975	\$7.0 billion
Undiagnosed diabetes	\$2,864	\$1.0 billion

* Per person cost Dall et al. (The economic burden of diabetes. Health Affairs 29(2): 297-303, 2010.); multiplied by estimated population for diagnosed & undiagnosed diabetes.

Diabetes is Controllable

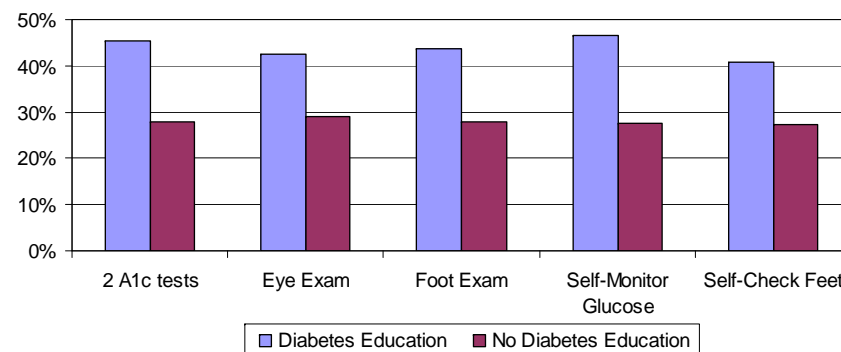
- Controllable factors to help prevent diabetes:
 - 80% of the increase in diabetes prevalence over the past 30 years is attributable to increases in obesity.¹¹
 - Physical activity can help control blood glucose, weight, blood pressure and cholesterol. 150 minutes each week is recommended.¹²
 - Lifestyle interventions (weight loss and physical activity) are more effective than drugs in reducing a person's risk of diabetes.¹³
- Controllable factors to prevent complications of diagnosed diabetes:
 - People with diabetes need to see a doctor at least once a year for regular exams and lab tests, and take all medications as prescribed.
 - An individualized Medical Nutrition Therapy plan and exercise helps people with diabetes to keep blood glucose levels under control.
 - Get educated! Working with a Certified Diabetes Educator can improve clinical outcomes and quality of life, and reduce claim costs.¹⁴
- Diabetes self-management education works!**
 - Diabetes is largely self-managed where patients are responsible for 99% of their care.¹⁵
 - Diabetes education results in 50% more people seeking recommended clinical exams and performing recommended self-care activities.
 - Over 60% more people monitor their glucose levels on a more regular basis (both short-term and long-term) with diabetes education.
 - Need to increase education since only 60% of people with diabetes in Michigan have had diabetes education at some point in their lifetime.²

Table 3. Controllable factors, general population & persons with diabetes.*

Controllable Factor	General Pop.	With Diabetes
Overweight or obese	67%	86%
Obese	31%	59%
Eat <5 fruits & vegetables a day	78%	79%
Physical inactivity	49%	62%
High blood pressure	30%	68%
High cholesterol	32%	61%

* 2009 Michigan Behavioral Risk Factor Survey, MDCH.

Figure 2. Diabetes care rates with and without diabetes education.*



* 2008-2009 Michigan Behavioral Risk Factor Survey, MDCH.

For more diabetes information in Michigan, please visit www.michigan.gov/diabetes

¹ *F as in Fat: How Obesity Threatens America's Future*. Washington, D.C.: Trust for America's Health and the Robert Wood Johnson Foundation. pp121.

² 2007-2009 Michigan Behavioral Risk Factor Survey, Bureau of Epidemiology, Division of Genomics, Perinatal Health and Chronic Disease Epidemiology, MDCH. Population estimate based on Michigan 2009 population data from the National Center for Health Statistics. Population estimate rounded to the nearest 100.

³ Age-adjusted proportion of total diabetes that is undiagnosed from Cowie et al. (Full accounting of diabetes and pre-diabetes in the U.S. population in 1988-1994 and 2005-2006. *Diabetes Care* 32(2): 287-294, 2009.) and estimated diagnosed diabetes population from the 2007-2009 Michigan Behavioral Risk Factor Survey and 2009 NCHS population data.

⁴ Preliminary Estimates for Chronic Health Conditions, Risk Factors, Health Indicators, and Preventive Health Practices by Race/Ethnicity. Behavioral Risk Factor Survey, 2007-2009. MDCH.

⁵ American Association of American Endocrinologists. 2006. State of diabetes complications in America. pp9.

⁶ American Diabetes Association. *Diabetes Statistics*. Retrieved 8/11/2010 from <http://www.diabetes.org/diabetes-basics/diabetes-statistics/>.

⁷ UK Prospective Diabetes Study (UKPDS) Group. Intensive blood-glucose control with sulphonylureas or insulin compared with conventional treatment and risk of complications in patients with type 2 diabetes (UKPDS 33). *Lancet* 1998;352: 837-53. [Erratum, *Lancet* 1999;354:602.]

⁸ American Diabetes Association. Economic costs of diabetes in the U.S. in 2007. *Diabetes Care* 31(3): 1-20, 2008.

⁹ Huang ES, Basu A, O'Grady M, Capretta JC. Projecting the future diabetes population and related costs for the U.S. *Diabetes Care* 32(12): 2225-2229, 2009.

¹⁰ Trust for America's Health. Prevention for a healthier America: Investments in disease prevention yield significant savings, stronger communities. Issue brief, July 2008.

¹¹ Gregg EW, Cheng YJ, Venkat Narayan KM, Thompson TJ, Williamson DF. The relative contributions of increases in the prevalence of overweight, obesity, and severe obesity to the increased prevalence of diabetes in the United States: 1976-2004. American Diabetes Association 67th Scientific Sessions, June 26-27, 2007.

¹² National Center for Chronic Disease Prevention and Health Promotion, Division of Diabetes Translation. *Be Active*. Retrieved 8/12/2010 from <http://www.cdc.gov/diabetes/consumer/beactive.htm>.

¹³ The Diabetes Prevention Program Research Group: Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med* 346:393-403, 2002.

¹⁴ American Diabetes Association. Clinical practice recommendations, 2010. *Diabetes Care* 33(S1), S26, 2010.

¹⁵ Funnell MM. Peer-based behavioral strategies to improve chronic disease self-management and clinical outcomes: evidence, logistics, evaluation considerations and needs for future research. *Family Practice* 27: i17-i22, 2010.