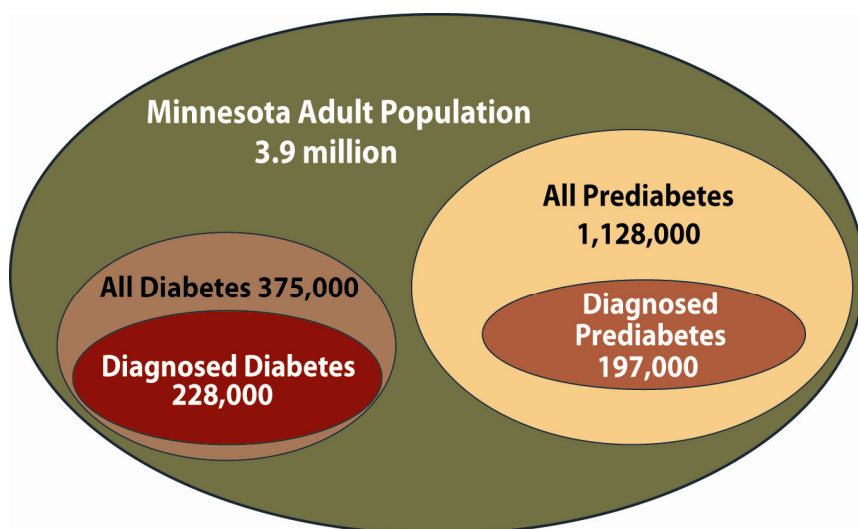


Diabetes and Prediabetes in Minnesota

January, 2010

More than 1 in 3 Adults and 1 in 6 Youth in Minnesota have Prediabetes or Diabetes

- Every year 20,000 Minnesotans are **newly diagnosed** with diabetes
- Approximately 2,100 Minnesota children have diabetes
- 92,000 12-19 year olds have prediabetes
- Minnesota county-level rates of diagnosed diabetes: http://apps.nccd.cdc.gov/DDT_STRS2/CountyPrevalenceData.aspx
- **Diabetes costs Minnesotans \$2.68 billion** or almost \$12,000 per Minnesotan with diabetes. About \$1 billion is due to lost productivity.



Minnesota Diabetes Program, MDH: 2007 Estimates

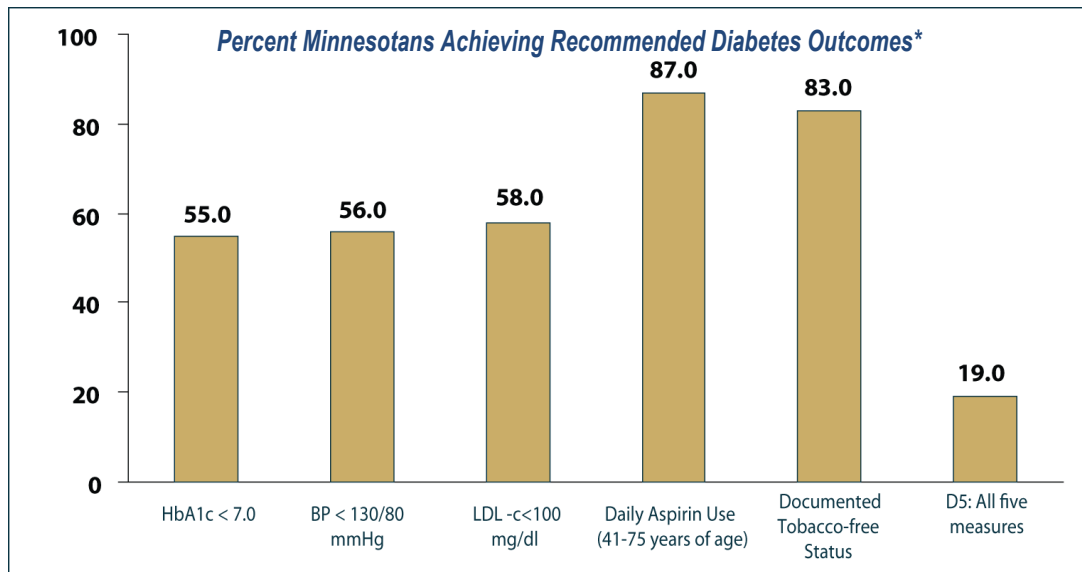
Impact of Diabetes

- Diabetes is the **6th leading cause of death** in Minnesota accounting for 17,485 years of potential life lost.
 - In 2005, diabetes contributed to 3,995 deaths with 1,259 directly due to diabetes.
- The **quality of life** for Minnesotans with diabetes is compromised.
 - Almost 1 in 2 Minnesotans with diabetes report being limited in any way in any activities.
- **Heart disease and stroke** is 2-4 times higher compared to those without diabetes.
- Among Minnesotans with diabetes, over 20% report **depression**.
- Almost 1 in 2 Minnesotans with diabetes also report having **arthritis**
- Diabetes is the leading cause of **blindness** in Minnesotans 20-74 years of age.
 - On average, 38,000 Minnesotans with diabetes report their eyes are affected by diabetes or retinopathy (2005-7)
- Diabetes is a leading cause of non-traumatic **lower extremity amputations** (LEAs). On average, **22,000 Minnesotans** with diabetes **report sores or irritations on their feet** that took more than 4 weeks to heal
- Diabetes is the leading cause of **chronic kidney disease (CKD), including end-stage renal disease (ESRD)**, or kidney failure in Minnesotans.
 - Almost 95% of Minnesotans with diabetes have CKD (Stages 1-5).
 - There were 498 **new cases** of ESRD for a total of 2,606 cases in 2007.
 - Direct yearly medical **costs** per diabetes ESRD case is estimated at **\$71,000**.
- Diabetes is the **leading complication** among **mothers giving birth**. 2,846 Minnesota births are complicated by **gestational diabetes mellitus** and another 349 by **pre-existing diabetes mellitus**.

Data sources: Minnesota Population Estimates (2005-8); Minnesota Behavioral Risk Factor Surveillance Survey (2005-8); Minnesota Death Certificates (2007); Minnesota Birth Certificates (2007); Minnesota Community Measurement (2007); American Diabetes Association Diabetes Cost Calculator at www.diabetes.org/advocacy-and-legalresources/cost-of-diabetes (2007); 2009 United States Renal Disease System Annual Data Report (www.usrds.org); Search for Diabetes in Youth Study (www.searchfordiabetes.org); 2005-6 National Health and Nutrition Examination Survey.



Diabetes Management & Control

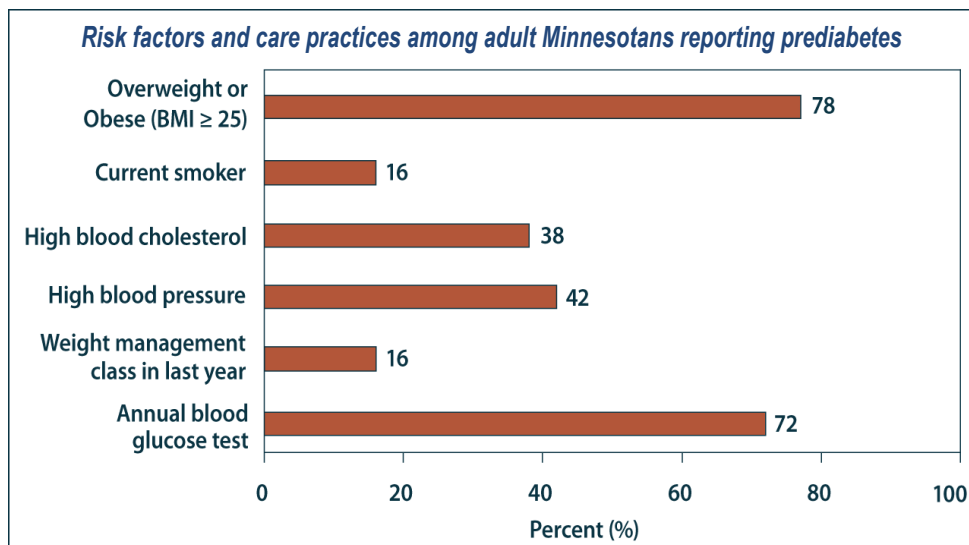


Minnesota Community Measurement: www.mnccm.org, accessed December 2009

For every 10 Minnesotans with diabetes:

- 7 have an annual dental cleaning
- 8 have an annual flu shot
- 6 ever had a pneumonia vaccination
- 8 report an annual dilated eye exam
- 9 report an annual foot exam
- 8 report taking a class to self-manage their diabetes
- 1 is a current smoker
- 5 are obese (body mass index ≥ 30 kg/m²)

Prediabetes Management & Control



References

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Prevention, Management, and Diagnosis

In Minnesotans with **prediabetes**, being active 150 minutes per week, healthy eating like reducing fat and calories, and moderate weight loss of 5-7% can delay the 3-year onset of diabetes by 58% and even more for older Minnesotans. Use of oral diabetes medications also reduces the onset of diabetes. However, the carefully designed **lifestyle balance program** of the Diabetes Prevention Program showed that moderate lifestyle changes can be achieved, are safer, and are more effective and sustainable than oral diabetes medications (1-4).

In Minnesotans with **Type 1 and Type 2 diabetes**, control of blood glucose levels (HbA1c < 7.0 mmHg or < 8.0 mmHg for persons with additional complex factors), systolic and diastolic pressure (< 130/80 mmHg) and low density lipids (LDL-c < 100 mg/dl) is essential for reducing macrovascular and microvascular complications. Daily aspirin use for persons 45 years of age and older and no tobacco use are also key care management components. (2,3)

Annual assessments of eyes, kidney function, feet, depression, weight, flu shots, cardiovascular health and oral health are recommended (2,3)

Diabetes education and self-management support is essential for control and prevention of long-term complications (2,3,4).

Gestational diabetes, Type 1 diabetes and Type 2 diabetes should be carefully managed before, during, and after pregnancy to reduce maternal and infant complications. This includes blood glucose, blood pressure, and depression monitoring for the mother. Six week postpartum glucose testing is recommended for women with gestational diabetes (5,6,7).

Criteria for Diagnosis (3)

	Prediabetes	Diabetes
HbA1c (%)	5.7-6.4	≥ 6.5
Impaired Fasting Glucose (mg/dl)	100-125	≥ 126
Impaired Glucose Tolerance (mg/dl)	140-199	≥ 200

Meeting any one criterion is sufficient for a prediabetes diagnosis. Repeat testing is required to confirm a diagnosis of diabetes.