Diabetes

Definition: Diabetes is a chronic condition characterized by high blood glucose (sugar) resulting from the body's inability to use glucose for energy. In type 1 diabetes (5–10% of diabetes), the pancreas no longer makes insulin (which allows glucose to enter many cells); therefore, blood glucose cannot enter these cells to be used for energy. In type 2 diabetes (90–95% of diabetes), the pancreas does not make enough insulin or the body is unable to use insulin correctly. Other types of diabetes might account for 1–5% of diabetes. Prediabetes is a condition in which blood glucose levels are higher than normal but not high enough to be classified as diabetes. Gestational diabetes is a form of glucose intolerance diagnosed during pregnancy. This chapter uses self-reported diabetes from the Behavioral Risk Factor Surveillance System to measure diabetes and prediabetes. Gestational diabetes is not included unless otherwise indicated. See Technical Notes for additional detail.

This is a data update of the *Health of Washington State* chapter on Diabetes published in 2014.

Time Trends

Self-reported data from the 2014 Behavioral Risk Factor Surveillance System (BRFSS) showed that 9% (±<1%) of Washington adults were ever told by a doctor they had any type of diabetes. Self-reported diabetes is slightly less prevalent in Washington than the nation as a whole.

The age-adjusted percent of Washington adults with diagnosed diabetes increased steadily from 1993 to 2010. Due to changes in methods of collecting and analyzing BRFSS, data for 2011 forward are not comparable to data from earlier years, causing a break in the trend shown in the chart (See BRFSS Caveats in Appendix B and this chapter's Technical Notes.)

Washington BRFSS has indicated that the upward trend between 1993 and 2010 may be stabilizing after 2011 as the age-adjusted percent of adults diagnosed with diabetes has remained at 8% (±<1%) since 2012. The national trend is slowing but not as quickly as in Washington. The National Health Interview Survey also tracks diagnosed diabetes, and has observed a potential slowing of the increase in the prevalence and incidence of diagnosed diabetes starting in 2008.[1] There are continued increases in the prevalence or incidence of diabetes in some high-risk subgroups including non-Hispanic black and Hispanic subpopulations and those with a high school education or less.
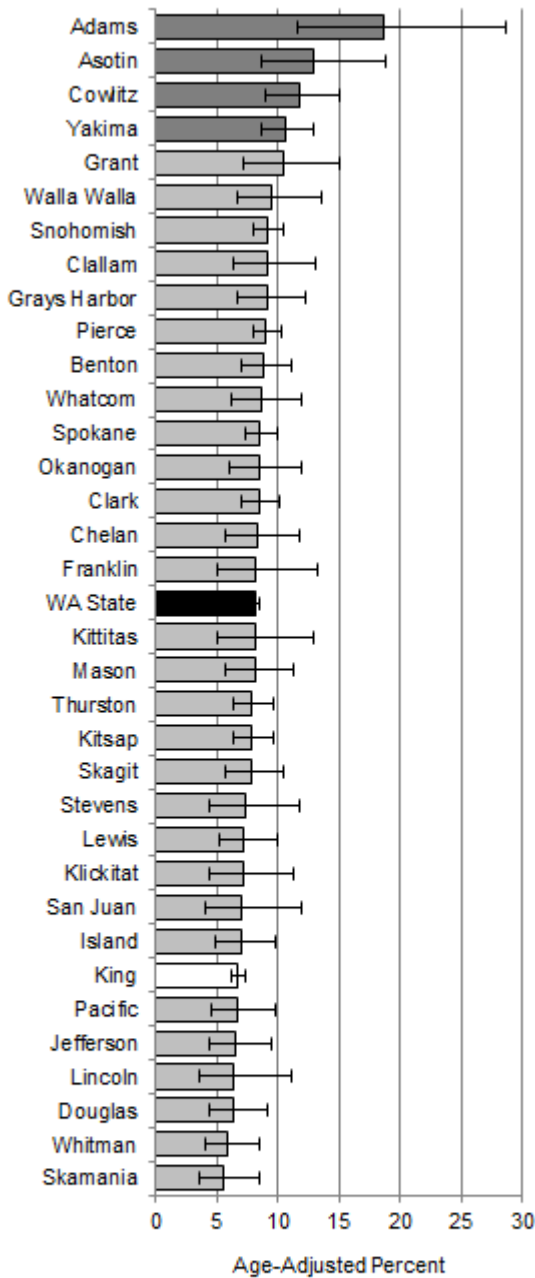
Increases in diabetes prevalence and incidence reflects changes in demographics (including aging of population and growth of minority populations at increased risk), more people with risk factors (including obesity and sedentary lifestyle), more people with diabetes living longer, and enhanced detection of diabetes cases.[2,3]

Diabetes Prevalence
Washington State and US
BRFSS
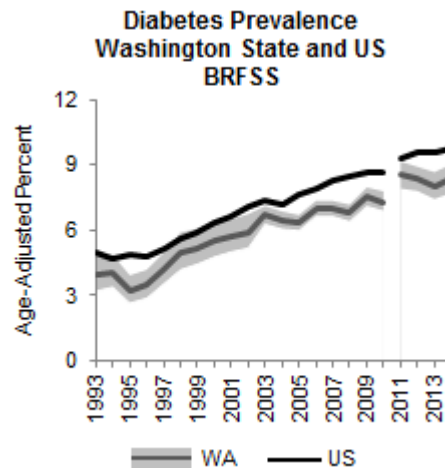
Geographic Variation

On the Washington BRFSS for 2012–2014 combined, 8% (±<1%) (age-adjusted) of adults reported having diabetes. This ranged from 6% (±3%) in Skamania County to 19% (±8%) in Adams County. Adams, Asotin, Cowlitz, and Yakima counties had higher age-adjusted percentages of adults reporting diabetes than the state average; King County had a lower percentage. There were too few BRFSS respondents in Columbia, Ferry, Garfield, Pend Oreille, and Wahkiakum counties to report a reliable percent.
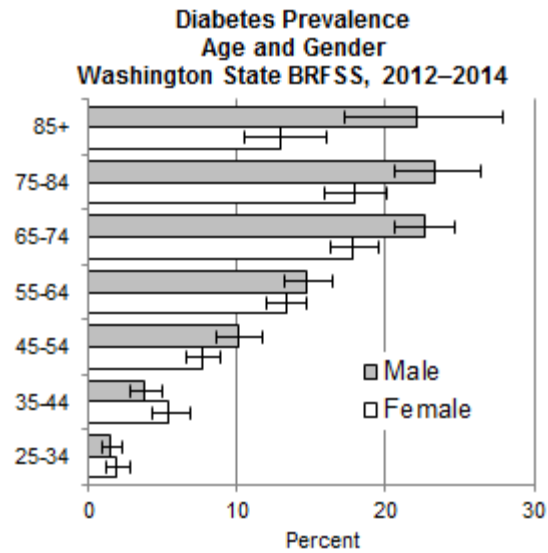
Diabetes Prevalence Washington Counties BRFSS, 2012–2014

Figure: Diabetes Prevalence, Washington Counties, BRFSS, 2012–2014. Horizontal bar chart showing Age-Adjusted Percent for counties from Adams (highest) to Skamania (lowest), with WA State marked in black. Legend:
- ■ Washington State
- □ Value lower than WA State
- ▨ Value same as WA State (light gray)
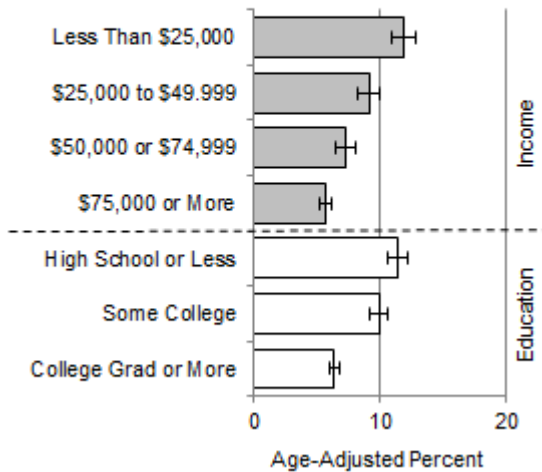- ▨ Value higher than WA State (dark gray)

Age and Gender

Washington BRFSS data for 2012–2014 combined showed the percent of adults reporting diabetes increased with age, up to 85 years old. About 6% (±<1%) of adults under age 65 reported having diabetes. Of those 65 years old and older, a higher percent of men (23% ±2%) than women (17% ±1%) reported having diabetes. This is similar to national patterns.[4]

Figure: Diabetes Prevalence, Age and Gender, Washington State BRFSS, 2012–2014. Horizontal bar chart by age group (25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+) comparing Male and Female. Legend: ▨ Male, □ Female.

Economic Factors and Education

People of lower socioeconomic position are more likely to develop diabetes.[5] Income and education are two common indicators used to measure socioeconomic position. During 2012–2014 the Washington BRFSS showed the age-adjusted percent of adults who reported diabetes increased with decreasing income and decreasing levels of education. These relationships are similar to those found in other studies.[6,7,8] Differences in health behaviors, effects of stress, and access to care may account for the relationship between socioeconomic position and diabetes.[9,10]

**Diabetes Prevalence
Annual Household Income
and Education
Washington State BRFSS, 2012–2014**

Less Than $25,000

$25,000 to $49.999

$50,000 or $74,999

$75,000 or More

Income

High School or Less

Some College

College Grad or More

Education

0   10   20
Age-Adjusted Percent

Race and Hispanic Origin

During 2012–2014 white adults reported lower age-adjusted percent of diabetes (7% ±<1%) than all other groups except Asian adults. Wide margins of error make it difficult to compare percentages between other groups. The high age-adjusted prevalence among Hispanic (14% ±2%), American Indians and Alaska Native (13% ±4%), and black adults (13% ±3%) is consistent with national data.[4] National data are not available for Native Hawaiian and other Pacific Islanders. Poverty and lack of access to healthcare may be barriers to preventive care for some racial and ethnic minorities.[11]

**Diabetes Prevalence
Race and Hispanic Origin
Washington State BRFSS, 2012–2014**

NHOPI*

Hispanic

AIAN*

Black*

Asian*

White*

0   10   20   30
Age-Adjusted Percent
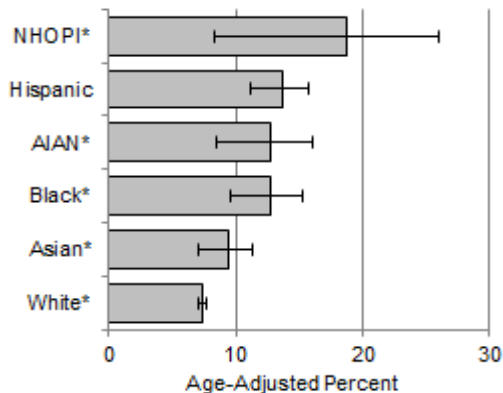
* Non-Hispanic, single race only
AIAN: American Indian/Alaska Native
NHOPI: Native Hawaiian/Other Pacific Islander

Technical Notes

Discontinuity in BRFSS trend. The addition of cell phone data and the new raked weighting method in the 2011 BRFSS are expected to result in more accurate estimates of health behaviors. The estimates are expected to shift as a result of these improvements. Special analysis to assess the effect of change in BRFSS methodology in 2011 indicate that the age-adjusted percent of adults with diabetes increased slightly from 8% using older methods to 9% using newer methods. Health estimates from 2011 (and beyond) should not be compared directly to those from 2010 (and earlier). This limits our ability to observe annual trends that cross 2010 and 2011.

For More Information

Washington State Diabetes Connection, web portal of the Washington State Diabetes Network: http://diabetes.doh.wa.gov/.

Healthy People 2020, Diabetes: http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=8.

Endnotes

[1] Geiss LS, Wang J, Cheng YJ, et al. Prevalence and incidence trends for diagnosed diabetes among adults aged 20 to 79 years, United States, 1980-2012. *JAMA.* 2014;312(12):1218-1226.

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[9] Stringhini S, Tabak AG, Akbaraly TN, et al. Contribution of modifiable risk factors to social inequalities in type 2 diabetes: prospective Whitehall II cohort study. *BMJ.* 2012;345:e5452.

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