



**Public Health**  
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# Health Profiles

## Diabetes Montgomery County, OH

Public Health - Dayton & Montgomery County  
Epidemiology Section

January 2014

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## Introduction

Diabetes affects 25.8 million people in the United States; 18.8 million diagnosed and an estimated 7.0 million undiagnosed cases (CDC, 2010). There are three types of diabetes; Type 1, gestational, and Type 2. This report focuses on those diagnosed and at risk for the development of Type 2 diabetes. Risk factors for developing Type 2 diabetes include having a family history of diabetes, lack of physical activity, history of gestational diabetes, obesity, older age, and race/ethnicity. Blacks, Native Americans, Hispanics, Asian Americans, Asian Indians, and Pacific Islanders are more at risk of developing Type 2 diabetes than Whites.

Once diagnosed, diabetics must incorporate healthy food choices, physical activity, and blood glucose testing into their daily life. With the assistance of their health care providers, diabetes educators, and nutritionists; diabetics will learn how to manage their diabetes so that they can avoid serious health complications associated with uncontrolled diabetes. High blood glucose can cause blindness, kidney failure, lower-extremity amputations, and heart disease.

This report analyzes data collected from the Behavioral Risk Factor Surveillance System (BRFSS) survey in 2011 and 2012 and 2010 and 2011 Ohio Death Certificate Data. The data presented provides the general characteristics of diabetics in Montgomery County to include gender, race, age, and income and also focuses on lifestyle choices of those diagnosed with diabetes. Data concerning a diabetic's lifestyle include information about BMI, physical activity, healthy food choices, tobacco use, and alcohol consumption. The next portion of this report looks at how well diabetics in Montgomery County are managing their diabetes by getting eye exams, having regular visits to their doctor and dentist, and receiving the proper immunizations. Also presented in this report are the characteristics of prediabetics in Montgomery County. The final section reports the number of deaths of Montgomery County residents where the leading cause of death was diabetes.

Information in this report can be used to measure the impact diabetes prevention and management efforts are having within the county. Additionally this report highlights the populations most impacted by diabetes and prediabetes.

**For more information about diabetes, please visit the American Diabetes Association (ADA) website <http://www.diabetes.org/>**

## Terminology

**A1C** - a test that measures a person's average blood glucose level over the past 2 to 3 months.

**Blood glucose** - the main sugar found in the blood and the body's main source of energy. Also called blood sugar.

**Blood glucose level** - the amount of glucose in a given amount of blood. It is noted in milligrams in a deciliter, or mg/dL.

**Diabetes** - a disease in which blood glucose levels are above normal. The three types of diabetes are: Type 1, Type 2, and gestational.

**Dilated eye exam** - a test done by an eye care specialist in which the pupil (the black center) of the eye is temporarily enlarged with eye drops to allow the specialist to see the inside of the eye more easily.

**Gestational diabetes** - a type of diabetes that develops only during pregnancy and usually disappears upon delivery, but increases the risk that the mother will develop diabetes later.

**Hyperglycemia** - a condition that occurs when an excessive amount of glucose is circulating in the blood. The normal blood glucose level for fasting adults is between 80 to 110 mg/dL. Consistent blood glucose levels above 126 mg/dL can cause damage to blood vessels and to the organs they supply.

**Hypoglycemia** - a condition that occurs when one's blood glucose is lower than normal, usually less than 70 mg/dL. Signs include hunger, nervousness, shakiness, perspiration, dizziness or light-headedness, sleepiness, and confusion. If left untreated, hypoglycemia may lead to unconsciousness. Also called an insulin reaction.

**Insulin** - a hormone that helps the body use glucose for energy. When the body cannot make enough insulin, it is taken by injection or through use of an insulin pump.

**Periodontal disease** - disease of the gums.

**Prediabetes** - a conditions where your blood sugar levels are higher than normal, but not high enough to be classified as type 2 diabetes

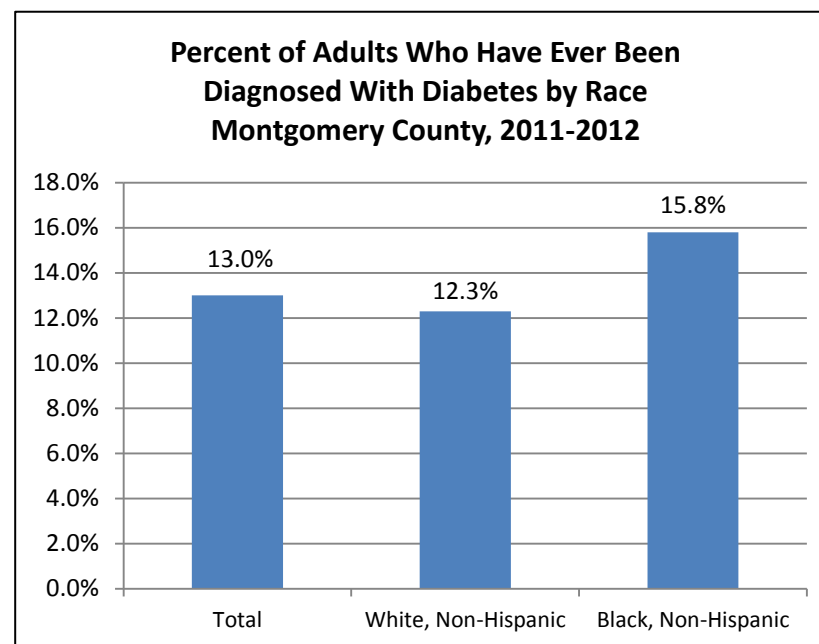
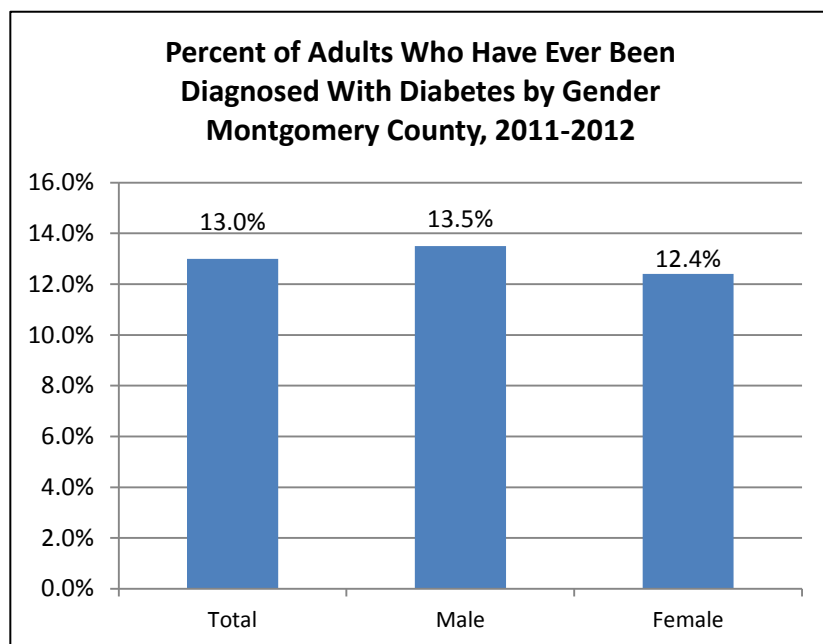
**Retinopathy** - eye disease that is caused by damage to the small blood vessels in the retina. Loss of vision may result.

**Type 1 diabetes** - a condition characterized by high blood glucose levels caused by a total lack of insulin. Type 1 diabetes develops most often in young people but can appear in adults.

**Type 2 diabetes** - a condition characterized by high blood glucose levels caused by either a lack of insulin or the body's inability to use insulin efficiently. Type 2 diabetes develops most often in middle-aged and older adults but can appear in young people.

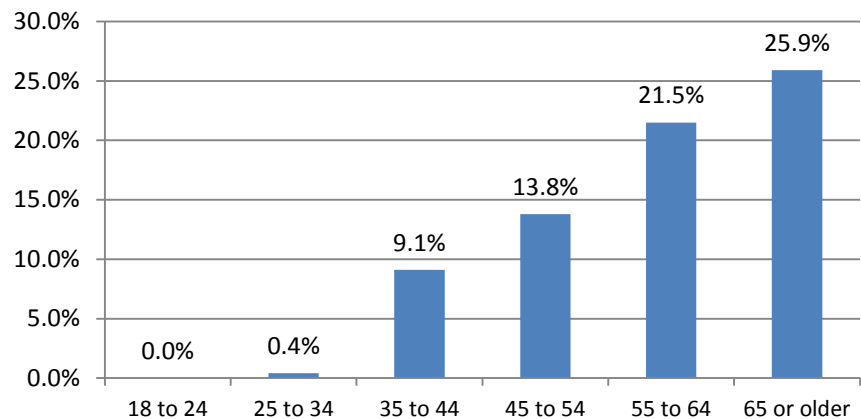
## Diabetes

### General Characteristics



- › 13% of adults in Montgomery County have been diagnosed with diabetes.
- › A higher percentage of males (13.5%) have been diagnosed with diabetes compared to females (12.4%).
- › More Black, Non-Hispanics have been diagnosed with diabetes than White, Non-Hispanics (15.8% vs 12.3%).

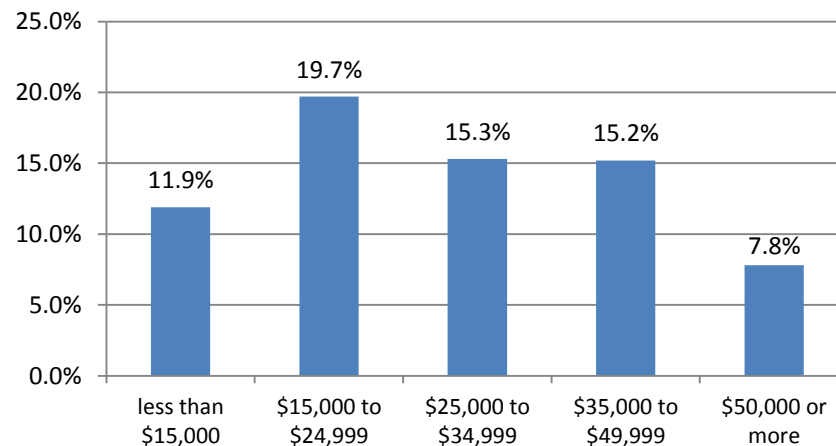
**Percent of Adults Who Have Ever Been Diagnosed With Diabetes by Age Group of Diagnosis  
Montgomery County, 2011-2012**



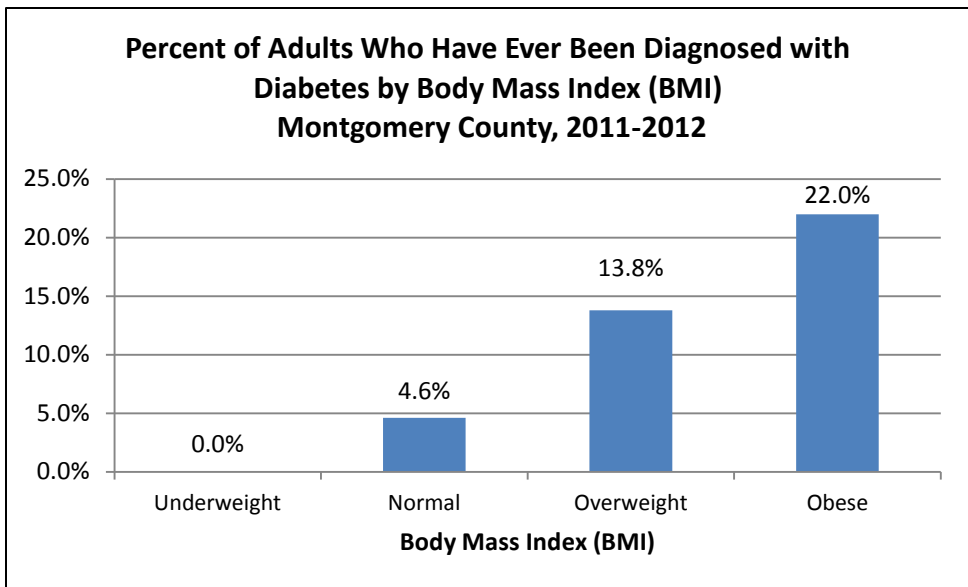
- › The prevalence of diabetes increased with age.
- › The average age of those 18 years and older diagnosed with diabetes was 52.7 years of age (BRFSS, 2011-12).

- › The annual household income with the highest percent of adults having been diagnosed with diabetes was between \$15,000 and \$24,999 (19.7%).
- › Only 7.8% of adults with a household income \$50,000 or more have been diagnosed with diabetes.

**Percent of Adults Who Have Ever Been Diagnosed With Diabetes by Annual Household Income  
Montgomery County, 2011-2012**

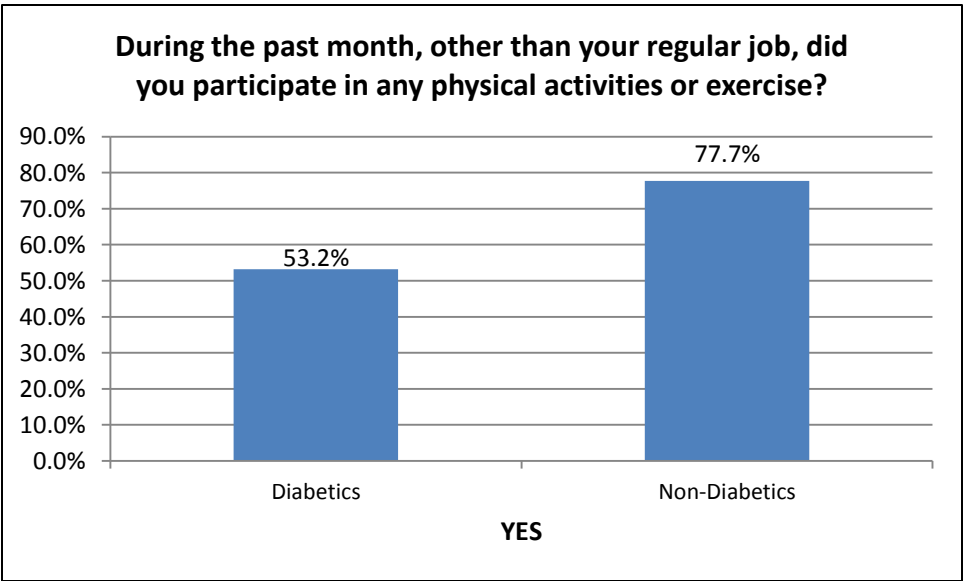


*Lifestyle*



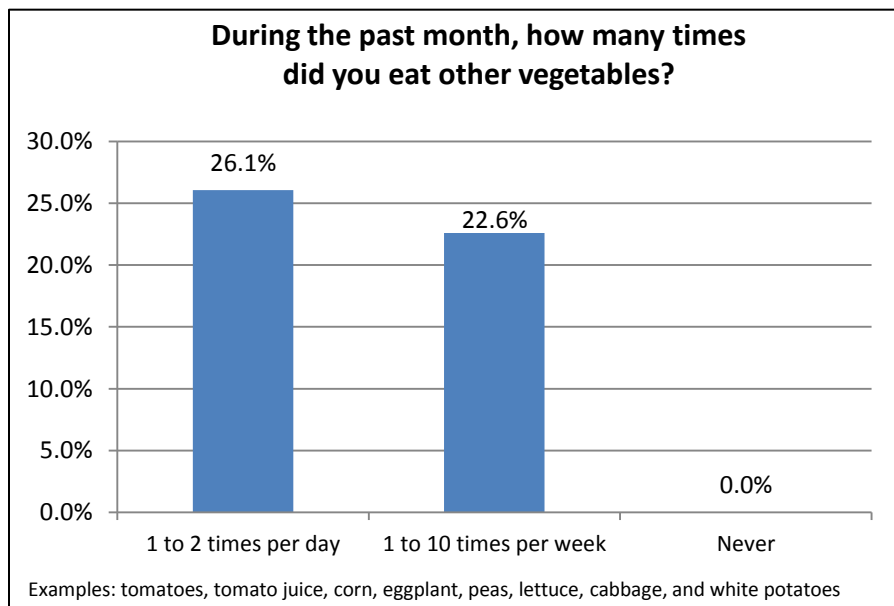
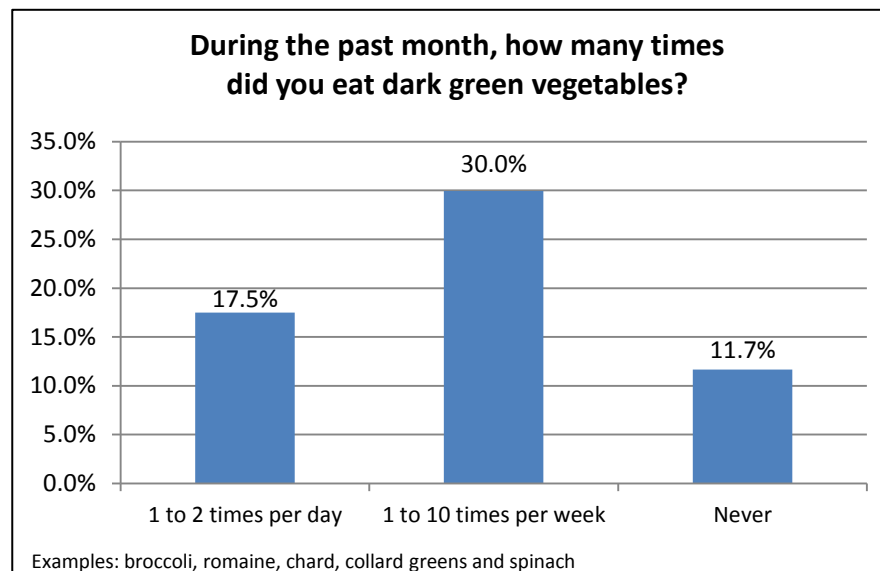
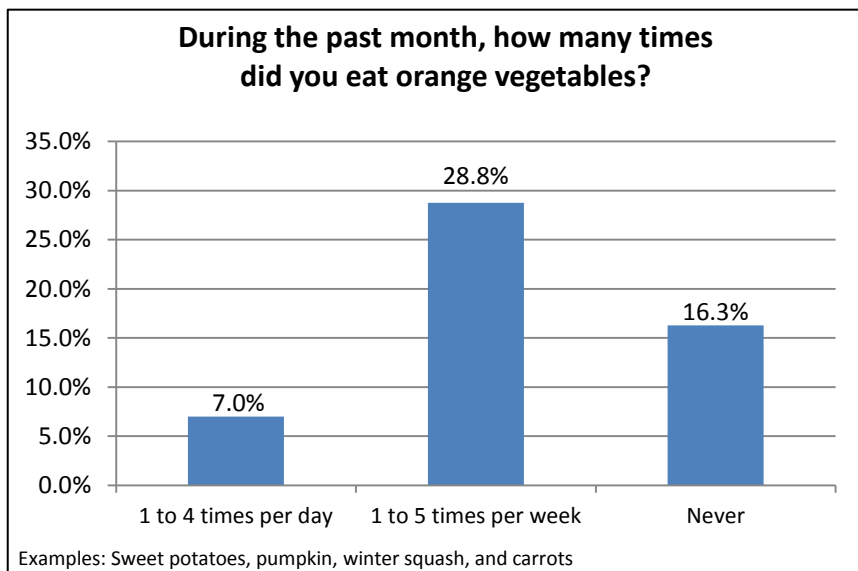
- › 13.8% of overweight adults and 22% of obese adults have been diagnosed with diabetes.
- › By losing just 10 to 15 pounds, diabetics can begin to improve their blood glucose levels as well as their blood pressure and cholesterol.

- › A higher percentage of non-diabetics participated in physical activity than those diagnosed with diabetes (77.7% vs. 53.2%).
- › Regular physical activity can lower blood glucose and improve A1C.
- › Current physical activity guidelines recommend that adults should participate in at least 150 minutes (2 hours and 30 minutes) a week of moderate-intensity aerobic physical activity (U.S. Department of Health and Human Services, 2008).

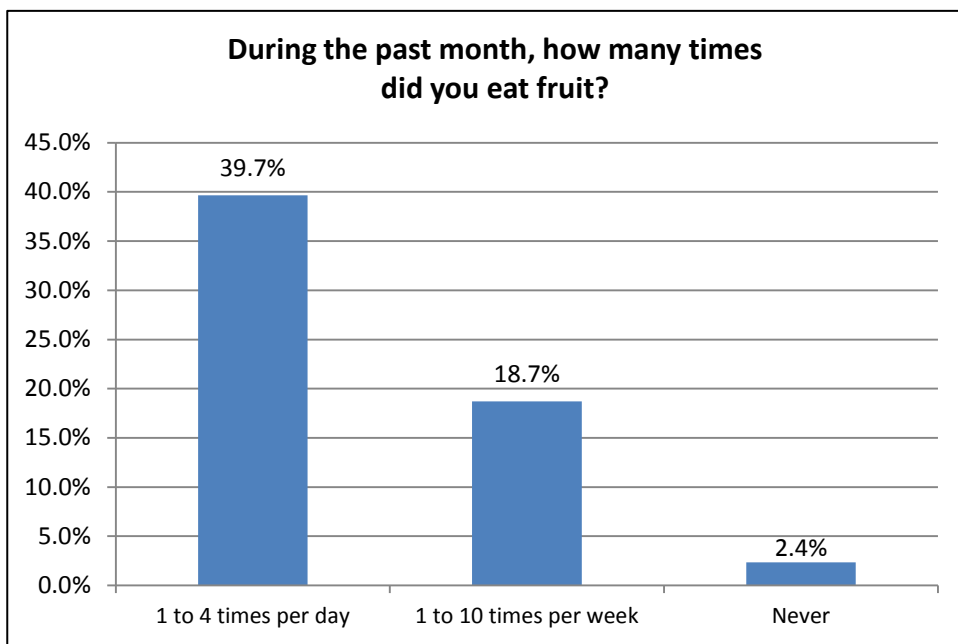




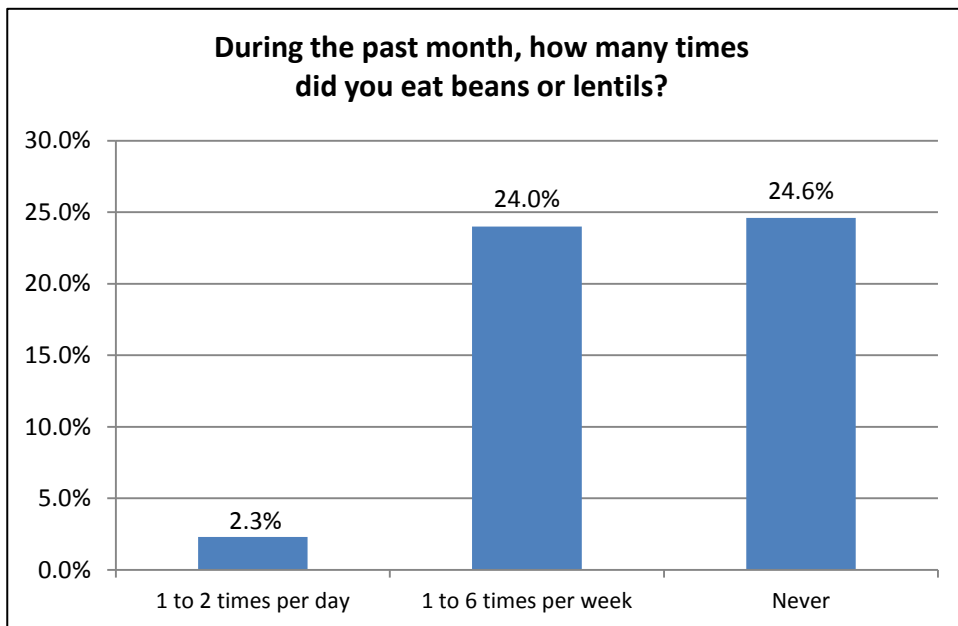
**THE FOLLOWING QUESTIONS WERE ASKED OF THOSE IDENTIFIED AS BEING DIAGNOSED WITH DIABETES.**



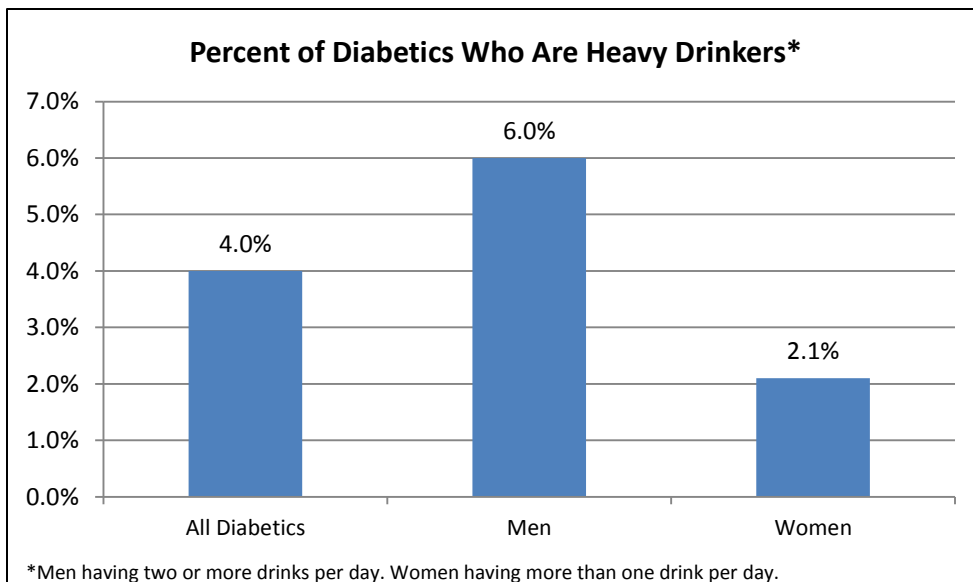
- › At a minimum, the ADA suggests that diabetics should eat at least 3-5 servings of non-starchy vegetables a day.
- › Vegetables have antioxidants, fiber, vitamins, and phytonutrients that lower cancer risk, improve eye health, promote heart health, and are good for the skin, bones, and teeth. The darker green vegetables have more nutrients.



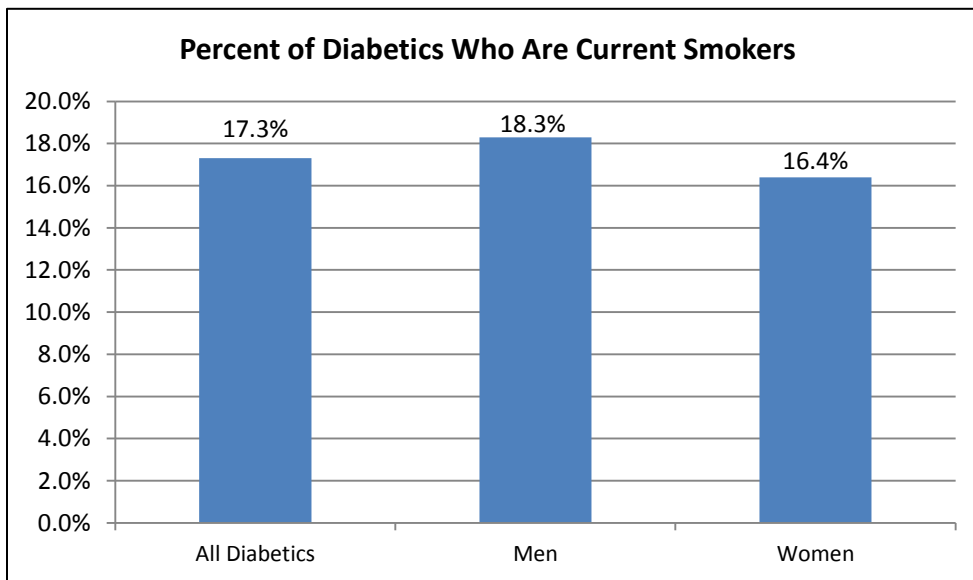
› Fruits are an excellent source of vitamins, minerals, and fiber, but contain carbohydrates that must be counted as part of a diabetic’s meal plan.



› The ADA recommends including dried beans into several meals per week as a source of protein, fiber, vitamins, and minerals.



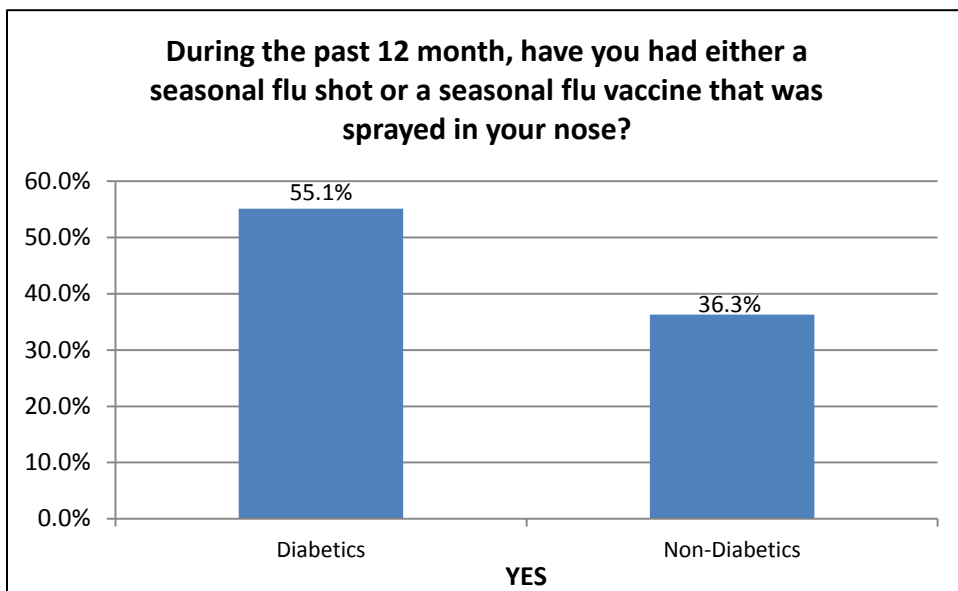
› The ADA warns that alcohol consumption may place individuals with diabetes at increased risk for delayed hypoglycemia.



› Tobacco products interfere with how insulin works in the body causing difficulty controlling blood glucose levels.

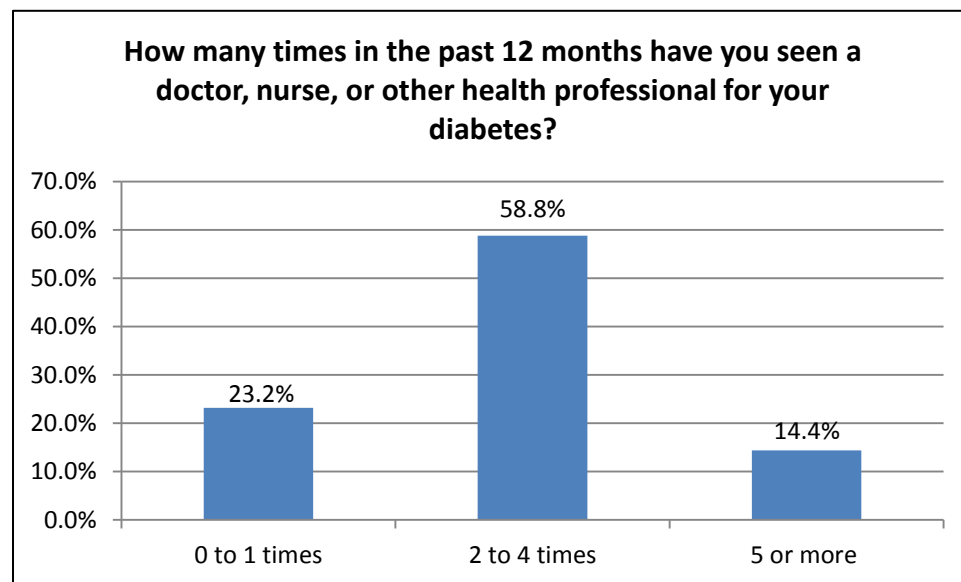
› Smokers with diabetes have a higher risk of heart and kidney disease; poor blood flow to legs and feet that can lead to foot infections, ulcers, and amputation; retinopathy, and nerve damage.

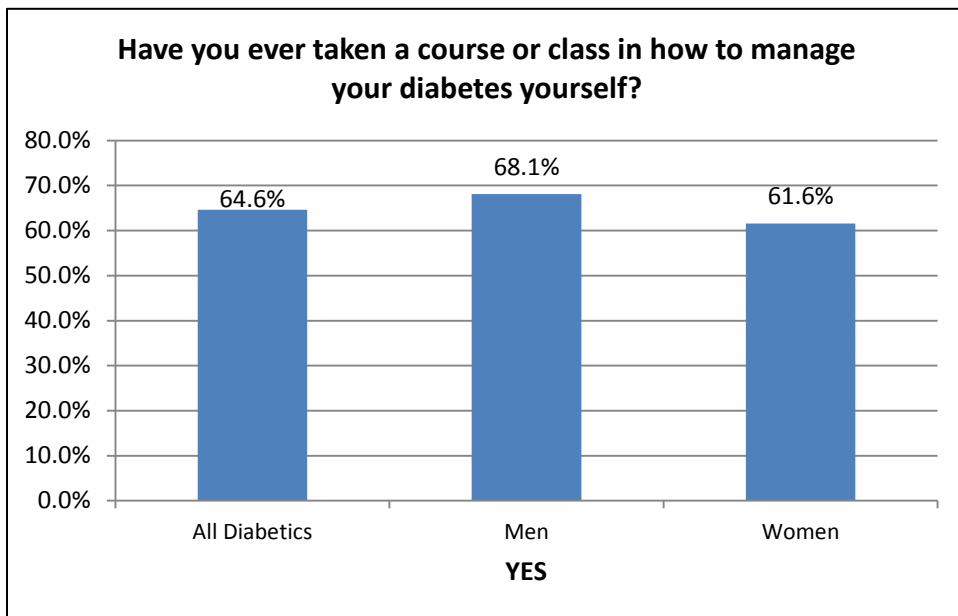
*Diabetes Management*



- > Influenza and pneumonia are associated with high mortality and morbidity in the elderly and those with chronic disease like diabetes.
- > The ADA recommends all diabetic patients  $\geq 6$  months of age receive a flu shot every year.
- > Diabetic patients that are  $\geq 2$  years of age should receive a pneumonia shot.
- > 60.5% of diabetics had received a pneumonia shot (BRFSS 2011-12).

- > Diabetics who take insulin or who are having difficulty managing their glucose levels should see their doctor at least four times a year. All others should see their doctor two to four times a year (ADA, 2014).
- > 23.2% of diabetics did not see their health professional at least two times in the past 12 months.

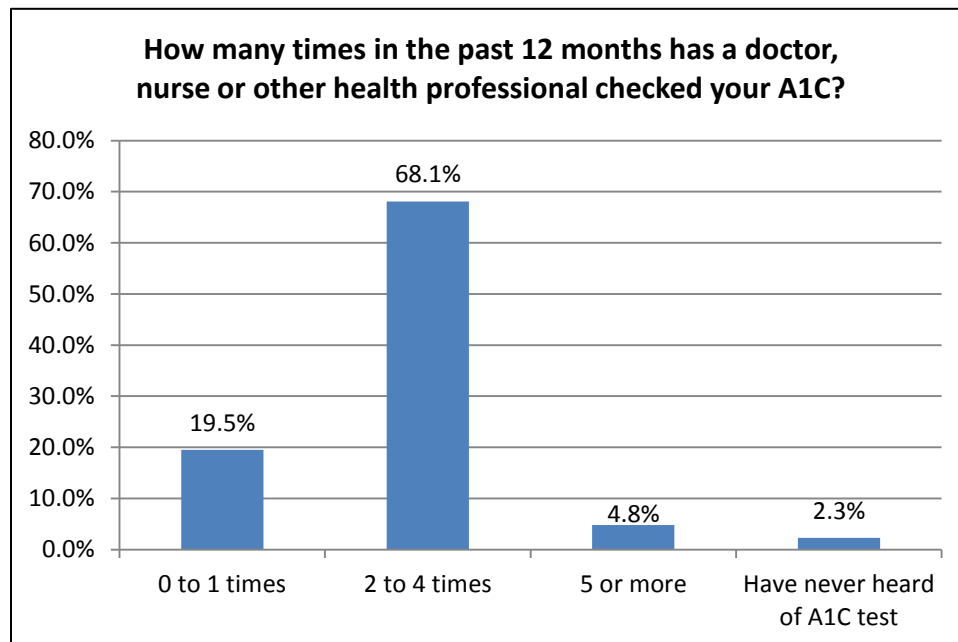




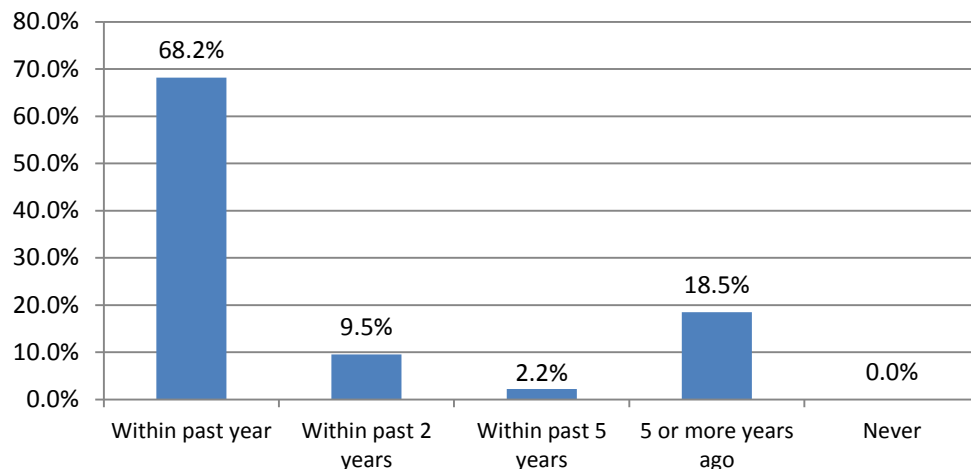
› According to the ADA, everyone diagnosed with diabetes should receive diabetes self-management education (DSME) and support (DSMS).

› According to ADA recommendations for physicians, A1C tests should be performed two times a year on patients meeting treatment goals and quarterly on patients whose therapy has changed or who are not meeting their goals.

› 19.5% of diabetics had not had their A1C tested the recommended number of times (two to four times) in the past 12 months, and 2.3% said they had never heard of an A1C test.



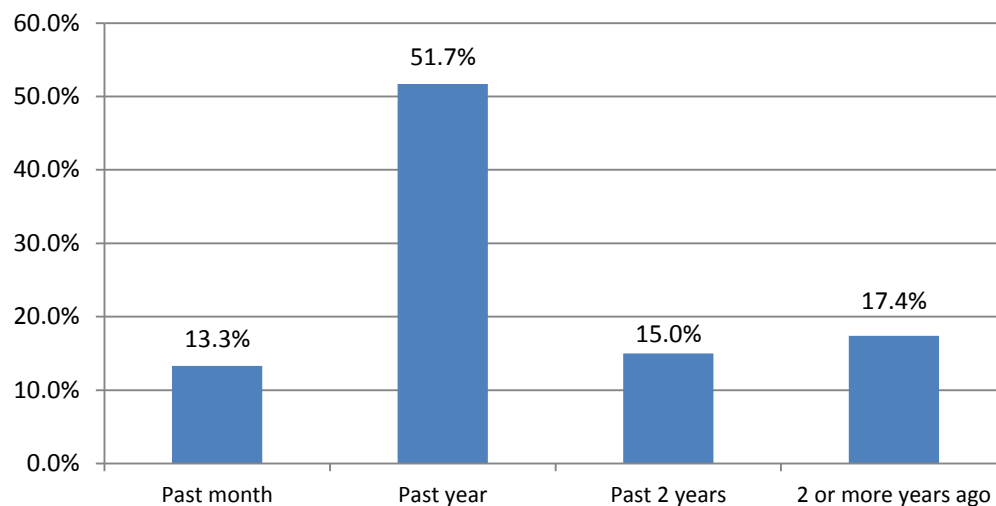
**How long has it been since you last visited a dentist or dental clinic for any reason?**



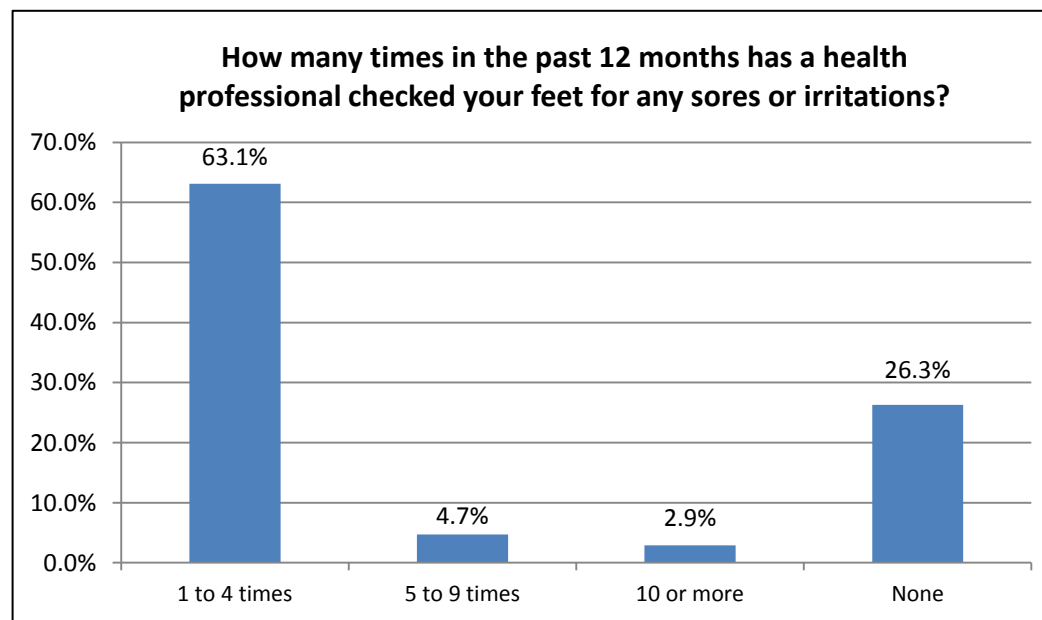
- › Diabetics should visit the dentist twice a year.
- › 68.2% of diabetics visited the dentist within the past year.
- › High glucose enables the natural bacteria in the mouth to multiply putting diabetics at a higher risk of periodontal (gum) disease.

- › Dilated and comprehensive eye examinations should be completed annually for those diagnosed with diabetes.
- › 17.4% of diabetics had not had a dilated eye exam in two or more years.
- › If there is no evidence of retinopathy for one or more eye exams, the optometrist or ophthalmologist may consider having the patient return every two years for an exam (ADA, 2014).
- › 19.6% of adults diagnosed with diabetes reported that diabetes had affected their eyes or they had retinopathy (BRFSS, 2011-12).

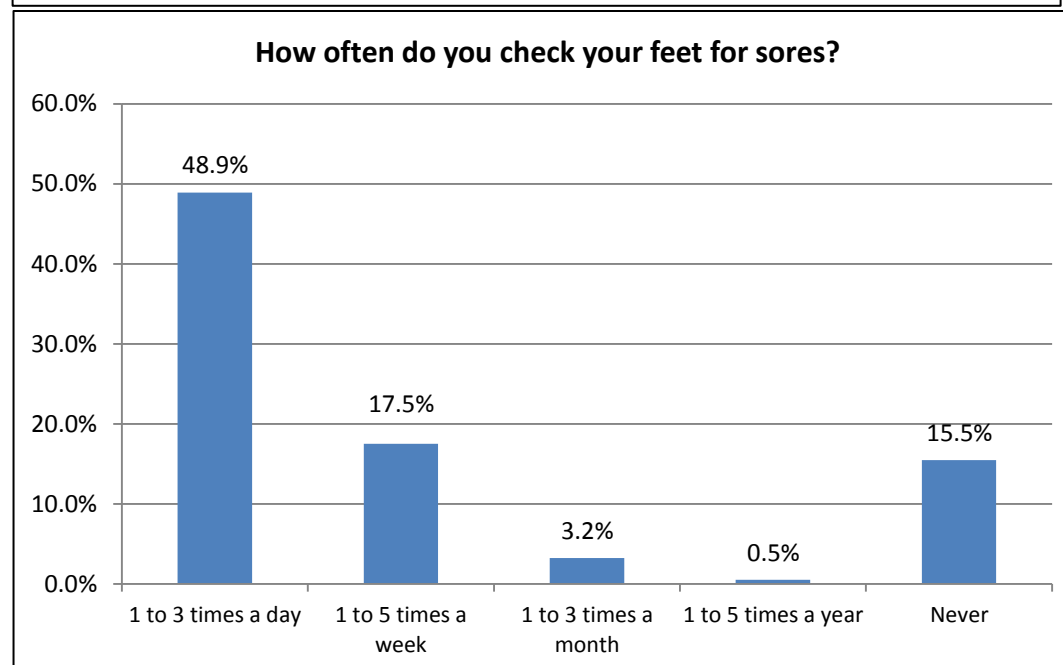
**When is the last time you had an eye exam where your pupils were dilated?**

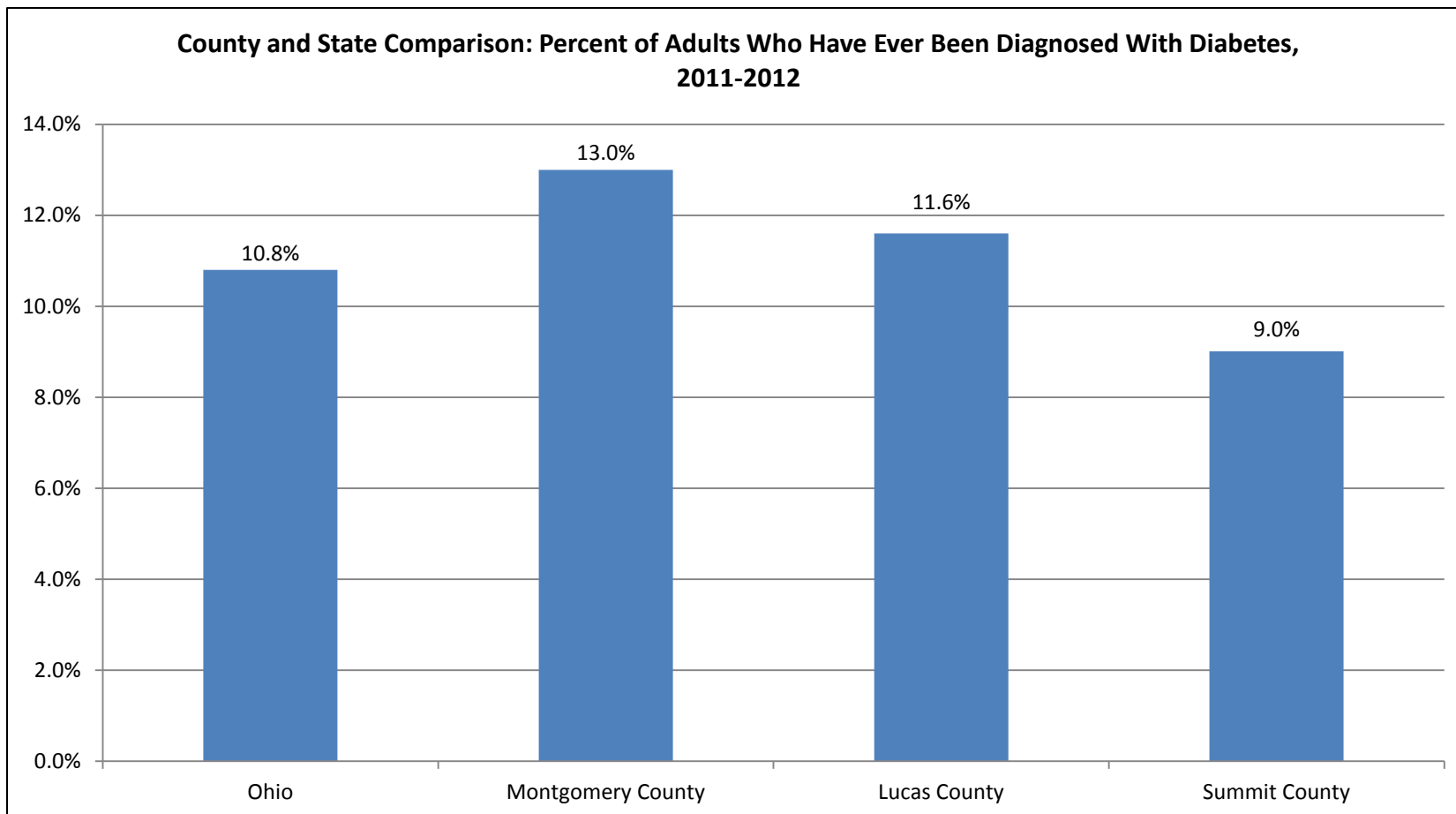


- › All patients with diabetes should get an annual comprehensive foot examination to identify risk factors predictive of ulcers and amputations (ADA, 2014).
- › 26.3% of diabetics had not had their feet examined by a health professional in the past 12 months.



- › In addition, the ADA recommends that physicians' educate patients on the importance of daily foot monitoring, proper nail and skin care, and shoe selection.
- › 48.9% of diabetics monitor their feet on a daily basis.



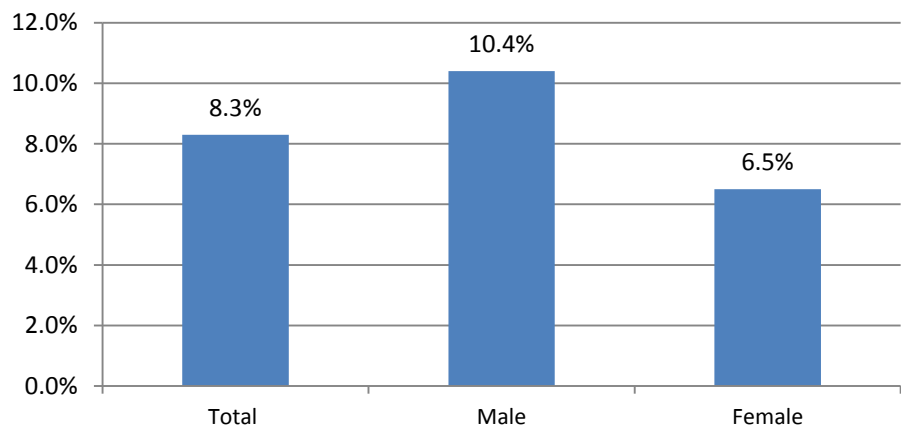


› When compared to two Ohio counties (Lucas and Summit) of similar population size and demographic make-up, the prevalence of diabetes was greatest in Montgomery County (13.0% vs. 11.6% and 9.0%).

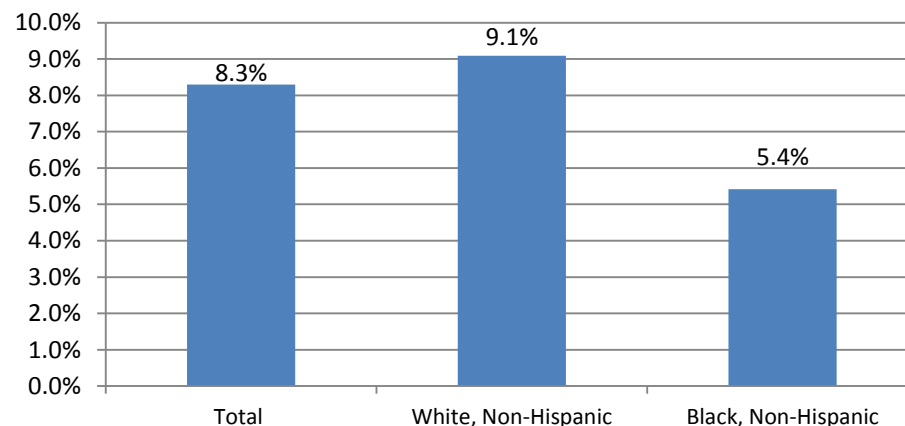


## Prediabetes

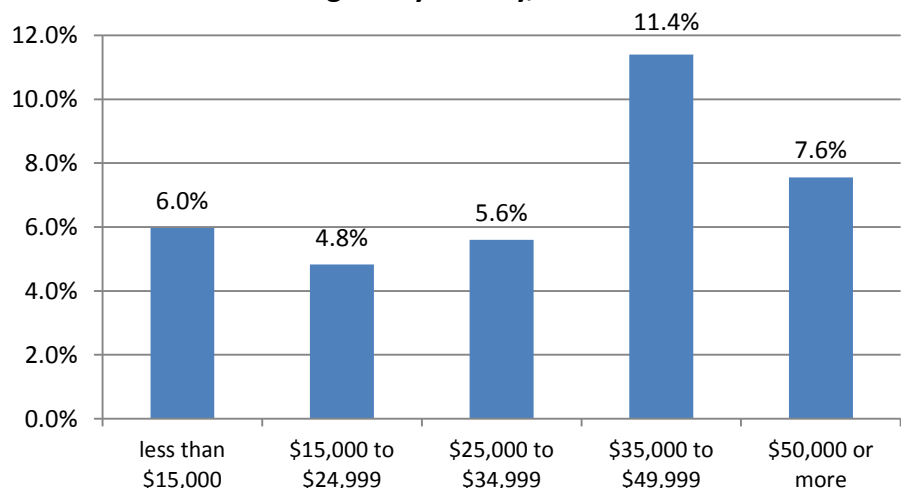
**Percent of Adults Who Have Ever Been Diagnosed With Prediabetes by Gender  
Montgomery County, 2011-2012**



**Percent of Adults Who Have Ever Been Diagnosed With Prediabetes by Race  
Montgomery County, 2011-2012**

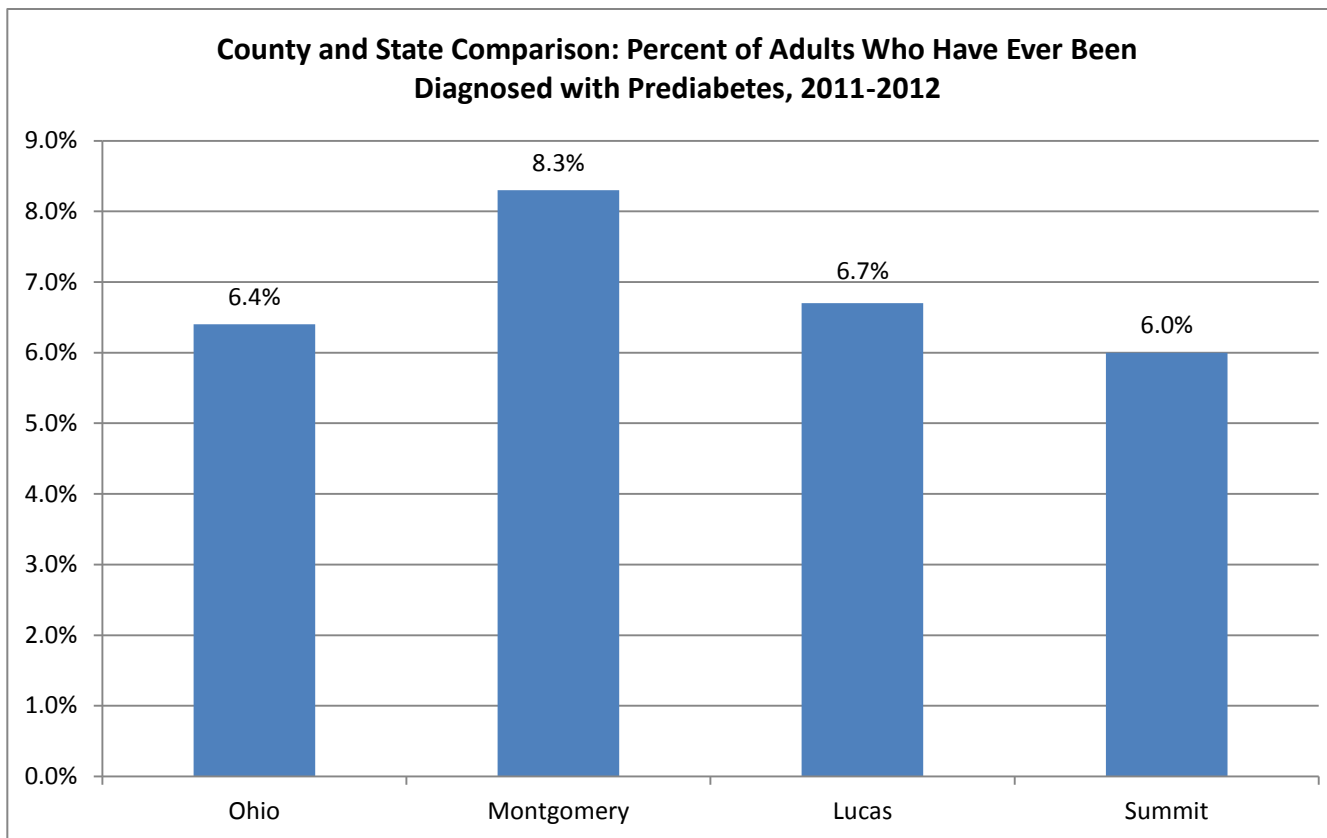


**Percent of Adults Who Have Ever Been Diagnosed With Prediabetes by Annual Household Income  
Montgomery County, 2011-2012**



› When comparing the demographics of those diagnosed with diabetes to those diagnosed with prediabetes:

- More males than females had been diagnosed with both diabetes and prediabetes.
- A higher percentage of White, Non-Hispanics had been diagnosed with prediabetes than Black, Non-Hispanics. The opposite was true for a diagnosis of diabetes.
- The highest percentage of prediabetics had a household income between \$35,000 and \$49,999; it was \$15,000 to \$24,999 for diabetics.



› Montgomery County had the highest prevalence of prediabetes, 8.3%, when compared to the state of Ohio (6.4%), Lucas County (6.7%), and Summit County (6.0%).

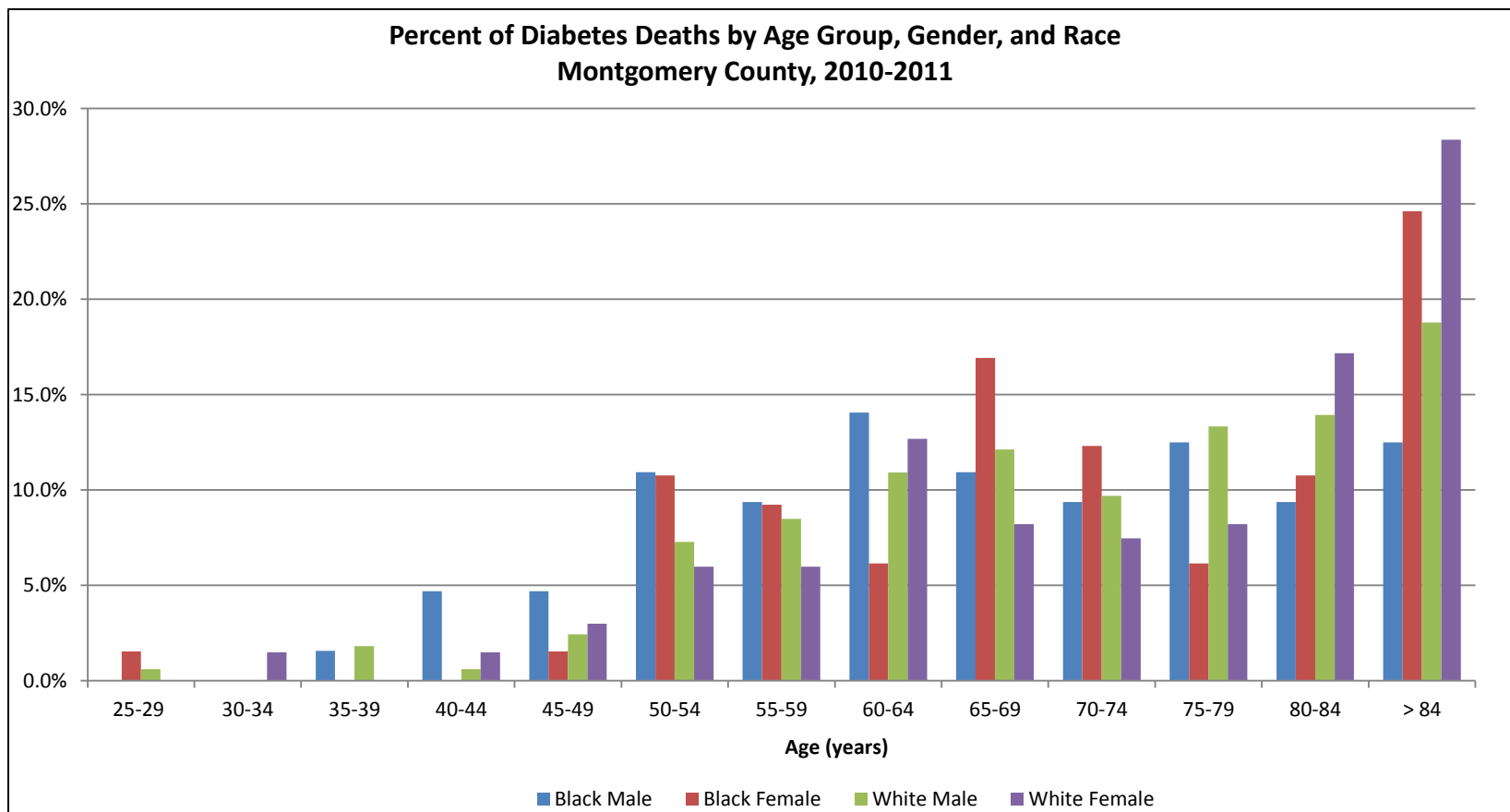
## Diabetes Deaths

Cause of Death: Diabetes, Montgomery County, 2010-2011

2010-2011	Number of Diabetes Deaths	Percent of All Deaths	Age-adjusted Death Rate	Leading Cause of Death Ranking
<b>All</b>	433	3.8%	32.3	7 <sup>th</sup>
<b>Male</b>	232	4.2%	42.0	5 <sup>th</sup>
<b>Female</b>	199	3.5%	25.2	7 <sup>th</sup>
<b>White</b>	299	3.2%	27.4	7 <sup>th</sup>
<b>Male</b>	165	3.7%	39.2	6 <sup>th</sup>
<b>Female</b>	134	2.9%	21.0	7 <sup>th</sup>
<b>Black</b>	129	6.2%	59.5	3 <sup>rd</sup>
<b>Male</b>	64	6.2%	74.7	3 <sup>rd</sup>
<b>Female</b>	65	6.1%	48.2	3 <sup>rd</sup>

Source: ODH, 2010 - 2011

- › Diabetes was the 7<sup>th</sup> leading cause of death in Montgomery County in 2010-2011.
- › When comparing males and females, males were almost twice as likely to die as a result of diabetes as females.
- › Between the Black and White populations, diabetes accounted for 6.2% of Black deaths and 3.2% of White deaths.
- › Overall, Black males died at the highest rate from diabetes; at a rate almost twice as much as White males (74.7 vs. 39.2 per 100,000 persons).



Source: ODH, 2010 - 2011

› Diabetes deaths began occurring more frequently in Black males at an earlier age (40-44 years) than in other gender/race combinations.

## Sources

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