

# HEALTH RISK BEHAVIORS IN THE STATE OF MICHIGAN



## 2012 BEHAVIORAL RISK FACTOR SURVEY 26TH ANNUAL REPORT



*Michigan Department  
of Community Health*



**Rick Snyder, Governor  
James K. Haveman, Director**

# 2012 Behavioral Risk Factor Survey

Health Risk Behaviors  
in the State of Michigan

[www.michigan.gov/brfs](http://www.michigan.gov/brfs)



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# BRFSS Methods

2012 MiBRFS

The Michigan Behavioral Risk Factor Survey (MiBRFS) is an annual, statewide telephone survey of Michigan adults aged 18 years and older that is conducted through a collaborative effort among the Division of Behavioral Surveillance (DBS) of the Centers for Disease Control and Prevention (CDC), the Michigan State University Institute for Public Policy and Social Research (IPPSR), and the Michigan Department of Community Health (MDCH). Michigan Behavioral Risk Factor Surveillance System (MiBRFSS) data contribute to the CDC Behavioral Risk Factor Surveillance System (BRFSS) that is conducted within every state, the District of Columbia, and within several U.S. territories.

In 2012, the MiBRFS collected data from both landline and cell phone respondents. The sample of landline telephone numbers was selected using a list-assisted, random-digit-dialed methodology with a disproportionate stratification based on phone bank density, listedness, and population density of African Americans. The sample of cell phone numbers was randomly selected from dedicated cellular telephone banks sorted on the basis of area code and exchange.

A weighting methodology known as iterative proportional fitting or raking was used in 2012 to allow for the incorporation of cell phone data and to improve the accuracy of prevalence estimates based on MiBRFS data. Estimates based on this weighting methodology were weighted to adjust for the probabilities of selection and a raking adjustment factor that adjusted for the distribution of the Michigan adult population by telephone source (landline or cell phone), detailed race/ethnicity, education level, marital status, age by gender, gender by race/ethnicity, age by race/ethnicity, and renter/owner status.

Due to the BRFSS methodology changes that took place in 2011, the 2012 MiBRFS estimates provided within this report should only be compared to MiBRFS estimates from 2011 and not to MiBRFS estimates from years prior to 2011.

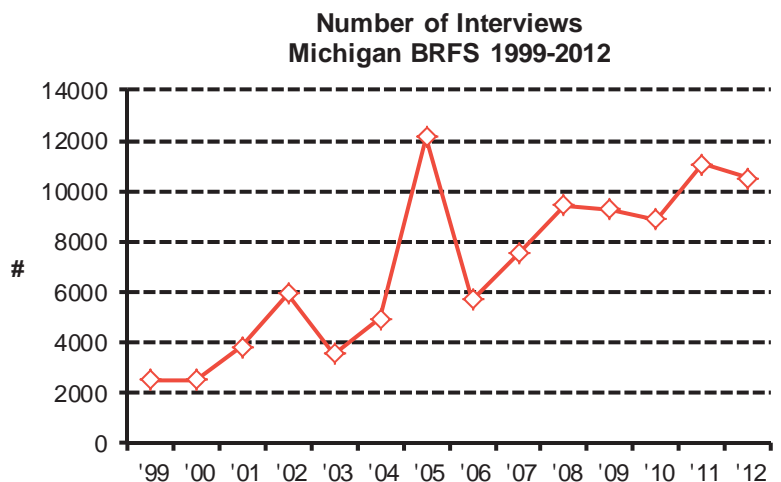
Prevalence estimates and asymmetric 95% confidence intervals (95% CIs) were calculated using SAS-Callable SU-DAAN (version 11.0.0), a statistical computing program that was designed for analyzing data from multistage sample surveys.<sup>1</sup> If the 95% CIs for two estimates from different subpopulations or survey years did not overlap, they were considered to be statistically different. Unless otherwise specified, respondents who answered that they did not know or refused to answer were not included in the calculation of estimates. For comparison purposes, the median estimates from all 50 states and the District of Columbia were used as national estimates.

In addition to this report, the MiBRFSS releases several additional publications each year. These publications provide statewide health estimates for Michigan adults as well as estimates among demographic and geographic subpopulations. MiBRFSS Surveillance Briefs are also published throughout the year and highlight new topical data from the MiBRFSS, including data from MiBRFSS state-added questions. All of these publications can be found on the MiBRFSS website ([www.michigan.gov/brfs](http://www.michigan.gov/brfs)).

## Sample Results for the 2012 MiBRFS

The total sample size for the 2012 MiBRFS was 10,499 (landline = 8,414; cell phone = 2,085). The AAPOR response rate for the landline portion of the 2012 MiBRFS was 50.1%, while the response rate for the cell phone portion of the survey was 33.3%. The overall weighted AAPOR response rate (landline and cell phones combined) for the 2012 MiBRFS was 47.3%.<sup>2</sup> The overall weighted U.S. median response rate for 2012 was 45.2%.

Over the past several years, MDCH has been able to maintain or increase the annual number of completed interviews for the MiBRFS. A larger annual sample size increases the utility of the survey by providing more precise estimates, allowing for increased number of topics to be covered each year, and enabling the calculation of estimates for more demographic and geographic subpopulations.





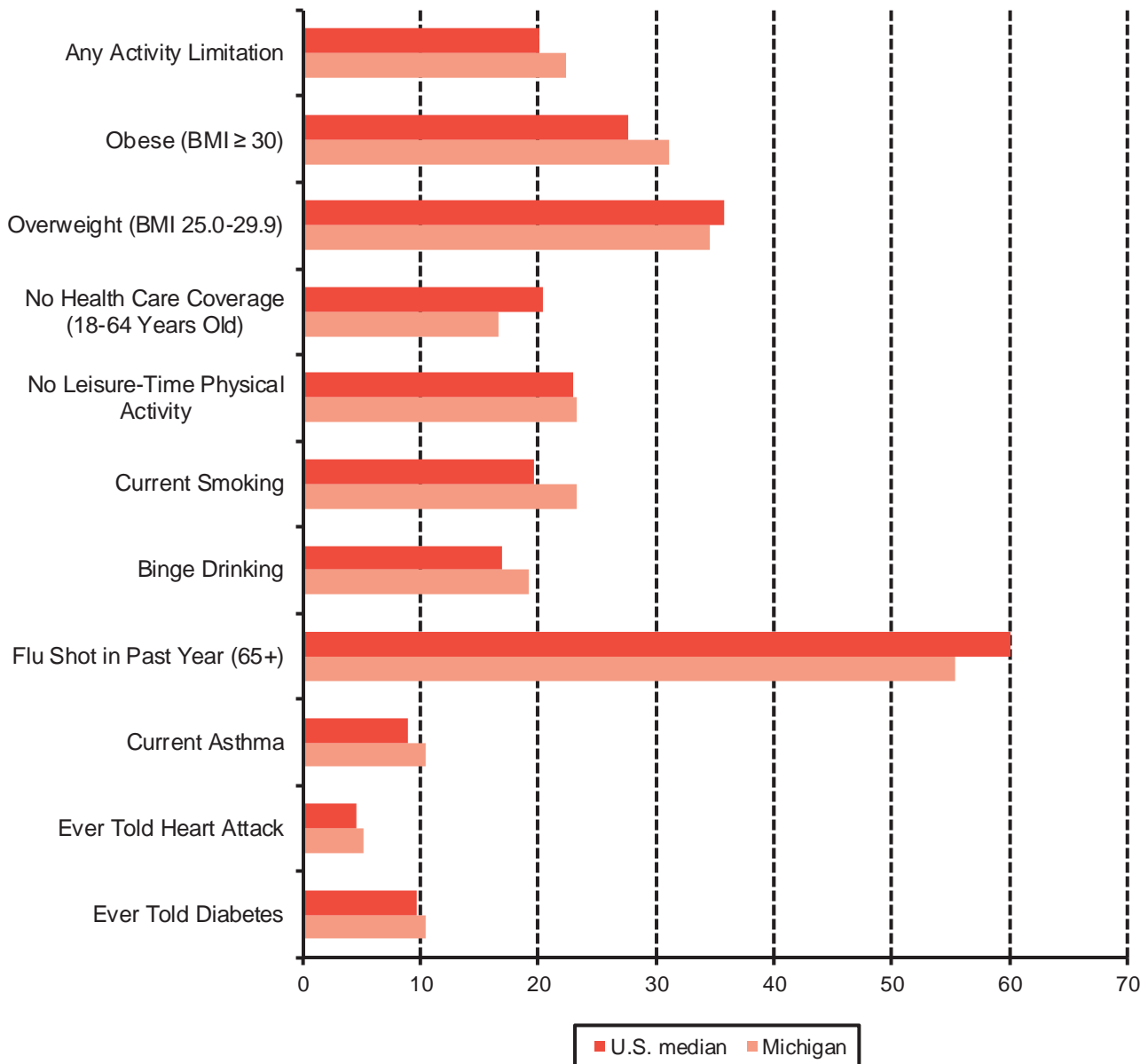


# Summary

This report presents estimates from the 2012 MiBRFS, a statewide landline and cell phone survey of Michigan residents aged 18 years and older. It is the only source of state-specific, population-based estimates of the prevalence of various health behaviors, medical conditions, and preventive health care practices among Michigan adults. The survey findings are used by public health agencies, academic institutions, non-profit organizations, and others to develop programs that promote the health of Michigan citizens.

All of the results from the 2012 MiBRFS presented within this report have been weighted as described in the methods section and can be interpreted as prevalence estimates among the Michigan adult population. Due to the BRFSS methodology changes that took place in 2011, these estimates should only be compared to MiBRFS estimates from 2011 and not to MiBRFS estimates from years prior to 2011.

**Selected Risk Factors - 2012 CDC BRFSS  
U.S. vs. Michigan**





# Summary, continued

2012 MiBRFS

## Public Health Implications of Findings

A number of themes emerge from the findings of the 2012 MiBRFS that have implications for public health.

### ✂ Obesity has stabilized, but more improvements are needed.

In 2012, nearly 1 in 3 Michigan adults (31.1%) were considered obese. The obesity prevalence among Michigan adults is currently only 0.5% above the HP 2020 obesity goal of 30.6%, but the overweight and obesity epidemic is still a major problem, with an estimated 65.7% of Michigan adults being classified as either overweight or obese. The prevalence of obesity among Black, non-Hispanic adults (37.8%) is over 25% higher than the obesity prevalence among White, non-Hispanic adults (29.9%). Furthermore, the obesity prevalence among Michigan's disabled adult population (41.4%) is nearly 50% higher than the obesity prevalence within Michigan's non-disabled adult population (27.7%). Improvements in the prevalence of obesity are needed to have a positive impact on the prevalence of diseases, such as diabetes, cardiovascular disease, and arthritis, that are directly associated with obesity. MDCH has a number of programs designed to decrease obesity, increase physical activity and promote healthy eating among Michigan adults and children.

### ✂ Approximately 1 in 4 Michigan adults are current smokers.

In 2012, an estimated 23.3% of Michigan adults reported that they currently smoke cigarettes on a regular basis. The highest prevalences of current smoking were reported for uninsured adults (41.2%), adults with household incomes of less than \$20,000 (39.9%), and disabled adults (31.6%). Another important aspect of cigarette smoking is secondhand smoke exposure. The Dr. Ron Davis Smoke Free Air Law that was implemented on May 1, 2010 has been successful at eliminating secondhand smoke exposure within virtually all public places, but secondhand smoke exposure on personal property remains a problem. In 2012, an estimated 27.9% of Michigan adults reported that they were exposed to secondhand smoke exposure in their home or car within the past seven days. With the continued enforcement of our smoke free air law along with a sustained emphasis on smoking cessation, the MDCH Tobacco Program anticipates that the prevalence of smoking will decrease in the coming years.

### ✂ Nearly 25% of Michigan adults report a sedentary lifestyle.

In 2012, an estimated 23.3% of Michigan adults reported that they did not participate in any leisure time physical activity within the past month (i.e., had a sedentary lifestyle). The highest prevalences of no leisure time physical activity were reported for disabled adults (40.5%), adults with household incomes of less than \$20,000 (37.8%), Black, non-Hispanic adults (33.8%), and adults 75 years of age and older (33.4%). Furthermore, Michigan adults reporting no leisure time physical activity were more likely to be considered obese when compared to those who participated in some form of physical activity (39.8% vs. 28.4%). The Michigan Nutrition, Physical Activity and Obesity Program continues to develop programs that focus on increasing physical activity among the entire Michigan population.

### ✂ Diabetes prevalence continues to increase, especially among specific subpopulations.

In 2012, an estimated 10.5% of Michigan adults reported that they had ever been told by a doctor that they had diabetes. The prevalence of diabetes among Black, non-Hispanic adults (13.8%) was nearly 44% higher than the diabetes prevalence among White, non-Hispanic adults (9.6%). The prevalence of diabetes among the Michigan adult population was highest within the 65-74 year old (23.6%) and 75+ year old (18.7%) age categories. Furthermore, Michigan adults who were considered obese were more likely to have reported ever being told by a doctor that they had diabetes (18.8%) when compared to both overweight (9.1%) and normal weight (4.2%) adults. Despite recent decreases in federal funding, the MDCH Diabetes and Other Chronic Diseases Section continues to work toward reducing the impact of diabetes in Michigan.



2012 MiBRFS

# Summary, continued

## Future of the Michigan Behavioral Risk Factor Survey

The target sample size for the 2013 MiBRFS is 12,400 total completed interviews. Of these 12,400 interviews, 8,680 will be completed with landline respondents, while the remaining 3,720 will be completed with cell phone-only or cell phone-mostly respondents. The 2013 questionnaire will include approximately 50 state-added questions on numerous topics, including cognitive impairment, adverse childhood experiences, infertility treatment, food access, drug use, and tobacco cessation. The full 2013 MiBRFS questionnaire is available on the MiBRFSS website ([www.michigan.gov/brfs](http://www.michigan.gov/brfs)).

The BRFSS continues to adapt to challenges and expand its utility. The representativeness and validity of MiBRFS estimates has been improved. For example, due the drastic increase in the utilization of cell phone communication, the BRFSS now collects data from cell phone respondents. Furthermore, the CDC has implemented a new raking weighting methodology so that BRFSS estimates are more representative than ever before. Michigan has also expanded the utility of the MiBRFS through the following projects:

- The maintenance of a larger MiBRFS sample size will allow for somewhat more precise estimates for Hispanics, especially when multiple years of data are combined.
- In 2013, a standalone BRFSS-like oversample survey is being conducted among the Arab American populations within Michigan. This survey will provide new data to a population that is currently underrepresented within the statewide Michigan BRFSS.
- Since 2005, questions have been included that randomly select one child in each household and obtain demographic characteristics of that child. This information allows us to ask health-related questions about this child and then to calculate estimates for childhood conditions, such as asthma.
- An Asthma Call-Back survey that follows up on children and adults who were identified as having asthma during the BRFSS interview has been conducted since 2005, allowing for collection of more detailed information on asthma management, clinical care, and impact of the disease on people's lives. It is anticipated that this methodology could be useful for other subpopulations in the future.
- The MiBRFSS is a main source of data for the priority chronic disease indicators that are used to support Michigan's Coordinated Chronic Disease Prevention and Health Promotion State Plan.
- The MiBRFSS is the source for seven of the twenty indicators included within the Michigan Health and Wellness Dashboard. This project provides a quick assessment of the health and wellness of Michigan residents.

In conclusion, the MiBRFS continues to serve the needs of public health officials, health care providers, researchers and local and state level policy makers, while presenting a number of opportunities for expanding our understanding of the risk factors and preventive behaviors for the major causes of disease and disability in Michigan.



# General Health Status

2012 MiBRFS

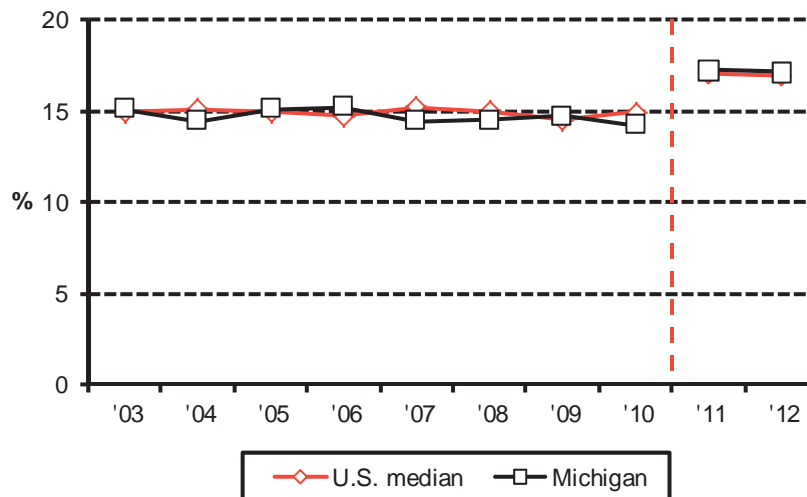
Self-assessed health is a measure of how a person perceives their own health. Self-assessed health status has been validated as a useful indicator of health among different populations and allows for broad comparisons across a variety of health conditions.<sup>3</sup>

- ◆ In 2012, an estimated 17.1% of Michigan adults reported that their general health was either fair or poor.
- ◆ Fair or poor general health increased with age and decreased with increasing household income level.
- ◆ The prevalence of fair or poor general health was similar by gender and health insurance status.
- ◆ White, non-Hispanic adults (15.1%) reported a significantly lower prevalence of fair or poor general health than Black, non-Hispanics (26.0%).
- ◆ Disabled adults (42.8%) reported a significantly higher prevalence of fair to poor health than non-disabled adults (8.6%).
- ◆ The BRFSS methodology changes that were implemented in 2011 resulted in a spike in the prevalence of fair or poor general health among Michigan adults, but since these changes, the prevalence of fair to poor general health has remained stable.
- ◆ In 2012, the prevalence of fair or poor general health among Michigan adults (17.1%) was comparable to the U.S. median prevalence (16.9%).

Demographic Characteristics	General Health, Fair or Poor <sup>a</sup>	
	%	95% Confidence Interval
<b>Total</b>	<b>17.1</b>	<b>(16.1-18.1)</b>
<b>Age</b>		
18 - 24	10.2	(7.7-13.4)
25 - 34	11.8	(9.2-15.0)
35 - 44	16.2	(13.5-19.4)
45 - 54	18.3	(16.0-20.8)
55 - 64	21.3	(19.1-23.6)
65 - 74	19.2	(17.0-21.5)
75 +	24.9	(22.2-27.8)
<b>Gender</b>		
Male	16.8	(15.3-18.4)
Female	17.3	(16.1-18.7)
<b>Race/Ethnicity</b>		
White non-Hispanic	15.1	(14.1-16.2)
Black non-Hispanic	26.0	(22.5-29.9)
Other non-Hispanic	18.2	(14.0-23.3)
Hispanic	24.2	(16.7-33.8)
<b>Household Income</b>		
< \$20,000	36.7	(33.3-40.1)
\$20,000 - \$34,999	19.6	(17.4-22.0)
\$35,000 - \$49,999	15.1	(12.8-17.7)
\$50,000 - \$74,999	9.8	(7.9-12.2)
≥ \$75,000	6.1	(4.9-7.5)
<b>Health Insurance</b>		
Insured	16.6	(15.5-17.7)
Uninsured	20.5	(17.5-24.0)
<b>Disability</b>		
Disabled	42.8	(40.3-45.4)
Not disabled	8.6	(7.7-9.6)

<sup>a</sup> Among all adults, the proportion who reported that their health, in general, was either fair or poor.

**General Health, Fair or Poor  
U.S. vs. Michigan, 2003-2012**



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.



# Quality of Life

2012 MiBRFS

Physically and mentally unhealthy days measure the number of days within the past 30 days that individuals rate their physical and mental health as not good. Poor physical and mental health was defined as 14 or more days within the past 30 days in which the adult respondents rated their physical and mental health as not good.

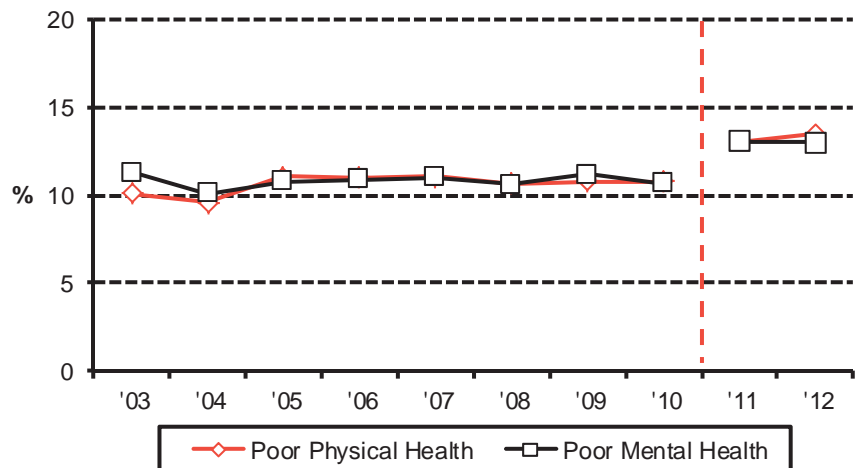
- ◆ In 2012, an estimated 13.5% of Michigan adults reported poor physical health, and 13.0% reported poor mental health.
- ◆ Poor physical health increased with age, while poor mental health decreased with age.
- ◆ Both poor physical health and poor mental health decreased with increasing household income level.
- ◆ The prevalence of poor physical health was similar by both gender and race/ethnicity.
- ◆ Females (16.0%) and Hispanics (22.6%) reported higher prevalences of poor mental health than males (9.9%) and White, non-Hispanics (12.0%), respectively.
- ◆ Uninsured adults (21.3%) were more likely to have reported poor mental health than insured adults (11.8%).
- ◆ Disabled adults (39.3% and 25.8%, respectively) were more likely to have reported both poor physical health and poor mental health than insured adults (5.1% and 8.8%, respectively).
- ◆ The BRFSS methodology changes that were implemented in 2011 resulted in a spike in the prevalence of poor physical and mental health among Michigan adults, but these prevalences have remained stable in 2012.

Demographic Characteristics	Poor Physical Health <sup>a</sup>		Poor Mental Health <sup>b</sup>	
	%	95% Confidence Interval	%	95% Confidence Interval
<b>Total</b>	<b>13.5</b>	<b>(12.6-14.4)</b>	<b>13.0</b>	<b>(12.1-14.0)</b>
<b>Age</b>				
18 - 24	7.7	(5.3-11.0)	16.7	(13.2-20.8)
25 - 34	7.9	(5.8-10.6)	15.2	(12.4-18.4)
35 - 44	11.6	(9.4-14.2)	14.4	(12.0-17.2)
45 - 54	15.9	(13.9-18.2)	14.5	(12.5-16.6)
55 - 64	17.9	(15.9-20.2)	12.4	(10.7-14.2)
65 - 74	16.1	(14.1-18.3)	7.0	(5.7-8.5)
75 +	18.4	(15.8-21.2)	6.6	(5.2-8.4)
<b>Gender</b>				
Male	12.8	(11.5-14.2)	9.9	(8.7-11.2)
Female	14.1	(12.9-15.4)	16.0	(14.7-17.5)
<b>Race/Ethnicity</b>				
White non-Hispanic	12.8	(11.9-13.8)	12.0	(11.0-13.0)
Black non-Hispanic	15.6	(12.9-18.6)	14.9	(12.2-17.9)
Other non-Hispanic	14.9	(11.1-19.7)	19.3	(14.5-25.1)
Hispanic	16.0	(9.7-25.1)	22.6	(15.3-32.1)
<b>Household Income</b>				
< \$20,000	26.5	(23.6-29.7)	27.4	(24.4-30.7)
\$20,000 - \$34,999	14.7	(12.9-16.8)	13.0	(11.2-15.0)
\$35,000 - \$49,999	10.8	(8.9-13.1)	8.7	(6.9-10.9)
\$50,000 - \$74,999	8.6	(6.9-10.6)	8.4	(6.5-10.8)
≥ \$75,000	5.9	(4.8-7.2)	7.4	(6.0-9.2)
<b>Health Insurance</b>				
Insured	13.4	(12.5-14.4)	11.8	(10.8-12.8)
Uninsured	14.1	(11.5-17.1)	21.3	(18.1-24.9)
<b>Disability</b>				
Disabled	39.3	(36.8-41.9)	25.8	(23.5-28.1)
Not Disabled	5.1	(4.5-5.9)	8.8	(7.9-9.9)

<sup>a</sup> Among all adults, the proportion who reported 14 or more days of poor physical health, which includes physical illness and injury, during the past 30 days.

<sup>b</sup> Among all adults, the proportion who reported 14 or more days of poor mental health, which includes stress, depression, and problems with emotions, during the past 30 days.

**Poor Physical and Mental Health Michigan, 2003-2012**



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.



# Disability

2012 MiBRFS

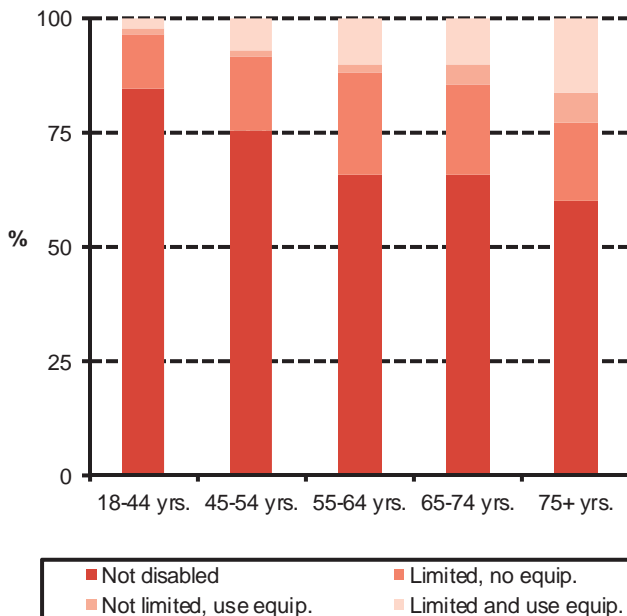
Through the Americans with Disabilities Act, an individual with a disability is defined as a person who has a physical or mental impairment that substantially limits one or more major life activities, a person who has a history of such an impairment, or a person who is perceived by others as having such an impairment.<sup>4</sup>

- ◆ In 2012, an estimated 24.6% of Michigan adults reported being disabled, which was defined as being limited in any activities because of physical, mental, or emotional problems or requiring the use of special equipment, such as a cane, a wheelchair, a special bed, or a special telephone due to a health problem.
- ◆ When looking at each component of the disability indicator, an estimated 22.3% of Michigan adults reported being limited in their activities, while 8.7% reported that they required the use of special equipment due to a health problem.
- ◆ The prevalence of disability increased with age and decreased with increasing household income level.
- ◆ The prevalence of disability was similar by gender and health insurance status.
- ◆ The prevalence of total disability was similar by race/ethnicity, but Black, non-Hispanics (12.5% [95% CI: 10.3-15.0]) reported a higher prevalence of special equipment use than White, non-Hispanics (8.2% [95% CI: 7.5-8.9]) (data is not shown).

Demographic Characteristics	Total Disability <sup>a</sup>	
	%	95% Confidence Interval
<b>Total</b>	<b>24.6</b>	<b>(23.5-25.7)</b>
<b>Age</b>		
18 - 24	10.7	(8.1-13.9)
25 - 34	15.1	(12.3-18.4)
35 - 44	19.4	(16.6-22.5)
45 - 54	25.0	(22.5-27.7)
55 - 64	34.3	(31.9-36.8)
65 - 74	34.4	(31.9-37.0)
75 +	40.0	(37.0-43.1)
<b>Gender</b>		
Male	23.2	(21.6-24.9)
Female	25.9	(24.5-27.4)
<b>Race/Ethnicity</b>		
White non-Hispanic	24.1	(23.0-25.3)
Black non-Hispanic	28.1	(24.6-31.9)
Other non-Hispanic	26.9	(21.6-32.9)
Hispanic	19.8	(13.5-27.9)
<b>Household Income</b>		
< \$20,000	43.1	(39.7-46.6)
\$20,000 - \$34,999	27.9	(25.4-30.4)
\$35,000 - \$49,999	22.1	(19.5-24.9)
\$50,000 - \$74,999	18.2	(15.8-20.7)
≥ \$75,000	12.7	(11.2-14.5)
<b>Health Insurance</b>		
Insured	25.1	(24.0-26.3)
Uninsured	21.9	(18.9-25.4)

<sup>a</sup> Among all adults, the proportion who reported being limited in any activities because of physical, mental, or emotional problems, or reported that they required the use of special equipment (such as a cane, a wheelchair, a special bed, or a special telephone) due to a health problem.

**Disability by Age Group and Severity Michigan, 2012**



- ◆ When assessing disability by age group and severity, Michigan adults 75 years and older reported more severe disability (i.e., both activities limited and use of special equipment) when compared to all other age groups.





# Weight Status

2012 MiBRFS

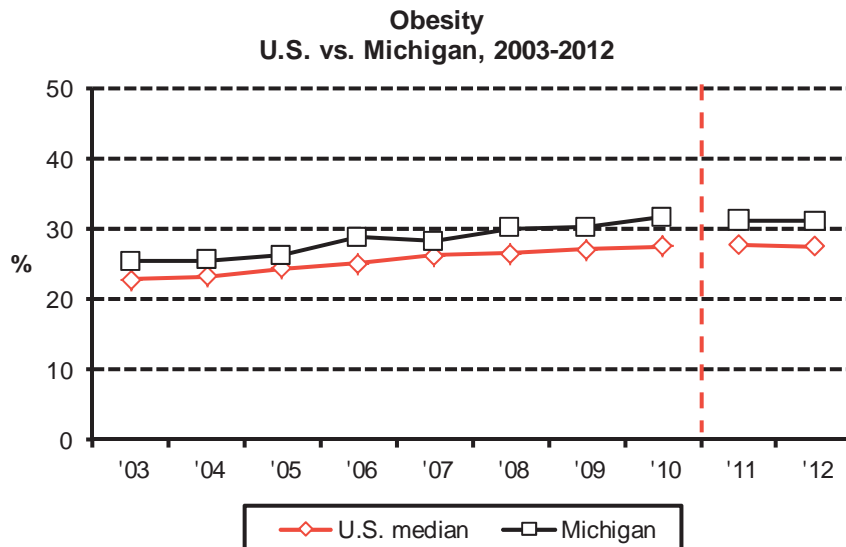
Overweight and obesity have been proven to increase the risk of many diseases and health conditions such as high blood pressure, diabetes, coronary heart disease, stroke, gallbladder disease, high cholesterol, and some forms of cancer.<sup>5</sup> Overweight is defined as having a body mass index (BMI) between 25.0 and 29.9, and obesity is defined as a BMI greater than or equal to 30.0. BMI is defined as weight in kilograms divided by height in meters squared ( $w/h^2$ ) and is calculated based on self-reported height and weight.

- ◆ In 2012, an estimated 31.1% of Michigan adults were classified as obese, with an additional 34.6% of Michigan adults being classified as overweight. The prevalence of obesity in Michigan is higher than the U.S. median prevalence (27.6%), while the prevalence of overweight is comparable to that of the U.S. median (35.8%).
- ◆ The prevalence of obesity increased through the 35-44 year age group, plateaued through the 65-74 year age group, and then dropped within the 75+ years age group.
- ◆ The prevalence of obesity was similar by gender and health insurance status.
- ◆ Black, non-Hispanic adults (37.8%) reported a significantly higher prevalence of obesity than White, non-Hispanics (29.9%). This disparity has persisted for several years.
- ◆ Disabled adults (41.4%) were more likely to be classified as obese than non-disabled adults (27.7%).
- ◆ The HP 2020 target for obesity among adults is set at 30.6%. In order to meet this target, the obesity prevalence among Michigan adults will need to decrease by only 0.5 percentage points during the next eight years.<sup>6</sup>

Demographic Characteristics	Obese <sup>a</sup>	
	%	95% Confidence Interval
<b>Total</b>	<b>31.1</b>	<b>(29.8-32.3)</b>
<b>Age</b>		
18 - 24	18.9	(15.4-22.9)
25 - 34	31.4	(27.6-35.4)
35 - 44	35.3	(31.9-38.9)
45 - 54	33.2	(30.5-36.1)
55 - 64	35.3	(32.9-37.7)
65 - 74	35.3	(32.7-38.0)
75 +	22.5	(19.9-25.2)
<b>Gender</b>		
Male	31.5	(29.6-33.4)
Female	30.6	(29.1-32.3)
<b>Race/Ethnicity</b>		
White non-Hispanic	29.9	(28.6-31.2)
Black non-Hispanic	37.8	(33.9-41.9)
Other non-Hispanic	27.6	(22.4-33.5)
Hispanic	37.0	(28.6-46.2)
<b>Household Income</b>		
< \$20,000	36.0	(32.7-39.4)
\$20,000 - \$34,999	32.9	(30.1-35.7)
\$35,000 - \$49,999	33.4	(30.2-36.8)
\$50,000 - \$74,999	31.7	(28.5-35.1)
≥ \$75,000	26.6	(24.3-29.0)
<b>Health Insurance</b>		
Insured	31.4	(30.1-32.8)
Uninsured	29.3	(25.7-33.2)
<b>Disability</b>		
Disabled	41.4	(38.9-44.0)
Not disabled	27.7	(26.3-29.2)

Note: BMI, body mass index, is defined as weight (in kilograms) divided by height (in meters) squared [weight in kg/(height in meters)<sup>2</sup>]. Weight and height were self-reported. Pregnant women were excluded.

<sup>a</sup> Among all adults, the proportion of respondents whose BMI was greater than or equal to 30.0.



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.



# No Health Care Coverage

Adults who do not have health care coverage are less likely to access health care services and are more likely to delay getting needed medical attention.<sup>7</sup>

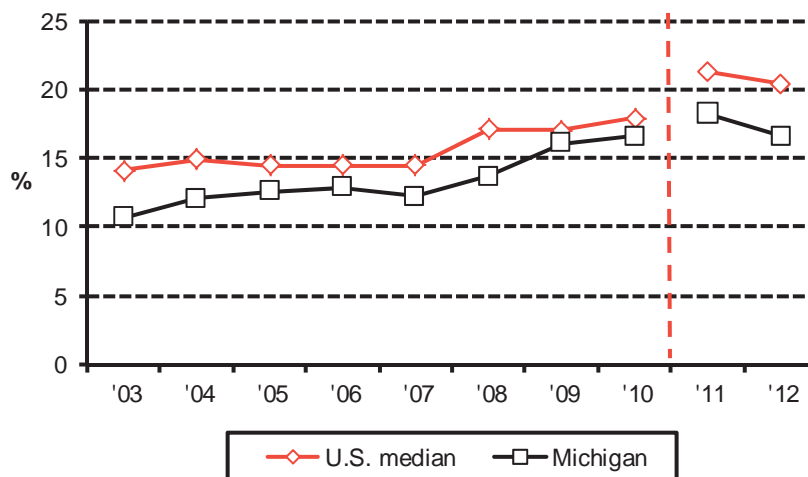
- ◆ In 2012, an estimated 16.6% of Michigan adults aged 18-64 years reported having no health care coverage. The prevalence of no health care coverage among Michigan adults 18-64 years of age is nearly four percentage points less than the U.S. median prevalence (20.4%).
- ◆ The prevalence of no health care coverage decreased with age and increasing household income level.
- ◆ Males (18.9%) reported a significantly higher prevalence of no health care coverage than females (14.2%), while Black, non-Hispanics (24.3%) reported a higher prevalence than White, non-Hispanics (15.1%).
- ◆ The prevalence of no health care coverage was similar by disability status.
- ◆ The HP 2020 target for health care coverage is to have 100% of adults insured by 2020. Since the prevalence of no health care coverage among Michigan adults 18-64 years of age is currently at 16.6%, this prevalence will need to decrease by an average of two percentage points each year in order to meet the HP 2020 goal.<sup>6</sup>

## No Health Care Coverage Among Adults 18-64 Years<sup>a</sup>

Demographic Characteristics	%	95% Confidence Interval
<b>Total</b>	<b>16.6</b>	<b>(15.4-17.8)</b>
<b>Age</b>		
18 - 24	18.5	(15.2-22.4)
25 - 34	25.9	(22.3-29.7)
35 - 44	13.3	(11.0-16.1)
45 - 54	15.2	(13.1-17.6)
55 - 64	11.2	(9.6-13.0)
<b>Gender</b>		
Male	18.9	(17.0-20.9)
Female	14.2	(12.8-15.8)
<b>Race/Ethnicity</b>		
White non-Hispanic	15.1	(13.8-16.4)
Black non-Hispanic	24.3	(20.5-28.6)
Other non-Hispanic	13.8	(9.9-18.8)
Hispanic	18.4	(12.1-27.2)
<b>Household Income</b>		
< \$20,000	32.8	(29.1-36.7)
\$20,000 - \$34,999	27.8	(24.4-31.5)
\$35,000 - \$49,999	15.6	(12.3-19.6)
\$50,000 - \$74,999	5.4	(3.9-7.5)
≥ \$75,000	3.6	(2.6-5.0)
<b>Disability</b>		
Disabled	16.2	(13.9-18.9)
Not disabled	16.4	(15.0-17.8)

<sup>a</sup> Among adults aged 18-64 years, the proportion who reported having no health care coverage, including health insurance, prepaid plans such as HMOs, or government plans, such as Medicare or Indian Health Services.

**No Health Care Coverage Among Adults Aged 18 to 64 Years U.S. vs. Michigan, 2003-2012**



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.





# Limited Health Care Coverage

2012 MiBRFS

Two additional indicators related to health care access are: 1) not having a personal doctor or health care provider and 2) having had a time during the past 12 months when you needed to see a doctor but could not because of the cost. Increases in access to primary care have been shown to substantially improve health-related outcomes.<sup>8</sup>

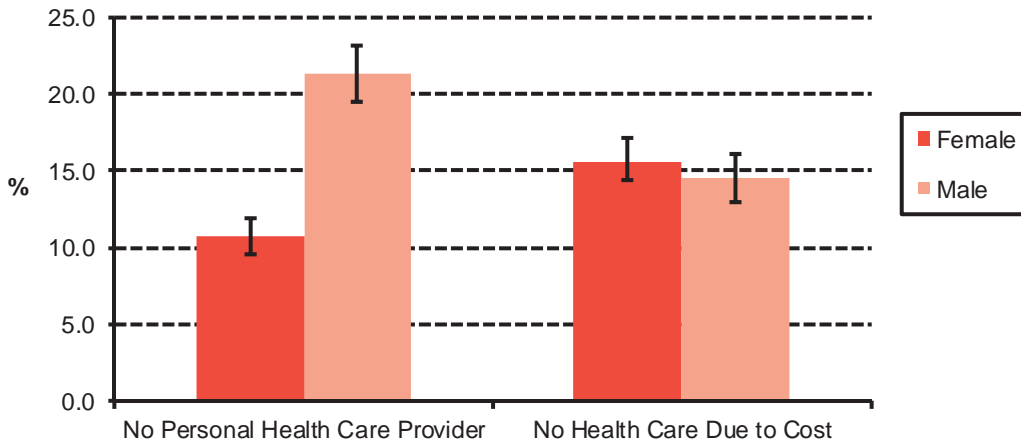
- ◆ In 2012, an estimated 15.8% of Michigan adults reported not having a personal health care provider, while 15.1% reported not seeing the doctor within the past 12 months due to cost.
- ◆ The prevalences of both of these indicators decreased with age and increasing household income level.
- ◆ Males (21.3%) were more likely than females (10.7%) to not have a personal health care provider.
- ◆ Black, non-Hispanics (22.1%) were more likely than White, non-Hispanics (14.5%) to not have a personal health care provider.
- ◆ Both Black, non-Hispanics (19.3%) and Hispanics (26.5%) were more likely than White non-Hispanics (13.5%) to not have seen a doctor within the past 12 months due to cost.
- ◆ Uninsured adults (47.8% and 49.0%, respectively) were more likely to not have a personal health care provider and to not have seen a doctor within the past 12 months due to cost when compared in insured adults (10.8% and 9.8%, respectively).

Demographic Characteristics	No Personal Health Care Provider <sup>a</sup>		No Health Care Access Due to Cost <sup>b</sup>	
	%	95% Confidence Interval	%	95% Confidence Interval
<b>Total</b>	<b>15.8</b>	<b>(14.8-16.9)</b>	<b>15.1</b>	<b>(14.1-16.1)</b>
<b>Age</b>				
18 - 24	25.8	(21.8-30.2)	17.7	(14.4-21.5)
25 - 34	31.9	(28.2-35.8)	21.1	(17.9-24.8)
35 - 44	17.8	(15.1-20.9)	17.4	(14.7-20.4)
45 - 54	13.2	(11.2-15.4)	18.1	(15.8-20.6)
55 - 64	8.1	(6.8-9.7)	13.0	(11.4-14.9)
65 - 74	4.7	(3.5-6.2)	6.4	(5.2-7.9)
75 +	3.8	(2.7-5.4)	4.3	(3.2-5.8)
<b>Gender</b>				
Male	21.3	(19.5-23.2)	14.5	(13.0-16.1)
Female	10.7	(9.6-11.9)	15.6	(14.4-17.0)
<b>Race/Ethnicity</b>				
White non-Hispanic	14.5	(13.4-15.7)	13.5	(12.5-14.6)
Black non-Hispanic	22.1	(18.7-26.0)	19.3	(16.3-22.8)
Other non-Hispanic	17.5	(13.2-22.7)	20.5	(15.8-26.1)
Hispanic	17.8	(11.8-26.0)	26.5	(19.0-35.6)
<b>Household Income</b>				
< \$20,000	23.7	(20.8-26.9)	32.0	(28.8-35.3)
\$20,000 - \$34,999	20.3	(17.7-23.2)	20.8	(18.3-23.6)
\$35,000 - \$49,999	14.0	(11.5-17.0)	13.7	(11.2-16.6)
\$50,000 - \$74,999	10.8	(8.6-13.4)	7.5	(5.8-9.7)
≥ \$75,000	9.5	(8.0-11.3)	3.3	(2.4-4.4)
<b>Health Insurance</b>				
Insured	10.8	(9.8-11.8)	9.8	(8.9-10.7)
Uninsured	47.8	(43.7-51.9)	49.0	(45.0-53.1)
<b>Disability</b>				
Disabled	10.3	(8.6-12.2)	22.0	(19.9-24.3)
Not disabled	17.5	(16.2-18.8)	12.7	(11.6-13.9)

<sup>a</sup> Among all adults, the proportion who reported that they did not have anyone that they thought of as their personal doctor or health care provider

<sup>b</sup> Among all adults, the proportion who reported that in the past 12 months, they could not see a doctor when they needed to due to the cost.

Health Care Access Indicators by Gender  
Michigan, 2012



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.



# Social Context

2012 MiBRFS

Differences in health-related exposures and stresses throughout life often result in differences in underlying health status.<sup>9</sup> As a result, it is important to look at the impact of social factors on the prevalence of disease.

- ◆ In 2012, an estimated 34.8% of Michigan adults reported worrying about having enough money to pay their rent/mortgage within the past year, while 21.9% reported worrying about having enough money to purchase nutritious meals within the past year.
- ◆ The prevalences of both of these indicators decreased with age and household income level.
- ◆ Females (37.5% and 25.0%, respectively) reported higher prevalences of each indicator compared to males (31.9% and 18.6%, respectively).
- ◆ Black, non-Hispanics (47.9% and 29.6%, respectively) reported higher prevalences of each indicator compared to White, non-Hispanics (31.9% and 19.8%, respectively).
- ◆ Uninsured adults (61.3% and 43.0%, respectively) were more likely to report being worried about having enough money for rent/mortgage and nutritious meals when compared in insured adults (31.1% and 18.8%, respectively).
- ◆ Disabled adults (46.5% and 35.1%, respectively) were more likely to report being worried about having enough money for rent/mortgage and nutritious meals when compared to non-disabled adults (30.9% and 17.5%, respectively).

Demographic Characteristics	Worried About Having Enough Money to Pay Rent/Mortgage <sup>a</sup>		Worried About Having Enough Money to Buy Nutritious Meals <sup>b</sup>	
	%	95% Confidence Interval	%	95% Confidence Interval
<b>Total</b>	<b>34.8</b>	<b>(33.4-36.2)</b>	<b>21.9</b>	<b>(20.7-23.1)</b>
<b>Age</b>				
18 - 24	39.4	(33.9-45.2)	26.1	(21.9-30.7)
25 - 34	41.7	(37.3-46.3)	26.1	(22.5-30.0)
35 - 44	40.6	(37.0-44.4)	25.9	(22.7-29.3)
45 - 54	41.2	(38.2-44.2)	26.8	(24.2-29.6)
55 - 64	31.7	(29.3-34.3)	20.1	(17.9-22.4)
65 - 74	20.9	(18.7-23.3)	10.8	(8.9-12.9)
75 +	16.8	(14.2-19.8)	8.1	(6.2-10.4)
<b>Gender</b>				
Male	31.9	(29.8-34.1)	18.6	(16.9-20.5)
Female	37.5	(35.7-39.3)	25.0	(23.4-26.6)
<b>Race/Ethnicity</b>				
White non-Hispanic	31.9	(30.5-33.4)	19.8	(18.6-21.0)
Black non-Hispanic	47.9	(43.6-52.3)	29.6	(25.8-33.7)
Other non-Hispanic	35.7	(29.6-42.3)	24.3	(19.4-29.9)
Hispanic	49.4	(39.8-59.1)	37.2	(28.0-47.4)
<b>Household Income</b>				
< \$20,000	61.8	(58.1-65.4)	47.4	(43.8-51.0)
\$20,000 - \$34,999	44.6	(41.5-47.8)	29.4	(26.6-32.3)
\$35,000 - \$49,999	35.7	(32.1-39.4)	19.8	(17.0-23.0)
\$50,000 - \$74,999	27.5	(24.3-30.9)	13.3	(10.9-16.1)
≥ \$75,000	14.3	(12.5-16.4)	5.1	(4.0-6.6)
<b>Health Insurance</b>				
Insured	31.1	(29.7-32.5)	18.8	(17.6-20.0)
Uninsured	61.3	(56.9-65.6)	43.0	(38.8-47.2)
<b>Disability</b>				
Disabled	46.5	(43.8-49.2)	35.1	(32.5-37.7)
Not disabled	30.9	(29.3-32.5)	17.5	(16.2-18.8)

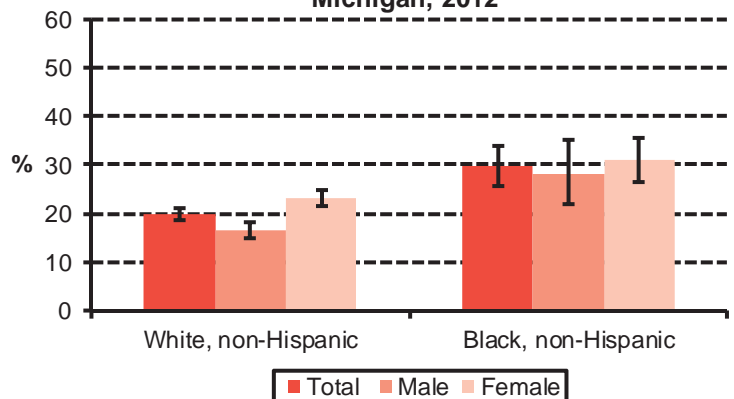
<sup>a</sup> Among all adults, the proportion who reported always, usually, or sometimes being worried about having enough money to pay rent/mortgage in the past year.

<sup>b</sup> Among all adults, the proportion who reported always, usually, or sometimes being worried about having enough money to buy nutritious meals in the past year.

**Worried About Money for Rent/Mortgage by Race and Gender Michigan, 2012**



**Worried About Money for Nutritious Meals by Race and Gender Michigan, 2012**



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.



# No Leisure Time Physical Activity

2012 MiBRFS

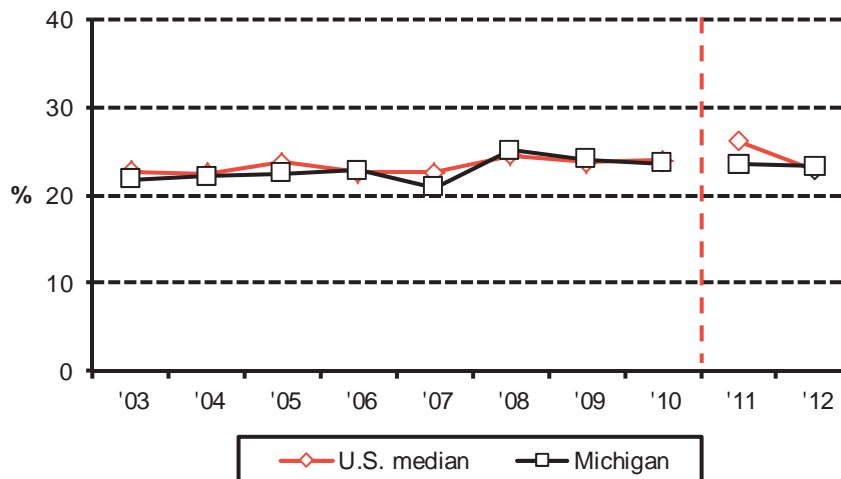
Regular physical activity among adults has been shown to reduce the risk of many diseases including cardiovascular disease, diabetes, colon and breast cancers, and osteoporosis. Keeping physically active also helps to control weight, maintain healthy bones, muscles, and joints, and relieve symptoms of depression.<sup>10</sup>

- ◆ In 2012, an estimated 23.3% of Michigan adults reported no leisure time physical activity within the past month. The prevalence of no leisure time physical activity among Michigan adults is currently comparable to the U.S. median prevalence (22.9%) for this indicator.
- ◆ The prevalence of no leisure time physical activity increased with age and decreased with increasing household income level.
- ◆ White, non-Hispanics (21.2%) reported a significantly lower prevalence of no leisure time physical activity than Black, non-Hispanics (33.8%), while disabled adults (40.5%) reported a higher prevalence than non-disabled adults (17.7%).
- ◆ Females (25.1%) reported a significantly higher prevalence of no leisure time physical activity compared to males (21.5%).
- ◆ The HP 2020 target for no leisure time physical activity among adults is set at 32.6%. The prevalence of no leisure time physical activity among Michigan adults is currently more than nine percentage points below this goal, so if Michigan can maintain the current prevalence for this indicator the healthy people target will easily be met by 2020.<sup>6</sup>

Demographic Characteristics	No Leisure Time Physical Activity <sup>a</sup>	
	%	95% Confidence Interval
<b>Total</b>	<b>23.3</b>	<b>(22.2-24.5)</b>
<b>Age</b>		
18 - 24	15.5	(12.3-19.4)
25 - 34	19.6	(16.4-23.2)
35 - 44	21.9	(18.8-25.3)
45 - 54	25.0	(22.4-27.7)
55 - 64	25.0	(22.8-27.4)
65 - 74	26.9	(24.4-29.6)
75 +	33.4	(30.5-36.5)
<b>Gender</b>		
Male	21.5	(19.7-23.3)
Female	25.1	(23.6-26.6)
<b>Race/Ethnicity</b>		
White non-Hispanic	21.2	(20.1-22.5)
Black non-Hispanic	33.8	(30.0-37.9)
Other non-Hispanic	21.4	(17.1-26.4)
Hispanic	29.5	(21.9-38.4)
<b>Household Income</b>		
< \$20,000	37.8	(34.4-41.3)
\$20,000 - \$34,999	27.9	(25.3-30.7)
\$35,000 - \$49,999	21.6	(18.9-24.5)
\$50,000 - \$74,999	17.4	(14.8-20.3)
≥ \$75,000	10.9	(9.4-12.7)
<b>Health Insurance</b>		
Insured	22.8	(21.6-24.0)
Uninsured	26.8	(23.4-30.5)
<b>Disability</b>		
Disabled	40.5	(38.0-43.1)
Not disabled	17.7	(16.5-18.9)

<sup>a</sup> Among all adults, the proportion who reported not participating in any leisure time physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise during the past month.

**No Leisure Time Physical Activity  
U.S. vs. Michigan, 2003-2012**



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.



# Cigarette Smoking

2012 MiBRFS

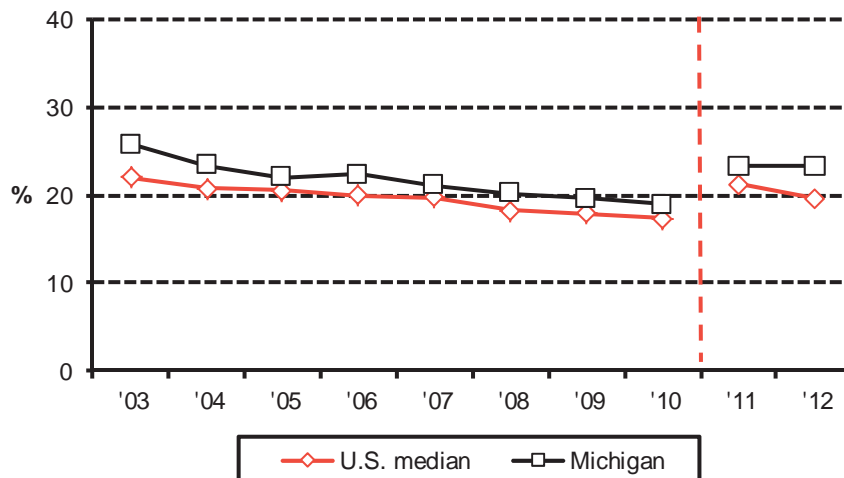
Cigarette smoking is the leading cause of preventable death in the United States, accounting for more than 440,000 deaths each year.<sup>11-12</sup>

- ◆ In 2012, an estimated 23.3% of Michigan adults reported that they currently smoke cigarettes on a regular basis.
- ◆ Current smoking decreased with both increasing age and household income level.
- ◆ The prevalence of current smoking was similar by gender and race/ethnicity.
- ◆ Disabled adults (31.6%) were more likely to have reported current smoking than non-disabled adults (20.6%).
- ◆ Uninsured adults (41.2%) were more likely to have reported current smoking than insured adults (20.5%).
- ◆ The HP 2020 target for current smoking among adults is set at 12.0%. In order to meet this target, the current smoking prevalence among Michigan adults will need to decrease by 11.3 percentage points over the next eight years.<sup>6</sup>
- ◆ The BRFSS methodology changes that were implemented in 2011 resulted in a spike in the prevalence of current smoking among Michigan adults, but since these changes the prevalence of current smoking has remained stable.
- ◆ In 2012, the prevalence of current smoking among Michigan adults (23.3%) was higher than the U.S. median prevalence (19.6%).

Demographic Characteristics	Current Smoking <sup>a</sup>	
	%	95% Confidence Interval
<b>Total</b>	<b>23.3</b>	<b>(22.1-24.6)</b>
<b>Age</b>		
18 - 24	24.9	(20.7-29.5)
25 - 34	33.4	(29.5-37.5)
35 - 44	26.5	(23.3-29.9)
45 - 54	28.8	(26.1-31.7)
55 - 64	21.8	(19.5-24.2)
65 - 74	10.9	(9.3-12.7)
75 +	3.5	(2.6-4.8)
<b>Gender</b>		
Male	23.8	(22.0-25.8)
Female	22.8	(21.3-24.5)
<b>Race/Ethnicity</b>		
White non-Hispanic	22.4	(21.1-23.8)
Black non-Hispanic	26.6	(22.9-30.8)
Other non-Hispanic	28.4	(22.8-34.7)
Hispanic	27.7	(19.8-37.2)
<b>Household Income</b>		
< \$20,000	39.9	(36.4-43.5)
\$20,000 - \$34,999	26.5	(23.7-29.4)
\$35,000 - \$49,999	20.6	(17.6-23.8)
\$50,000 - \$74,999	17.1	(14.6-20.1)
≥ \$75,000	12.2	(10.4-14.3)
<b>Health Insurance</b>		
Insured	20.5	(19.3-21.8)
Uninsured	41.2	(37.1-45.3)
<b>Disability</b>		
Disabled	31.6	(29.0-34.3)
Not disabled	20.6	(19.2-22.0)

<sup>a</sup> Among all adults, the proportion who reported that they had ever smoked at least 100 cigarettes (5 packs) in their life and that they smoke cigarettes now, either every day or on some days.

**Current Cigarette Smoking  
U.S. vs. Michigan, 2003-2012**



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.



# Secondhand Smoke Exposure

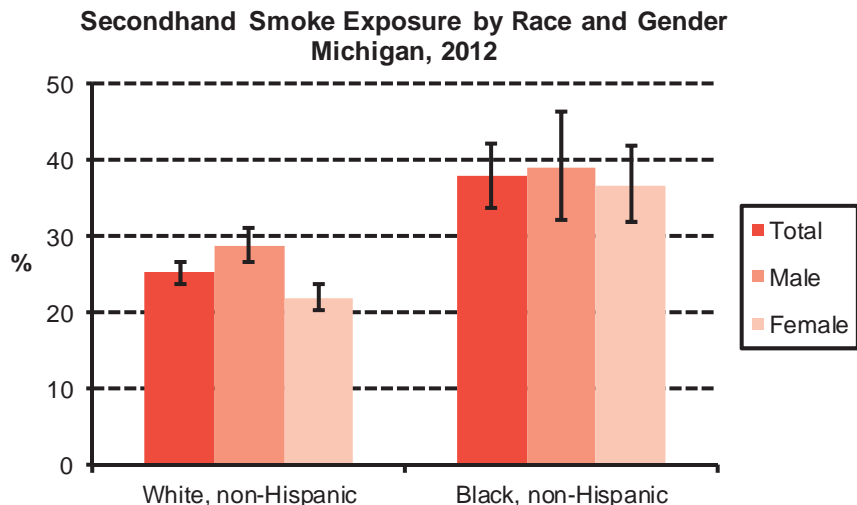
2012 MiBRFS

Among adults who have never smoked, secondhand smoke exposure causes an estimated 46,000 heart disease deaths and 3,400 lung cancer deaths within the United States each year.<sup>11</sup>

- ◆ In 2012, an estimated 27.9% of Michigan adults reported that they were exposed to secondhand smoke in their home or car within the past seven days.
- ◆ Secondhand smoke exposure decreased with both increasing age and household income level.
- ◆ Male (31.2%) were more likely than females (24.8%) to report recent secondhand smoke exposure.
- ◆ Black, non-Hispanics (37.9%) and Hispanics (44.3%) reported significantly higher prevalences of secondhand smoke exposure than White, non-Hispanics (25.3%).
- ◆ Uninsured and disabled adults (47.9% and 31.4%, respectively) were more likely to have reported recent secondhand smoke exposure than insured and non-disabled adults (24.8% and 26.8%, respectively).
- ◆ White, non-Hispanic females reported the lowest prevalence of recent secondhand smoke exposure at 22.0%. White, non-Hispanic males and females (28.9% and 22.0%, respectively) reported lower prevalence of recent secondhand smoke exposure than Black, non-Hispanic males and females (39.1% and 36.8%, respectively).

Demographic Characteristics	Secondhand Smoke Exposure <sup>a</sup>	
	%	95% Confidence Interval
<b>Total</b>	<b>27.9</b>	<b>(26.6-29.2)</b>
<b>Age</b>		
18 - 24	48.5	(43.5-53.5)
25 - 34	37.3	(33.1-41.8)
35 - 44	27.6	(24.2-31.3)
45 - 54	30.1	(27.3-33.1)
55 - 64	21.4	(19.2-23.7)
65 - 74	13.8	(11.9-15.9)
75 +	8.9	(7.0-11.1)
<b>Gender</b>		
Male	31.2	(29.1-33.3)
Female	24.8	(23.2-26.5)
<b>Race/Ethnicity</b>		
White non-Hispanic	25.3	(23.9-26.8)
Black non-Hispanic	37.9	(33.7-42.3)
Other non-Hispanic	33.0	(27.0-39.5)
Hispanic	44.3	(34.9-54.2)
<b>Household Income</b>		
< \$20,000	44.4	(40.8-48.1)
\$20,000 - \$34,999	35.7	(32.6-38.9)
\$35,000 - \$49,999	23.6	(20.4-27.1)
\$50,000 - \$74,999	23.2	(20.1-26.5)
≥ \$75,000	13.9	(11.8-16.2)
<b>Health Insurance</b>		
Insured	24.8	(23.5-26.2)
Uninsured	47.9	(43.6-52.2)
<b>Disability</b>		
Disabled	31.4	(28.9-34.0)
Not disabled	26.8	(25.3-28.4)

<sup>a</sup> Among all adults, the proportion who reported being exposed to secondhand smoke in their home or a car within the past seven days.



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.



# Alcohol Consumption

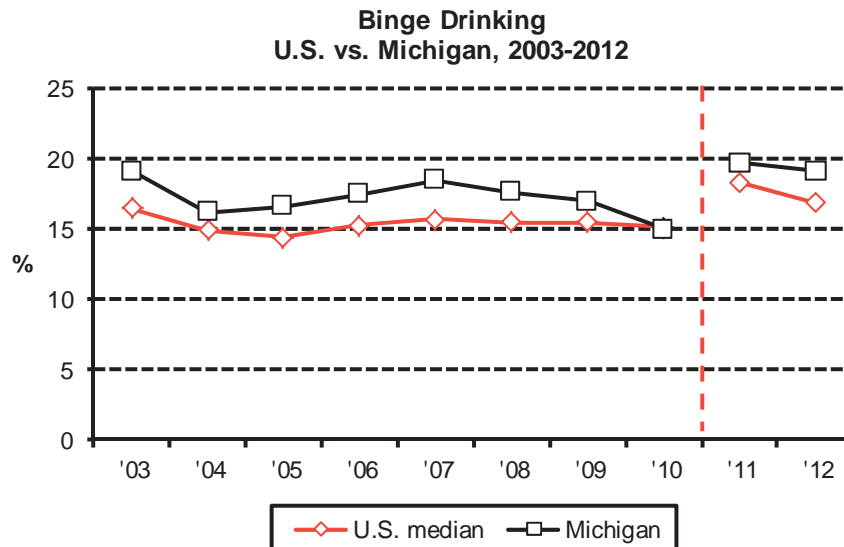
2012 MiBRFS

Alcohol abuse has been associated with serious health problems, such as cirrhosis of the liver, high blood pressure, stroke, and some types of cancer.<sup>13</sup> It can also increase the risk for motor vehicle accidents, injuries, violence, and suicide.<sup>13</sup> Binge drinking is defined as consuming five or more alcoholic drinks per occasion (for men) or four or more alcoholic drinks per occasion (for women) at least once in the past month, while heavy drinking is defined as consuming an average of more than two alcoholic drinks per day for men or more than one alcoholic drink per day for women in the past month.

- ◆ In 2012, an estimated 56.4% (95% CI: 55.1-57.8) of Michigan adults reported some form of alcohol consumption within the past month. Furthermore, an estimated 19.2% of Michigan adults reported binge drinking on at least one occasion within the past month, and 6.1% (95% CI: 5.4-6.8) reported heavy drinking over the past month.
- ◆ Both binge drinking and heavy drinking are more prevalent within the younger age groups and decrease significantly within the older age groups.
- ◆ Males (24.7%) reported a significantly higher prevalence of binge drinking than females (14.0%).
- ◆ Binge drinking was similar by race/ethnicity, but increased slightly in the highest household income level.
- ◆ Disabled adults (13.4%) reported a significantly lower prevalence of binge drinking than non-disabled adults (21.1%).
- ◆ The prevalence of binge drinking among Michigan adults has decreased slightly since the BRFSS methodology changes in 2011, but remains higher than the U.S. median prevalence.

Demographic Characteristics	Binge Drinking <sup>a</sup>	
	%	95% Confidence Interval
<b>Total</b>	<b>19.2</b>	<b>(18.1-20.3)</b>
<b>Age</b>		
18 - 24	27.9	(23.8-32.3)
25 - 34	27.6	(24.0-31.6)
35 - 44	23.9	(20.9-27.1)
45 - 54	21.2	(18.8-23.8)
55 - 64	13.5	(11.8-15.3)
65 - 74	8.1	(6.7-9.8)
75 +	3.0	(2.0-4.5)
<b>Gender</b>		
Male	24.7	(22.9-26.6)
Female	14.0	(12.8-15.4)
<b>Race/Ethnicity</b>		
White non-Hispanic	19.3	(18.2-20.6)
Black non-Hispanic	15.3	(12.2-19.1)
Other non-Hispanic	20.8	(15.8-27.0)
Hispanic	27.5	(19.9-36.7)
<b>Household Income</b>		
< \$20,000	16.8	(14.1-19.9)
\$20,000 - \$34,999	19.6	(17.1-22.5)
\$35,000 - \$49,999	19.4	(16.5-22.5)
\$50,000 - \$74,999	21.5	(18.7-24.6)
≥ \$75,000	22.4	(20.2-24.8)
<b>Health Insurance</b>		
Insured	18.6	(17.5-19.9)
Uninsured	23.2	(19.8-27.0)
<b>Disability</b>		
Disabled	13.4	(11.6-15.6)
Not disabled	21.1	(19.7-22.5)

<sup>a</sup> Among all adults, the proportion who reported consuming five or more drinks per occasion (for males) or four or more drinks per occasion (for women) at least once in the previous month.



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.





# Motor Vehicle Safety

2012 MiBRFS

Seatbelt use has been proven to save lives and prevent injuries. In 2011, 21,253 people died in the United States in motor vehicle traffic crashes, of which only 52% were restrained. In 2011, seat belts saved an estimated 11,949 lives among motor vehicle occupants 5 years of age and older within the United States.<sup>14</sup>

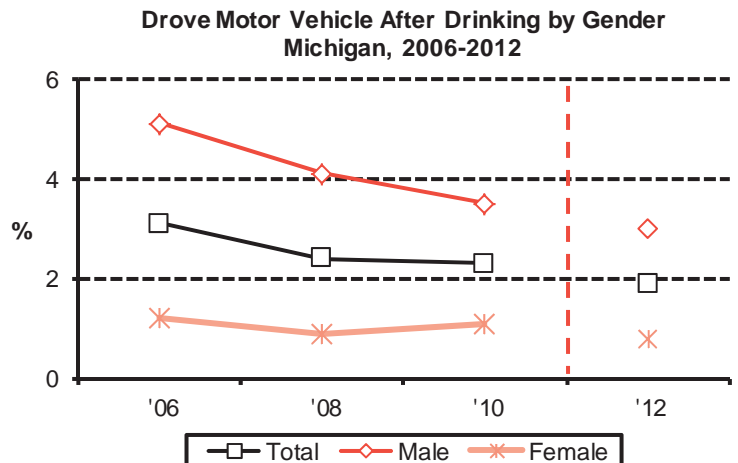
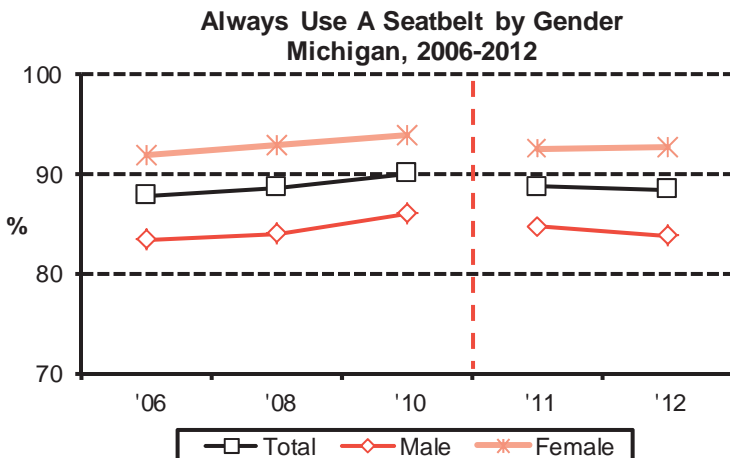
In addition to seatbelt use, driving after drinking is another risk indicator for motor vehicle safety. In Michigan, 3.7% of all crashes were reported to involve drinking in 2012. During this same time period, three out of every ten fatal motor vehicle crashes involved drinking. Consumption of alcohol is a major factor in the more serious types of motor vehicle crashes.<sup>15</sup>

- ◆ In 2012, an estimated 88.4% of Michigan adults reported always using their seat belt when driving or riding in a car, while only 1.9% of Michigan adults reported driving after drinking within the past month.
- ◆ Seatbelt use increased slightly with age, while driving after drinking decreased within the older age groups.
- ◆ Males reported a significantly lower prevalence of seatbelt use (83.8% vs. 92.6%) and a significantly higher prevalence of driving after drinking (3.0% vs. 0.8%) compared to females.
- ◆ White, non-Hispanics (2.1%) reported a higher prevalence of driving after drinking than Black, non-Hispanics (0.7%).

Demographic Characteristics	Always Uses a Seatbelt <sup>a</sup>		Drove Motor Vehicle After Drinking <sup>b</sup>	
	%	95% Confidence Interval	%	95% Confidence Interval
<b>Total</b>	<b>88.4</b>	<b>(87.4-89.3)</b>	<b>1.9</b>	<b>(1.6-2.3)</b>
<b>Age</b>				
18 - 24	78.3	(74.1-82.0)	1.4	(0.7-2.7)
25 - 34	86.5	(83.3-89.2)	2.0	(1.2-3.2)
35 - 44	88.7	(86.0-91.0)	2.7	(1.6-4.4)
45 - 54	91.2	(89.5-92.6)	2.8	(1.9-4.0)
55 - 64	90.6	(88.9-92.0)	1.9	(1.3-2.7)
65 - 74	91.7	(89.7-93.4)	0.9	(0.5-1.5)
75 +	91.4	(89.5-93.0)	0.3	(0.1-0.7)
<b>Gender</b>				
Male	83.8	(82.2-85.4)	3.0	(2.4-3.8)
Female	92.6	(91.6-93.5)	0.8	(0.6-1.2)
<b>Race/Ethnicity</b>				
White non-Hispanic	88.9	(87.9-89.9)	2.1	(1.7-2.6)
Black non-Hispanic	85.6	(82.1-88.6)	0.7	(0.3-1.6)
Other non-Hispanic	85.4	(80.1-89.5)	2.7	(1.2-5.6)
Hispanic	89.2	(81.7-93.9)	1.1	(0.3-3.7)
<b>Household Income</b>				
< \$20,000	87.2	(84.4-89.5)	0.8	(0.4-1.4)
\$20,000 - \$34,999	87.0	(84.8-89.0)	2.5	(1.6-3.8)
\$35,000 - \$49,999	89.1	(86.5-91.3)	2.0	(1.2-3.2)
\$50,000 - \$74,999	89.0	(86.4-91.2)	2.5	(1.6-3.9)
≥ \$75,000	90.3	(88.5-91.8)	2.4	(1.7-3.4)
<b>Health Insurance</b>				
Insured	88.8	(87.8-89.7)	1.9	(1.6-2.4)
Uninsured	86.0	(82.8-88.7)	1.8	(1.0-3.1)
<b>Disability</b>				
Disabled	89.0	(87.2-90.6)	1.5	(1.0-2.4)
Not disabled	88.2	(87.1-89.3)	2.0	(1.6-2.5)

<sup>a</sup> Among all adults, the proportion who reported always using a seatbelt within driving or riding in a car.

<sup>b</sup> Among all adults, the proportion who reported that they had driven when they had too much to drink at least once in the previous month.



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.



# Routine Checkup in Past Year

2012 MiBRFS

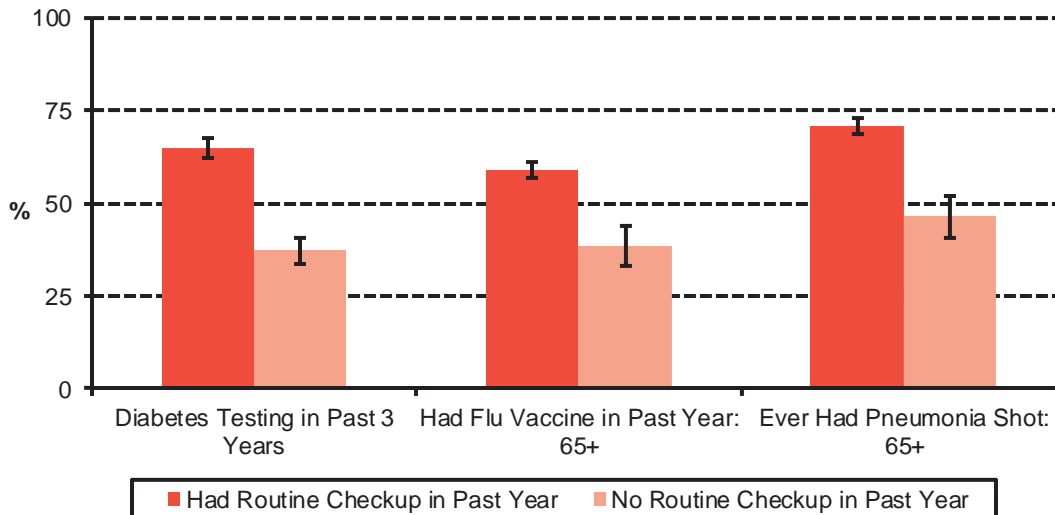
A yearly routine checkup is a great way to remain proactive about one's health. The benefits of having an annual checkup include early diagnosis and treatment of existing conditions and prevention of future medical problems.<sup>16</sup>

- ◆ In 2012, an estimated 66.5% of Michigan adults reported having a routine medical checkup within the past year.
- ◆ The prevalence of having a routine checkup within the past year increased with age.
- ◆ Males (61.0%) reported a significantly lower prevalence of having a routine checkup within the past year than females (71.7%).
- ◆ White, non-Hispanics (65.6%) reported a significantly lower prevalence of having had a routine checkup within the past year than Black, non-Hispanics (73.0%).
- ◆ Insured and disabled adults (71.6% and 73.8%, respectively) were more likely to have had a routine checkup within the past year than uninsured and non-disabled adults (33.7% and 64.1%, respectively).
- ◆ Michigan adults who had a routine check up within the past year were more likely to have had diabetes testing within the past 3 years (64.8% vs. 37.2%), a flu vaccine within the past year (58.9% vs. 38.2%), and to have ever had a pneumonia vaccine (70.8% vs. 46.3%) when compared to adults who had not had a routine checkup within the past year.

Demographic Characteristics	Had a Routine Checkup Within The Past Year <sup>a</sup>	
	%	95% Confidence Interval
<b>Total</b>	<b>66.5</b>	<b>(65.2-67.8)</b>
<b>Age</b>		
18 - 24	58.9	(54.1-63.5)
25 - 34	49.1	(45.0-53.2)
35 - 44	59.9	(56.4-63.3)
45 - 54	66.6	(63.8-69.2)
55 - 64	74.9	(72.7-77.1)
65 - 74	80.8	(78.3-83.1)
75 +	86.5	(84.1-88.5)
<b>Gender</b>		
Male	61.0	(58.9-63.0)
Female	71.7	(70.1-73.3)
<b>Race/Ethnicity</b>		
White non-Hispanic	65.6	(64.1-67.0)
Black non-Hispanic	73.0	(69.2-76.6)
Other non-Hispanic	60.0	(53.6-66.0)
Hispanic	67.2	(58.6-74.8)
<b>Household Income</b>		
< \$20,000	62.6	(59.1-65.9)
\$20,000 - \$34,999	62.9	(59.9-65.9)
\$35,000 - \$49,999	68.4	(64.9-71.7)
\$50,000 - \$74,999	70.3	(67.0-73.3)
≥ \$75,000	68.9	(66.4-71.3)
<b>Health Insurance</b>		
Insured	71.6	(70.3-72.9)
Uninsured	33.7	(30.0-37.7)
<b>Disability</b>		
Disabled	73.8	(71.4-76.1)
Not disabled	64.1	(62.6-65.7)

<sup>a</sup> Among all adults, the proportion who reported that they had a routine medical checkup within the past year.

## Health Screenings and Immunizations by Routine Checkup Status



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.





# Breast Cancer Screening

2012 MiBRFS

Breast cancer is the second leading cause of cancer deaths among United States women.<sup>17</sup> In 2010, there were 1,492 deaths among Michigan women due to breast cancer, second only to that of lung cancer.<sup>18</sup> Early detection of breast cancer can occur through the use of screening tools such as mammography and clinical breast exams.

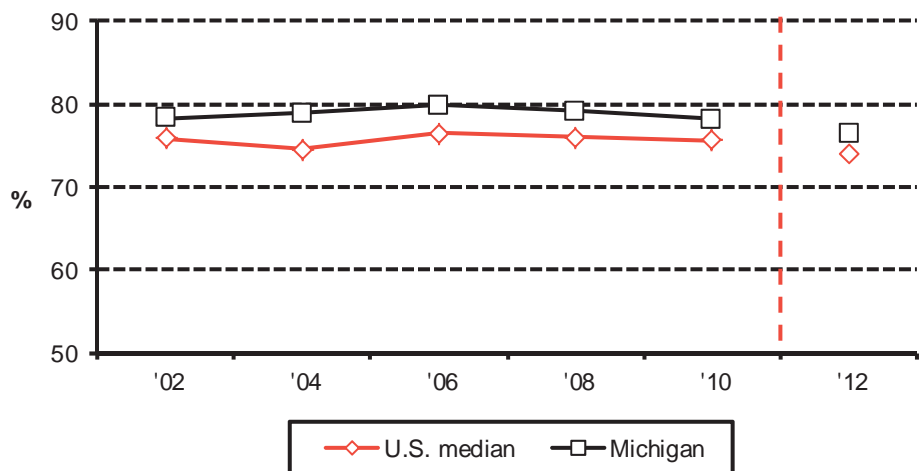
- ◆ In 2012, an estimated 76.6% of Michigan women 40 years and older reported having a mammogram within the past two years, while 50.4% reported having both a clinical breast exam and a mammogram within the past year.
- ◆ Breast cancer screening increased with household income level, but was similar by race/ethnicity.
- ◆ Insured adults (52.9%) were more likely than uninsured adults (25.6%) to have reported receiving appropriate breast cancer screening.
- ◆ The HP 2020 target for having received a mammogram within the past two years among women aged 40 years and older is set at 81.1%.<sup>6</sup> The prevalence for this indicator among Michigan women 40 years and older (76.6%) will need to increase by 4.5 percentage points over the next eight years in order to meet the HP 2020 target.
- ◆ The prevalence of having had a mammogram within the past two years among Michigan women 40 years and older is comparable to that of the U.S. median prevalence for this indicator.

Demographic Characteristics	Had Mammogram in Past Two Years Among Women Aged 40 Years and Older <sup>a</sup>		Had Clinical Breast Exam and Mammogram in Past Year Among Women Aged 40 Years and Older <sup>b</sup>	
	%	95% Confidence Interval	%	95% Confidence Interval
<b>Total</b>	<b>76.6</b>	<b>(75.0-78.1)</b>	<b>50.4</b>	<b>(48.6-52.2)</b>
<b>Age</b>				
40 - 49	68.1	(64.2-71.8)	47.0	(42.8-51.2)
50 - 59	78.8	(75.8-81.5)	54.2	(50.8-57.5)
60 - 69	83.1	(80.5-85.5)	54.2	(50.8-57.4)
70 +	76.8	(74.1-79.3)	45.5	(42.4-48.7)
<b>Race/Ethnicity</b>				
White non-Hispanic	76.2	(74.5-77.9)	50.3	(48.3-52.2)
Black non-Hispanic	77.9	(73.0-82.1)	48.4	(43.0-53.8)
Other non-Hispanic	75.5	(67.1-82.3)	49.2	(39.2-59.2)
Hispanic	83.9	(72.5-91.2)	64.4	(50.1-76.5)
<b>Household Income</b>				
< \$20,000	63.4	(58.7-67.8)	35.7	(31.2-40.3)
\$20,000 - \$34,999	75.9	(72.4-79.2)	45.7	(41.9-49.5)
\$35,000 - \$49,999	81.2	(77.4-84.6)	53.8	(49.1-58.4)
\$50,000 - \$74,999	81.9	(77.8-85.5)	61.3	(56.7-65.8)
≥ \$75,000	81.4	(78.1-84.2)	60.5	(56.6-64.3)
<b>Health Insurance</b>				
Insured	79.9	(78.3-81.3)	52.9	(51.0-54.7)
Uninsured	44.1	(37.4-50.9)	25.6	(19.7-32.5)
<b>Disability</b>				
Disabled	75.0	(72.2-77.6)	43.9	(40.7-47.1)
Not disabled	77.4	(75.4-79.2)	53.3	(51.2-55.5)

<sup>a</sup> Among women aged 40 years and older, the proportion who reported having a mammogram within the past two years.

<sup>b</sup> Among women aged 40 years and older, the proportion who reported having a clinical breast exam and a mammogram within the past year.

**Had a Mammogram in the Past Two Years Among Women Aged 40 Years and Older  
U.S. vs. Michigan, 2002-2012**



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.



# Cervical Cancer Screening

2012 MiBRFS

Current guidelines for cervical cancer screening recommend that Pap testing should begin within three years after the onset of sexual intercourse, or at least by 21 years of age. Once three or more annual tests have been normal, at the discretion of the physician, Pap tests can be performed less frequently, but at least once every three years.<sup>19</sup>

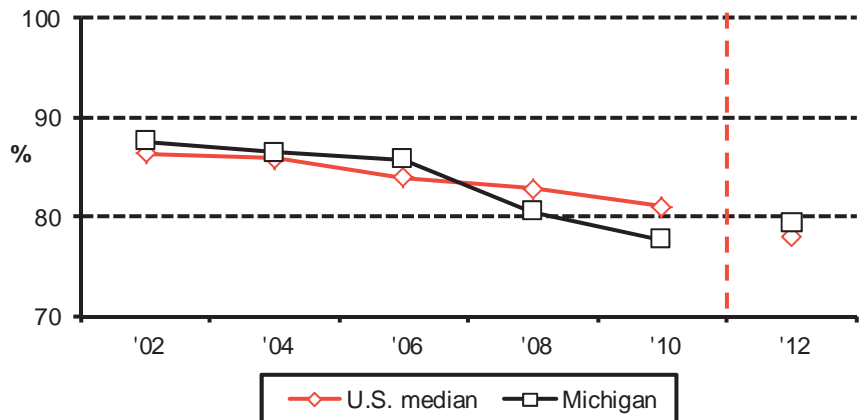
- ◆ In 2012, an estimated 92.1% of Michigan women aged 18 years and older reported ever having a Pap test, while 79.4% reported having had a Pap test within the past three years.
- ◆ The prevalence of appropriate cervical cancer screening increased with age until falling off in the oldest age group.
- ◆ The prevalence of appropriate cervical cancer screening was similar by race/ethnicity, but increased with household income level.
- ◆ Insured women and non-disabled women (81.7% and 80.9%, respectively) were more likely than uninsured women and disabled women (65.1% and 74.3%, respectively) to have received a Pap test within the past three years.
- ◆ The HP 2020 target for the proportion of women aged 18 years and older who have received a Pap test within the past three years is set at 93.0%.<sup>6</sup> The prevalence of this indicator among Michigan women aged 18 years and older will need to increase by an average of nearly two percentage points per year in order to meet the HP 2020 target.
- ◆ Over the past several years, the prevalence of appropriate cervical cancer screening has been on the decline in Michigan and the U.S.

Demographic Characteristics	Ever Had a Pap Test <sup>a</sup>		Had Appropriately Timed Pap Test <sup>b</sup>	
	%	95% Confidence Interval	%	95% Confidence Interval
<b>Total</b>	<b>92.1</b>	<b>(90.6-93.4)</b>	<b>79.4</b>	<b>(77.6-81.1)</b>
<b>Age</b>				
18 - 29	72.4	(67.1-77.2)	67.7	(62.2-72.8)
30 - 39	97.6	(95.5-98.7)	91.5	(88.3-93.9)
40 - 49	98.6	(97.0-99.4)	87.2	(83.8-90.0)
50 - 59	99.4	(98.6-99.7)	86.3	(83.3-88.8)
60 - 69	98.7	(97.4-99.4)	82.0	(78.6-85.0)
70 +	95.4	(93.3-96.9)	55.9	(51.5-60.2)
<b>Race/Ethnicity</b>				
White non-Hispanic	93.1	(91.5-94.4)	78.9	(76.9-80.8)
Black non-Hispanic	91.3	(87.0-94.3)	84.5	(79.7-88.3)
Other non-Hispanic	88.6	(79.9-93.9)	74.6	(64.3-82.7)
Hispanic	82.0	(67.1-91.1)	77.3	(62.8-87.3)
<b>Household Income</b>				
< \$20,000	91.4	(88.2-93.8)	71.5	(66.8-75.8)
\$20,000 - \$34,999	94.9	(91.5-96.9)	77.0	(72.8-80.8)
\$35,000 - \$49,999	94.9	(91.0-97.2)	82.9	(78.4-86.7)
\$50,000 - \$74,999	94.6	(90.3-97.0)	87.0	(82.8-90.3)
≥ \$75,000	92.7	(88.8-95.3)	86.1	(82.2-89.2)
<b>Health Insurance</b>				
Insured	92.8	(91.2-94.1)	81.7	(79.8-83.4)
Uninsured	89.3	(84.3-92.9)	65.1	(59.0-70.8)
<b>Disability</b>				
Disabled	95.1	(92.6-96.8)	74.3	(70.6-77.7)
Not disabled	91.3	(89.5-92.8)	80.9	(78.8-82.8)

<sup>a</sup> Among women aged 18 years and older, the proportion who reported ever having a Pap test.

<sup>b</sup> Among women aged 18 years and older, the proportion who reported having a Pap test within the previous three years.

**Had a Pap Test in the Past Three Years Among Women Aged 18 Years and Older U.S. vs. Michigan, 2002-2012**



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.



# Prostate Cancer Screening

2012 MiBRFS

Prostate cancer is the second leading cause of cancer deaths among males in Michigan; there were 981 deaths in 2010 (21.9 deaths per 100,000 male population, age adjusted).<sup>18</sup>

- ◆ In 2012, an estimated 73.0% of Michigan men aged 50 years and older reported discussing the advantages of a Prostate-Specific Antigen (PSA) test with their doctor, while 46.9% reported having had a PSA test within the past year.
- ◆ The prevalence of having had a PSA test within the past year increased with age and household income level.
- ◆ White, non Hispanics (49.0%) and Black, non-Hispanics (40.4%) reported higher prevalences of having had a PSA test within the past year than Other, non-Hispanics (28.0%).
- ◆ Insured men (49.6%) were more likely to have reported receiving a PSA test within the past year compared to uninsured men (17.5%).
- ◆ Prior to the 2011 BRFSS methodology changes, the prevalence of receiving a PSA test within the past year among Michigan men 50 years and older was on the decline. Based on 2012 MiBRFS estimates, this decline appears to be continuing.

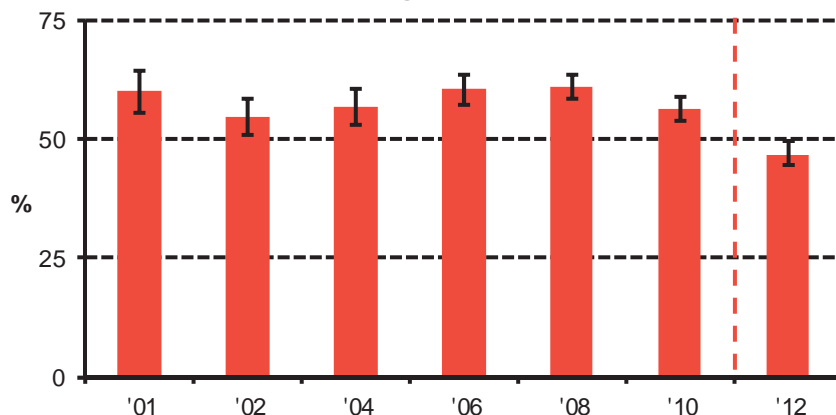
Demographic Characteristics	Ever Discussed Advantages of PSA Test With Doctor <sup>a</sup>		Had PSA Test in Past Year <sup>b</sup>	
	%	95% Confidence Interval	%	95% Confidence Interval
<b>Total</b>	<b>73.0</b>	<b>(70.6-75.4)</b>	<b>46.9</b>	<b>(44.4-49.5)</b>
<b>Age</b>				
50 - 59	67.3	(63.0-71.4)	37.7	(33.6-42.0)
60 - 69	76.4	(72.2-80.1)	53.9	(49.8-58.0)
70 +	78.5	(74.5-82.0)	53.6	(49.2-57.9)
<b>Race/Ethnicity</b>				
White non-Hispanic	73.9	(71.4-76.3)	49.0	(46.4-51.7)
Black non-Hispanic	70.5	(59.0-79.9)	40.4	(31.0-50.6)
Other non-Hispanic	68.4	(56.2-78.5)	28.0	(18.6-39.8)
Hispanic	-- <sup>c</sup>	---	-- <sup>c</sup>	---
<b>Household Income</b>				
< \$20,000	54.0	(45.4-62.4)	29.4	(22.3-37.6)
\$20,000 - \$34,999	66.4	(60.8-71.6)	42.3	(37.2-47.7)
\$35,000 - \$49,999	75.7	(69.7-80.9)	48.5	(42.2-54.7)
\$50,000 - \$74,999	81.2	(75.5-85.9)	48.7	(42.5-55.0)
≥ \$75,000	82.8	(78.9-86.0)	56.0	(51.3-60.5)
<b>Health Insurance</b>				
Insured	75.8	(73.4-78.1)	49.6	(47.0-52.2)
Uninsured	41.8	(32.2-52.1)	17.5	(11.0-26.7)
<b>Disability</b>				
Disabled	69.4	(64.7-73.7)	44.3	(39.8-48.9)
Not disabled	74.8	(71.9-77.5)	48.1	(45.1-51.2)

<sup>a</sup> Among men aged 50 years and older, the proportion ever discussing the advantages of a PSA test with a doctor, nurse, or other health professional.

<sup>b</sup> Among men aged 50 years and older, the proportion who reported having a PSA test within the past year.

<sup>c</sup> The denominator in this subgroup was less than 50.

Had a PSA Test in the Past Year  
Among Men Aged 50 Years and Older  
Michigan, 2001-2012



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.



# Colorectal Cancer Screening

2012 MiBRFS

In 2010, colorectal cancer was the third leading cause of cancer-related deaths in Michigan with 1,791 deaths.<sup>18</sup> Fecal occult blood tests, sigmoidoscopy, and colonoscopy are screening procedures that are performed to detect colorectal cancer in the early stages. Appropriate colorectal cancer screening consists of a fecal occult blood test within the past year, a sigmoidoscopy within the past five years, or a colonoscopy within the past ten years.

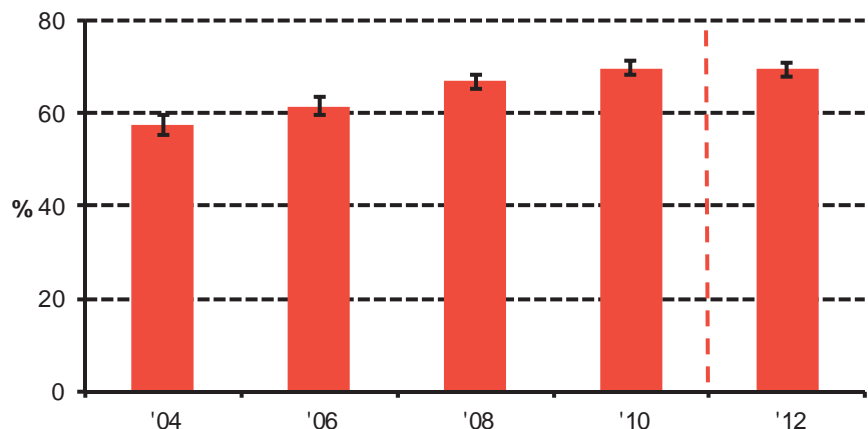
- ◆ In 2012, an estimated 55.4% of Michigan adults aged 50 years and older reported having a sigmoidoscopy or colonoscopy within the past five years, while 69.4% reported appropriate colorectal cancer screening.
- ◆ The prevalence of appropriate colorectal cancer screening was similar by gender and race/ethnicity, but increased with household income level.
- ◆ Insured adults (72.3%) were more likely than uninsured adults (35.2%) to have reported receiving appropriate colorectal cancer screening.
- ◆ The HP 2020 target for the proportion of adults aged 50 years and older who have received appropriate colorectal cancer screening is set at 70.5%.<sup>6</sup> The prevalence of this indicator among Michigan adults 50 years and older will need to increase by 1.1 percentage points over the next eight years in order to meet the HP 2020 target.
- ◆ The prevalence of appropriate colorectal cancer screening among Michigan adults 50 years and older has remained stable before and after the BRFSS methodology changes that were implemented in 2011.

Demographic Characteristics	Had Sigmoidoscopy or Colonoscopy in Past 5 Years <sup>a</sup>		Had Appropriate Colorectal Cancer Screening <sup>b</sup>	
	%	95% Confidence Interval	%	95% Confidence Interval
<b>Total</b>	<b>55.4</b>	<b>(53.8-57.0)</b>	<b>69.4</b>	<b>(67.8-70.9)</b>
<b>Age</b>				
50 - 59	49.1	(46.4-51.9)	60.5	(57.7-63.3)
60 - 69	59.9	(57.3-62.4)	76.7	(74.3-78.8)
70 +	59.8	(57.2-62.3)	74.5	(72.1-76.7)
<b>Gender</b>				
Male	55.3	(52.8-57.8)	67.5	(64.9-69.9)
Female	55.5	(53.5-57.4)	71.0	(69.2-72.8)
<b>Race/Ethnicity</b>				
White non-Hispanic	55.9	(54.3-57.6)	70.7	(69.1-72.2)
Black non-Hispanic	54.5	(48.8-60.2)	64.2	(58.1-69.9)
Other non-Hispanic	49.8	(41.3-58.3)	60.0	(51.5-68.0)
Hispanic	47.0	(33.5-60.9)	60.0	(45.7-72.8)
<b>Household Income</b>				
< \$20,000	44.8	(40.5-49.3)	55.8	(51.2-60.2)
\$20,000 - \$34,999	53.8	(50.5-57.1)	65.8	(62.4-69.1)
\$35,000 - \$49,999	57.6	(53.6-61.5)	74.0	(70.1-77.5)
\$50,000 - \$74,999	57.5	(53.5-61.5)	73.6	(69.7-77.2)
≥ \$75,000	60.8	(57.4-64.1)	74.9	(71.7-77.9)
<b>Health Insurance</b>				
Insured	58.3	(56.7-59.9)	72.3	(70.8-73.8)
Uninsured	22.6	(17.9-28.1)	35.2	(29.4-41.5)
<b>Disability</b>				
Disabled	55.6	(52.9-58.3)	68.4	(65.7-71.1)
Not disabled	55.3	(53.4-57.2)	69.9	(68.0-71.7)

<sup>a</sup> Among adults aged 50 years and older, the proportion who reported having a sigmoidoscopy or colonoscopy within the past five years.

<sup>b</sup> Among adults aged 50 years and older, the proportion who reported having a fecal occult blood test within the past year, a sigmoidoscopy within the past five years, or a colonoscopy within the past ten years.

**Appropriate Colorectal Cancer Screening Among Adults Aged 50 Years and Older Michigan, 2004-2012**



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.



# Oral Health

2012 MiBRFS

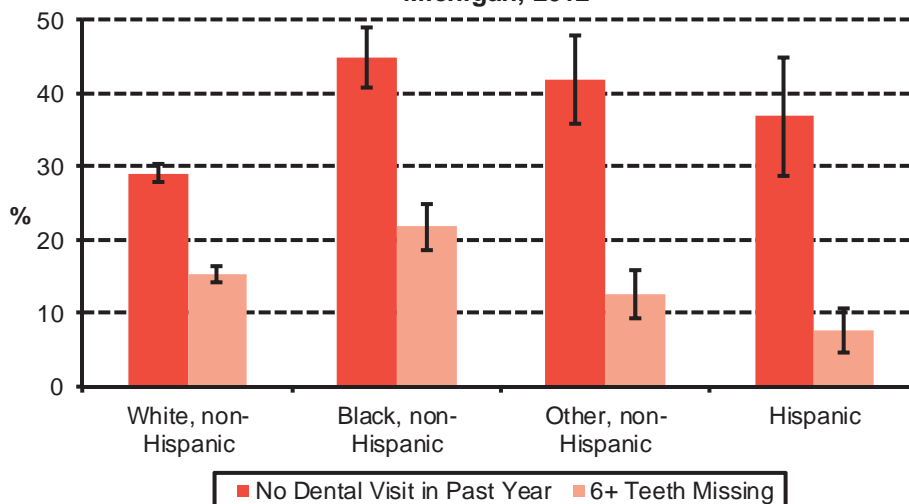
Oral health is an important part of one's general health and quality of life. Regular dental care includes preventive dental services such as teeth cleaning, and permits early diagnosis and treatment of tooth decay and periodontal diseases.<sup>20</sup> It has been estimated that low income adults are 2.5 times more likely to have at least one untreated decayed tooth compared with higher income adults (40% vs. 16%).<sup>21</sup>

- ◆ In 2012, an estimated 32.0% of Michigan adults reported not having had a dental visit within the past year.
- ◆ With exception of the 25-34 years age group, the prevalence of not having had a dental visit within the past year was similar by age.
- ◆ The prevalence of not having had a dental visit within the past year decreased with increasing household income.
- ◆ Males (36.2%) were more likely to have reported not having a dental visit within the past year compared to females (28.0%).
- ◆ Black, non-Hispanic adults (44.8%) reported a higher prevalence of no dental visit within the past year than White, non-Hispanic adults (29.1%).
- ◆ Uninsured adults and disabled adults (60.2% and 42.2%, respectively) were more likely to have not had a dental visit within the past year compared to insured adults and non-disabled adults (27.6% and 28.7%, respectively).
- ◆ The prevalence of having 6 or more teeth missing was greater among Black, non-Hispanics (21.8%) than White, non-Hispanics (15.3%).

Demographic Characteristics	No Dental Visit in Past Year <sup>a</sup>	
	%	95% Confidence Interval
<b>Total</b>	<b>32.0</b>	<b>(30.7-33.3)</b>
<b>Age</b>		
18 - 24	31.3	(27.1-35.9)
25 - 34	41.8	(37.7-45.9)
35 - 44	33.7	(30.4-37.3)
45 - 54	31.6	(28.8-34.5)
55 - 64	26.6	(24.3-29.1)
65 - 74	27.5	(24.9-30.3)
75 +	29.4	(26.5-32.5)
<b>Gender</b>		
Male	36.2	(34.2-38.3)
Female	28.0	(26.4-29.6)
<b>Race/Ethnicity</b>		
White non-Hispanic	29.1	(27.8-30.5)
Black non-Hispanic	44.8	(40.7-48.9)
Other non-Hispanic	41.9	(35.9-48.2)
Hispanic	36.9	(28.8-45.8)
<b>Household Income</b>		
< \$20,000	55.7	(52.2-59.2)
\$20,000 - \$34,999	42.4	(39.4-45.4)
\$35,000 - \$49,999	28.3	(25.0-31.8)
\$50,000 - \$74,999	21.5	(18.6-24.7)
≥ \$75,000	13.7	(11.9-15.7)
<b>Health Insurance</b>		
Insured	27.6	(26.3-28.9)
Uninsured	60.2	(56.2-64.2)
<b>Disability</b>		
Disabled	42.2	(39.6-44.8)
Not disabled	28.7	(27.3-30.2)

<sup>a</sup> Among all adults, the proportion who reported that they had not visited a dentist or dental clinic for any reason in the previous year.

**Oral Health Risk Factors by Race/Ethnicity  
Michigan, 2012**



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.



2012 MiBRFS

# Immunizations Among Adults 65 Years of Age and Older

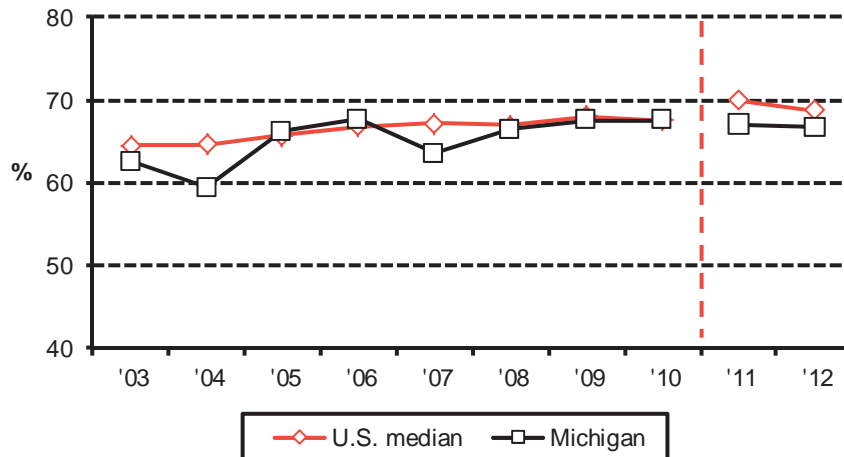
Adult immunizations against influenza and pneumococcal disease are important health indicators that need to be routinely monitored since morbidity and mortality are associated with both of these diseases within different demographic groups.<sup>22</sup>

- ◆ In 2012, an estimated 55.4% of Michigan adults ages 65 years and older reported receiving a flu vaccine within the past year, while an estimated 66.8% of this population reported ever receiving a pneumonia vaccine.
- ◆ The prevalence of receiving these vaccines among the 65+ year old age group was similar by gender.
- ◆ White, non-Hispanics were more likely than Black, non-Hispanics to have received a flu vaccine within the past year (57.5% vs. 37.8%) and a pneumonia vaccine ever (68.4% vs. 53.6%).
- ◆ Disabled adults (72.8%) were more likely to have ever received a pneumonia vaccine than non-disabled adults (63.4%).
- ◆ The prevalence of ever having had a pneumonia vaccine among Michigan adults has been stable over the past couple years.
- ◆ In 2012, the prevalence of ever having had a pneumonia vaccine among Michigan adults (66.8%) was slightly lower than the U.S. median prevalence (68.8%).

Demographic Characteristics	Had Flu Vaccine in Past Year <sup>a</sup>		Ever Had Pneumonia Vaccine <sup>b</sup>	
	%	95% Confidence Interval	%	95% Confidence Interval
<b>Total</b>	<b>55.4</b>	<b>(53.3-57.5)</b>	<b>66.8</b>	<b>(64.6-68.8)</b>
<b>Age</b>				
65 - 74	52.2	(49.4-54.9)	62.1	(59.3-64.9)
75 +	59.6	(56.5-62.7)	72.7	(69.5-75.6)
<b>Gender</b>				
Male	53.2	(49.7-56.6)	64.0	(60.5-67.5)
Female	57.1	(54.5-59.6)	68.8	(66.3-71.2)
<b>Race/Ethnicity</b>				
White non-Hispanic	57.5	(55.3-59.7)	68.4	(66.2-70.6)
Black non-Hispanic	37.8	(30.9-45.3)	53.6	(45.7-61.4)
Other non-Hispanic	42.2	(30.4-55.0)	62.5	(49.5-73.9)
Hispanic	-- <sup>c</sup>	---	-- <sup>c</sup>	---
<b>Household Income</b>				
< \$20,000	44.6	(38.9-50.4)	62.6	(56.0-68.7)
\$20,000 - \$34,999	56.0	(52.2-59.7)	66.7	(63.0-70.3)
\$35,000 - \$49,999	59.4	(54.3-64.3)	65.6	(60.4-70.5)
\$50,000 - \$74,999	56.2	(50.1-62.1)	70.1	(64.2-75.3)
≥ \$75,000	58.6	(52.7-64.4)	66.7	(60.7-72.1)
<b>Disability</b>				
Disabled	58.3	(55.0-61.5)	72.8	(69.7-75.7)
Not disabled	53.7	(51.0-56.4)	63.4	(60.6-66.0)

<sup>a</sup> Among adults aged 65 years and older, the proportion who reported that they had a flu vaccine, either by injection in the arm or sprayed in the nose during the past 12 months.  
<sup>b</sup> Among adults aged 65 years and older, the proportion who reported that they ever had a pneumococcal vaccine.  
<sup>c</sup> The denominator in this subgroup was less than 50.

**Ever Had a Pneumococcal Vaccination Among Adults Aged 65 Years and Older U.S. vs. Michigan, 2003-2012**



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.





# HIV Testing

2012 MiBRFS

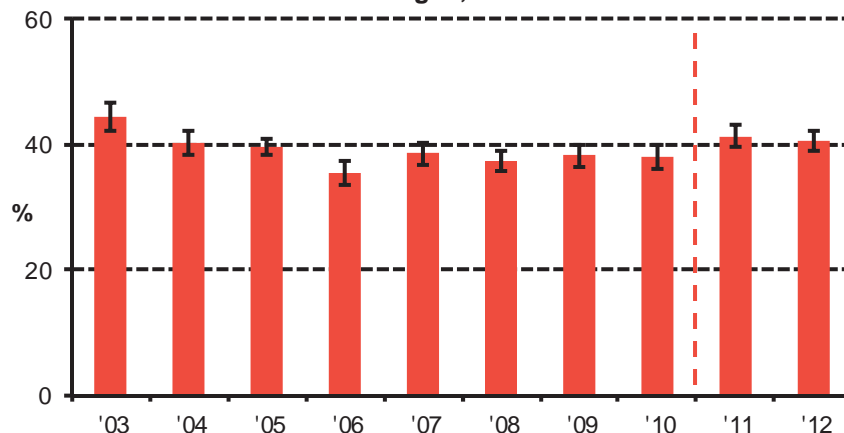
Early awareness of an HIV infection through HIV testing can prevent further spread of the disease, and an early start on antiretroviral therapy can increase the quality of life among those who are living with HIV/AIDS.<sup>23</sup>

- ◆ In 2012, an estimated 40.4% of Michigan adults reported ever being tested for HIV.
- ◆ Females (44.7%) reported a significantly higher prevalence of HIV testing than males (36.2%).
- ◆ Black, non-Hispanics (65.5%) reported a significantly higher prevalence of HIV testing than White, non-Hispanics (34.6%).
- ◆ The prevalence of HIV testing decreased with increasing household income level.
- ◆ Uninsured adults (46.7%) were more likely to have been tested for HIV than insured adults (39.4%), while disabled adults (47.0%) were more likely to be tested than non-disabled adults (38.5%).
- ◆ Since the BRFSS methodology changes that were implemented in 2011, the prevalence of HIV testing among Michigan adult has remained stable over time.

Demographic Characteristics	Ever Had an HIV Test <sup>a</sup>	
	%	95% Confidence Interval
<b>Total</b>	<b>40.4</b>	<b>(38.9-42.0)</b>
<b>Age</b>		
18 - 24	28.2	(24.1-32.8)
25 - 34	54.1	(49.9-58.2)
35 - 44	56.3	(52.7-59.8)
45 - 54	39.2	(36.4-42.1)
55 - 64	24.5	(22.3-26.9)
<b>Gender</b>		
Male	36.2	(33.9-38.5)
Female	44.7	(42.6-46.8)
<b>Race/Ethnicity</b>		
White non-Hispanic	34.6	(32.9-36.3)
Black non-Hispanic	65.5	(60.8-69.8)
Other non-Hispanic	41.8	(35.5-48.4)
Hispanic	58.8	(49.0-68.0)
<b>Household Income</b>		
< \$20,000	51.4	(47.3-55.5)
\$20,000 - \$34,999	42.7	(38.8-46.7)
\$35,000 - \$49,999	38.2	(33.9-42.6)
\$50,000 - \$74,999	38.4	(34.6-42.4)
≥ \$75,000	37.0	(34.4-39.8)
<b>Health Insurance</b>		
Insured	39.4	(37.7-41.1)
Uninsured	46.7	(42.5-51.1)
<b>Disability</b>		
Disabled	47.0	(43.7-50.4)
Not disabled	38.5	(36.8-40.3)

<sup>a</sup> Among adults aged 18-64 years, the proportion who reported that they ever had been tested for HIV, apart from tests that were part of a blood donation.

**Ever Tested for HIV  
Among Adults Aged 18-64 Years  
Michigan, 2003-2012**



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.



# Asthma in Adults

2012 MiBRFS

Asthma is a chronic inflammatory disorder of the lungs, characterized by wheezing, coughing, difficulty breathing, and chest tightness. Allergies, a family history of asthma or allergy, low birth weight, and exposure to tobacco smoke are just a few of the potential risk factors that are associated with the development of asthma.<sup>24</sup>

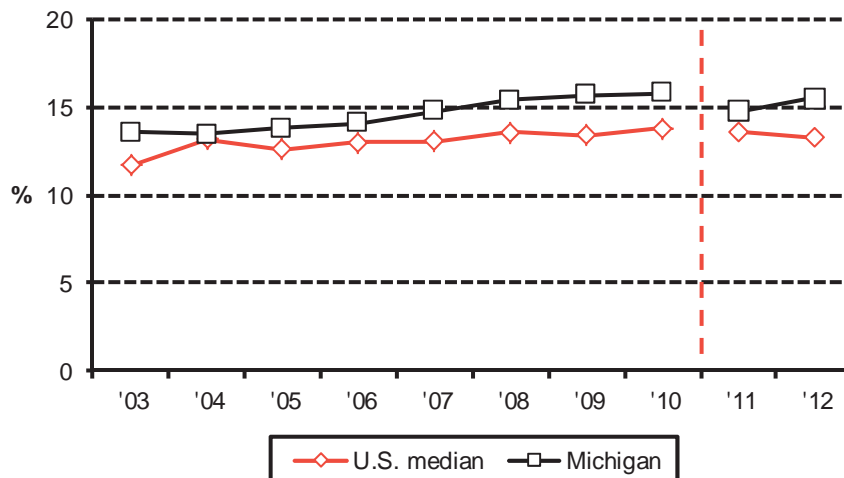
- ◆ In 2012, an estimated 15.5% of Michigan adults reported that they were ever diagnosed with asthma and 10.5% reported that they currently have asthma.
- ◆ The prevalence of both lifetime and current asthma decreased with age and increasing household income level.
- ◆ Females reported a significantly higher prevalence than males for both lifetime (17.5% vs. 13.4%) and current asthma (13.1% and 7.7%).
- ◆ Black, non-Hispanics reported significantly higher prevalences of lifetime (20.6% vs. 14.4%) and current asthma (15.4% vs. 9.3%) compared to White, non-Hispanics.
- ◆ Disabled adults (18.1%) were more likely to have current asthma than non-disabled adults (8.1%).
- ◆ In 2012, the prevalence of ever being diagnosed with asthma among Michigan adults (15.5%) was higher than the U.S. median prevalence (13.3%).

Demographic Characteristics	Lifetime Asthma <sup>a</sup>		Current Asthma <sup>b</sup>	
	%	95% Confidence Interval	%	95% Confidence Interval
<b>Total</b>	<b>15.5</b>	<b>(14.6-16.6)</b>	<b>10.5</b>	<b>(9.7-11.4)</b>
<b>Age</b>				
18 - 24	23.4	(19.6-27.7)	15.0	(11.8-18.8)
25 - 34	17.9	(14.9-21.2)	10.0	(7.7-12.8)
35 - 44	14.8	(12.5-17.5)	9.6	(7.8-11.8)
45 - 54	14.9	(13.0-17.1)	11.0	(9.3-12.9)
55 - 64	13.4	(11.8-15.2)	10.0	(8.5-11.6)
65 - 74	12.2	(10.6-14.1)	9.5	(8.1-11.3)
75 +	10.4	(8.4-12.8)	7.2	(5.6-9.4)
<b>Gender</b>				
Male	13.4	(12.0-14.9)	7.7	(6.6-8.8)
Female	17.5	(16.2-19.0)	13.1	(11.9-14.4)
<b>Race/Ethnicity</b>				
White non-Hispanic	14.4	(13.4-15.5)	9.3	(8.5-10.2)
Black non-Hispanic	20.6	(17.5-24.0)	15.4	(12.7-18.5)
Other non-Hispanic	18.2	(14.1-23.3)	14.4	(10.6-19.2)
Hispanic	19.0	(12.6-27.6)	14.1	(8.5-22.4)
<b>Household Income</b>				
< \$20,000	22.9	(20.1-26.0)	18.0	(15.4-20.9)
\$20,000 - \$34,999	14.7	(12.7-17.0)	9.5	(8.0-11.3)
\$35,000 - \$49,999	14.0	(11.8-16.6)	7.9	(6.2-9.9)
\$50,000 - \$74,999	12.3	(10.3-14.8)	8.8	(7.1-10.9)
≥ \$75,000	12.2	(10.5-14.3)	8.0	(6.5-9.7)
<b>Health Insurance</b>				
Insured	14.9	(13.9-15.9)	10.4	(9.5-11.3)
Uninsured	19.8	(16.7-23.3)	11.2	(8.9-13.9)
<b>Disability</b>				
Disabled	23.8	(21.6-26.1)	18.1	(16.1-20.2)
Not disabled	12.9	(11.9-14.1)	8.1	(7.2-9.0)

<sup>a</sup> Among all adults, the proportion who reported that they were ever told by a doctor, nurse, or other health care professional that they had asthma

<sup>b</sup> Among all adults, the proportion who reported that they still have asthma.

**Lifetime Adult Asthma  
U.S. vs. Michigan, 2003-2012**



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.





# Asthma in Children

2012 MiBRFS

Although asthma can affect people of all ages, in most cases it begins during childhood. Children with a family history of asthma and allergy are at a higher risk of developing asthma during childhood.<sup>25</sup>

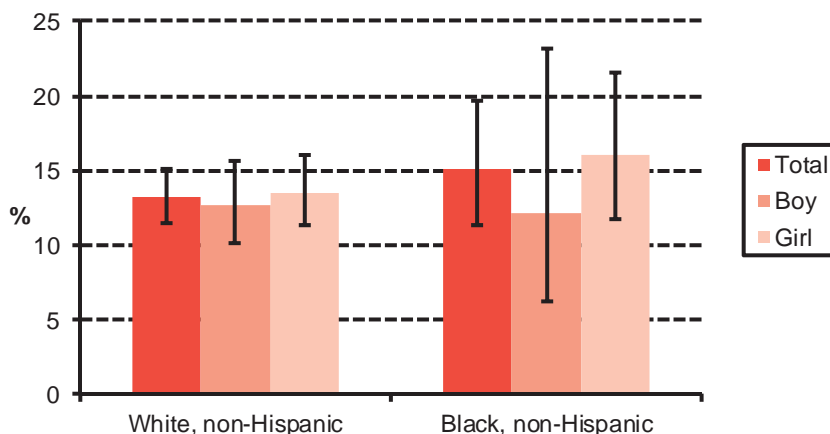
- ◆ Based on proxy information provided by the adult respondent, the estimated proportion of Michigan children aged 0-17 years who were ever told by a doctor that they had asthma for 2012 was 14.4% and an estimated 9.5% currently have asthma.
- ◆ The prevalences of both lifetime and current asthma increased with age and decreased with increasing household income level.
- ◆ The prevalences of lifetime and current asthma among children were similar by gender and race/ethnicity.
- ◆ White, non-Hispanic boys and girls reported a similar prevalence of lifetime asthma. The prevalence of lifetime and current asthma were also similar among Black, non-Hispanic boys and girls.

Demographic Characteristics	Lifetime Asthma <sup>a</sup>		Current Asthma <sup>b</sup>	
	%	95% Confidence Interval	%	95% Confidence Interval
<b>Total</b>	<b>14.4</b>	<b>(12.8-16.2)</b>	<b>9.5</b>	<b>(8.2-10.9)</b>
<b>Age</b>				
0 - 4	7.5	(5.0-11.1)	5.8	(3.7-8.9)
5 - 9	13.3	(10.1-17.4)	10.1	(7.3-13.7)
10 - 14	19.4	(16.2-23.1)	11.4	(9.0-14.2)
15 - 17	20.0	(16.5-24.1)	12.4	(9.7-15.8)
<b>Gender</b>				
Boy	15.9	(13.7-18.5)	10.1	(8.3-12.3)
Girl	13.0	(10.9-15.5)	8.9	(7.2-10.9)
<b>Race/Ethnicity</b>				
White non-Hispanic	13.2	(11.5-15.1)	9.4	(7.9-11.1)
Black non-Hispanic	15.1	(11.4-19.7)	9.3	(6.7-12.8)
Other non-Hispanic	22.1	(15.3-30.8)	13.7	(8.3-22.0)
Hispanic	16.6	(9.9-26.6)	6.6	(3.4-12.5)
<b>Household Income</b>				
< \$20,000	18.0	(13.4-23.6)	14.1	(10.0-19.5)
\$20,000 - \$34,999	17.0	(12.9-22.0)	9.3	(6.5-13.2)
\$35,000 - \$49,999	15.5	(10.9-21.5)	9.3	(6.1-13.9)
\$50,000 - \$74,999	14.5	(10.6-19.6)	7.1	(4.8-10.5)
≥ \$75,000	12.3	(10.1-14.9)	8.8	(6.9-11.1)

<sup>a</sup> Estimated proportion of Michigan children aged 0-17 years who were ever told by a doctor, nurse, or other health care professional that they had asthma, using proxy information from the adult respondent.

<sup>b</sup> Estimated proportion of Michigan children aged 0-17 years who still have asthma, using proxy information from the adult respondent.

**Lifetime Child Asthma by Race and Gender  
Michigan, 2012**





# Chronic Obstructive Pulmonary Disease (COPD)

2012 MiBRFS

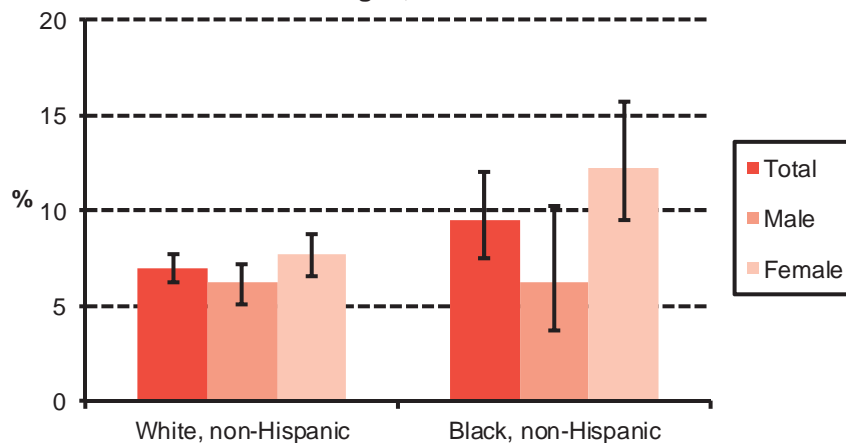
Chronic obstructive pulmonary disease (COPD) is a progressive disease that usually resulting in coughing, wheezing, shortness of breath, chest tightness, and other symptoms. Cigarette smoking is the leading cause of COPD.<sup>26</sup>

- ◆ In 2012, an estimated 7.4% of Michigan adults reported ever being told by a doctor that they had COPD.
- ◆ The prevalence of COPD increased with age and decreased with increasing household income level.
- ◆ Females (8.5%) reported a significantly higher prevalence of COPD than males (6.3%).
- ◆ The prevalence of COPD was similar by race/ethnicity.
- ◆ Disabled adults (18.1%) were more likely to have been diagnosed with COPD than non-disabled adults (3.9%).
- ◆ White, non-Hispanic men and women reported similar prevalence of COPD. COPD prevalence was also similar among Black, non-Hispanic men and women.
- ◆ In 2012, the prevalence of COPD among Michigan adults (7.4%) was slightly higher than the U.S. median prevalence (6.2%).

Demographic Characteristics	Ever Told COPD, Emphysema, or Chronic Bronchitis <sup>a</sup>	
	%	95% Confidence Interval
<b>Total</b>	<b>7.4</b>	<b>(6.8-8.1)</b>
<b>Age</b>		
18 - 24	4.1	(2.5-6.8)
25 - 34	4.3	(2.8-6.7)
35 - 44	3.4	(2.3-5.0)
45 - 54	8.1	(6.6-10.0)
55 - 64	10.7	(9.2-12.4)
65 - 74	11.9	(10.3-13.7)
75 +	12.2	(10.4-14.2)
<b>Gender</b>		
Male	6.3	(5.5-7.3)
Female	8.5	(7.6-9.5)
<b>Race/Ethnicity</b>		
White non-Hispanic	7.0	(6.3-7.7)
Black non-Hispanic	9.5	(7.5-12.0)
Other non-Hispanic	9.1	(6.5-12.7)
Hispanic	6.9	(3.1-14.6)
<b>Household Income</b>		
< \$20,000	14.5	(12.2-17.1)
\$20,000 - \$34,999	9.3	(8.0-10.9)
\$35,000 - \$49,999	6.9	(5.4-8.7)
\$50,000 - \$74,999	4.3	(3.3-5.7)
≥ \$75,000	3.0	(2.1-4.4)
<b>Health Insurance</b>		
Insured	7.3	(6.7-8.1)
Uninsured	8.3	(6.3-11.0)
<b>Disability</b>		
Disabled	18.1	(16.3-20.1)
Not disabled	3.9	(3.4-4.6)

<sup>a</sup> Among all adults, the proportion who reported ever being told by a doctor that they had chronic obstructive pulmonary disease (COPD), emphysema or chronic bronchitis.

**COPD by Race and Gender Michigan, 2012**



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.



# Arthritis

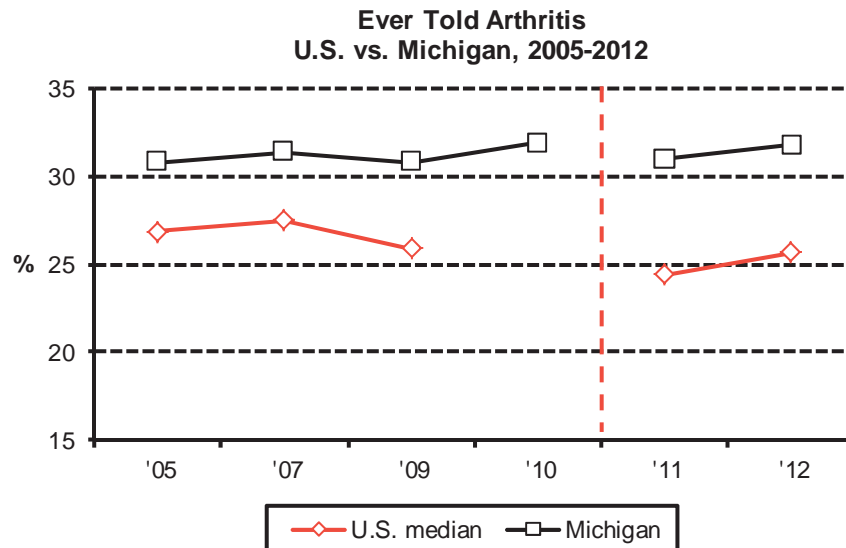
2012 MiBRFS

Arthritis and rheumatism are the leading causes of disability within the United States.<sup>27</sup>

- ◆ In 2012, an estimated 31.8% of Michigan adults reported ever being told by a doctor that they had some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia.
- ◆ Females (35.4%) reported a significantly higher prevalence of arthritis than males (28.0%).
- ◆ Hispanics (16.1%) reported a significantly lower prevalence of arthritis than both White, non-Hispanics (33.0%) and Black, non-Hispanics (29.9%).
- ◆ The prevalence of arthritis increased with age and decreased with increasing household income level.
- ◆ Uninsured adults (23.5%) were less likely to have been diagnosed with arthritis than insured adults (33.3%), while disabled adults (62.1%) were more likely to be have been diagnosed than non-disabled adults (22.0%).
- ◆ In 2012, the prevalence of arthritis among Michigan adults (31.8%) was significantly higher than the U.S. median prevalence (25.7%).

Demographic Characteristics	Ever Told Arthritis <sup>a</sup>	
	%	95% Confidence Interval
<b>Total</b>	<b>31.8</b>	<b>(30.7-33.0)</b>
<b>Age</b>		
18 - 24	4.1	(2.7-6.2)
25 - 34	9.6	(7.5-12.1)
35 - 44	18.9	(16.3-21.7)
45 - 54	35.2	(32.4-38.0)
55 - 64	49.2	(46.7-51.7)
65 - 74	58.6	(55.9-61.3)
75 +	62.8	(59.7-65.8)
<b>Gender</b>		
Male	28.0	(26.3-29.7)
Female	35.4	(33.9-37.0)
<b>Race/Ethnicity</b>		
White non-Hispanic	33.0	(31.7-34.2)
Black non-Hispanic	29.9	(26.6-33.5)
Other non-Hispanic	28.3	(23.4-33.9)
Hispanic	16.1	(11.6-22.0)
<b>Household Income</b>		
< \$20,000	39.1	(35.8-42.4)
\$20,000 - \$34,999	36.9	(34.3-39.7)
\$35,000 - \$49,999	35.8	(32.6-39.0)
\$50,000 - \$74,999	29.2	(26.4-32.1)
≥ \$75,000	21.1	(19.2-23.1)
<b>Health Insurance</b>		
Insured	33.3	(32.1-34.5)
Uninsured	23.5	(20.4-26.9)
<b>Disability</b>		
Disabled	62.1	(59.5-64.6)
Not disabled	22.0	(20.9-23.2)

<sup>a</sup> Among all adults, the proportion who reported ever being told by a doctor that they had some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia.



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.



# Cardiovascular Disease

2012 MiBRFS

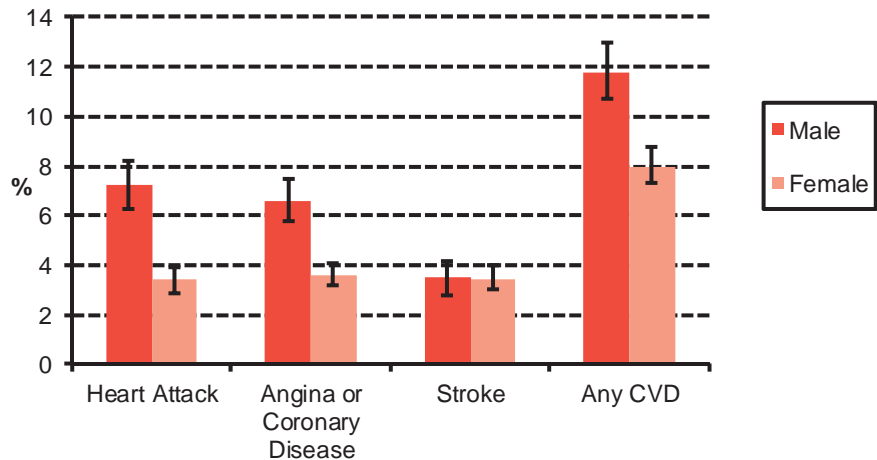
Heart disease and stroke are the first and fourth leading causes of death, respectively, in both Michigan and the United States.<sup>28</sup>

- ◆ In 2012, an estimated 5.2% of Michigan adults had ever been told by a doctor that they had a heart attack, 5.1% had ever been told they had angina or coronary heart disease, and 3.5% had ever been told they had a stroke.
- ◆ When combining all three measures into one indicator, an estimated 9.9% of Michigan adults have ever been told by a doctor that they had some form of cardiovascular disease.
- ◆ The prevalence of all three diseases increased with age and decreased with increasing household income level.
- ◆ Males reported higher prevalence than females for heart attack and coronary heart disease, but not stroke.
- ◆ Black, non-Hispanics (5.2%) reported a higher prevalence of stroke than White, non-Hispanics (3.1%).
- ◆ Insured adults were more likely to have been diagnosed with each of the three diseases when compared to uninsured adults.
- ◆ Disabled adults were also more likely to have been diagnosed with each of the three diseases when compared to non-disabled adults.
- ◆ In 2012, the prevalence of heart attack (5.2%), coronary heart disease (5.1%), and stroke (3.5%) among Michigan adults were all comparable to the U.S. median prevalence (heart attack: 4.5%; coronary heart disease: 4.3%; and stroke: 2.9%).

Demographic Characteristics	Ever Told Heart Attack <sup>a</sup>		Ever Told Angina or Coronary Heart Disease <sup>b</sup>		Ever Told Stroke <sup>c</sup>	
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
<b>Total</b>	<b>5.2</b>	<b>(4.7-5.8)</b>	<b>5.1</b>	<b>(4.6-5.6)</b>	<b>3.5</b>	<b>(3.1-3.9)</b>
<b>Age</b>						
18 - 34	0.3	(0.1-0.9)	0.2	(0.0-0.7)	0.4	(0.2-1.1)
35 - 44	1.7	(1.0-2.9)	1.0	(0.5-1.9)	1.9	(1.1-3.2)
45 - 54	3.7	(2.5-5.5)	3.7	(2.6-5.1)	3.7	(2.6-5.2)
55 - 64	8.7	(7.2-10.5)	7.9	(6.5-9.5)	4.5	(3.6-5.6)
65 - 74	12.2	(10.4-14.3)	13.5	(11.7-15.5)	7.2	(5.9-8.7)
75 +	16.1	(13.8-18.6)	16.2	(14.1-18.6)	9.3	(7.6-11.3)
<b>Gender</b>						
Male	7.2	(6.3-8.2)	6.6	(5.8-7.5)	3.5	(2.8-4.2)
Female	3.4	(2.9-3.9)	3.6	(3.2-4.1)	3.4	(3.0-4.0)
<b>Race/Ethnicity</b>						
White non-Hispanic	5.2	(4.7-5.8)	5.2	(4.7-5.8)	3.1	(2.7-3.6)
Black non-Hispanic	5.8	(4.1-8.2)	4.5	(3.3-6.0)	5.2	(3.7-7.1)
Other non-Hispanic	5.0	(3.0-8.2)	5.9	(3.7-9.3)	4.5	(2.9-7.0)
Hispanic	3.9	(2.0-7.6)	3.0	(1.4-6.5)	2.7	(1.1-6.5)
<b>Household Income</b>						
< \$20,000	8.8	(7.2-10.7)	8.0	(6.5-9.9)	5.5	(4.4-6.7)
\$20,000 - \$34,999	7.3	(5.9-8.9)	7.1	(5.9-8.4)	5.1	(4.1-6.4)
\$35,000 - \$49,999	5.4	(4.2-7.1)	5.9	(4.7-7.4)	3.2	(2.2-4.6)
\$50,000 - \$74,999	3.8	(2.9-5.0)	3.1	(2.3-4.1)	2.0	(1.3-3.0)
≥ \$75,000	1.7	(1.2-2.3)	2.2	(1.7-2.8)	1.4	(0.9-2.3)
<b>Health Insurance</b>						
Insured	5.5	(5.0-6.1)	5.4	(4.9-5.9)	3.7	(3.3-4.2)
Uninsured	3.4	(2.3-5.0)	3.3	(2.2-4.8)	1.8	(1.0-3.3)
<b>Disability</b>						
Disabled	12.3	(10.7-14.1)	12.6	(11.1-14.2)	9.0	(7.7-10.4)
Not disabled	2.9	(2.5-3.4)	2.7	(2.3-3.0)	1.7	(1.3-2.1)

Among all adults, the proportion who had ever been told by a doctor that: <sup>a</sup> they had a heart attack or myocardial infarction, <sup>b</sup> they had angina or coronary heart disease, or <sup>c</sup> they had a stroke.

Cardiovascular Disease by Gender  
Michigan, 2012



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.



# Cancer

2012 MiBRFS

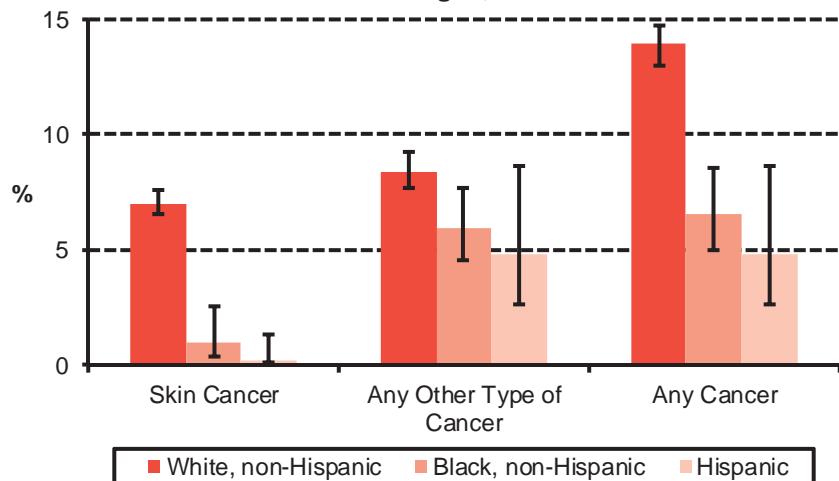
Cancer is the second leading cause of death in both Michigan and the United States.<sup>28</sup> There are more than 100 different types of cancer and it is estimated that there will be nearly 1.7 million new cases of cancer within the following year.<sup>29</sup>

- ◆ In 2012, an estimated 5.7% of Michigan adults had ever been told by a doctor that they had skin cancer, and 7.9% reported ever being diagnosed with a type of cancer other than skin cancer.
- ◆ When combining these two measures into one indicator, an estimated 12.3% of Michigan adult had ever been told by a doctor that they had some form of cancer.
- ◆ The prevalence of cancer increased with age.
- ◆ Males (10.4%) reported a significantly lower prevalence of cancer than females (14.1%).
- ◆ White, non-Hispanics (13.9%) reported a significantly higher prevalence of cancer than both Black, non-Hispanics (6.5%) and Hispanics (4.8%).
- ◆ Insured adults and disabled adults reported higher cancer prevalences than uninsured and non-disabled adults, respectively.
- ◆ In 2012, the prevalence for skin cancer (5.7%) and other types of cancer (7.9%) were comparable to the U.S. median prevalence (skin cancer: 5.7% and other cancers: 6.5%).

Demographic Characteristics	Ever Told Skin Cancer <sup>a</sup>		Ever Told Any Other Types of Cancer <sup>b</sup>		Ever Told Cancer <sup>c</sup>	
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
<b>Total</b>	<b>5.7</b>	<b>(5.3-6.2)</b>	<b>7.9</b>	<b>(7.3-8.5)</b>	<b>12.3</b>	<b>(11.6-13.0)</b>
<b>Age</b>						
18 - 34	0.5	(0.2-1.2)	2.5	(1.6-3.7)	2.7	(1.8-4.0)
35 - 44	1.4	(0.9-2.3)	3.4	(2.3-5.0)	4.6	(3.3-6.2)
45 - 54	4.3	(3.3-5.7)	7.1	(5.7-8.9)	10.5	(8.8-12.4)
55 - 64	8.3	(7.0-9.7)	9.7	(8.3-11.2)	16.9	(15.2-18.8)
65 - 74	13.7	(12.0-15.6)	16.0	(14.1-18.1)	25.8	(23.5-28.2)
75 +	19.6	(17.2-22.3)	22.6	(20.1-25.4)	36.9	(33.9-40.0)
<b>Gender</b>						
Male	5.3	(4.7-6.0)	6.2	(5.4-7.0)	10.4	(9.4-11.4)
Female	6.1	(5.5-6.9)	9.5	(8.6-10.5)	14.1	(13.0-15.2)
<b>Race/Ethnicity</b>						
White non-Hispanic	7.0	(6.5-7.6)	8.4	(7.7-9.2)	13.9	(13.0-14.7)
Black non-Hispanic	1.0	(0.4-2.5)	5.9	(4.5-7.7)	6.5	(5.0-8.5)
Other non-Hispanic	2.1	(1.2-3.5)	6.1	(3.8-9.6)	7.5	(5.1-11.0)
Hispanic	0.2	(0.0-1.3)	4.8	(2.6-8.6)	4.8	(2.6-8.6)
<b>Household Income</b>						
< \$20,000	4.4	(3.3-5.7)	10.6	(8.7-12.8)	13.1	(11.1-15.5)
\$20,000 - \$34,999	5.8	(4.8-7.0)	8.7	(7.5-10.2)	13.5	(11.9-15.2)
\$35,000 - \$49,999	7.2	(5.9-8.8)	8.2	(6.7-10.0)	13.7	(11.8-15.8)
\$50,000 - \$74,999	5.4	(4.3-6.7)	7.7	(6.1-9.7)	12.1	(10.2-14.2)
≥ \$75,000	6.0	(5.0-7.0)	5.6	(4.7-6.6)	10.5	(9.3-11.9)
<b>Health Insurance</b>						
Insured	6.4	(5.9-7.0)	8.6	(7.9-9.3)	13.6	(12.8-14.4)
Uninsured	1.7	(0.9-3.0)	3.9	(2.7-5.7)	4.7	(3.3-6.5)
<b>Disability</b>						
Disabled	7.8	(6.8-9.0)	12.8	(11.4-14.4)	18.5	(16.8-20.3)
Not disabled	5.1	(4.6-5.7)	6.3	(5.7-7.0)	10.4	(9.6-11.2)

Among all adults, the proportion who had ever been told by a doctor that: <sup>a</sup> they had skin cancer, <sup>b</sup> they had a form of cancer other than skin cancer, or <sup>c</sup> they had skin cancer or any other type of cancer.

Ever Told Cancer by Race/Ethnicity  
Michigan, 2012





# Prediabetes

2012 MiBRFS

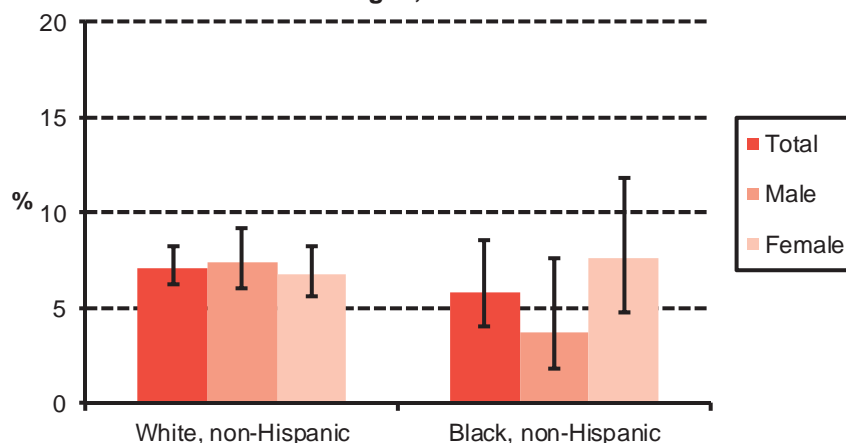
Prediabetes is an underreported condition that increases a person's risk of type 2 diabetes, heart disease, and stroke.<sup>30</sup>

- ◆ In 2012, an estimated 7.3% of Michigan adults reported ever being told by a doctor that they had prediabetes.
- ◆ The prevalence of prediabetes increased with age, but was similar by gender, race/ethnicity, and insurance status.
- ◆ Adults within the highest household income category reported the lowest prevalence of prediabetes (5.6%).
- ◆ Disabled adults (10.6%) were more likely to report having ever been told they had prediabetes compared to non-disabled adults (6.3%).
- ◆ White, non-Hispanic males (7.4%) and females (6.8%) reported prediabetes prevalences that were comparable to Black, non-Hispanic males (7.6%) and females (3.7%).

Demographic Characteristics	Ever Told Prediabetes <sup>a</sup>	
	%	95% Confidence Interval
<b>Total</b>	<b>7.3</b>	<b>(6.4-8.3)</b>
<b>Age</b>		
18 - 24	2.6	(1.3-5.1)
25 - 34	2.8	(1.5-5.5)
35 - 44	3.9	(2.3-6.4)
45 - 54	8.3	(6.1-11.4)
55 - 64	14.0	(11.3-17.2)
65 - 74	12.4	(9.8-15.4)
75 +	10.0	(7.4-13.4)
<b>Gender</b>		
Male	7.6	(6.2-9.3)
Female	7.0	(5.9-8.2)
<b>Race/Ethnicity</b>		
White non-Hispanic	7.1	(6.2-8.2)
Black non-Hispanic	5.8	(4.0-8.6)
Other non-Hispanic	11.6	(6.7-19.4)
Hispanic	12.0	(5.6-23.9)
<b>Household Income</b>		
< \$20,000	8.0	(5.9-10.9)
\$20,000 - \$34,999	7.5	(5.5-10.2)
\$35,000 - \$49,999	8.0	(5.5-11.5)
\$50,000 - \$74,999	10.3	(7.6-13.7)
≥ \$75,000	5.6	(4.3-7.4)
<b>Health Insurance</b>		
Insured	7.5	(6.6-8.6)
Uninsured	5.8	(3.8-8.8)
<b>Disability</b>		
Disabled	10.6	(8.7-12.9)
Not disabled	6.3	(5.3-7.4)

<sup>a</sup> Among all adults, the proportion who reported that they were ever told by a doctor that they had prediabetes. Women who had prediabetes only during pregnancy were classified as not having been diagnosed.

**Prediabetes by Race and Gender  
Michigan, 2012**



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# Diabetes

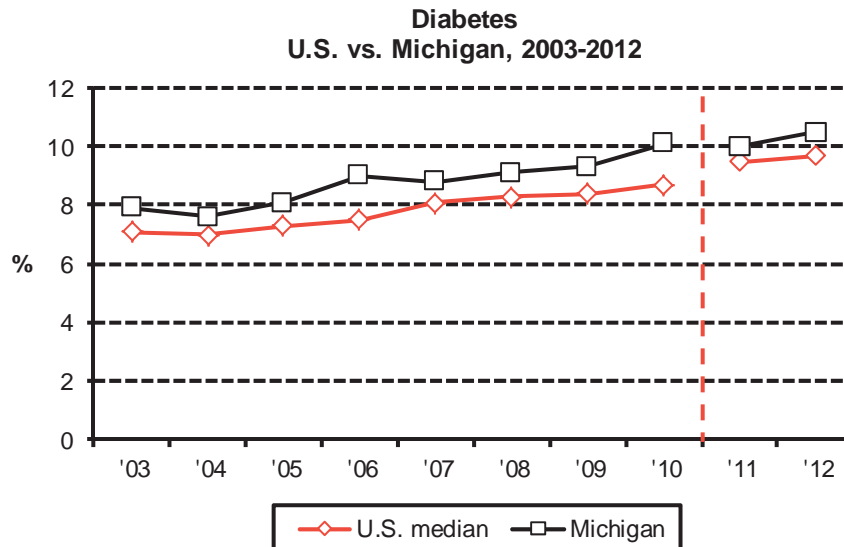
2012 MiBRFS

In 2010, diabetes was the seventh leading cause of death.<sup>28</sup> Obesity, poor diet, physical inactivity, and high blood pressure are just a few of the known risk factors that are associated with the development of diabetes.<sup>31</sup>

- ◆ In 2012, an estimated 10.5% of Michigan adults reported ever being told by a doctor that they had diabetes.
- ◆ The prevalence of diabetes increased through the 65-74 year age group and then decreased within the 75+ years age group.
- ◆ The prevalence of diabetes also decreased with increasing household income level.
- ◆ Diabetes prevalence was similar by gender, but White, non-Hispanics (9.6%) reported a significantly lower prevalence than Black, non-Hispanics (13.8%).
- ◆ Uninsured adults (6.2%) were less likely to have been diagnosed with diabetes than insured adults (11.2%), while disabled adults (19.7%) were more likely to be have been diagnosed than non-disabled adults (7.4%).
- ◆ Prior to the BRFSS methodology changes that were implemented in 2011, the prevalence of diabetes among Michigan adults was increasing slightly over time. This trend seems to be continuing after the methodology changes.
- ◆ In 2012, the prevalence of diabetes among Michigan adults (10.5%) was comparable to the U.S. median prevalence (9.7%).

Demographic Characteristics	Ever Told Diabetes <sup>a</sup>	
	%	95% Confidence Interval
<b>Total</b>	<b>10.5</b>	<b>(9.7-11.2)</b>
<b>Age</b>		
18 - 24	2.0	(1.0-3.9)
25 - 34	2.2	(1.2-3.8)
35 - 44	5.7	(4.0-8.1)
45 - 54	10.1	(8.4-12.1)
55 - 64	16.9	(15.0-19.0)
65 - 74	23.6	(21.3-25.9)
75 +	18.7	(16.2-21.4)
<b>Gender</b>		
Male	11.5	(10.3-12.8)
Female	9.5	(8.7-10.4)
<b>Race/Ethnicity</b>		
White non-Hispanic	9.6	(8.9-10.4)
Black non-Hispanic	13.8	(11.4-16.7)
Other non-Hispanic	11.0	(7.9-15.0)
Hispanic	13.9	(8.4-22.1)
<b>Household Income</b>		
< \$20,000	14.4	(12.3-16.7)
\$20,000 - \$34,999	13.4	(11.6-15.5)
\$35,000 - \$49,999	11.1	(9.3-13.2)
\$50,000 - \$74,999	8.9	(7.0-11.2)
≥ \$75,000	6.0	(5.0-7.2)
<b>Health Insurance</b>		
Insured	11.2	(10.4-12.0)
Uninsured	6.2	(4.6-8.2)
<b>Disability</b>		
Disabled	19.7	(17.8-21.7)
Not disabled	7.4	(6.7-8.2)

<sup>a</sup> Among all adults, the proportion who reported that they were ever told by a doctor that they had diabetes. Adults told they have prediabetes and women who had diabetes only during pregnancy were classified as not having been diagnosed.



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# Kidney Disease

2012 MiBRFS

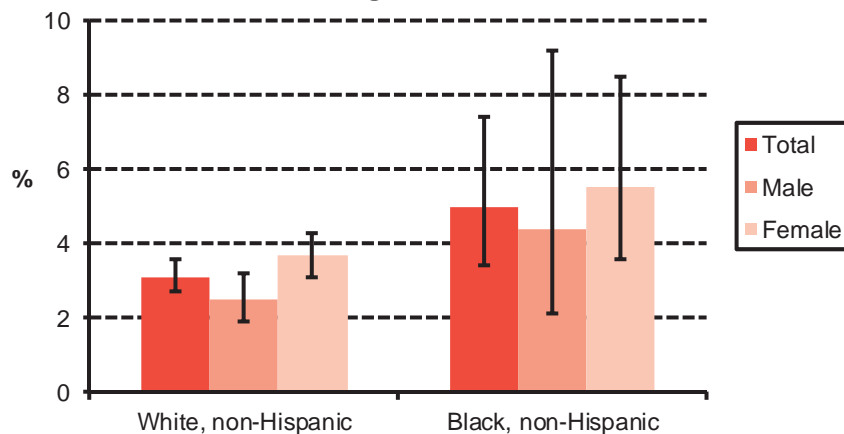
Kidney disease is a condition in which the kidneys are damaged and cannot filter blood properly. Adults with diabetes or hypertension are at increased risk of kidney disease. Kidney disease is also a risk factor for the development of cardiovascular disease.<sup>32</sup>

- ◆ In 2012, an estimated 3.4% of Michigan adults reported ever being told by a doctor that they had kidney disease.
- ◆ The prevalence of kidney disease increased with age and decreased with increasing household income level.
- ◆ Disabled adults (7.5%) were more likely to have been diagnosed with kidney disease than non-disabled adults (2.0%).
- ◆ Michigan adults with diabetes (10.8% [95% CI: 8.5-13.6]) were more than four times as likely to have being diagnosed with kidney disease than non-diabetic adults (2.5% [95% CI: 2.1-3.0]).
- ◆ White, non-Hispanic men and women reported a similar prevalence of kidney disease. The prevalence of kidney disease was also similar among Black, non-Hispanic men and women.
- ◆ In 2012, the prevalence of kidney disease among Michigan adults (3.4%) was slightly higher than the U.S. median prevalence (2.5%).

Demographic Characteristics	Ever Told Kidney Disease <sup>a</sup>	
	%	95% Confidence Interval
<b>Total</b>	<b>3.4</b>	<b>(2.9-3.9)</b>
<b>Age</b>		
18 - 24	1.9	(1.0-3.8)
25 - 34	1.1	(0.5-2.4)
35 - 44	1.8	(0.9-3.4)
45 - 54	3.4	(2.3-4.9)
55 - 64	4.2	(3.4-5.3)
65 - 74	6.1	(5.0-7.4)
75 +	7.6	(5.8-9.8)
<b>Gender</b>		
Male	2.7	(2.1-3.5)
Female	4.0	(3.4-4.7)
<b>Race/Ethnicity</b>		
White non-Hispanic	3.1	(2.7-3.6)
Black non-Hispanic	5.0	(3.4-7.4)
Other non-Hispanic	3.3	(2.0-5.4)
Hispanic	4.0	(1.8-8.6)
<b>Household Income</b>		
< \$20,000	4.3	(3.1-5.9)
\$20,000 - \$34,999	4.6	(3.4-6.1)
\$35,000 - \$49,999	3.1	(2.3-4.3)
\$50,000 - \$74,999	2.5	(1.8-3.6)
≥ \$75,000	1.9	(1.3-2.6)
<b>Health Insurance</b>		
Insured	3.7	(3.2-4.3)
Uninsured	1.3	(0.8-2.2)
<b>Disability</b>		
Disabled	7.5	(6.2-9.1)
Not disabled	2.0	(1.6-2.4)

<sup>a</sup> Among all adults, the proportion who reported ever being told by a doctor that they had kidney disease.

**Kidney Disease by Race and Gender  
Michigan, 2012**



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.





# Depression

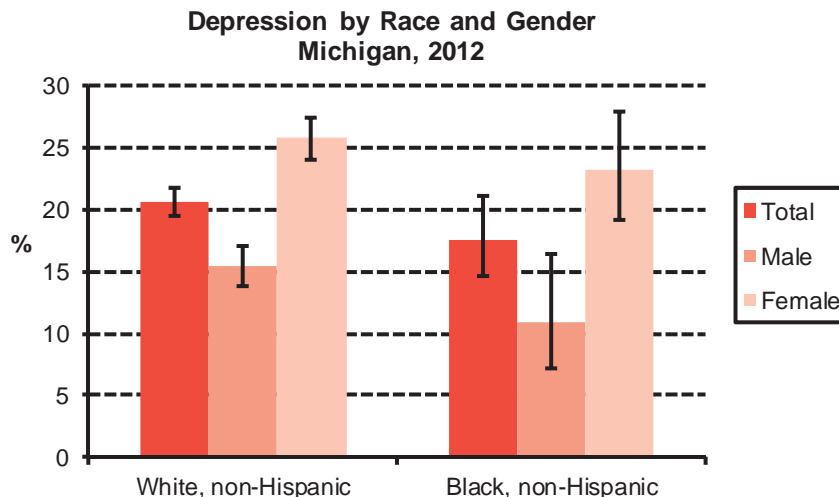
2012 MiBRFS

Depression is a common and treatable medical disorder that is more common among individuals with chronic conditions such as obesity, diabetes, and arthritis.<sup>33</sup>

- ◆ In 2012, an estimated 20.6% of Michigan adults reported ever being told by a doctor that they had a depressive disorder including depression, major depression, dysthymia, or minor depression.
- ◆ The prevalence of depression was highest in the middle age groups and decreased with increasing household income level.
- ◆ Females (25.8%) reported a significantly higher prevalence of depression than males (15.1%).
- ◆ White, non-Hispanics (20.6%) reported a significantly lower prevalence of depression than Hispanics (30.9%).
- ◆ Disabled adults (40.4%) were more likely to have been diagnosed with depression than non-disabled adults (14.0%).
- ◆ White, non-Hispanic and Black, non-Hispanic females (25.7% and 23.2%, respectively) reported significantly higher prevalences of depression than White, non-Hispanic and Black, non-Hispanic males (15.4% and 10.9%, respectively).
- ◆ In 2012, the prevalence of depression among Michigan adults (20.6%) was higher than the U.S. median prevalence (18.0%).

Demographic Characteristics	Ever Told Depression <sup>a</sup>	
	%	95% Confidence Interval
<b>Total</b>	<b>20.6</b>	<b>(19.5-21.7)</b>
<b>Age</b>		
18 - 24	20.5	(16.8-24.7)
25 - 34	20.9	(17.7-24.5)
35 - 44	20.7	(18.0-23.6)
45 - 54	23.6	(21.2-26.3)
55 - 64	23.1	(21.0-25.3)
65 - 74	17.0	(15.1-19.1)
75 +	12.7	(10.7-15.0)
<b>Gender</b>		
Male	15.1	(13.7-16.6)
Female	25.8	(24.2-27.4)
<b>Race/Ethnicity</b>		
White non-Hispanic	20.6	(19.5-21.8)
Black non-Hispanic	17.5	(14.6-21.0)
Other non-Hispanic	21.7	(17.1-27.2)
Hispanic	30.9	(22.8-40.4)
<b>Household Income</b>		
< \$20,000	33.8	(30.5-37.2)
\$20,000 - \$34,999	22.7	(20.4-25.3)
\$35,000 - \$49,999	19.4	(16.8-22.3)
\$50,000 - \$74,999	16.1	(13.9-18.7)
≥ \$75,000	12.1	(10.4-14.0)
<b>Health Insurance</b>		
Insured	20.1	(19.0-21.3)
Uninsured	23.9	(20.6-27.5)
<b>Disability</b>		
Disabled	40.4	(37.9-43.0)
Not disabled	14.0	(13.0-15.2)

<sup>a</sup> Among all adults, the proportion who reported ever being told by a doctor that they had a depressive disorder including depression, major depression, dysthymia, or minor depression.



Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.



# Acknowledgements

2012 MiBRFS

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The assistance provided by the Division of Behavioral Surveillance at the Centers for Disease Control and Prevention in Atlanta, Georgia is greatly appreciated.

We are especially grateful to the residents of Michigan who agreed to participate in this survey.



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