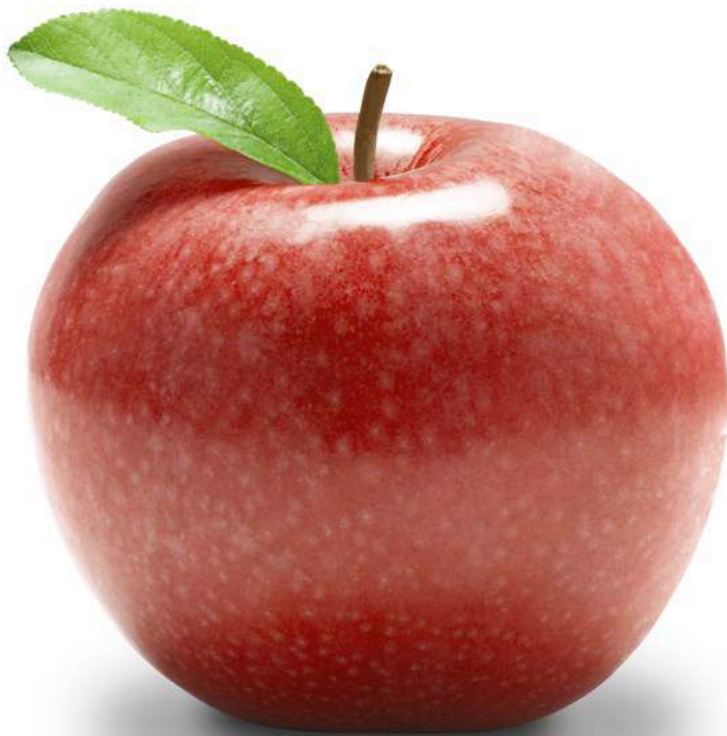


Barry County Report

2011–2013 Behavioral Risk Factor Survey

Measures of the health status, risk behaviors,
screening rates, and chronic diseases
of adults in Barry County

Updated April 17, 2017



Barry-Eaton District
Health Department

Be Active • Be Safe • Be Healthy

Acknowledgements

The Barry-Eaton District Health Department wishes to thank the members of the community who graciously participated in this survey.

Additionally, thanks go to Chris Fussman of the Michigan Department of Community Health Epidemiology Section, Cassandre Larrieux of the Ingham County Health Department, and Rex Hoyt of the Mid-Michigan District Health Department for technical consultation on survey design, data analysis, and interpretation.

Key funding partners included the Eaton County Substance Abuse Advisory Group (ECSAAG) and the Clinton-Eaton-Ingham Community Mental Health Authority Coordinating Agency. We thank them for their ongoing support of local data collection efforts.

For more information

Please contact Anne Klein Barna, MA, Health Analyst at (517)541-2694 or (269)948-9516 x 694 or email at abarna@bedhd.org. Please visit www.barryeatonhealth.org for links to other local data and data sources.

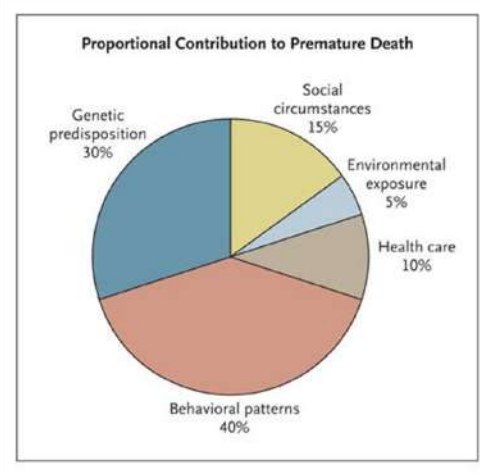
The data presented here represents the highlights of the dataset, but is not comprehensive of all of the available data or question items. Please contact Anne for more information about the extent of other data available from this survey, as well as to request customized data extractions or raw data files.

INTRODUCTION

Health is influenced by factors in five domains—behavioral patterns, social circumstances, environmental exposures, genetics, and health care. Behavioral patterns are the single greatest cause of premature death in the United States, accounting for nearly 40% of all deaths. Smoking, obesity, and inactivity are the top behavioral causes of premature death. (Schroeder, SA. *N Engl J Med* 2007; 357:1221)

In 2011, the Capital Area United Way, Barry-Eaton District Health Department, Ingham County Health Department, and Mid-Michigan Health Department contracted for a survey of the adult population in their jurisdictions (Barry, Eaton, Ingham, Clinton, Gratiot, and Montcalm counties) on various behaviors, medical conditions, and preventive health care practices. The survey was conducted using the Capital Area Behavioral Risk Factor Survey (BRFS) instrument, which uses questions from the Centers for Disease Control and Prevention’s Behavioral Risk Factor Surveillance System questionnaire, as well as questions developed by the health departments to collect information of interest to the local community. This survey continues a long tradition at the Barry-Eaton District Health Department of locally collected data on behavioral health factors.

Determinants of Health and Their Contribution to Premature Death



Schroeder SA. *N Engl J Med* 2007;357:1221

SURVEY DESIGN

The Barry-Eaton Behavioral Risk Factor Survey (BE-BRFS), part of the Capital Area Behavioral Risk Factor Survey, utilizes a disproportionate stratified random sample methodology. This approach was used to ensure a sufficient sample size in each county. Households were contacted through random-digit-dialed methodology (RDD) to ensure that all possible telephone numbers in a working block with at least one directory-listed number have an equal probability of selection. Telephone numbers where no contact was made were called up to 10 times before being taken out of the calling rotation. When this occurred, the telephone number was replaced by a replicate telephone number (i.e., one within the same working block as the one that was removed) to ensure parity. A total of 3,617 adults in the Capital Area responded to the telephone survey and the overall survey cooperation (response) rate was 44%. This rate is computed using the American Association for Public Opinion Research definitions, which compute the number of completed interviews as a proportion of the total number of eligible households contacted. In the Barry-Eaton District, 780 interviews were completed—390 in each county. The survey utilized a rolling sample survey design, which allows for reliable multi-year estimates for small areas. The rolling sample design called for collection of approximately one-third of the survey sample in each of three years—2011, 2012, and 2013. Sampling was accelerated in 2013 to conclude early to allow for data processing and analysis.

WEIGHTING

Because random sampling assumes an equal probability of selection into the final sample, it is important to adjust sample estimates when this assumption is not met, or when over-sampling of a specific group is sought to allow for subgroup analysis. No matter how carefully a population is sampled, bias can be introduced into a sample due to non-response and non-coverage of particular subgroups (i.e., age, education, race, and Hispanic origin). Therefore, weighting is employed to adjust for the known differences between fixed characteristics of the sample and the population. Cases in the 2011–2013 BRFS data set were weighted using Census 2010 and American Community Survey (ACS) data.

For analysis of the overall district, a district weight was created to adjust for the disproportionate stratified sample of counties; this was combined with a post-stratification weight for age, education, race, and Hispanic origin for each county to create the final weight for district level, aggregate frequencies, and cross-tabulations. For analysis of individual counties, a county-level weight was created that provides an adjustment for each county by age and education.

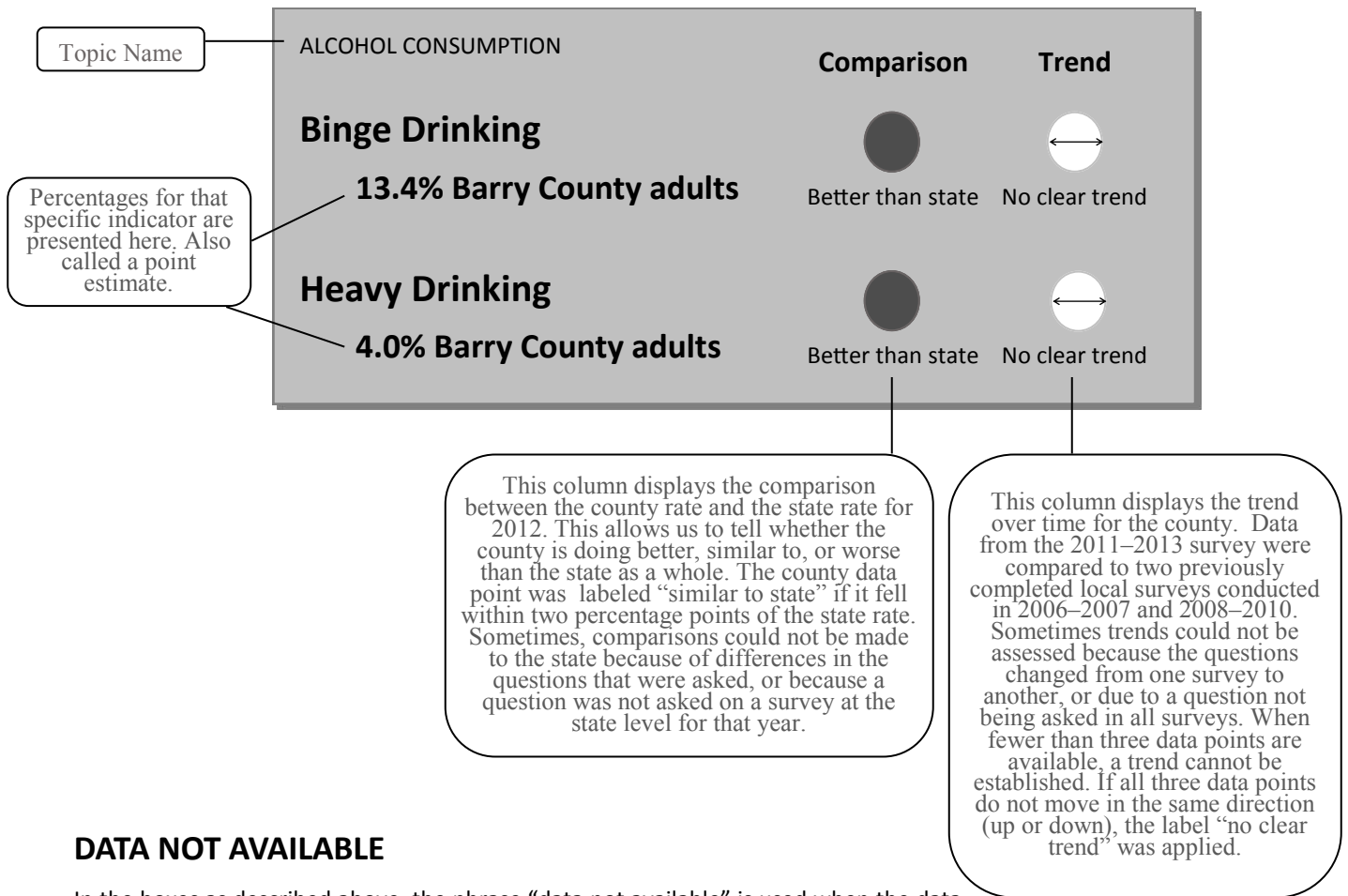
DATA INTERPRETATION NOTES

The data presented in the following charts are weighted as described above—both the prevalence estimate percentages and the N values. The N value is a weighted number of participants reporting that response. When the weighted number (N) was five or fewer responses, the N value and the percentage are suppressed (or not reported). Readers should examine the N values when looking at subgroups such as age, education, and income. The smaller the N value, the greater chance that the prevalence estimate does not have a statistically significantly difference from the other groups.

Note that due to missing values, question refusal, and data weighting, the sum of the N values of all responses in a particular measure, or the sum of the N values of respondents in a particular subgroup, will not typically equal the total number of interviews conducted. The prevalence estimates exclude missing data from the percentages reported.

UNDERSTANDING THE DATA DISPLAY

Each topic has a few specific data points highlighted in a box in each section that looks like this:



DATA NOT AVAILABLE

In the boxes as described above, the phrase “data not available” is used when the data are insufficient to make either a comparison to the state, or to determine a trend pattern.

In the data tables, “NA” indicates that the data are not available for a specific survey or survey year. The use of ** means that the number of responses or the percentage for specific subgroups were too small to be shared, and the data were suppressed (not reported).

SURVEY ANALYSIS The BE-BRFS survey data were analyzed using SPSS 18.0 for Windows, Release 18.0.0 (30 July 2009), Copyright SPSS, Inc. 1993–2007.

CITATIONS The majority of sources cited in the text (unless otherwise noted) are derived from sources cited in the 2012 Michigan Behavioral Risk Factor Survey Report. The report (and bibliography) is available at: http://www.michigan.gov/documents/mdch/2012_MiBRFS_Annual_Report_FINAL_435019_7.pdf



Barry-Eaton District Health Department

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To Our Community:

On behalf of the Board of Health and a group of community partners, I am pleased to share the 2011-2013 Barry-Eaton Behavioral Risk Factor Survey for Barry and Eaton Counties. As a public health agency, the Health Department is responsible for monitoring health status to identify and solve community health problems. This survey sought to measure the health status, risk behaviors, clinical preventive care practices, and chronic disease rates of Barry and Eaton County residents.

This undertaking is a key local tool that provides crucial data to identify priority health issues in the community – and in our populations at greatest risk for health problems. Our local Barry-Eaton Behavioral Risk Factor Survey contributes to multiple strategic planning efforts and the effective targeting of resources towards key health problems. Concurrently, the survey assists in monitoring the effectiveness of current initiatives and collaborative efforts. Further, the data supports the development of health policy changes to improve community health across the population.

Funding partners for this survey include the Eaton County Substance Abuse Advisory Group (ECSAAG) www.eatondrugfree.org and the Clinton-Eaton-Ingham Community Mental Health Coordinating Agency.

We welcome the utilization of this data by the community and community organizations, and invite inquiries for more detailed analysis and breakouts of the data. Please contact Anne Barna, BEDHD Health Analyst, at abarna@bedhd.org for more information on this opportunity. The Health Department is committed to using this local data to inform decisions that affect health in our community. Please visit www.barryeatonhealth.org and click on the “Health Promotion & Statistics” tab to view other sources of data about the community’s health and the collaborative efforts to improve health.

We would like to thank again the citizens of Barry and Eaton counties who agreed to participate in the survey – understanding the health of the community depends on reliable, consistent measurement of many people over time.

Craig Stolsonburg
Chair, Barry-Eaton District Board of Health



Summary

Barry County Behavioral Risk Factor Survey 2011–2013

		Indicators	%	Comparison	Trend
HEALTH STATUS INDICATORS	Health Status	Poor Physical Health	9.6	Better than state	No clear trend
		Limitation Due to Poor Mental Health	2.4	NA	NA
		Receiving Treatment for Mental Health Condition	13.0	NA	NA
	Disability	Limited in Any Activity	18.2	Better than state	NA
	Weight Status	Obese	32.2	Similar to state	No clear trend
		Overweight	36.1	Worse than state	Getting worse
	Access to Health Care	No Health Care Coverage 18–64	14.6	Similar to state	No clear trend
		Could Not See Doctor	11.0	NA	No clear trend
		Could Not See Dentist	12.0	NA	No clear trend
RISK BEHAVIOR INDICATORS	Alcohol	Binge Drinking	13.4	Better than state	No clear trend
		Heavy Drinking	4.0	Better than state	No clear trend
	Tobacco Use & Exposure	Current Smoker	20.5	Better than state	No clear trend
		Indoor Smoking Allowed	12.1	NA	NA
	Nutrition	Five or More Servings of Fruit	5.5	NA	NA
		Five or More Servings of Vegetables	4.4	NA	NA
	Physical Activity	No Vigorous Leisure-time Physical Activity	44.4	NA	NA
		No Moderate Leisure-time Physical Activity	12.7	NA	NA
CLINICAL PREVENTION INDICATORS	Cancer Screening	Timely Pap Test (Women)	70.0	Worse than state	NA
		Ever Colon Cancer Screening Procedure (Adults 50+)	69.0	Worse than state	NA
CHRONIC DISEASE OUTCOMES	Chronic Disease	High Blood Pressure	32.7	Similar to state*	No clear trend
		Diabetes	10.3	Similar to state	No clear trend
		Asthma	10.0	Better than state	NA
		High Blood Cholesterol	32.4	NA	NA

Trends are assessed using local BRFs data collected in 2006–2007, 2008–2010, and 2011–2013. Comparisons are based on 2011–2013 local BRFs data compared with the 2012 Michigan BRFs. *Compared with 2011 Michigan BRFs due to question not asked in the 2012 Michigan BRFs.

View the full report at www.barryeatonhealth.org



Barry-Eaton District
Health Department
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2011–2013
Barry-Eaton District Health Department
Behavioral Risk Factor Survey

Health Status & Quality of Life

Barry County





The concept of health-related quality of life refers to perceived physical or mental health. Poor physical health is defined as the proportion of adults who reported two weeks or more (at least 14 days) of poor physical health within the past month—including physical illness and/or injury. Limitation due to poor mental health is defined as the proportion of adults who reported two weeks or more (at least 14 days) of being unable to do work or other usual activities due to a mental health condition or emotional problem.

Barry County rated lower levels of poor physical health than the state, meaning adults are reporting better physical health than the state as a whole. Females, those with low incomes, and those with just a high school education were much more likely to report poor physical health.

2.4% of Barry County adults reported limitation in regular activities due to a poor mental health condition or emotional problem. Limitation due to poor mental health within subgroups cannot be reported due to low numbers in each subgroup.

13.0% of Barry County adults reported taking medication or receiving treatment for a mental health condition. Women and adults with incomes less than \$25,000 in Barry County were about twice as likely to report taking medication or receiving treatment for a mental health condition or emotional problem than males or adults with incomes greater than \$75,000.

HEALTH STATUS & QUALITY OF LIFE	Comparison	Trend
Poor Physical Health 9.6% Barry County Adults	 Better than state	 No clear trend
Limitation Due to Poor Mental Health 2.4% Barry County Adults	Data not available	Data not available
Taking Medicine or Receiving Treatment for a Mental Health Condition 13.0% Barry County Adults	Data not available	Data not available

Trends are assessed using local BRFSS data collected in 2006–2007, 2008–2010, and 2011–2013. Comparisons are based on 2011–2013 local BRFSS data compared with the 2012 Michigan BRFSS.



Physical and Mental Health

Barry County		Poor Physical Health (i)		Limitation Due to Poor Mental Health (ii)		Taking Medication or Receiving Treatment for Mental Health Condition (iii)	
		%	N	%	N	%	N
Total		9.6%	37	2.4%	9	13.0%	51
Gender	Male	6.3	12	**	**	7.7	15
	Female	13.1	25	**	**	18.4	36
Age	18–34	**	**	**	**	14.3	13
	35–54	10.6	15	**	**	16.1	23
	55 +	11.8	17	**	**	9.3	14
Education	Less than high school	**	**	**	**	**	**
	High school grad	14.0	21	**	**	13.0	20
	Some college	6.9	7	**	**	14.3	15
	College grad	6.1	6	**	**	11.3	11
Income	< \$24,999	20.6	20	**	**	17.0	17
	\$25,000–49,999	9.3	9	**	**	13.3	13
	\$50,000–74,999	**	**	**	**	13.1	8
	\$75,000 +	**	**	**	**	8.9	7

(i) The proportion of adults who reported 14 or more days of poor physical health, which includes physical illness and injury, during the past 30 days.

(ii) The proportion of adults who reported 14 or more days of being unable to do work or other usual activities due to a mental health condition or emotional problem, during the past 30 days.

(iii) Among all adults, the proportion who reported taking medicine or receiving treatment from a doctor or other health professional for any type of mental health condition or emotional problem.

** Prevalence estimate not available due to subgroup size.

Comparison & Trends	Barry County 2006–07	Barry County 2008–10	Barry County 2011–13	Michigan 2012
Poor physical health	11.0%	12.6%	9.6%	13.5%
Limitation due to poor mental health	N/A	N/A	2.4%	N/A
Receiving treatment for mental health condition	N/A	N/A	13.0%	N/A




Disability

Barry County

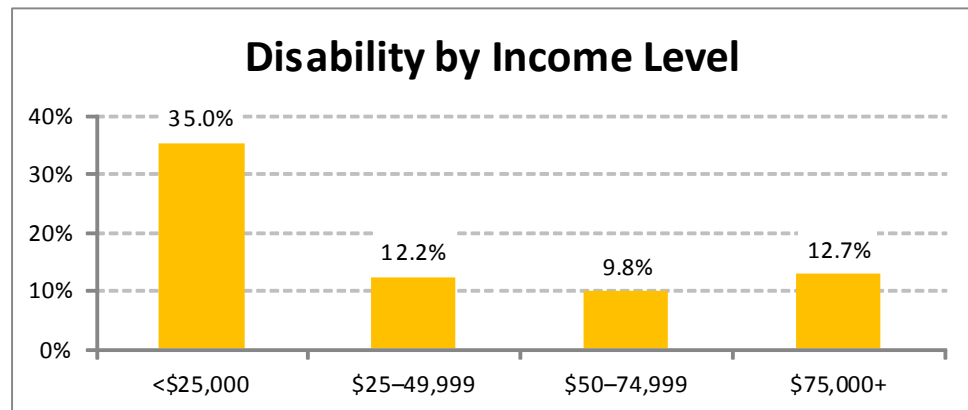


Disability can be defined in many ways, ranging from experiencing difficulty participating in certain activities (such as lifting and carrying objects, seeing, or hearing), to having more severe disabilities that require assistance in personal or routine care needs (such as bathing or housework). An individual can get a disabling impairment or chronic condition at any point in life. Disability is part of life, and an impairment or condition does not define individuals, their health, or their talents and abilities. One goal described in Healthy People 2020 is to “promote the health and well-being of people with disabilities.” (www.healthypeople.gov)

18.2% percent of Barry County adults reported that they were limited in some activity because of physical, mental, or emotional problems. Older adults were more likely to report some limitation in activity than younger adults. **Adults with less than \$25,000 per year in income were more likely to report some limitation in activity than those with more income.**

DISABILITY	Comparison	Trend
Limited in Any Activity 18.2 % Barry County Adults	 Better than state	Data not available

Trends are assessed using local BRFSS data collected in 2006–2007, 2008–2010, and 2011–2013. Comparisons are based on 2011–2013 local BRFSS data compared with the 2012 Michigan BRFSS.



Disability			
Barry County		Limited in Any Activities*	
		%	N
Total		18.2%	71
Gender	Male	17.9	35
	Female	18.9	37
Age	18–34	**	**
	35–54	21.1	30
	55 +	23.2	35
Education	Less than high school	18.8	6
	High school grad	19.4	30
	Some college	15.2	16
	College grad	20.2	20
Income	< \$24,999	35.0	35
	\$25,000–49,999	12.2	12
	\$50,000–74,999	9.8	6
	\$75,000 +	12.7	10

*The proportion of adults who reported being limited in any way in any activities because of physical, mental, or emotional problems.

** Prevalence estimate not available due to subgroup size.

Barry County		
Rank	Major Impairment or Health Problem	Number of Respondents*
1	Arthritis/Rheumatism	10
2	Back or Neck	9
2	Fractures, Bone/Joint Injury	9
4	Heart	8
5	Walking	4
6	Eye/Vision	3
6	Depression/Anxiety/Emotional	3
7	Hearing	2
7	Diabetes	2
7	Lungs/Breathing	2
11	Stroke	1
—	Other Impairment	16
—	Don't Know	2

*The number of adults who reported a specific major impairment or health problem.

Comparison & Trends	Barry County 2006–07	Barry County 2008–10	Barry County 2011–13	Michigan 2012
Limited in any activity	NA	18.7%	18.2%	22.3%



Weight Status





Barry County



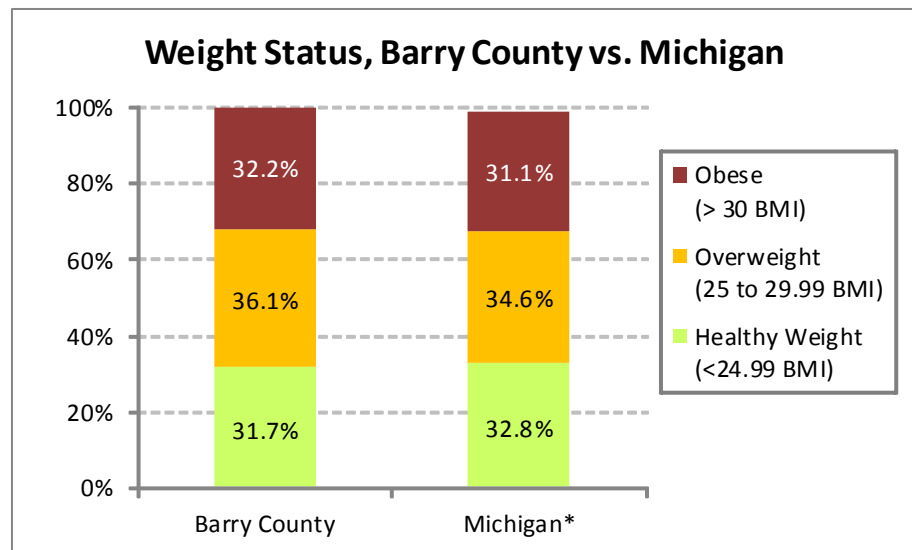
Obesity increases the risk of many diseases and health conditions, such as high blood pressure, diabetes, coronary heart disease, stroke, sleep apnea, arthritis, gallbladder disease, high cholesterol, and some forms of cancer. In 2012, Michigan had the 10th highest prevalence of obesity in the United States. Michigan is expected to spend \$12.5 billion in 2018 on obesity-related health care costs, if rates continue to increase at their current levels. (MDCH)

Overweight is defined as having a body mass index (BMI) between 25.0 and 29.9, and obesity is 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 was calculated from the self-reported height and weight measurements of county residents participating in the survey. Some people tend to underestimate their weight when self-reporting in a phone survey.¹

32.2% of Barry County adults in the 2011–2013 BRFs were estimated to be obese, and another **36.1% of Barry County adults were estimated to be overweight**. Females are more likely to report being a healthy weight than males in Barry County. Those with less than high school education are less likely to report a healthy weight than those with more education.

WEIGHT STATUS	Comparison	Trend
Obese 32.2% Barry County Adults	 Similar to state	 No clear trend
Overweight 36.1% Barry County Adults	 Worse than state	 Getting worse

Trends are assessed using local BRFs data collected in 2006–2007, 2008–2010, and 2011–2013. Comparisons are based on 2011–2013 local BRFs data compared with the 2012 Michigan BRFs.



*1.5% of Michigan adults are underweight, which is not represented in this graph.

¹A comparison of the CDC's national 2008 BRFs (similar to this survey) and the 2007–08 National Health and Nutrition Examination Survey (a study which includes physical measurements taken by trained surveyors) shows that obesity rates are generally lower (26.7% in the BRFs vs. 33.8% in the NHANES) but that overweight rates are a bit higher (36.5% in the BRFs vs. 34.2% in the NHANES). Despite these difficulties with self-reported height and weight measures, the BRFs is the most reliable and comparable measure of adult obesity in the Barry-Eaton District.



Weight Status							
Barry County		Healthy Weight (< 24.99 BMI*)		Overweight (25 to 29.99 BMI*)		Obese (> 30 BMI*)	
		%	N	%	N	%	N
Total		31.7%	119	36.1%	136	32.2%	121
Gender	Male	24.6	46	43.9	82	31.6	59
	Female	38.8	73	28.7	54	32.4	61
Age	18–34	33.3	29	34.5	30	32.2	28
	35–54	33.1	46	36.0	50	30.9	43
	55 +	28.1	41	38.4	56	33.6	49
Education	Less than high school	23.1	6	50.0	13	26.9	7
	High school grad	30.2	45	32.9	49	36.9	55
	Some college	39.2	40	34.3	35	26.5	27
	College grad	29.2	28	38.5	37	32.3	31
Income	$< \$24,999$	28.7	27	34.0	32	37.2	35
	$\$25,000$ – $49,999$	35.1	34	37.1	36	27.8	27
	$\$50,000$ – $74,999$	29.8	17	36.8	21	33.3	19
	$\$75,000$ +	32.1	25	39.7	31	28.2	22

* BMI = Body Mass Index, defined as weight in kilograms divided by height in meters, squared. Weight and height were self-reported.

Comparison & Trends	Barry County 2006–07	Barry County 2008–10	Barry County 2011–13	Michigan 2012
Obese	27.5%	26.6%	32.2%	31.1%
Overweight	33.4%	34.9%	36.1%	34.6%
Overweight and obese	60.9%	61.5%	68.3%	65.7%



Access to Health Care

Barry County



Adults who do not have health care coverage are less likely to access health care services and more likely to delay getting needed medical attention. The uninsured are less likely to receive necessary preventive care, and are thus more likely to be hospitalized for avoidable conditions. (Kaiser Family Foundation)

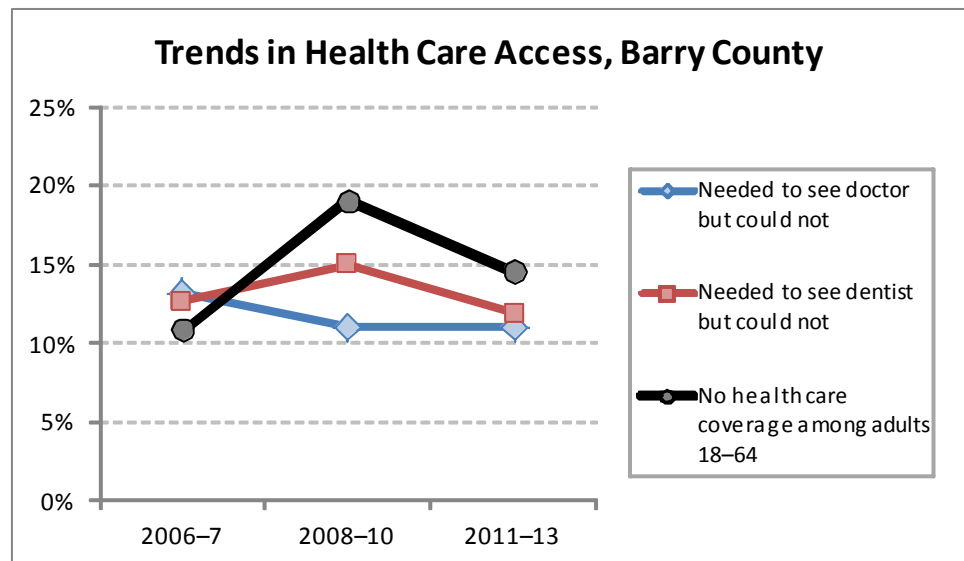
14.6% of Barry County adults aged 18–64 in the 2011–2013 BRFs reported that they did not have any kind of health care coverage. Adults 65 and older are not included in this indicator because nearly all seniors have access to health insurance coverage through the Medicare program. Adults with less than a high school education were more likely to report being uninsured than any other group. Younger adults aged 18–34 were more likely to be uninsured than older adults. **The proportion of adults reporting they have health insurance increases with more education and with more income.** Females reported higher levels of health care coverage than males in Barry County.

1 in 9 Barry County adults reported that there was a time in the past year when they needed to see a doctor but could not. And nearly 1 in 8 Barry County adults reported that there was a time in the past year when they needed to see a dentist but could not. Females were more likely to report that they could not access dental or medical care when needed, as well as those with less education and those with low incomes. **More than 1 in 4 adults with income less than \$25,000/year report that they do not have a personal health care provider, compared with only 1 in 13 adults with incomes over \$75,000/year.**

ACCESS TO HEALTH CARE	Comparison	Trend
No Health Care Coverage (18–64) 14.6% Barry County Adults	Similar to state	No clear trend
Could Not See Doctor 11.0% Barry County Adults	Data not available	No clear trend
Could Not See Dentist 12.0% Barry County Adults	Data not available	No clear trend

Trends are assessed using local BRFs data collected in 2006–2007, 2008–2010, and 2011–2013.

Comparisons are based on 2011–2013 local BRFs data compared with the 2012 Michigan BRFs.



Health Care Coverage					
Barry County		Health Care Coverage Among Adults 18–64		No Health Care Coverage Among Adults 18–64*	
		%	N	%	N
Total		85.4%	254	14.6%	43
Gender	Male	82.6	123	17.4	26
	Female	88.5	131	11.5	17
Age	18–34	80.0	68	20.0	17
	35–54	86.6	123	13.4	19
	55–64	88.7	63	11.3	8
Education	Less than high school	47.1	8	52.9	9
	High school grad	81.0	94	19.0	22
	Some college	88.1	74	11.9	10
	College grad	97.5	78	**	**
Income	< \$24,999	73.1	49	26.9	18
	\$25,000–49,999	84.3	76	15.7	11
	\$50,000–74,999	94.4	59	**	**
	\$75,000 +	93.2	76	**	**

* Among all adults, the proportion who reported having no health care coverage, including health insurance, HMOs, government plans such as Medicaid or Medicare, or a County Health Plan such as the Barry-Eaton Health Plan.

** Prevalence estimate not available due to subgroup size.

Health Care Access									
Barry County		No Personal Health Care Provider (i)		Needed to See Doctor But Could Not (ii)		Needed to See Dentist But Could Not (iii)		Could Not Get Prescription Filled Due to Cost (iv)	
		%	N	%	N	%	N	%	N
Total		16.4%	64	11.0%	43	12.0%	47	7.0%	27
Gender	Male	19.0	37	8.2	16	8.7	17	4.1	8
	Female	13.8	27	13.8	27	15.4	30	9.7	19
Age	18–34	28.6	26	11.0	10	12.1	11	**	**
	35–54	17.6	25	14.8	21	14.1	20	9.2	13
	55 +	7.9	12	7.9	12	10.6	16	6.7	10
Education	Less than high school	43.8	14	18.8	6	25.0	8	**	**
	High school grad	16.9	26	13.0	20	12.3	19	6.5	10
	Some college	13.3	14	10.5	11	14.3	15	8.6	9
	College grad	10.1	10	6.1	6	6.1	6	**	**
Income	< \$24,999	28.0	28	18.0	18	26.0	26	11.9	12
	\$25,000–49,999	19.6	19	6.2	6	11.2	11	**	**
	\$50,000–74,999	9.8	6	11.5	7	**	**	**	**
	\$75,000 +	7.6	6	9	7	**	**	**	**

(i) Among all adults, the proportion who reported that they did not have a person or persons that they thought of as their personal doctor or usual health care provider.

(ii) Among all adults the proportion who reported that there was a time in the past year when they needed to see a doctor, physician's assistant, or nurse, but could not, for any reason.

(iii) Among all adults, the proportion who reported that there was a time in the past year when they needed to see a dentist but could not, for any reason.

(iv) Among all adults, the proportion who reported that there was a time in the past year when they needed to get a prescription filled but could not *due to cost*.

** Prevalence estimate not available due to subgroup size.

Comparison & Trends	Barry County 2006–07	Barry County 2008–10	Barry County 2011–13	Michigan 2012
No health care coverage among adults 18–64	10.9%	19.1%	14.6%	16.6%
Needed to see doctor but could not	13.2%	11.0%	11.0%	NA
Needed to see dentist but could not	12.7%	15.0%	12.0%	NA



Alcohol Consumption

Barry County







Alcohol abuse and misuse has been associated with serious health problems, such as cirrhosis of the liver, high blood pressure, stroke, and some types of cancer, and can increase the risk for motor vehicle accidents, injuries, violence, and suicide. (CDC) In Barry County, 25.0% of fatal motor vehicle crashes were alcohol-involved in 2009. (MTCF)

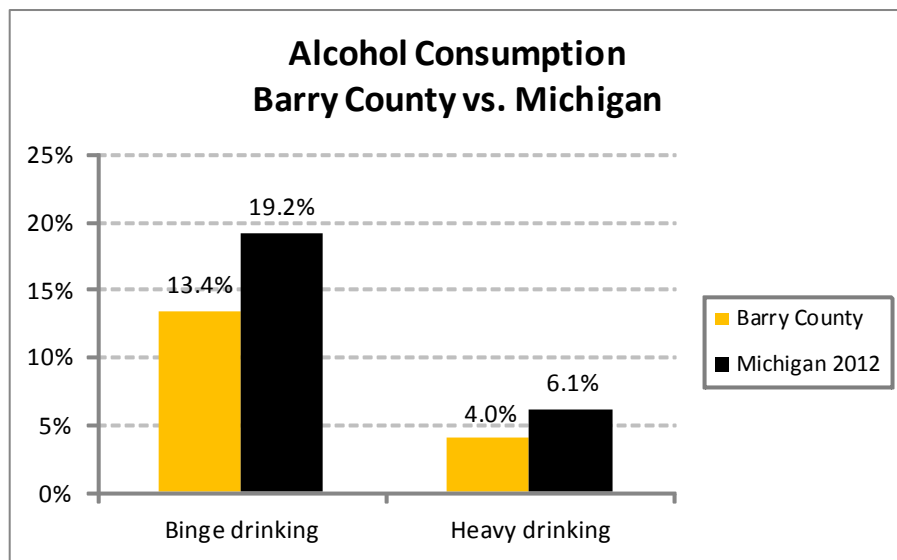
13.4% of Barry County adults in the 2011–2013 BRFs were estimated to have engaged in binge drinking (i.e., the consumption of five or more drinks per occasion for males, and more than four drinks for women) at least once in the past month. **Males in Barry County were almost 4 times more likely to report binge drinking than females.** Younger adults were more likely to report binge drinking than older adults. For example, 22.2% of adults aged 18–34 reported binge drinking, compared to only 5.3% of adults 55 and older.

Adults in Barry County with higher incomes reported higher rates of drinking than those with lower incomes. Alcohol consumption is an exception to the usual distribution pattern seen in most risk behaviors—that people with less education and lower incomes are more likely to engage in the behavior. With alcohol use, the higher the income and education, the more likely the person is to report binge or heavy drinking.

4.0% of Barry County adults reported heavy drinking in the past month (i.e., usually consuming more than two alcoholic beverages per day for men or more than one alcoholic beverage for women per day).

ALCOHOL CONSUMPTION		
	Comparison	Trend
Binge Drinking 13.4% Barry County Adults	 Better than state	 No clear trend
Heavy Drinking 4.0% Barry County Adults	 Better than state	 No clear trend

Trends are assessed using local BRFs data collected in 2006–2007, 2008–2010, and 2011–2013. Comparisons are based on 2011–2013 local BRFs data compared with the 2012 Michigan BRFs.



Binge Drinking							
Barry County		No Drinks in Past Month		Drank, But NO Binge Drinking		Binge Drinking*	
		%	N	%	N	%	N
Total		50.6%	196	36.0%	139	13.4%	52
Gender	Male	45.4	88	33.5	65	21.1	41
	Female	55.7	107	38.5	74	5.7	11
Age	18–34	44.4	40	33.3	30	22.2	20
	35–54	37.6	53	45.4	64	17.0	24
	55 +	64.5	98	30.3	46	5.3	8
Education	Less than high school	71.0	22	**	**	22.6	7
	High school grad	65.4	100	22.9	35	11.8	18
	Some college	45.6	47	40.8	42	13.6	14
	College grad	26.5	26	61.2	60	12.2	12
Income	< \$24,999	77.0	77	14.0	14	9.0	9
	\$25,000–49,999	49.0	48	38.8	38	12.2	12
	\$50,000–74,999	31.1	19	45.9	28	23.0	14
	\$75,000 +	31.6	25	54.4	43	13.9	11

* Among all adults, the proportion who reported consuming five or more drinks per occasion (for men) or four or more drinks per occasion (for women) at least once in the previous month.

** Prevalence estimate not available due to subgroup size.

Heavy Drinking							
Barry County		No Drinks in Past Month		Drank, But NO Heavy Drinking		Heavy Drinking*	
		%	N	%	N	%	N
Total		52.5%	196	43.5%	162	4.0%	15
Gender	Male	47.8	88	45.7	84	6.5	12
	Female	56.6	107	41.8	79	**	**
Age	18–34	48.8	40	46.3	38	**	**
	35–54	38.1	53	59.0	82	**	**
	55 +	67.1	98	28.8	42	4.1	6
Education	Less than high school	73.3	22	**	**	**	**
	High school grad	67.1	100	32.2	48	**	**
	Some college	47.0	47	48.0	48	**	**
	College grad	28.3	26	67.4	62	**	**
Income	< \$24,999	78.6	77	19.4	19	**	**
	\$25,000–49,999	50.5	48	43.2	41	6.3	6
	\$50,000–74,999	32.2	19	62.7	37	**	**
	\$75,000 +	32.5	25	63.6	49	**	**

* Among all adults, the proportion who reported usually consuming more than two alcoholic beverages per day for men or more than one alcoholic beverage for women per day.

** Prevalence estimate not available due to subgroup size.

Comparison & Trends	Barry County 2006–07	Barry County 2008–10	Barry County 2011–13	Michigan 2012
Binge drinking	12.1%	16.7%	13.4%	19.2%
Heavy drinking	3.7%	7.5%	4.0%	6.1%



Tobacco Use & Exposure



Barry County



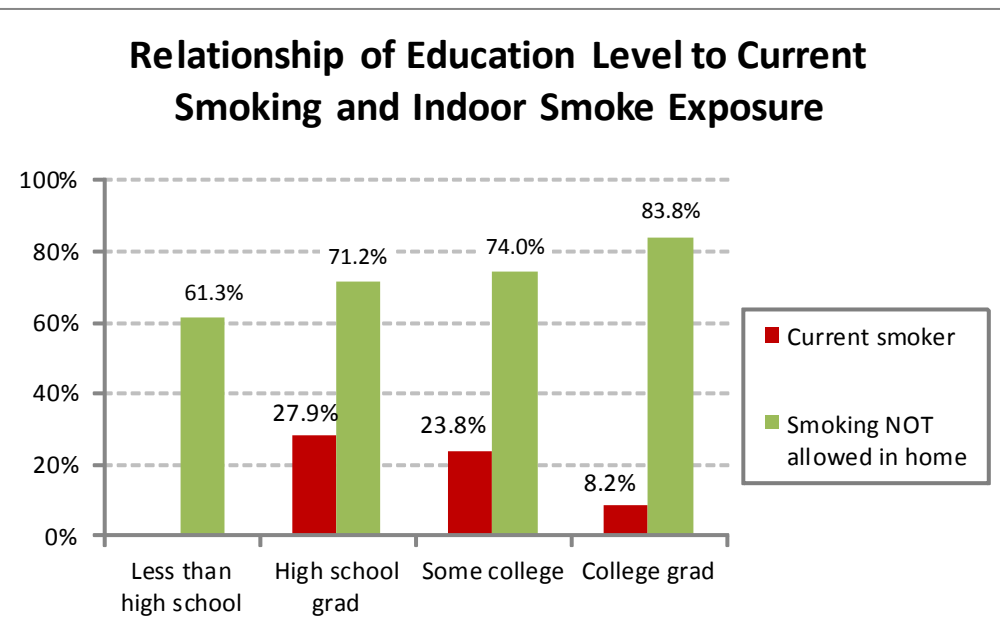
Smoking contributes to the development of many kinds of chronic conditions, including cancers, respiratory diseases, and cardiovascular diseases, and **“remains the leading preventable cause of premature death in the United States.”** (U.S. Surgeon General Report, 2004) Smokers die up to 15 years earlier than non-smokers. Smoking among pregnant women is a major contributor to premature births and infant mortality. (Schroeder SA. N Engl J Med 2007; 357:1221) The Michigan Department of Community Health estimates that smoking costs Barry County \$15.7 million in annual smoking-related health care costs, and kills 76 Barry County residents each year—67 directly, and 9 via secondhand smoke.

20.5% of Barry County adults in the 2011–2013 BRFSS were estimated to be current smokers (the proportion who reported that they had ever smoked at least 100 cigarettes in their life and that they smoke cigarettes now, either every day or on some days). Younger **adults were more likely to be a current smoker than older adults**. For example, 34.1% of adults aged 18–34 reported being a current smokers, compared to only 15.2% of adults aged 55 and older. **Adults with lower education levels reported higher rates of current smoking than those with more education**. Females reported slightly higher levels of current smoking than males in Barry County.

Smoking is allowed indoors in the homes of 12.1% of Barry County residents, with another 11.9% reporting no rules about smoking in their home. Adults with more education and more income were more likely to forbid smoking in their home than those with less education or less income.

TOBACCO USE & EXPOSURE	Comparison	Trend
Current Cigarette Smoking 20.5 % Barry County Adults	 Better than state	 No clear trend
Smoking Allowed in Home 12.1% Barry County Adults	Data not available	Data not available

Trends are assessed using local BRFSS data collected in 2006–2007, 2008–2010, and 2011–2013
 Comparisons are based on 2011–2013 local BRFSS data compared with the 2012 Michigan BRFSS.



Cigarette Smoking

Barry County		Never Smoked		Former Smoker		Current Smoker*	
		%	N	%	N	%	N
Total		50.8%	198	28.7%	112	20.5%	80
Gender	Male	52.3	102	29.2	57	18.5	36
	Female	49.2	96	28.2	55	22.6	44
Age	18–34	57.1	52	8.8	8	34.1	31
	35–54	46.2	66	35.7	51	18.2	26
	55 +	50.3	76	34.4	52	15.2	23
Education	Less than high school	50.0	16	37.5	12	**	**
	High school grad	41.6	64	30.5	47	27.9	43
	Some college	50.5	53	25.7	27	23.8	25
	College grad	65.3	64	26.5	26	8.2	8
Income	< \$24,999	43.0	43	34.0	34	23.0	23
	\$25,000–49,999	50.0	49	32.7	32	17.3	17
	\$50,000–74,999	50.8	31	27.9	17	21.3	13
	\$75,000 +	61.5	48	23.1	18	15.4	12

* Among all adults, the proportion who reported that they had ever smoked at least 100 cigarettes in their life and that they smoke cigarettes now, either every day or on some days.

** Prevalence estimate not available due to subgroup size.

Indoor Smoking

Barry County		Smoking Not Allowed		No Rules About Smoking Indoors		Smoking Is Allowed Indoors*	
		%	N	%	N	%	N
Total		74.3%	290	11.9%	46	12.1%	47
Gender	Male	77.4	151	12.8	25	7.7	15
	Female	71.3	139	10.8	21	16.5	32
Age	18–34	69.2	63	11.0	10	17.6	16
	35–54	81.1	116	7.0	10	10.5	15
	55 +	70.9	107	16.6	25	10.4	16
Education	Less than high school	61.3	19	22.6	7	**	**
	High school grad	71.2	111	13.5	21	13.4	21
	Some college	74.0	77	6.7	7	15.4	16
	College grad	83.8	83	11.1	11	**	**
Income	<\$24,999	63.0	63	21.0	21	15.0	15
	\$25,000–49,999	68.7	68	12.1	12	17.2	17
	\$50,000–74,999	86.7	52	**	**	**	**
	\$75,000 +	87.3	69	**	**	**	**

* Among all adults, the proportion who reported that smoking is allowed anywhere in their home, or in some places or at some time.

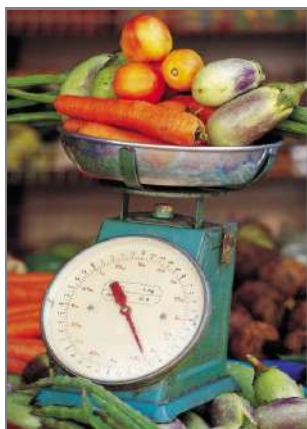
** Prevalence estimate not available due to subgroup size.

Comparison & Trends	Barry County 2006–07	Barry County 2008–10	Barry County 2011–13	Michigan 2012
Current smoker	23.5%	24.3%	20.5%	23.3%
Indoor smoking allowed	NA	15.8%	12.1%	NA



Fruit & Vegetable Consumption

Barry County



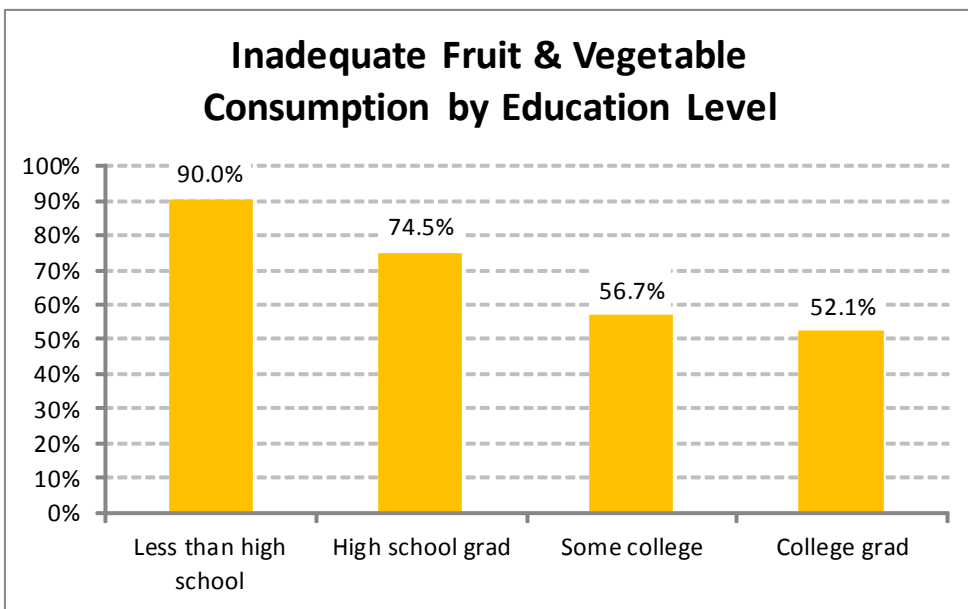
Research shows that fruits and vegetables are important promoters of good health. When compared with people whose diets are low in fruits and vegetables, those who eat more generous amounts of fruits and vegetables have a reduced risk of some chronic diseases, such as stroke and certain forms of cancer. (CDC) Increasing fruit and vegetable consumption is a healthy way to lose or maintain weight.

65.4% of Barry County adults in the 2011–2013 BRFSS reported **inadequate fruit and vegetable consumption** (the proportion whose total reported frequency of fruits [including juice] and vegetables combined was less than five servings per day).

Males were more likely to report inadequate fruit and vegetable consumption than females in Barry County. Adults under 35 years of age reported lower rates of inadequate consumption than older adults. **The more education reported, the less likely they were to report inadequate fruit and vegetable consumption than adults with less education.** For example, 52.1% of college graduates reported fewer than five fruits or vegetables consumed in a day, compared to 90% of adults with less than a high school education. Adults with the highest income (\$75,000+) were less likely to report inadequate fruit and vegetable consumption than those with lower incomes.

FRUIT & VEGETABLE CONSUMPTION	Comparison	Trend
Inadequate Fruits & Vegetables		
65.4% Barry County Adults	Data not available	Data not available

Due to changes in the wording of the question, results are not comparable to Michigan 2012 BRFSS report, nor to the 2008–2010 Barry-Eaton BRFSS report.



Fruit & Vegetable Consumption							
Barry County		5 or More Servings of Fruit Per Day		5 or More Servings of Vegetables Per Day		Inadequate Fruits and Vegetables*	
		%	N	%	N	%	N
Total		5.5%	21	4.4%	16	65.4%	251
Gender	Male	5.4	10	**	**	71.1	135
	Female	5.2	10	5.9	11	59.8	116
Age	18–34	6.6	6	**	**	54.9	50
	35–54	5.8	8	4.3	6	67.9	95
	55 +	4.9	7	**	**	68.2	101
Education	Less than high school	**	**	**	**	90.0	27
	High school grad	**	**	**	**	74.5	114
	Some college	5.8	6	5.9	6	56.7	59
	College grad	11.5	11	9.5	9	52.1	50
Income	<\$24,999	6.2	6	**	**	72.3	73
	\$25,000–49,999	**	**	**	**	66.3	63
	\$50,000–74,999	**	**	**	**	67.2	41
	\$75,000 +	10.3	8	7.9	6	60.8	48

*Among all adults, the proportion whose total reported frequency of consumption of fruits (including juice) and total vegetables combined totaled less than five servings per day.

** Prevalence estimate not available due to subgroup size.

Comparison & Trends	Barry County 2006–07	Barry County 2008–10	Barry County 2011–13	Michigan 2012
Inadequate fruits	NA	NA	94.5%	NA
Inadequate vegetables	NA	NA	95.6%	NA
Inadequate fruits and vegetables	NA	NA	65.4%	NA



Physical Activity

Barry County



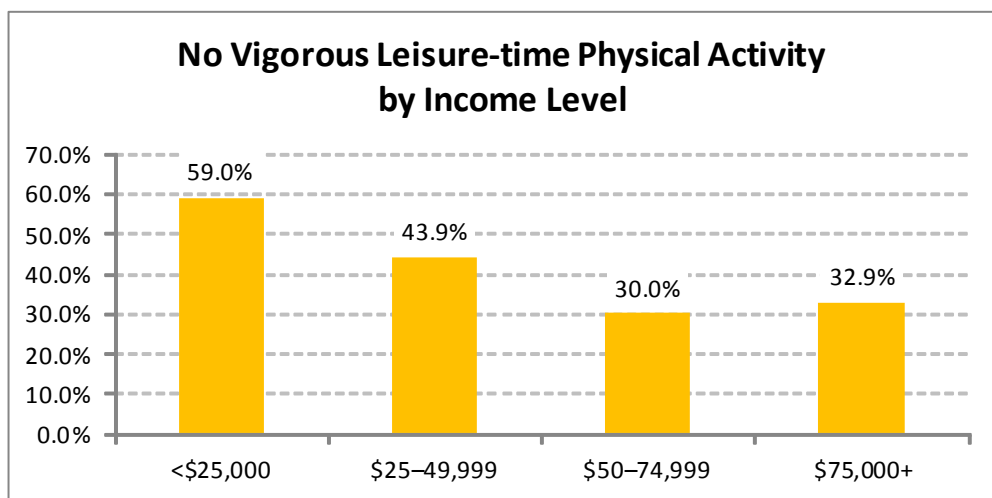
Regular physical activity has been shown to reduce the risk of many diseases, including cardiovascular disease, diabetes, colon and breast cancer, and osteoporosis. Keeping physically active also helps to control weight, maintain healthy bones, muscles, and joints, and can relieve symptoms of depression. (CDC)

10.6% of Barry County adults did not report **any leisure-time physical activity** (neither moderate leisure-time physical activities nor vigorous leisure-time activities) during a usual week.

Females were more likely to report no vigorous leisure-time physical activity than males in Barry County, but males and females reported similar levels of no moderate leisure-time activity. Older adults, adults with less than a high school education, and adults with income less than \$25,000 were more likely to report no moderate or no vigorous leisure-time activity than those who are younger, have more education, or have more income.

PHYSICAL ACTIVITY	Comparison	Trend
No Moderate Leisure-time Physical Activity 12.7% Barry County Adults	Data not available	Data not available
No Vigorous Leisure-time Physical Activity 44.4% Barry County Adults	Data not available	Data not available
No Moderate and No Vigorous Leisure-time Physical Activity 10.6% Barry County Adults	Data not available	Data not available

Trends are assessed using local BRFSS data collected in 2006–2007, 2008–2010, and 2011–2013. Comparisons are based on 2011–2013 local BRFSS data compared with the 2012 Michigan BRFSS.



Physical Activity									
Barry County		Some Moderate Leisure-time Physical Activity (i)		No Moderate Leisure-time Physical Activity		Some Vigorous Leisure-time Physical Activity (iii)		No Vigorous Leisure-time Physical Activity	
		%	N	%	N	%	N	%	N
Total		86.4%	337	12.7%	50	55.3%	216	44.4%	173
Gender	Male	85.1	166	13.3	26	66.5	129	33.3	64
	Female	87.2	171	12.2	24	44.4	87	55.6	109
Age	18–34	93.4	85	6.6	6	69.2	63	30.8	28
	35–54	90.8	129	9.2	13	64.8	92	35.2	50
	55 +	78.7	118	19.3	29	38.4	58	60.9	92
Education	Less than high school	68.8	22	31.3	10	40.6	13	59.4	19
	High school grad	83.1	128	16.2	25	49.4	76	50.0	77
	Some college	89.4	93	9.6	10	65.7	69	34.3	36
	College grad	94.9	93	**	**	58.2	57	41.8	41
Income	< \$24,999	76.2	77	22.8	23	41.0	41	59.0	59
	\$25,000–49,999	89.7	87	10.3	10	56.1	55	43.9	43
	\$50,000–74,999	93.4	57	**	**	70.0	42	30.0	18
	\$75,000 +	92.4	73	**	**	67.1	53	32.9	26

(i) Among all adults, the proportion who reported participating in a moderate leisure-time physical activity for 10 minutes or more in a usual week, including activities such as brisk walking, bicycling, vacuuming, gardening, or anything else that causes some increase in breathing or heart rate.

(ii) Among all adults, the proportion who reported participating in a vigorous leisure-time physical activity for 10 minutes or more in a usual week, including activities such as running, aerobics, heavy yard work, or anything else that causes large increase in breathing or heart rate.

** Prevalence estimate not available due to subgroup size.

Barry County		
Rank	Community or Neighborhood Reasons for Not Being More Physically Active	Number of Respondents*
1	Rural/remote area	23
2	Not enough sidewalks or places to walk	22
3	Bad weather	18
4	Not enough recreation facilities	12
5	No street lights/not well lit	10
6	Not enough bike lanes	7
7	Too many hills	5
8	Heavy traffic	3
8	Poor scenery	3
10	Not enough physical activity programs	2
10	Unattended dogs	2

* Among all adults, the number who cited a community or neighborhood reason as to why they were not able to be more physically active.

Comparison & Trends	Barry County 2006–07	Barry County 2008–10	Barry County 2011–13	Michigan 2012
No moderate leisure-time physical activity	NA	NA	12.7%	NA
No vigorous leisure-time physical activity	NA	NA	44.4%	NA



Cancer Screening



Barry County



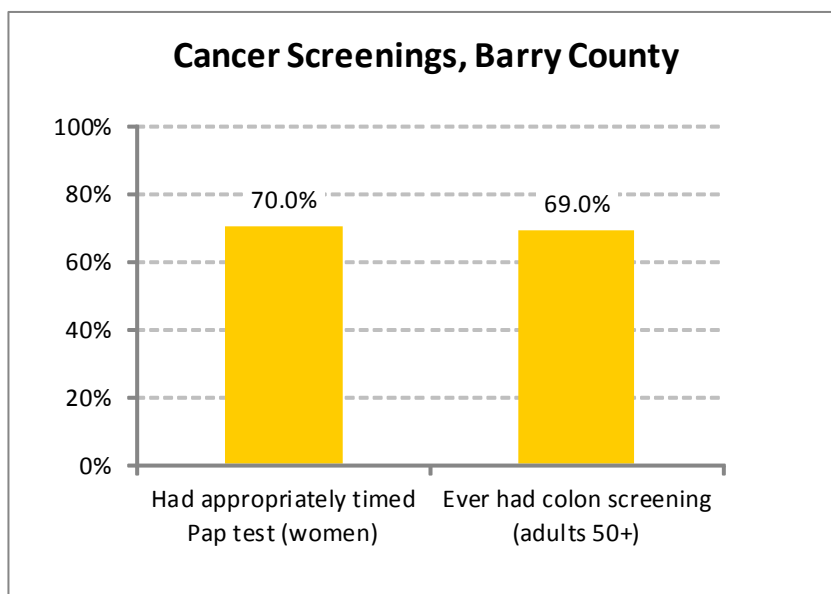
Cancer was a leading cause of death in Barry County in 2011, according to the Michigan Department of Community Health. Getting cancer screening tests regularly may find breast, colon, and other cancers early—when treatment is likely to work best. Current screening recommendations are available at www.cdc.gov/cancer. Early detection of cervical cancer can occur through the use of a Pap test in women, while detection and treatment of colon cancer lesions can occur through procedures called sigmoidoscopy or colonoscopy in adults over age 50.

70.0% of Barry County women in the 2011–2013 BRFs reported that they had a Pap test in the last three years. Women under 55 years and those making more than \$25,000 reported higher rates of having a Pap test in the last three years than women over 55 years of age or those making less than \$25,000.

69.0% of Barry County adults over age 50 responded that they had ever had a sigmoidoscopy or colonoscopy procedure. Males and females reported similar rates of having had a colon screening procedure. Respondents who had less than high school education were less likely to report having a colon screening procedure.

CANCER SCREENING	Comparison	Trend
Pap Test in Last Three Years 70.0% Barry County Women	 Worse than state	Data not available
Ever Had Colon Screening 69.0% Barry County Adults 50+	 Worse than state	Data not available

Trends are assessed using local BRFs data collected in 2006–2007, 2008–2010, and 2011–2013. Comparisons are based on 2010–2013 local BRFs data compared with the 2012 Michigan BRFs.



Cancer Screening					
Barry County		Had Appropriately Timed Pap Test Among Women (i)		Ever Had Colon Cancer Screening Procedure Among Adults 50 + (ii)	
		%	N	%	N
Total		70.0%	137	69.0%	141
Gender	Male			69.2	74
	Female	70.0	137	68.7	68
Age	18–34	85.4	41		
	35–54	80.6	58	59.3	32
	55+	50.7	36	72.2	109
Education	Less than high school	**	**	61.1	11
	High school grad	63.5	54	70.1	61
	Some college	78.6	44	69.4	34
	College grad	76.6	36	71.4	35
Income	< \$24,999	54.4	31	65.6	40
	\$25,000–49,999	80.0	40	73.1	38
	\$50,000–74,999	83.3	20	63.3	19
	\$75,000 +	83.3	30	67.6	25

(i) Among women, the proportion who reported having a Pap test in the past three years.

(ii) Among adults aged 50 and older, the proportion who reported ever receiving a sigmoidoscopy and/or colonoscopy procedure.

** Prevalence estimate not available due to subgroup size.

Comparison & Trends	Barry County 2006–07	Barry County 2008–10	Barry County 2011–13	Michigan 2012
Had appropriately timed Pap test (among women)	NA	NA	70.0%	79.4%
Ever had colon cancer screening procedure (among adults 50+)	NA	66.1%	69.0%	72.7%



Chronic Disease

Barry County



Chronic diseases account for 7 of the 10 leading causes of death in Michigan and are responsible for a great deal of morbidity and disability. More than 60% of Michigan's adult population suffers from a chronic disabling condition, such as arthritis, heart disease, hypertension, or diabetes. In addition, more than 95% of Michigan adults report behaviors, such as smoking, unhealthy diet, lack of physical activity, and alcohol use, that lead to many chronic diseases. (MDCH)

32.7% of Barry County adults in the 2011–2013 BRFs reported that they have ever been told by a health professional that they had high blood pressure. Males, older adults, those with less education, and those with less income reported higher rates of ever being told they had high blood pressure than females, younger adults, those with more education, or those with more income.

10.3% of Barry County adults reported that they have ever been told by a health professional that they had diabetes. Females and older adults reported higher rates than males or younger adults of ever having been told they had diabetes.

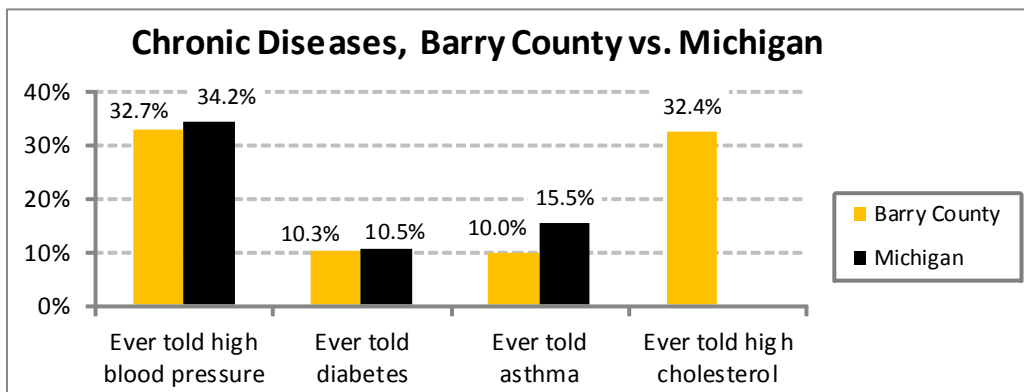
10.0% of Barry County adults reported that they have ever been told by a health professional that they had asthma and 83.8% of these adults still have asthma. Those who are younger, have less education, or less income were more likely to report having ever been told they had asthma.

32.4% of Barry County adults reported that they have ever been told by a health professional that they had high blood cholesterol. Older adults over 55 years of age were much more likely to report having ever been told they had high blood cholesterol than adults 18 to 54

CHRONIC DISEASE	Comparison	Trend
Ever Told High Blood Pressure 32.7% Barry County Adults	Similar to state	No clear Trend
Ever Told Diabetes 10.3% Barry County Adults	Similar to state	No clear trend
Ever Told Asthma 10.0% Barry County Adults	Better than state	Data not available
Ever Told High Cholesterol 32.4% Barry County Adults	Data not available	Data not available

Trends are assessed using local BRFs data collected in 2006–2007, 2008–2010, and 2011–2013.

Comparisons are based on 2011–2013 local BRFs data compared with the 2012 Michigan BRFs, except for high blood pressure, which is compared to the 2011 Michigan BRFs.



Chronic Disease							
Barry County		Ever Told High Blood Pressure (i)		Ever Told Diabetes (ii)		Ever Told High Cholesterol (iii)	
		%	N	%	N	%	N
Total		32.7%	127	10.3%	40	32.4%	126
Gender	Male	37.1	72	9.2	18	31.4	61
	Female	28.2	55	11.3	22	33.7	66
Age	18–34	6.6	6	0.0	0	**	**
	35–54	24.6	35	9.1	13	28.0	40
	55 +	57.6	87	18.5	28	53.3	80
Education	Less than high school	48.4	15	**	**	37.5	12
	High school grad	33.5	52	12.9	20	35.1	54
	Some college	28.8	30	7.6	8	26.0	27
	College grad	29.9	29	9.2	9	33.0	32
Income	< \$24,999	41.0	41	14.9	15	37.4	37
	\$25,000–49,999	34.7	34	9.3	9	36.7	36
	\$50,000–74,999	29.5	18	13.1	8	32.8	20
	\$75,000 +	24.1	19	**	**	25.3	20

(i) Among all adults, the proportion who reported that they were ever told by a health care professional that they have high blood pressure. Women who had high blood pressure only during pregnancy and adults who were borderline or prehypertensive were considered not to have been diagnosed.

(ii) Among all adults, the proportion who reported that they were ever told by a health care professional that they have diabetes. Adults who have been told they have prediabetes and women who had diabetes only during pregnancy were classified as not being diagnosed.

(iii) Among all adults, the proportion who reported that they were ever told by a health care professional that they have high blood cholesterol.

**Prevalence estimate not available due to subgroup size.

Asthma					
Barry County		Ever Told Asthma (i)		Still Have Asthma (ii)	
		%	N	%	N
Total		10.0%	39	83.8%	33
Gender	Male	9.2	18	88.9	16
	Female	10.8	21	77.3	17
Age	18–34	13.3	12	76.9	10
	35–54	10.6	15	80.0	12
	55 +	6.6	10	90.0	9
Education	Less than high school	**	**	**	**
	High school grad	12.3	19	95.0	19
	Some college	9.5	10	80.0	8
	College grad	8.2	8	**	**
Income	< \$24,999	12.9	13	100.0	13
	\$25,000–49,999	9.2	9	66.7	6
	\$50,000–74,999	**	**	**	**
	\$75,000 +	7.7	6	**	**

(i) Among all adults, the proportion who reported that they were ever told by a health care professional that they have asthma.

(ii) Among adults who reported that they have ever been told that they have asthma, the proportion who still have asthma.

**Prevalence estimate not available due to subgroup size.

Comparison & Trends	Barry County 2006–07	Barry County 2008–10	Barry County 2011–13	Michigan 2012
Ever told high blood pressure	29.9%	22.0%	32.7%	34.2%*
Ever told diabetes	9.1%	8.2%	10.3%	10.5%
Ever told asthma	NA	NA	10.0%	15.5%
Ever told high cholesterol	NA	NA	32.4%	NA

*Michigan 2011 BRFSS comparison. Question not asked in Michigan 2012 BRFSS Survey.

