

Barry County Report

2008-2010

Barry-Eaton District Health Department
Behavioral Risk Factor Survey

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



**Barry-Eaton District
Health Department**

Caring for the Community Since the 1930's

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 Mid-South Substance Abuse Commission. 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.



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 2008-2010 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 Mid-South Substance Abuse Commission.

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.

Joseph Brehler
Chair, Barry-Eaton District Board of Health

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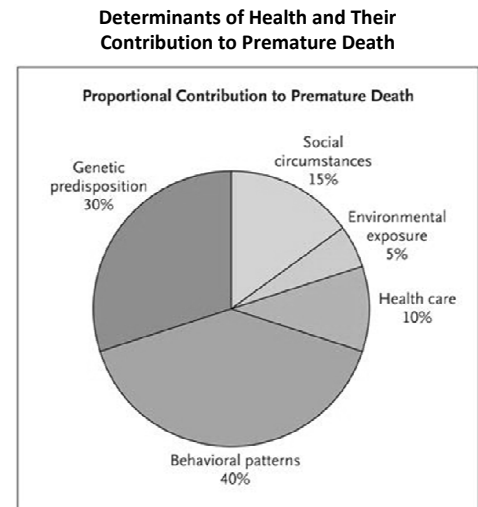
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INTRODUCTION

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 2008 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 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.



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 ten 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 2,431 adults in the Capital Area responded to the telephone survey and the overall survey cooperation (response) rate was 48%. This rate is computed using the American Association for Public Opinion Research (AAPOR) definitions, which compute the number of completed interviews as a proportion of the total number of eligible households contacted. 780 interviews were completed in the Barry-Eaton District — 390 in both Barry and Eaton counties. 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 1/3 of the survey sample in each year 2008, 2009, and 2010. Sampling was accelerated in 2010 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 specific groups are 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 2008-2010 BRFSS data set were weighted using Census 2000 data. While more current data is available through the American Community Survey (ACS), it is not available for all counties included in the BRFSS since the most recent ACS collects and reports data only for places with populations of 100,000 or greater. Therefore, Census data were used for consistency.

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.

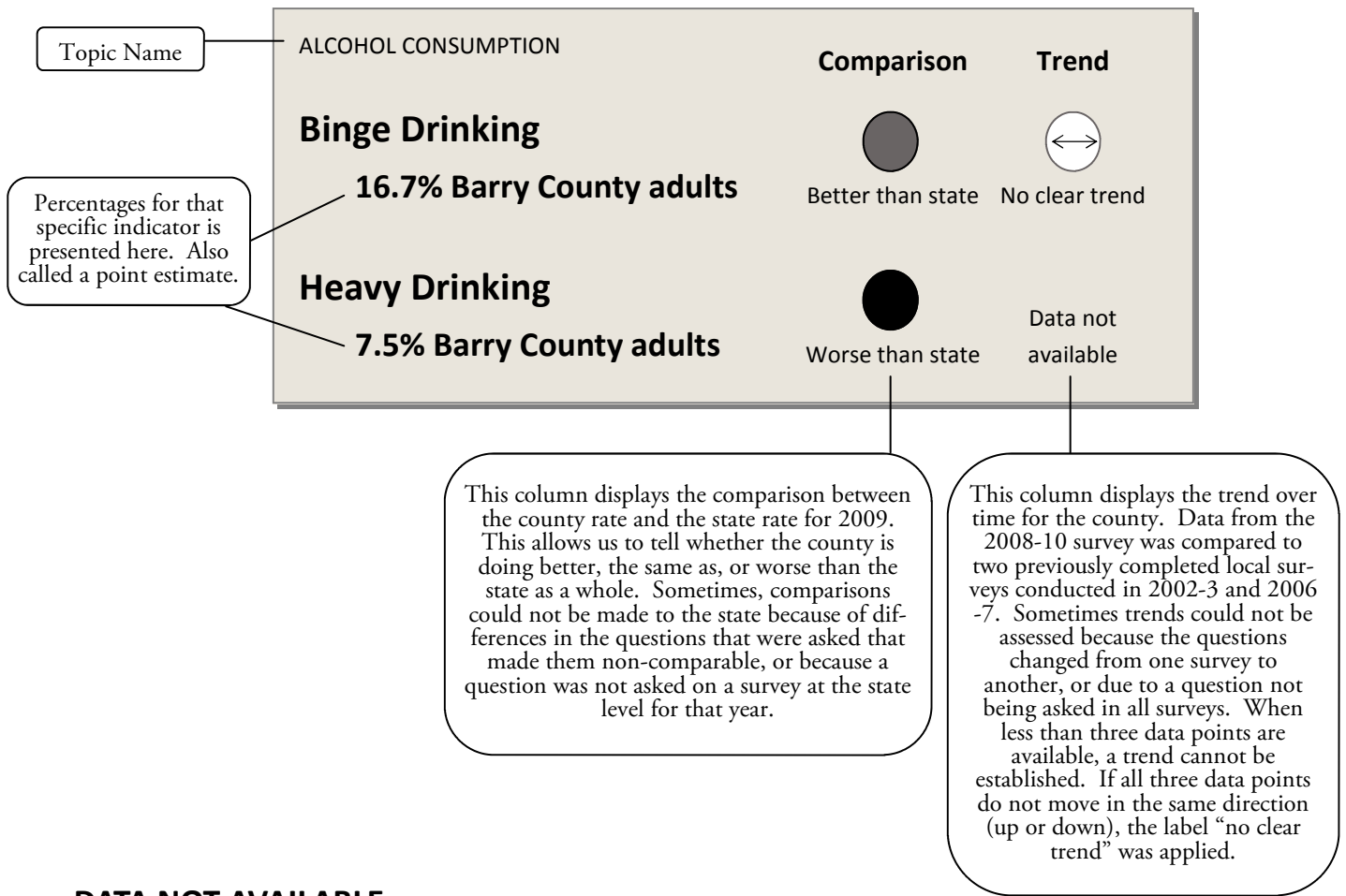
DATA INTERPRETATION NOTES

The data presented in the following charts are weighted as described above — both the prevalence estimate percents and the N values. The N value is a weighted number of participants reporting that response. When the weighted number (N) was 5 or fewer responses, the N value and the percent are not reported (suppressed). 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 is not statistically significantly different 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 percentage 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 there is not data to make either a comparison to the state, or to determine a trend pattern.

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

SURVEY ANALYSIS The BE-BRFSS survey data was analyzed using SPSS 15.0 for Windows, Release 15.0.0 (6 Sept 2006), Copyright SPSS, Inc. 1989-2006.

CITATIONS The majority of sources cited in the text (unless otherwise noted) are derived from sources cited in the 2009 Michigan Behavioral Risk Factor Survey Report. Their report (and bibliography) is available here: http://www.michigan.gov/documents/mdch/2009_MiBRFS_Annual_Report_12.21.10_340958_7.PDF



Summary

Barry County Behavioral Risk Factor Survey 2008-2010

		Indicators	%	Comparison	Trend
HEALTH STATUS INDICATORS	Health Status	Physical Health Status Not Good	12.6	worse than state	NA
		Mental Health Status Not Good	10.3	better than state	NA
		General Health Status Fair/Poor	12.7	better than state	NA
	Disability	Disability, Total	20.7	better than state	NA
	Weight Status	Obese	26.6	better than state	no clear trend
		Overweight	34.9	better than state	no clear trend
	Access to Healthcare	No Health Coverage 18-64	19.1	worse than state	NA
		Could not see Doctor	11.0	NA	no clear trend
		Could not see Dentist	15.0	NA	getting worse
RISK BEHAVIOR INDICATORS	Alcohol	Binge Drinking	16.7	better than state	no clear trend
		Heavy Drinking	7.5	worse than state	NA
	Tobacco Use & Exposure	Current Smoker	24.3	worse than state	getting worse
		Indoor Smoking	15.8	NA	NA
	Nutrition	Inadequate Fruit & Veg Consumption	82.5	worse than state	no clear trend
	Physical Activity	No Leisure-Time Physical Activity	15.2	better than state	getting better
CLINICAL PREVENTION INDICATORS	Cancer Screening	Ever Mammogram (women 40+)	91.0	NA	NA
		Ever Colon Cancer Screening Procedure (adults 50+)	66.1	NA	NA
CHRONIC DISEASE OUTCOMES	Chronic Disease	High Blood Pressure	22.0	better than state	NA
		Diabetes	8.2	better than state	no clear trend

Trends are assessed using local BRFs data collected in 2002-2003, 2006-2007, and 2008-2010. Comparisons are based on 2008-2010 local BRFs data compared with the 2009 Michigan BRFs.



Barry-Eaton District Health Department
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2008-2010
Barry-Eaton District Health Department
Behavioral Risk Factor Survey

Health Status & Quality of Life




Barry County



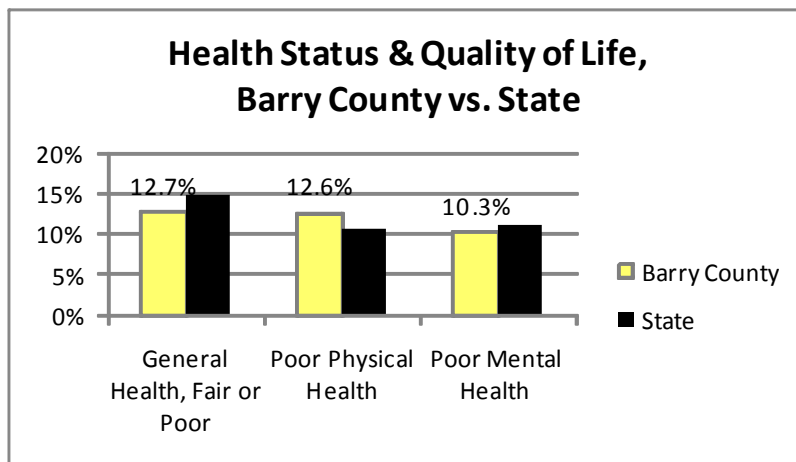
General health status is a reliable self-rated assessment of one's perceived health, which may be influenced by all aspects of life, including behaviors, environmental factors, and community, according to Healthy People 2020. The rates of self-rated fair or poor health status has been found to be statistically significantly higher within older age groups, females, and minorities, and has also been associated with lower socioeconomic status in the presence or absence of disease. (CDC)

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. Poor mental health is defined as the proportion of adults who reported two weeks or more (at least 14 days) of poor mental health within the past month — including stress, depression, or problems with emotions.

Barry County adults rated higher than the state in poor physical health, meaning adults are reporting worse physical health than people in the state as a whole. **Younger adults reported more poor mental health, whereas older adults reported more poor physical health.** Those with less education and low incomes were more likely to report poor physical and mental health, and to rate their general health status as fair or poor.

HEALTH STATUS & QUALITY OF LIFE	Comparison	Trend
Poor Physical Health 12.6% Barry County adults	 Worse than state	Data not available
Poor Mental Health 10.3% Barry County adults	 Better than state	Data not available
General Health Status, Fair or Poor 12.7% Barry County adults	 Better than state	Data not available

Trends are assessed using local BRFSS data collected in 2002-2003, 2006-2007, and 2008-2010. Comparisons are based on 2008-2010 local BRFSS data compared with the 2009 Michigan BRFSS.



Health Status & Quality of Life							
Barry County		Poor Physical Health (i)		Poor Mental Health (ii)		General Health, Fair or Poor (iii)	
		%	N	%	N	%	N
Total		12.6%	47	10.3%	39	12.7%	49
Gender	Male	8.5%	17	6.7%	13	12.4%	25
	Female	17.1%	30	14.1%	26	12.8%	24
Age	18-34	**	**	11.8%	8	**	**
	35-54	15.0%	23	13.8%	21	12.7%	20
	55 +	20.5%	23	9.8%	11	22.0%	26
Education	Less than high school	13.7%	7	**	**	11.1%	6
	High school grad	19.1%	25	11.8%	16	19.3%	27
	Some college	9.6%	13	11.1%	15	11.0%	15
	College grad	**	**	**	**	**	**
Income	< 24,999	30.8%	16	14.8%	8	27.0%	20
	25,000 - 49,999	8.8%	8	12.5%	11	6.5%	6
	50,000 - 74,999	**	**	**	**	**	**
	75,000 +	**	**	**	**	**	**

(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 poor mental health, which includes stress, depression, and problems with emotions, during the past 30 days.

(iii) Among all adults, the proportion who reported that their health, in general, was either fair or poor.

** Prevalence estimate not available due to subgroup size.

Comparison & Trends	Barry County 2003-4	Barry County 2006-7	Barry County 2008-10	Michigan 2009
Poor Physical Health	NA	11.0%	12.6%	10.8%
Poor Mental Health	NA	14.3%	10.3%	11.2%
General Health, Fair or Poor	NA	14.1%	12.7%	15.0%



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”. (See www.healthypeople.gov)

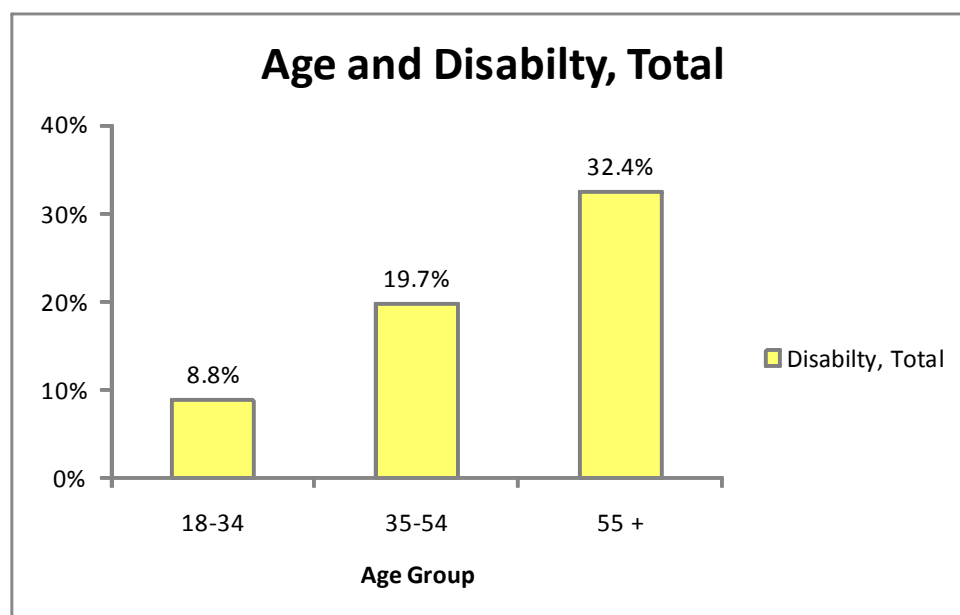
5.6% of Barry County adults in the 2008-2010 BRFs reported that they had a health problem that required the use of special equipment, such as a cane, wheelchair, or special telephone. 18.7% of Barry County adults reported that they were limited in any activities because of physical, mental, or emotional problems.

A total of **20.7% of Barry County adults** in the 2008-2010 BRFs reported that they were disabled— either requiring special equipment, limited in their activities, or both.

Older adults were more likely to report being disabled than younger adults. **Adults with less education and less income reported higher rates of disability** than those with more education and more income.

DISABILITY	Comparison	Trend
Disability, Total 20.7% Barry County adults	 Better than state	Data not available

Trends are assessed using local BRFs data collected in 2002-2003, 2006-2007, and 2008-2010. Comparisons are based on 2008-2010 local BRFs data compared with the 2009 Michigan BRFs.



Disability							
Barry County		Used Special Equipment (i)		Limited in any activities (ii)		Disability, Total (iii)	
		%	N	%	N	%	N
Total		5.6%	22	18.7%	73	20.7%	81
Gender	Male	5.4%	11	18.1%	37	20.4%	41
	Female	5.9%	11	19.3%	36	20.9%	39
Age	18-34	**	**	8.8%	6	8.8%	6
	35-54	**	**	19.1%	30	19.7%	31
	55 +	14.4%	17	28.0%	33	32.4%	38
Education	Less than high school	**	**	21.8%	12	26.0%	14
	High school grad	7.1%	10	22.9%	32	25.0%	35
	Some college	4.4%	6	14.7%	20	15.6%	21
	College grad	**	**	15.3%	9	16.7%	10
Income	< 24,999	13.0%	7	31.5%	17	35.2%	19
	25,000 - 49,999	**	**	15.1%	14	15.3%	14
	50,000 - 74,999	**	**	**	**	**	**
	75,000 +	**	**	**	**	8.4%	6

(i) the proportion of adults who reported having a health problem(s) that require the use of special equipment (such as a cane, wheelchair, or special telephone).

(ii) the proportion of adults who reported being limited in any activities because of physical, mental, or emotional problems.

(iii) the proportion of adults who reported either (i) OR (ii).

** Prevalence estimate not available due to subgroup size.

Comparison & Trends	Barry County 2003-4	Barry County 2006-7	Barry County 2008-10	Michigan 2009
Disability, Total	n/a	n/a	20.7%	22.1%



Weight Status

Barry County



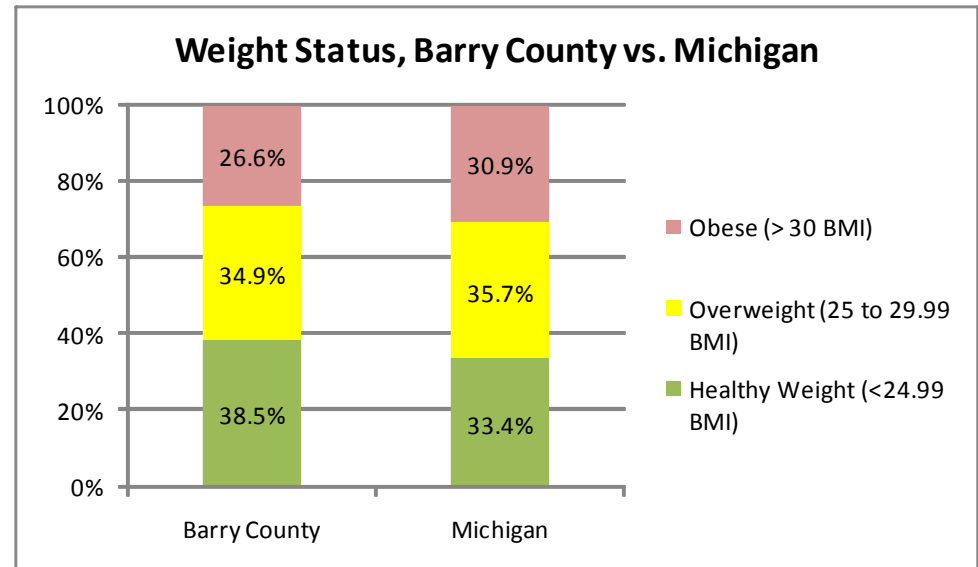
Obesity increases the risk of many diseases and health conditions, such as high blood pressure, diabetes, coronary heart disease, stroke, sleep apnea, arthritis, gallbladder disease, high cholesterol, and some forms of cancer. Obesity-related medical expenses in Michigan were estimated to be \$2.9 billion based on 2003 dollars (MDCH). Since obesity rates have increased since 2003, obesity-related medical expenditures are expected to have increased as well.

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.*

26.6% of Barry County adults in the 2008-2010 BRFs were estimated to be obese, and another **34.9% of Barry County adults were estimated to be overweight**. Females are more likely to report being a healthy weight than males in Barry County. College graduates are more likely to report being at a healthy weight than those with less than a high school education. Younger adults are more likely to report a healthy weight than older adults.

WEIGHT STATUS	Comparison	Trend
Obese 26.6% Barry County adults	Better than state	No clear trend
Overweight 34.9% Barry County adults	Better than state	No clear trend

Trends are assessed using local BRFs data collected in 2002-2003, 2006-2007, and 2008-2010. Comparisons are based on 2008-2010 local BRFs data compared with the 2009 Michigan BRFs.



* A comparison of the CDC's national 2008 BRFs (similar to this survey) and the 2007/8 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		38.5%	138	34.9%	125	26.6%	95
Gender	Male	26.2%	50	42.9%	82	30.9%	59
	Female	52.4%	87	25.9%	43	21.7%	36
Age	18-34	45.6%	26	22.8%	13	31.6%	18
	35-54	25.0%	37	43.2%	64	31.8%	47
	55 +	36.0%	40	36.0%	40	27.9%	31
Education	Less than high school	44.0%	22	**	**	46.0%	23
	High school grad	31.2%	39	40.0%	50	28.8%	36
	Some college	44.2%	57	35.7%	46	20.2%	26
	College grad	36.2%	21	43.1%	25	20.7%	21
Income	$< 24,999$	32.1%	17	26.4%	14	41.5%	22
	25,000 - 49,999	40.9%	36	33.0%	29	26.1%	23
	50,000 - 74,999	37.0%	17	45.7%	21	17.4%	8
	75,000 +	22.1%	15	54.4%	37	23.5%	16

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

** Prevalence estimate not available due to subgroup size.

Comparison & Trends	Barry County 2003-4	Barry County 2006-7	Barry County 2008-10	Michigan 2009
Obese	26.4%	27.5%	26.6%	30.9%
Overweight	41.5%	33.4%	34.9%	35.7%
Overweight + Obese	67.9%	60.9%	61.5%	66.6%



Access to Healthcare

Barry County



Adults who do not have health care coverage are less likely to access healthcare 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)

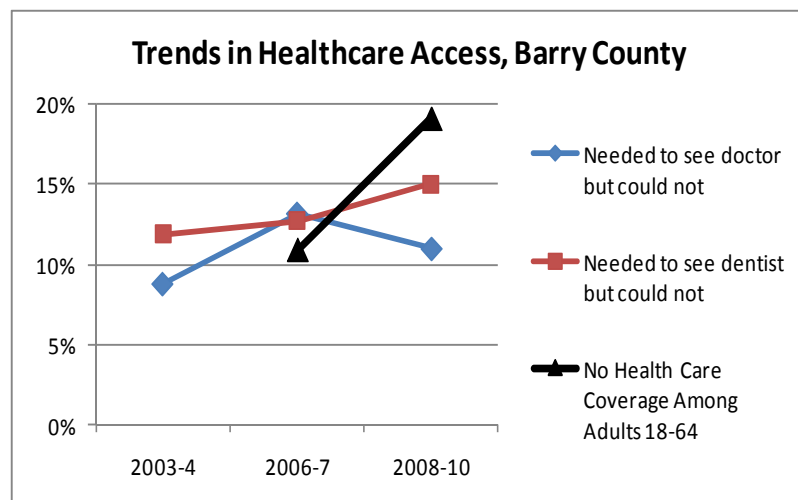
19.1% of Barry County adults aged 18-64 in the 2008-2010 BRFSS reported that they did not have any kind of health care coverage. Adults 65 and older are not included in this indicator because nearly all seniors have access to health insurance coverage through the Medicare program. **Younger adults 18-35 were more likely to be uninsured than older adults. Adults 18-64 with more education and more income were likelier to report having health care coverage.** Males reported lower levels of health care coverage 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 6 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 who are younger, those with less education, and those with low incomes.

Nearly 1 in 3 adults with income less than \$25,000/year reports that they do not have a personal healthcare provider, compared with only 1 in 10 adults with incomes over \$75,000/year.

ACCESS TO HEALTHCARE	Comparison	Trend
No Health Coverage (18-64) 19.1% Barry County adults	Worse than state	Data not available
Could not see Doctor 11.0% Barry County adults	Data not available	No clear trend
Could not see Dentist 15.0% Barry County adults	Data not available	Getting worse

Trends are assessed using local BRFSS data collected in 2002-2003, 2006-2007, and 2008-2010. Comparisons are based on 2008-2010 local BRFSS data compared with the 2009 Michigan BRFSS.



Health Care Coverage					
Barry County		Health Care Coverage Among Adults 18-64		No Health Care Coverage Among Adults 18-64*	
		%	N	%	N
Total		80.9%	263	19.1%	62
Gender	Male	79.3%	138	20.7%	36
	Female	82.7%	124	17.3%	26
Age	18-34	73.0%	84	27.0%	31
	35-54	84.1%	132	15.9%	25
	55-64	88.5%	46	11.5%	6
Education	Less than high school	63.4%	26	36.6%	15
	High school grad	82.0%	91	18.0%	20
	Some college	80.8%	97	19.2%	23
	College grad	92.3%	48	**	**
Income	< 24,999	52.4%	22	47.6%	20
	25,000 - 49,999	85.9%	61	14.4%	10
	50,000 - 74,999	93.8%	45	**	**
	75,000 +	95.6%	65	**	**

* 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.

Healthcare Access											
Barry County		No Personal Healthcare 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)		Average # Visits to the Emergency Room (v)	
		%	N	%	N	%	N	%	N	MEAN	N
Total		16.2%	63	11.0%	43	15.0%	59	15.0%	59	0.34	389
Gender	Male	18.7%	38	8.9%	18	11.8%	24	11.8%	24	0.23	202
	Female	13.4%	25	13.3%	25	18.7%	35	18.6%	35	0.45	187
Age	18-34	23.5%	16	19.1%	13	19.1%	13	8.8%	6	0.32	68
	35-54	19.0%	30	12.0%	19	19.7%	31	22.3%	35	0.35	157
	55 +	10.9%	13	**	**	6.8%	8	6.8%	8	0.32	117
Education	Less than high school	25.5%	14	14.8%	8	25.9%	14	16.7%	9	0.41	53
	High school grad	12.1%	17	17.0%	24	15.1%	21	23.7%	33	0.46	140
	Some college	19.9%	27	7.4%	10	16.2%	22	11.0%	15	0.27	136
	College grad	10.2%	6	**	**	**	**	**	**	0.13	59
Income	< 24,999	32.7%	18	29.6%	16	44.4%	24	30.2%	16	0.63	54
	25,000 - 49,999	9.8%	9	6.5%	6	16.3%	15	12.0%	11	0.15	92
	50,000 - 74,999	11.3%	6	**	**	**	**	**	**	0.24	53
	75,000 +	9.9%	7	**	**	**	**	**	**	0.18	70

(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 healthcare 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, due to 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**. (v) Among all adults, the average of the number of times respondents went to an emergency room to get care for themselves in the past year.

** Prevalence estimate not available due to subgroup size.

Comparison & Trends	Barry County 2003-4	Barry County 2006-7	Barry County 2008-10	Michigan 2009
No Health Care Coverage Among Adults 18-64	NA	10.9%	19.1%	16.2%
Needed to see doctor but could not	8.8%	13.2%	11.0%	NA
Needed to see dentist but could not	11.9%	12.7%	15.0%	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% of fatal motor vehicle crashes were alcohol-involved in 2009. (MTCF)

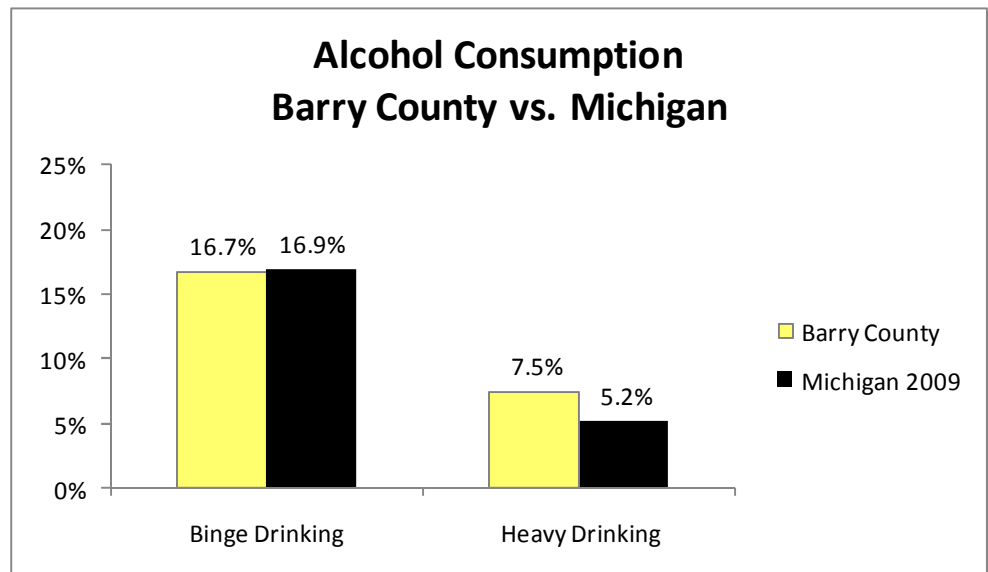
16.7% of Barry County adults in the 2008-2010 BRFSS were estimated to have engaged in binge drinking (i.e. the consumption of five or more drinks per occasion for males, and more than four drinks for women) at least once in the past month. **Younger adults were more likely to report binge drinking than older adults.**

Adults with higher incomes reported higher rates of binge 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.

7.5% 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 16.7% Barry County adults	 Better than state	 No clear trend
Heavy Drinking 7.5% Barry County adults	 Worse than state	Data not available

Trends are assessed using local BRFSS data collected in 2002-2003, 2006-2007, and 2008-2010. Comparisons are based on 2008-2010 local BRFSS data compared with the 2009 Michigan BRFSS.



Binge Drinking							
Barry County		No drinks in past month		Drank, but NO Binge Drinking		Binge Drinking*	
		%	N	%	N	%	N
Total		46.1%	180	26.6%	104	16.7%	65
Gender	Male	46.3%	94	23.6%	48	16.3%	33
	Female	45.7%	85	30.1%	56	17.2%	32
Age	18-34	23.5%	16	32.4%	22	22.1%	15
	35-54	36.3%	57	29.3%	46	22.3%	35
	55 +	66.1%	78	22.9%	27	**	**
Education	Less than high school	68.5%	37	16.7%	9	**	**
	High school grad	53.6%	75	24.3%	34	15.0%	21
	Some college	33.3%	45	29.6%	40	25.2%	34
	College grad	35.6%	21	33.9%	20	18.6%	11
Income	< 24,999	50.0%	27	22.2%	12	13.0%	7
	25,000 - 49,999	40.2%	37	35.9%	33	17.4%	16
	50,000 - 74,999	44.2%	23	23.1%	12	21.2%	11
	75,000 +	26.8%	19	31.0%	22	22.5%	16

* 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		46.7%	180	45.7%	176	7.5%	29
Gender	Male	47.2%	94	42.7%	85	10.1%	20
	Female	45.9%	85	48.6%	90	4.9%	9
Age	18-34	23.5%	16	70.6%	48	**	**
	35-54	37.3%	57	49.0%	75	13.7%	21
	55 +	66.1%	78	29.7%	35	**	**
Education	Less than high school	71.2%	37	28.8%	15	**	**
	High school grad	54.3%	75	38.4%	53	7.2%	10
	Some college	33.1%	45	53.7%	73	12.5%	17
	College grad	36.2%	21	60.3%	35	**	**
Income	< 24,999	50.0%	27	40.7%	22	**	**
	25,000 - 49,999	40.2%	37	54.3%	50	**	**
	50,000 - 74,999	43.4%	23	45.3%	24	11.3%	6
	75,000 +	27.5%	19	58.0%	40	14.5%	10

* 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 2003-4	Barry County 2006-7	Barry County 2008-10	Michigan 2009
Binge Drinking Rate	14.6%	12.1%	16.7%	16.9%
Heavy Drinking Rate	NA	3.7%	7.5%	5.2%



Tobacco Use & Exposure



Barry County



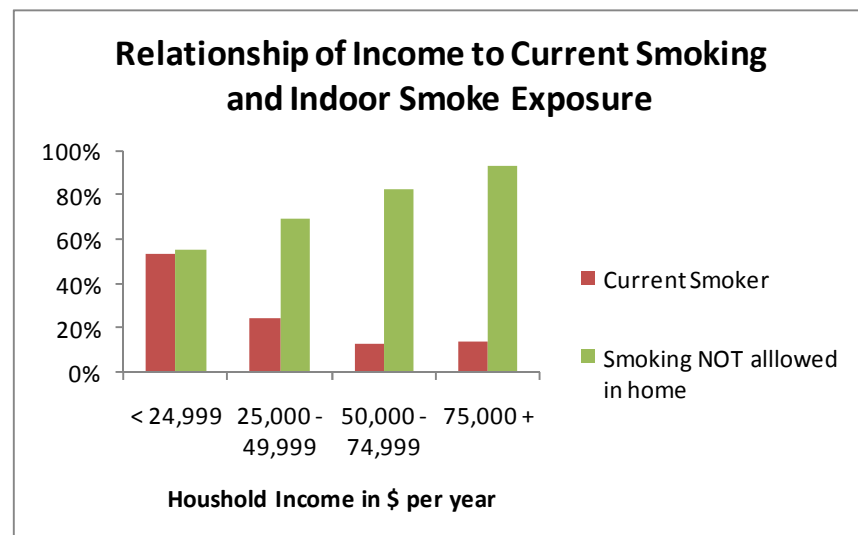
Smoking contributes to the development of many kinds of chronic conditions, including cancers, respiratory diseases, and cardiovascular diseases, and **“remains the leading preventable cause of premature death in the United States”** (U.S. Surgeon General Report, 2004). Smokers die up to 15 years earlier 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.

24.3% of Barry County adults in the 2008-2010 BRFs 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, 33.8% of adults aged 18-34 reported being current smokers, compared to only 14.5% of adults 55+. **Adults with lower education levels reported higher rates of current smoking than those with more education.** Adults with low and middle incomes reported higher rates of current smoking than those with higher incomes. Females reported higher rates of current smoking in Barry County.

Smoking is allowed indoors in the homes of 15.8% of Barry County residents, with another 10.3% reporting no rules about smoking in their home. Those with more education and more income were more likely to forbid smoking in their home.

TOBACCO USE & EXPOSURE	Comparison	Trend
Current Cigarette Smoking 24.3% Barry County adults	 Worse than state	 Getting worse
Smoking Allowed in Home 15.8% Barry County adults	Data not available	Data not available

Trends are assessed using local BRFs data collected in 2002-2003, 2006-2007, and 2008-2010. Comparisons are based on 2008-2010 local BRFs data compared with the 2009 Michigan BRFs.



Cigarette Smoking							
Barry County		Never smoked		Former smoker		Current Smoker*	
		%	N	%	N	%	N
Total		49.2%	192	26.5%	103	24.3%	95
Gender	Male	45.0%	91	32.7%	66	22.3%	45
	Female	53.5%	100	20.3%	38	26.2%	49
Age	18-34	45.6%	31	20.6%	14	33.8%	23
	35-54	44.6%	70	23.6%	37	31.8%	50
	55 +	44.4%	52	41.0%	48	14.5%	17
Education	Less than high school	35.2%	19	25.9%	14	38.9%	21
	High school grad	42.4%	59	30.2%	42	27.3%	38
	Some college	50.4%	68	26.7%	36	23.0%	31
	College grad	76.3%	45	16.9%	10	**	**
Income	< 24,999	18.5%	10	27.8%	15	53.7%	29
	25,000 - 49,999	48.9%	45	27.2%	25	23.9%	22
	50,000 - 74,999	58.5%	31	28.3%	15	13.2%	7
	75,000 +	62.0%	44	23.9%	17	14.1%	10

* 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		72.6%	283	10.3%	40	15.8%	62
Gender	Male	74.9%	152	7.9%	16	16.8%	34
	Female	70.2%	132	13.3%	25	14.9%	28
Age	18-34	71.6%	48	**	**	22.4%	15
	35-54	71.3%	112	10.8%	17	17.8%	28
	55 +	68.6%	81	13.6%	16	16.1%	19
Education	Less than high school	56.4%	31	**	**	38.2%	21
	High school grad	67.9%	95	17.1%	24	14.3%	20
	Some college	76.5%	104	8.8%	12	13.2%	18
	College grad	91.4%	53	**	**	**	**
Income	< 24,999	55.6%	30	**	**	35.2%	19
	25,000 - 49,999	69.6%	64	15.2%	14	10.9%	10
	50,000 - 74,999	83.0%	44	13.2%	7	**	**
	75,000 +	92.9%	65	**	**	**	**

* 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 2003-4	Barry County 2006-7	Barry County 2008-10	Michigan 2009
Current Smoker	22.8%	23.5%	24.3%	19.8%
Indoor Smoking	NA	NA	15.8%	NA



Fruit & Vegetable Consumption



Barry County



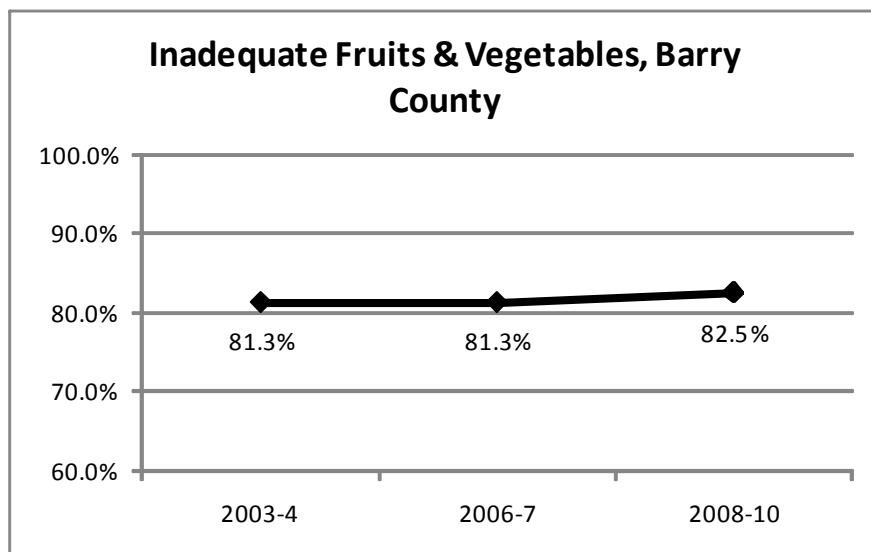
Research shows that fruits and vegetables are important promoters of good health. When compared with people whose diets are low in fruits and vegetables, those who eat more generous amounts of fruits and vegetables have a reduced risk of some chronic diseases, such as stroke and certain forms of cancer.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

82.5% of Barry County adults in the 2008-2010 BRFs reported **inadequate fruit and vegetable consumption** (the proportion whose total reported frequency of fruits [including juice] and vegetables was less than five servings per day).

Males were more likely to report inadequate fruit and vegetable consumption than females in Barry County. Adults over age 55 reported lower rates of inadequate consumption (77.4%) than young adults 18-34 years old (89.7%). Those with less than a high school education were more likely than those with college degrees to report inadequate fruit and vegetable consumption. **Adults with high incomes (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	 Worse than state	 No clear trend
82.5% Barry County adults		

Trends are assessed using local BRFs data collected in 2002-2003, 2006-2007, and 2008-2010. Comparisons are based on 2008-2010 local BRFs data compared with the 2009 Michigan BRFs.



Fruit & Vegetable Consumption					
Barry County		5 or more servings per day		Inadequate Fruits and Vegetables*	
		%	N	%	N
Total		17.5%	66	82.5%	309
Gender	Male	13.4%	26	86.6%	168
	Female	22.2%	40	77.8%	140
Age	18-34	10.3%	7	89.7%	61
	35-54	22.7%	35	77.3%	119
	55 +	22.6%	24	77.4%	82
Education	Less than high school	**	**	91.8%	45
	High school grad	16.7%	22	83.3%	110
	Some college	15.6%	21	84.4%	114
	College grad	32.8%	19	67.2%	39
Income	< 24,999	15.1%	8	84.9%	45
	25,000 - 49,999	18.9%	17	81.1%	73
	50,000 - 74,999	17.0%	9	83.0%	44
	75,000 +	24.6%	17	75.4%	52

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

** Prevalence estimate not available due to subgroup size.

Comparison & Trends	Barry County 2003-4	Barry County 2006-7	Barry County 2008-10	Michigan 2009
Inadequate Fruits & Vegetables	81.3%	81.3%	82.5%	77.8%



Physical Activity



Barry County



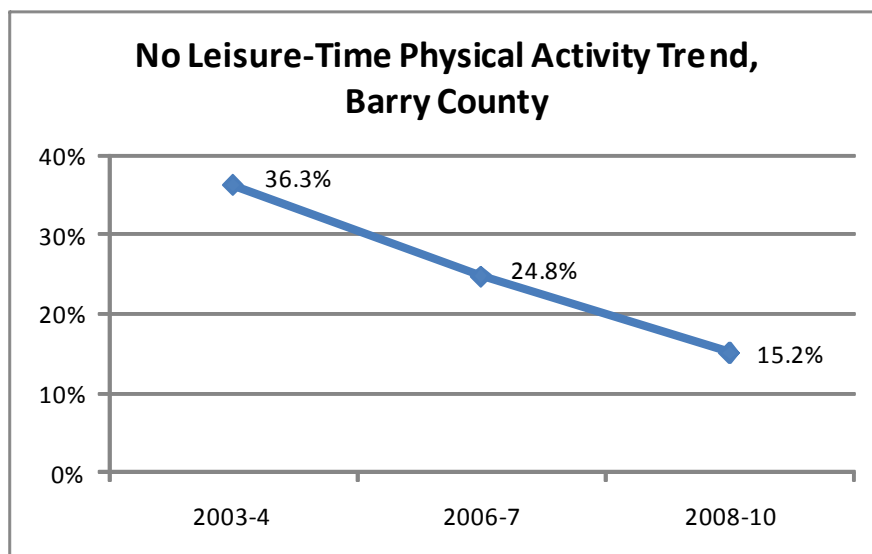
Regular physical activity has been shown to reduce the risk of many diseases including cardiovascular disease, diabetes, colon and breast cancer, and osteoporosis. Keeping physically active also helps to control weight, maintain healthy bones, muscles, and joints, and can relieve symptoms of depression.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

15.2% of Barry County adults in the 2008-2010 BRFs reported **no leisure time physical activity** (the proportion who reported not participating in any leisure-time physical activities or exercises during the past month). This is significantly less than the response in the previous two local BRFs surveys in 2003-4 and 2006-7, which means that **more Barry County adults are not completely sedentary** than in previous years.

Females were more likely to report no leisure-time physical activity than males in Barry County. Adults over age 55 reported higher rates of no physical activity (24.8%) than younger adults. The lower the income level of respondents, the less leisure-time physical activity was reported.

PHYSICAL ACTIVITY	Comparison	Trend
No Leisure-time Physical Activity	 Better than state	 Getting better
15.2% Barry County adults		

Trends are assessed using local BRFs data collected in 2002-2003, 2006-2007, and 2008-2010. Comparisons are based on 2008-2010 local BRFs data compared with the 2009 Michigan BRFs.



Physical Activity					
Barry County		Some Leisure-Time Physical Activity		No Leisure-Time Physical Activity*	
		%	N	%	N
Total		84.7%	331	15.2%	59
Gender	Male	86.2%	175	13.8%	28
	Female	83.4%	156	16.6%	31
Age	18-34	97.1%	66	**	**
	35-54	86.0%	135	14.0%	22
	55 +	75.2%	88	24.8%	29
Education	Less than high school	83.3%	45	16.7%	9
	High school grad	80.0%	112	20.0%	28
	Some college	86.0%	117	14.0%	19
	College grad	94.8%	55	**	**
Income	< 24,999	81.5%	44	18.5%	10
	25,000 - 49,999	84.8%	78	15.2%	14
	50,000 - 74,999	92.5%	49	**	**
	75,000 +	94.4%	67	**	**

* Among all adults, the proportion whose reported not participating in any leisure-time physical activities or exercises during the past month.

** 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	Not enough sidewalks or places to walk	41
2	Rural/Remote area	37
3	Heavy Traffic	20
4	Bad weather	11
5	Not enough bike lanes	11
6	No street lights/not well lit	10
7	Unattended dogs	9
8	Not enough physical activity programs	6
8	Not enough recreation facilities	5
10	High crime/Fear of crime	5

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

Comparison & Trends	Barry County 2003-4	Barry County 2006-7	Barry County 2008-10	Michigan 2009
No leisure-time physical activity	36.3%	24.8%	15.2%	24.1%



Cancer Screening

Barry County



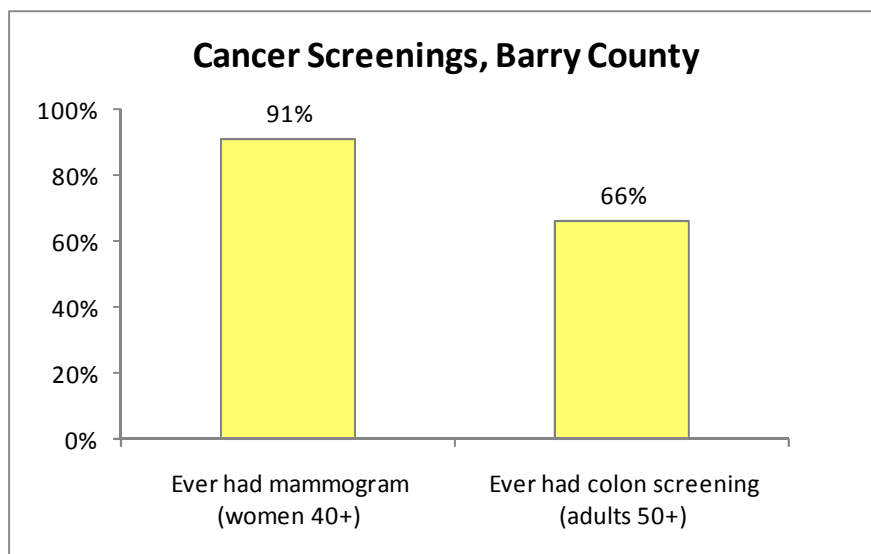
Cancer is a leading cause of death in Barry County in 2009 according to the Michigan Department of Community Health. Getting cancer screening tests regularly may find breast, colon, and other cancers early — when treatment is likely to work best. Current screening recommendations are available at www.cdc.gov/cancer. Early detection of breast cancer can occur through the use of a mammogram in women after age 40, while detection and treatment of colon cancer lesions can occur through procedures called sigmoidoscopy or colonoscopy in adults over age 50.

91.0% of Barry County women over 40 in the 2008-2010 BRFs reported that they had ever had a mammogram. Women reported high rates of ever having a mammogram regardless of the education level or income level.

66.1% of Barry County adults over 50 responded that they had ever had a sigmoidoscopy or colonoscopy procedure. More females than males reported having had a colon screening procedure. Respondents who had 'some college', and those with incomes \$50,000 to 74,999 were less likely to report having a colon screening procedure.

CANCER SCREENING	Comparison	Trend
Ever had Mammogram 91.0% Barry County women 40+	Data not available	Data not available
Ever had Colon Screening 66.1% Barry County adults 50+	Data not available	Data not available

Trends are assessed using local BRFs data collected in 2002-2003, 2006-2007, and 2008-2010. Comparisons are based on 2008-2010 local BRFs data compared with the 2009 Michigan BRFs.



Cancer Screening					
Barry County		Ever Had Mammogram Among Women 40 + (i)		Ever Had Colon Cancer Screening Procedure Among Adults 50 + (ii)	
		%	N	%	N
Total		91.0%	101	66.1%	109
Gender	Male	-----	-----	60.7%	54
	Female	-----	-----	72.4%	55
Education	Less than high school	100.0%	10	83.3%	15
	High school grad	90.2%	46	63.4%	45
	Some college	91.9%	34	62.5%	35
	College grad	83.3%	10	72.2%	13
Income	< 24,999	92.9%	13	73.1%	19
	25,000 - 49,999	90.9%	30	70.0%	35
	50,000 - 74,999	92.9%	13	39.1%	9
	75,000 +	83.3%	10	73.7%	14

(i) Among women aged 40 and older, the proportion who reported ever having a mammogram.

(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 2003-4	Barry County 2006-7	Barry County 2008-10	Michigan 2009
Ever had mammogram (among women 40+)	NA	NA	91.0%	NA
Ever had colon cancer screening procedure (among adults 50+)	NA	NA	66.1%	NA



Chronic Disease




Barry County



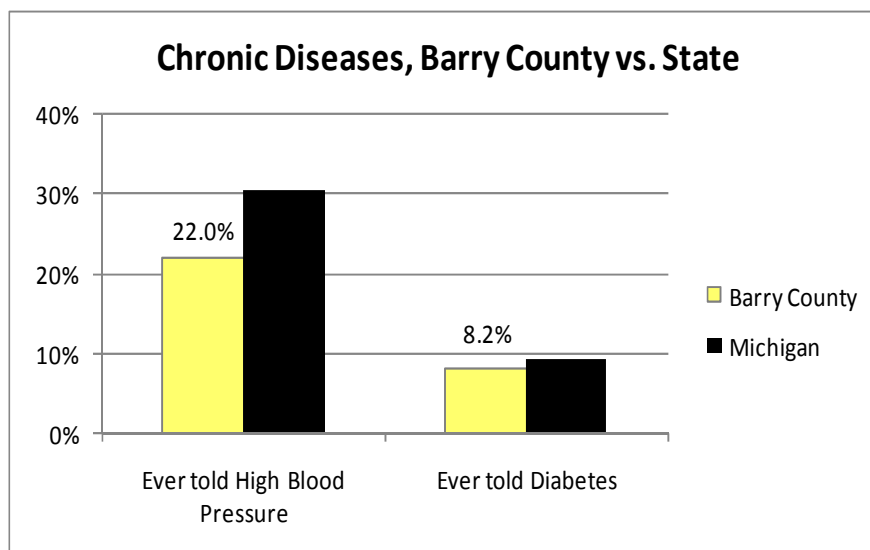
Adults with high blood pressure, known as hypertension, are at a higher risk for stroke, cardiovascular disease, and end stage renal disease. Diabetes mellitus is a chronic disease characterized by high blood glucose levels, owing to insufficient production of insulin by the pancreas or to a reduction in the body's ability to use insulin.

22.0% of Barry County adults in the 2008-2010 BRFs reported that they have ever been told by a health professional that they had high blood pressure (women with high blood pressure only during pregnancy and adults who were borderline or pre-hypertensive were considered not to have been diagnosed). Males reported higher rates of being told they have high blood pressure than females. Older adults, as well as adults with less education and lower income, reported higher rates of having been told they have high blood pressure.

8.2% of Barry County adults reported that they have ever been told by a health professional that they had diabetes (women who had diabetes only during pregnancy and adults who had pre-diabetes were considered not to have been diagnosed). Males and females reported similar rates of having been told they have diabetes. Older adults, and those with less education, reported higher rates of having been told they have diabetes.

CHRONIC DISEASE	Comparison	Trend
Ever told High Blood Pressure 22.0% Barry County adults	 Better than state	Data not available
Ever told Diabetes 8.2% Barry County adults	 Better than state	 No clear trend

Trends are assessed using local BRFs data collected in 2002-2003, 2006-2007, and 2008-2010. Comparisons are based on 2008-2010 local BRFs data compared with the 2009 Michigan BRFs.



High Blood Pressure				
Barry County		Ever told High Blood		Of those with High Blood Pressure,
		%	N	%
Total		22.0%	86	77.9%
Gender	Male	25.1%	51	66.7%
	Female	18.2%	34	94.3%
Age	18-34	**	**	**
	35-54	21.7%	34	69.7%
	55 +	44.1%	52	84.6%
Education	Less than high school	24.1%	13	57.1%
	High school grad	23.7%	33	84.8%
	Some college	21.5%	29	73.3%
	College grad	15.3%	9	100.0%
Income	< 24,999	33.3%	18	72.2%
	25,000 - 49,999	22.6%	21	90.0%
	50,000 - 74,999	16.7%	9	75.0%
	75,000 +	14.3%	10	63.6%

* 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

** Prevalence estimate not available due to subgroup size.

Diabetes				
Barry County		Ever told Diabetes*		
		%	N	
Total		8.2%	32	
Gender	Male	8.4%	17	
	Female	8.1%	15	
Age	18-34	**	**	
	35-54	6.4%	10	
	55 +	18.6%	22	
Education	Less than high school	16.4%	9	
	High school grad	8.6%	12	
	Some college	5.9%	8	
	College grad	**	**	
Income	< 24,999	**	**	
	25,000 - 49,999	6.5%	6	
	50,000 - 74,999	**	**	
	75,000 +	**	**	

* 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.

** Prevalence estimate not available due to subgroup size.

Comparison & Trends	Barry County 2003-4	Barry County 2006-7	Barry County 2008-10	Michigan 2009
Ever told High Blood Pressure	NA	29.9%	22.0%	30.4%
Ever told Diabetes	7.1%	9.1%	8.2%	9.4%

