



Kentucky Behavioral Risk Factor Survey (KyBRFS)

2021 Annual Report

Data Source: Kentucky Behavior Risk Factor Survey 2019



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Division of Prevention and Quality Improvement
Chronic Disease Prevention & Control Branch
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Kentucky Public Health
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Table of Contents	Page
Executive Summary	iv
Introduction	vi
Health Behavior Risk Factors	
Alcohol Consumption	1
Physical Activity	2
Tobacco Use	3
Chronic Diseases	
Arthritis	4
Asthma	5
Chronic Obstructive Pulmonary Disease (COPD)	6
Coronary Heart Disease	7
Depressive Disorder	8
Diabetes	9
Heart Attack	10
High Blood Cholesterol	11
High Blood Pressure	12
Obesity	13
Stroke	14
Health Status Indicators	
General Health	15
Health Care Access/Coverage	16
Clinical Preventive Practices	
HIV/AIDS Screening	17
Influenza Immunization	18
Pneumococcal Vaccination	19
Prevalence Estimates by Area Development District (ADD)	20

ACKNOWLEDGMENTS

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Tracey Sparks, *Administrative Assistant*

Data for the 2019 KyBRFS were collected by:

University of Kentucky Survey Research Center
The KyBRFS program is grateful to Dr. Ron Langley and his staff for conducting the survey.

The Kentucky Department for Public Health is especially grateful to the many citizens of the Commonwealth who gave their time to make this survey successful.

The development of this report was supported in part by funds from Cooperative Agreement Number 5 NU58DP006058-05-00 from the Centers for Disease Control and Prevention (CDC).

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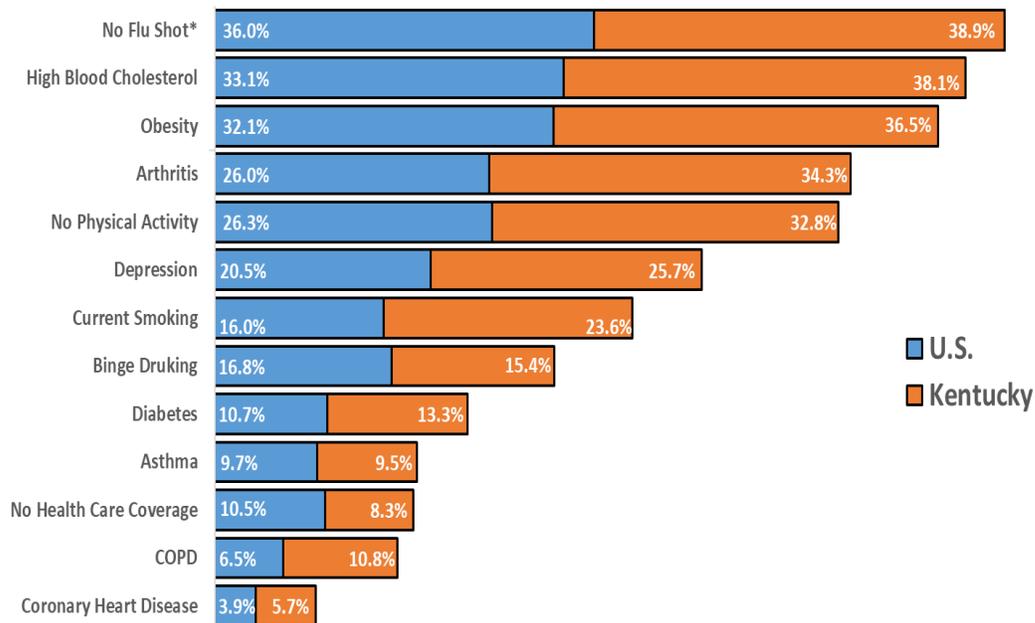
Suggested Citation:

Kentucky Department for Public Health (KDPH) and the Centers for Disease Control and Prevention (CDC). *Kentucky Behavioral Risk Factor Survey (KyBRFS) Data*. Frankfort, Kentucky: Cabinet for Health and Family Services, Kentucky Department for Public Health, [2019 data].

Executive Summary

The 2021 KyBRFS Annual Data Report provides a snapshot of the health behaviors and health status indicators that place Kentucky adults at risk for chronic diseases, injuries, and preventable infectious diseases. This report is based on a sample of non-institutionalized residents aged 18 years or older from 7,974 households in the Commonwealth of Kentucky. The results are weighted to obtain representative estimates for all adults in the state. Some key findings from the 2019 survey are listed below.

Selected Indicators — 2019 KyBRFS United States vs. Kentucky



Alcohol Consumption:

Binge drinking is of particular concern, as alcohol can permeate to virtually all tissues in the body, resulting in significant alterations in organ function, which can lead to multisystemic pathophysiological consequences.¹ In 2019, an estimated 15.4% of Kentucky adults reported binge drinking in the past month. Binge drinking among Kentucky adults remains lower than the U.S. median (16.8%). In Kentucky, binge drinking is more common among males, young adults aged 18-34 year olds, adults with higher educational levels and adults with household income of \$50,000 or more.

Arthritis:

Arthritis is the leading cause of disability in the United States². This condition has been diagnosed in nearly 54 million U.S adults and is expected to rise to 78 million cases by 2040¹. About two in five adults with arthritis also have limitations in their usual activities due to their arthritis. In 2019, more than one in three (34.3%) Kentucky adults reported ever being told by a health professional that they had arthritis. This means an estimated 1.1 million Kentucky adults had arthritis. This was higher compared to the United States estimate of 26.3%. When compared by gender, the prevalence of arthritis was significantly higher among women than men (39.4% vs. 29.0%). The prevalence of arthritis increased significantly with age.

Asthma:

According to CDC, asthma affects more than 25 millions of adults in the United States. In 2019, almost one in ten (9.5%) Kentucky adults reported that they had asthma. The prevalence of asthma was significantly higher in women than men (11.7% vs. 7.1%). Asthma was more common in adults with less than high school education compared to those with a college degree (15.6% vs. 6.9%).

Executive Summary (continued)

Cardiovascular Diseases:

Heart Disease is the leading cause of death in the United States.⁴ More than 600,000 people in the United States die from heart diseases each year (nearly 1 in every 3 U.S. deaths).^{1,4} In 2019 the prevalence of heart attack (6.4%), coronary heart disease (5.7%) and stroke (4.9%) among Kentucky adults were all higher than the U.S. median prevalence (heart attack 4.3%, coronary heart disease 3.9% and stroke 3.1%). The prevalence of all three diseases significantly increased with age and decreased with increasing educational and household income level.

Chronic Obstructive Pulmonary Disease (COPD):

Chronic Obstructive Pulmonary Disease, mainly COPD, is the fourth leading cause of death in the U.S.⁵ While tobacco smoke is the primary cause, 1 in 4 people with COPD have never smoked⁸. In 2019, about 10.8% of Kentucky adults were told by a doctor that they had COPD. This prevalence was approximately twice the U.S. median prevalence (6.5%). The following groups were more likely to report COPD: women, adults aged 65 years and older, adults with less than high school education, current and former smoker and adults with household income less than \$25,000.

Diabetes:

Diabetes is now the seventh leading cause of death in the United States.⁶ According to CDC, more than 100 million Americans have diabetes or prediabetes. In 2019 about 13.3% of Kentucky adults reported ever being told by a doctor that they have diabetes. This estimate was higher when compared to the U.S. median prevalence of 10.7%. The prevalence of diabetes varied significantly by education. Among Kentucky adults with less than a high school education, 19.9% had diabetes compared to 9.3% among those with a college degree. The prevalence of diabetes increased significantly with age.

Health Care Coverage:

In 2019, about 8.3% of adults in Kentucky reported having no health care coverage. This was lower compared to 10.5% in the United States. Males (10.5%) reported a significantly higher prevalence of no health care coverage than females (6.3%). The prevalence of no health care coverage decreased significantly with age or increasing annual household income.

Obesity:

An estimated 36.5% of Kentucky adults reported being obese, based on Body Mass Index (BMI). The prevalence of obesity in Kentucky was higher than the U.S. median prevalence of (32.1%). The prevalence of obesity in Kentucky was significantly higher among black adults (41.8%) than white adults (36.1%).

Physical Activity:

About 32.8% of Kentucky adults did not participate in any leisure-time physical activity or exercise; this was higher compared to 26.3% in the nation. Significant differences were observed by race with the prevalence of not participating in any leisure-time physical activity being higher in black adults (36.8%) as compared to white adults (32.5%).

Tobacco Use:

Smoking causes more than 480,000 deaths in the United States every year⁹. About 23.6% of Kentucky adults reported that they were current cigarette smokers in 2019. This estimate was higher than the national average (16.0%). Men were more likely to be current cigarette smokers than women. Current cigarette smoking was significantly higher among adults with less than high school education than among those with a college degree (39.8% vs 18.0%).

Introduction

What is KyBRFS?

The Kentucky Behavioral Risk Factor Survey (KyBRFS) is a statewide telephone health survey jointly sponsored by the Centers for Disease Control and Prevention (CDC) and the Kentucky Department for Public Health (KDPH). The KyBRFS has been conducted continuously since 1985. KyBRFS data contributes to the CDC Behavioral Risk Factor Surveillance System (BRFSS) that is conducted within every state, the District of Columbia, and within several U.S. territories. The survey is administered to randomly selected non-institutionalized adults who live in a household with a landline or cell phone. Participation in the survey is strictly voluntary. Personal identifying information, such as a person's name or address, is not collected.

Changes in BRFSS Protocol

In 2011, two major changes were made in BRFSS Protocol: The incorporation of cell phone interviews and the adoption of a more advanced weighting method called Iterative Proportional Fitting or raking (raking replaced the post-stratification weighting method used with previous BRFSS data sets). Due to these significant changes, estimates of prevalence from 2011 and subsequent years cannot be directly compared to estimates from previous years. Comparing 2012 BRFSS data with BRFSS data from years prior to 2011 may cause misinterpretation of trend line shifts in prevalence estimates.

The changes in BRFSS protocol are discussed in detail in the June 8, 2012, MMWR Policy Note, "Methodology Changes in the Behavioral Risk Factor Surveillance System in 2011 and Potential Effects on Prevalence Estimates." This note is available online at the CDC Surveillance Resource Center <http://www.cdc.gov/surveillancepractice/reports/brfss/brfss.html>.

How is the survey conducted?

Kentucky currently uses disproportionate stratified sampling to obtain a random sample of Kentucky telephone numbers. Once an interviewer reaches a household, a member of the household aged 18 years or older is randomly selected to be interviewed. Surveyors conduct interviews seven days a week, January through December.

How can this report be used?

Data from this report can be used in many of the following ways to:

- Document health trends
- Provide information related to the development of policies and legislation
- Plan and measure the progress of health initiatives
- Assess risk behaviors and preventive health practices in Kentucky
- Monitor health goals, such as those stated in *Healthy Kentuckians 2020*

Race

Beginning in 2001, the BRFSS race question allowed reporting of more than one race. Therefore, data users should be cautious when comparing race data from the year 2001 onward to race data from previous years due to the change in race categories. Since Kentucky's population is predominantly white, survey respondents are predominantly white and the low number of non-white populations tend to make data regarding those populations statistically unstable. Race data, therefore, may be excluded from this report due to the small nature of the sample size. *In this report, we are unable to include data on Hispanics and sometimes cannot include data on black.*

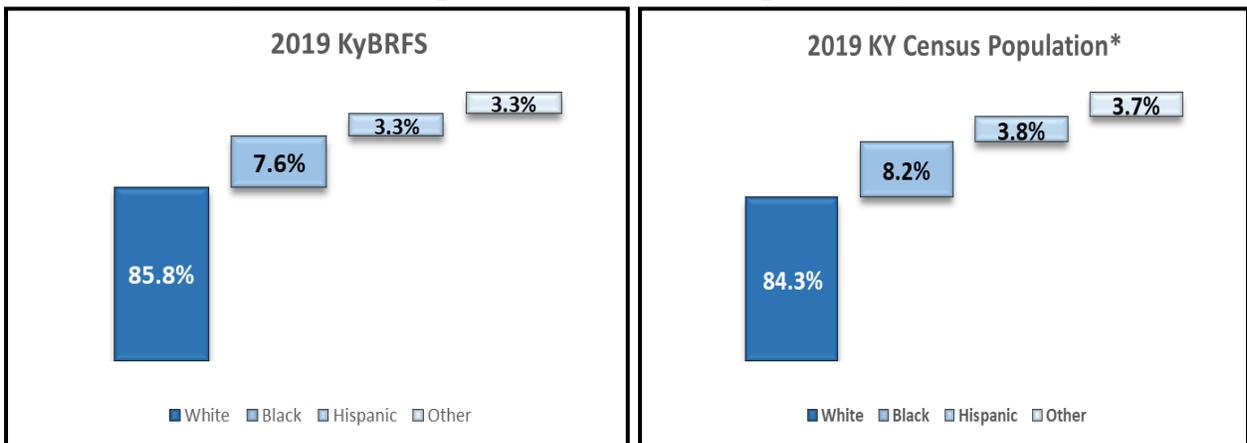
Introduction (continued)

Demographic Characteristics: Race/Ethnicity and Gender

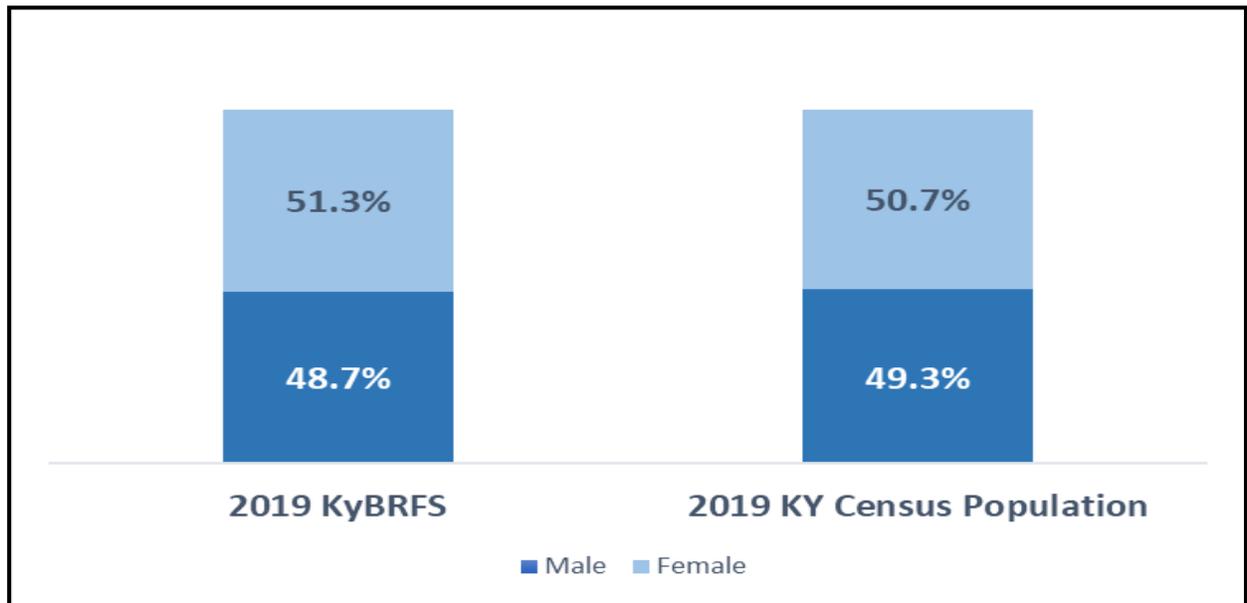
A total of 7,974 residents (18 years or older) participated in the 2019 Kentucky Behavioral Risk Factor Survey. The initial sample of 7,974 residents was used to “weight” these survey data in order to obtain representative estimates for the state of Kentucky.

The distribution of respondents by race and by gender on the 2019 KyBRFS was similar to the 2019 Kentucky census population (as indicated in the charts below). The race/ethnicity categories used for this comparison are: Non-Hispanic White, Non-Hispanic Black, Hispanic, and Other/Non-Hispanic.

Distribution of KyBRFS Adult Population vs KY Census Population, by Race/Ethnicity — 2019



Distribution of KyBRFS Adult Population vs KY Census Population, by Gender — 2019



*Note: KY Census Population includes all age groups.

KY Census Population estimates obtained from Kentucky State Data Center website: <http://ksdc.louisville.edu/>.

Introduction (continued)

How is the data analyzed?

Data is analyzed using the following statistical analysis software: SAS 9.3, SAS Callable SUDAAN, and SPSS Complex Samples. A pre-calculated weighting variable provided by the CDC is used to weight the data. Weighting adjusts for over-sampling or under-sampling of certain subgroups and allows the survey data to be representative of the Kentucky population. Factors in weighting include the number of telephone numbers per household, the number of adults per household, and the demographic distribution of the sample. BRFSS raking includes categories of age by gender, detailed race and ethnicity groups, education levels, marital status, regions within states, gender by race and ethnicity, telephone source, renter/owner status, and age groups by race and ethnicity.

The data are not age-adjusted. Data estimates for fewer than 50 respondents are considered statistically unreliable by the CDC and are not included in this report. Respondents who answered that they did not know or refused to answer a question were excluded from the calculation of prevalence estimates related to that question. Therefore, the sample sizes used to calculate the estimates in this report vary.

What are the limitations to the data?

There are two main limitations to BRFSS data: non-coverage bias and self-report bias. These limitations should not hinder the use of BRFSS data, but should be considered.

Non-coverage bias: Since the BRFSS is a telephone survey, adults who live in households without a telephone are not included in the sample. The BRFSS only surveys adults living in households. Therefore, individuals living in a group setting, such as a nursing home, the military, or prison are not surveyed.

Self-report bias: The BRFSS survey relies on self-reporting, which means that the prevalence estimates are strictly based on the respondents answers to the survey questions. The tendency to report a more healthy lifestyle may occur.

Small sample size for subgroups

Producing accurate prevalence estimates for different subgroups (men, women, Whites, Black, women aged 40 years or older, etc.) requires a minimum number of 50 respondents per question. In some cases, the KyBRFS does not reach enough people in certain categories to produce statistically reliable estimates. Small sample sizes produce large variances (i.e., a deviation from the mean), resulting in a large confidence interval (CI). The same problem of small numbers of responses occurs at the county level. In order to provide locally relevant estimates, KyBRFS data are reported by Regions.

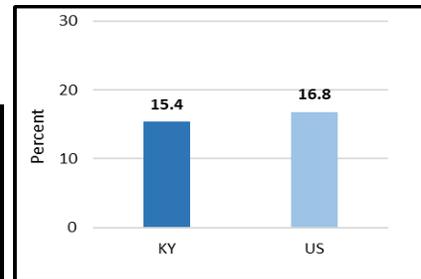
In this report, if the un-weighted sample size for the denominator is < 50 , the data are not reported. Additionally, CDC BRFSS recommends using Relative Standard Error (RSE) as a criterion for estimates that meet standards of statistical reliability; if RSE is > 0.3 , the estimate is not reported on the CDC BRFSS website. These standards have also been adopted by KyBRFS.

ALCOHOL CONSUMPTION: BINGE DRINKING

Question: Considering all types of alcoholic beverages, how many times during the past month did you have four or more drinks on one occasion?

At Risk: Adult men who reported having five or more drinks on one occasion and adult females who reported having four or more drinks on one occasion (in the past month) are considered at risk.

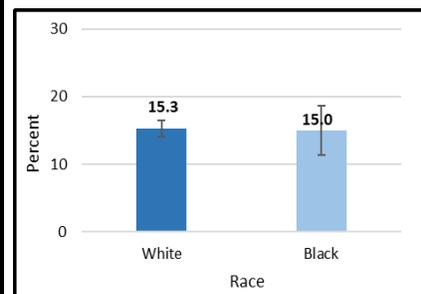
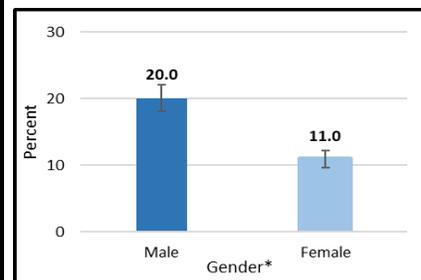
Percent of Adults Classified as Binge Drinkers: Kentucky vs. Nationwide (States and DC) — 2019



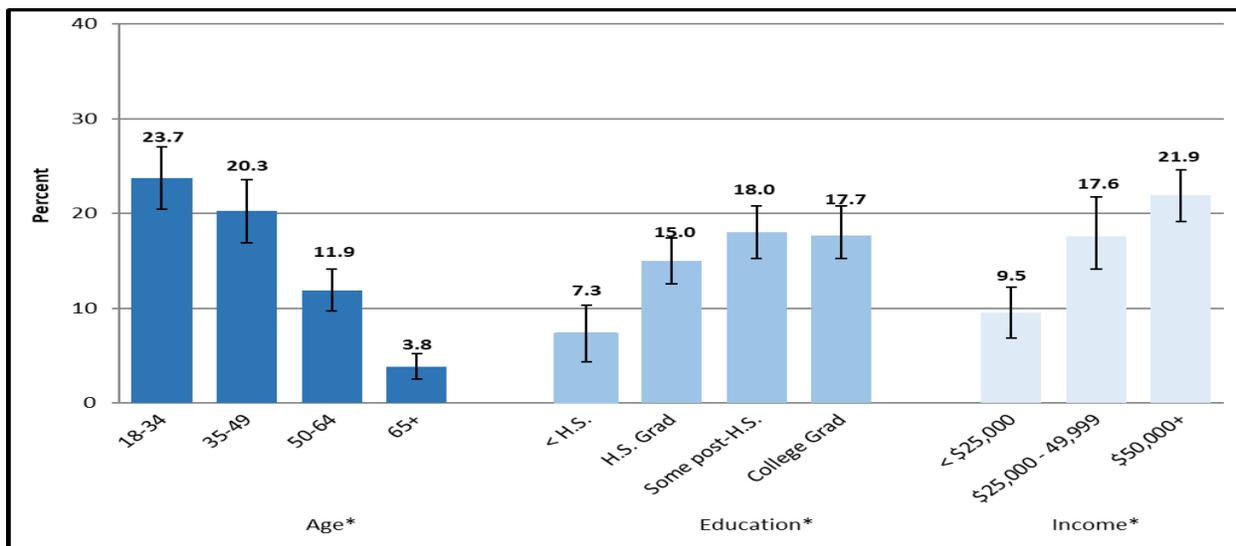
Who is at risk in Kentucky?

- ◆ In 2019, the prevalence of binge drinking among Kentucky adults was 15.4%. This estimate was lower compared to the 16.8% in the United States.
- ◆ The prevalence of binge drinking was significantly higher among males than among females (20.0% vs 11.0%).
- ◆ The prevalence of binge drinking did not significantly differ by race.
- ◆ The prevalence of binge drinking was significantly higher among young adults aged 18-34 years than the other age groups.
- ◆ When compared by education, binge drinking was significantly higher among adults with a college degree (17.7%) than among those with less than high school (7.3%).
- ◆ The prevalence of binge drinking was significantly higher among those with an annual household incomes of \$50,000 or more than among those who earn less than \$25,000 a year (21.9% vs 9.5%).

Percent of Kentucky Adults Classified as Binge Drinkers, by Gender*, and by Race — 2019



Percent of Kentucky Adults Classified as Binge Drinkers, by Age*, Education*, and Income* — 2019



* Denotes a statistically significant difference among the values.

In this report, the term 'significant' only refers to statistically significant differences in prevalence.

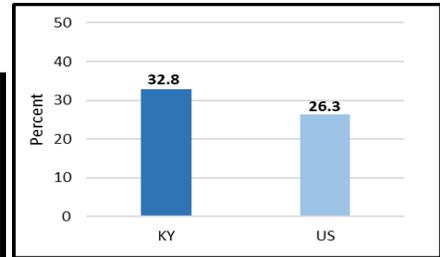
Due to BRFFS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

NO LEISURE TIME PHYSICAL ACTIVITY

Question: During the past 30 days, other than your regular job, did you participate in any physical activity or exercise such as running, calisthenics, golf, gardening, or walking for exercise?

At Risk: Adults who did not participate in any physical activity or exercise during the last 30 days are considered at risk.

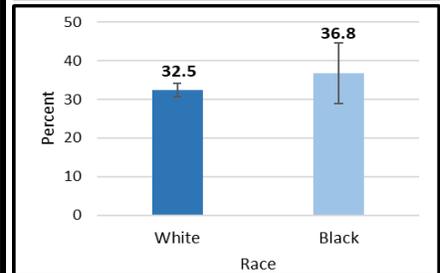
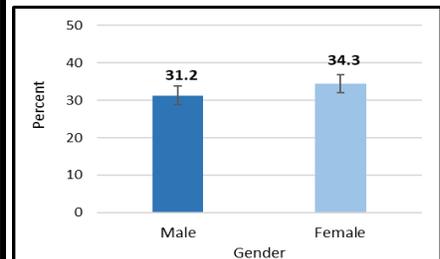
Percent of Adults who did not Participate in any Physical Activity in the Past 30 days: Kentucky vs. Nationwide (States and DC) — 2019



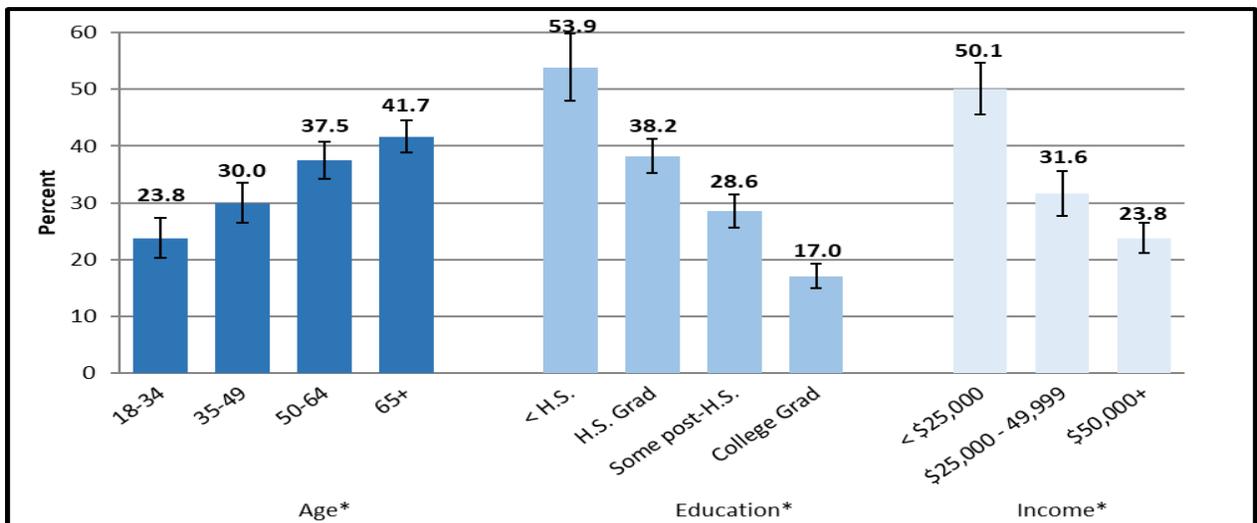
Who is at risk in Kentucky?

- ◆ About 32.8% of Kentucky adults reported not participating in any physical activity or exercise during the past month. This estimate was higher compared to 26.3% in the United States.
- ◆ The prevalence of not participating in any physical activity during the past month did not significantly differ by gender.
- ◆ There were no statistically significant differences between white and black adults who reported not participating in any physical activity during the past month.
- ◆ Adults aged 65 and older were more likely to report not participating in any physical activity compared to younger age groups.
- ◆ When compared by education, the lack of physical activity was significantly highest among adults with less than high school (53.9%), and lowest among those with a college degree (17.0%).
- ◆ The lack of physical activity significantly decreased as annual household income increased.

Percent of Kentucky Adults who did not Participate in any Physical Activity in the Past 30 Days, by Gender*, and by Race — 2019



Percent of Kentucky Adults who did not Participate in any Physical Activity in the Past 30 Days by Age*, Education*, and Income* — 2019



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Due to BRFFS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

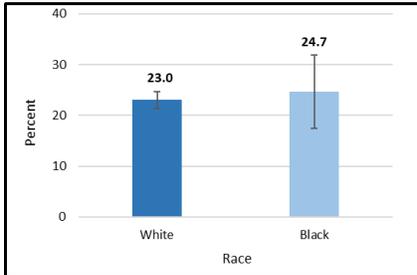
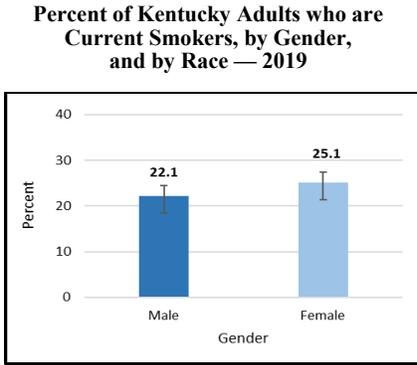
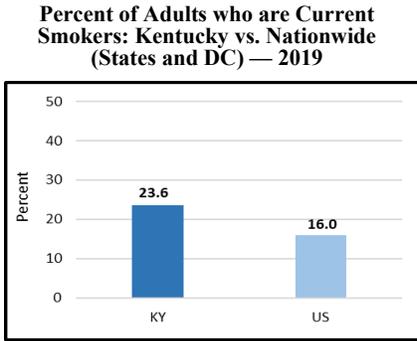
TOBACCO USE

Question: If you have smoked at least 100 cigarettes in your entire life, are you now smoking every day, some days, or not at all?

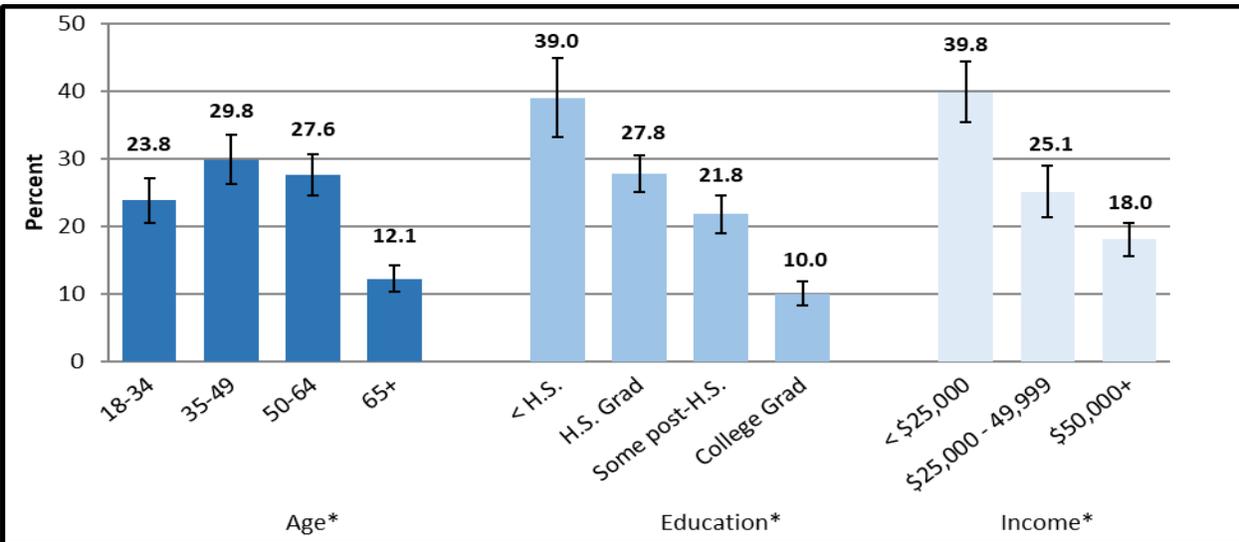
At Risk: Adults who are “Current Smokers” (i.e., smoke “everyday” or “some days”) are considered at risk).

Who is at risk in Kentucky?

- ◆ In 2019, an estimated 23.6 % of Kentucky adults reported that they were current smokers. This prevalence was higher compared to 16.0% in the United States.
- ◆ The prevalence of current smoking did not significantly differ by gender.
- ◆ The prevalence of current smoking did not significantly differ by race.
- ◆ The prevalence of current smoking was significantly lower among adults aged 65 and older (12.1%) compared to other age groups.
- ◆ The prevalence of current smoking was significantly higher among adults with less than a high school education than those with a college degree (39.0% vs. 10.0%).
- ◆ The prevalence of current smoking decreased significantly with increasing annual household income.



Percent of Kentucky Adults who are Current Smokers, by Age*, Education*, and Income* — 2019



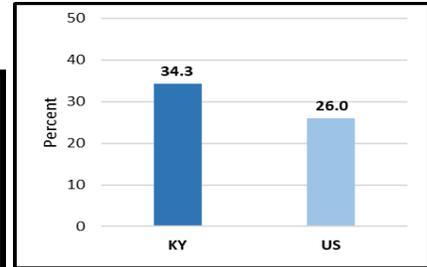
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ARTHRITIS

Question: Have you ever been told by a doctor or other health professional that you have some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia?

At Risk: Adults who answered “Yes” are considered at risk.

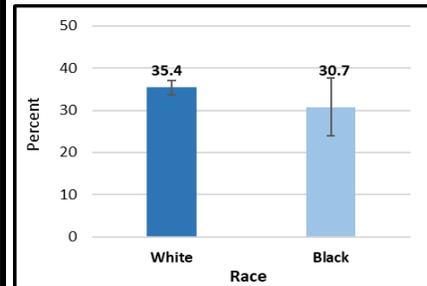
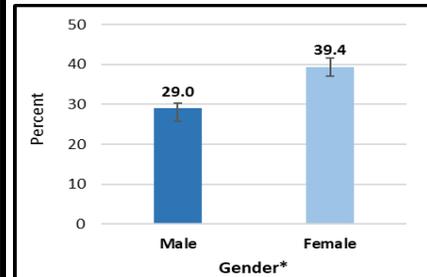
Percent of Adults who have Arthritis: Kentucky vs. Nationwide (States and DC) — 2019



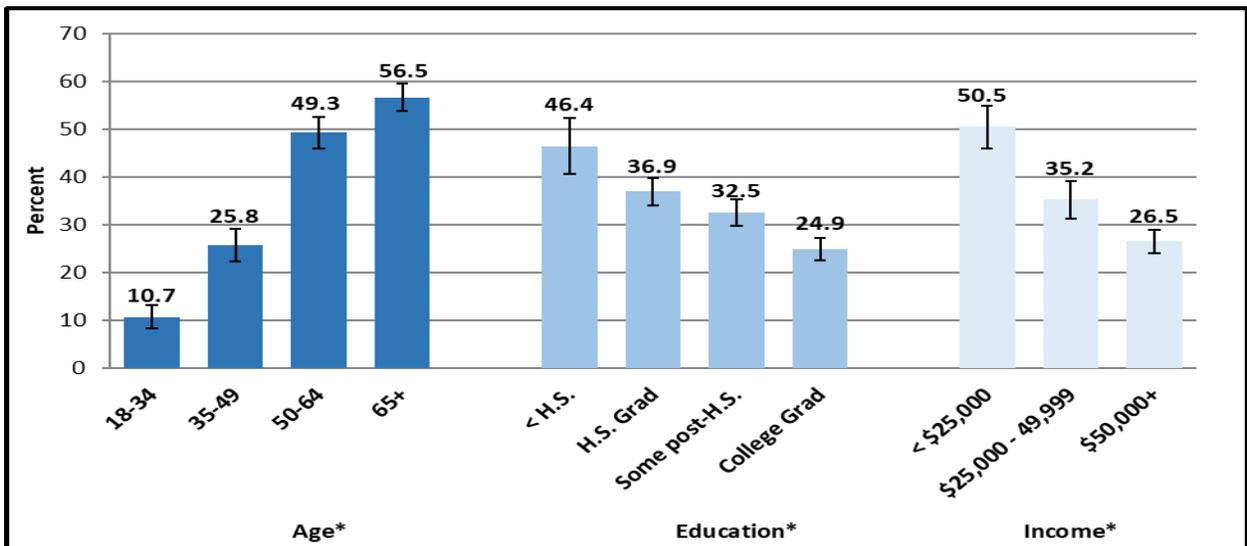
Who is at risk in Kentucky?

- ◆ An estimated 34.3% of Kentucky adults reported ever being told by a doctor or health professional that they had some form of arthritis. This was a higher compared to 26.0% in the United States.
- ◆ Females (39.4%) reported a significantly higher prevalence of arthritis than males (29.0%).
- ◆ White adults (35.4%) reported a significantly higher prevalence of arthritis than Black adults (30.7%).
- ◆ The prevalence of arthritis significantly increased with age. The highest prevalence was among adults aged 65 years or older (56.5%).
- ◆ The prevalence of arthritis among adults with less than high school (46.4%) was significantly higher compared to those with a college degree (24.9%).
- ◆ The prevalence of arthritis significantly decreased with increasing household income level.

Percent of Kentucky Adults who have Arthritis, by Gender*, and by Race* — 2019



Percent of Kentucky Adults who have Arthritis, by Age*, Education*, and Income* — 2019



* Denotes a statistically significant difference among the values.

In this report, the term ‘significant’ only refers to statistically significant differences in prevalence.

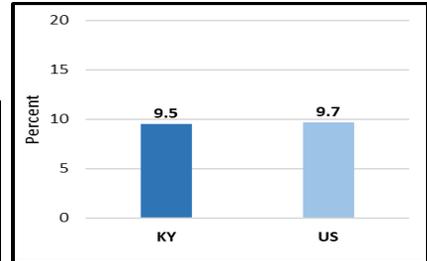
Due to BRFSS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

ASTHMA

Question: 1. Have you ever been told by a doctor, nurse, or other health professional that you had asthma? (lifetime)
 2. Do you still have asthma? (current)

At Risk: Adults who answered “Yes” to both questions (i.e., currently have asthma) are considered at risk.

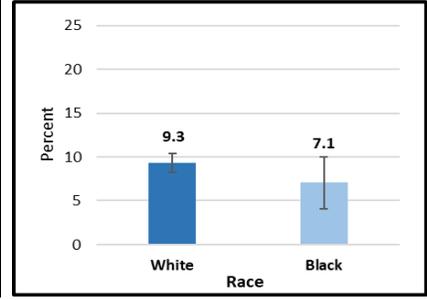
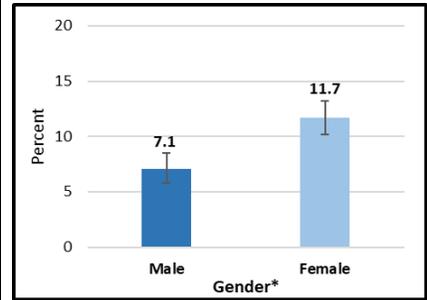
Percent of Adults who have Current Asthma: Kentucky vs. Nationwide (States and DC) — 2019



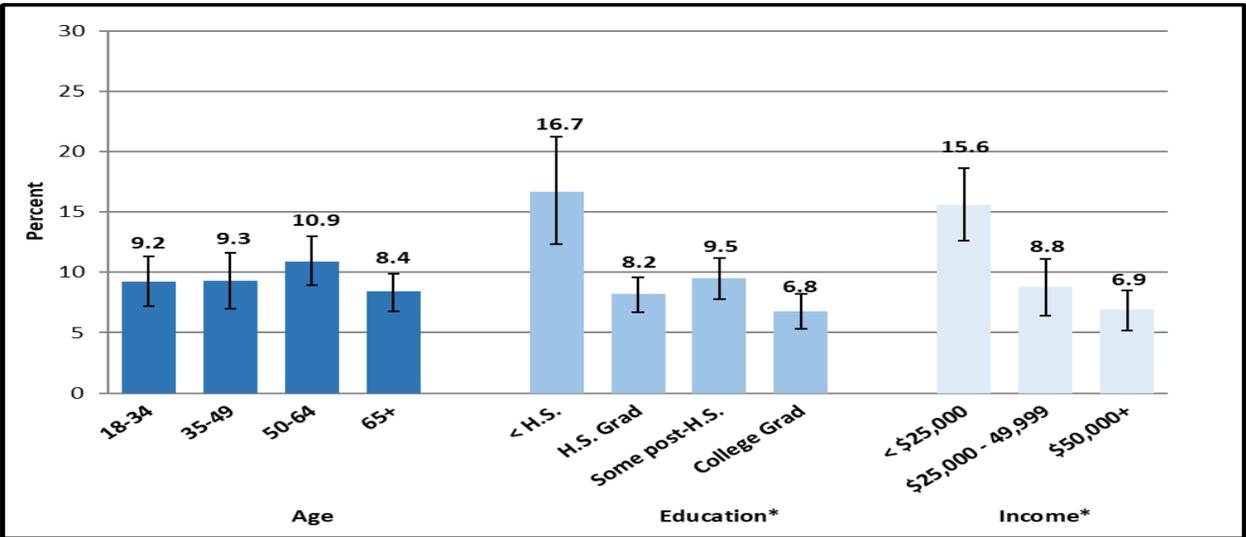
Who is at risk in Kentucky?

- ◆ In 2019, about 9.5% of Kentucky adults reported that they currently have asthma compared to 9.7% in the United States.
- ◆ The prevalence of asthma was significantly higher among females (11.7%) than among males (7.1%).
- ◆ The prevalence of asthma did not significantly differ by race.
- ◆ The prevalence of asthma did not significantly differ across age groups.
- ◆ The prevalence of asthma reported by adults with less than high school education was 16.7% compared to 6.8% for those with a college degree.
- ◆ The prevalence of asthma was significantly higher among adults with an annual household income of less than \$25,000 (15.6%) than among those with \$55,000 or more (6.9%).

Percent of Kentucky Adults who have Current Asthma, by Gender*, and by Race — 2019



Percent of Kentucky Adults who have Current Asthma, by Age, Education*, and Income* — 2019



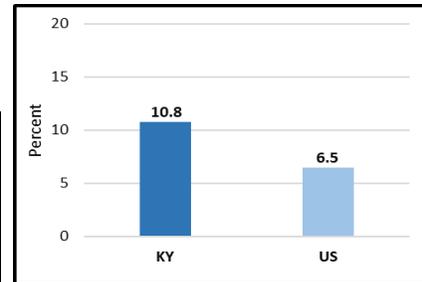
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 Due to BRFFS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

Chronic Obstructive Pulmonary Disease (COPD)

Question: Have you ever been told by a doctor, nurse, or other health professional that you that you have Chronic Obstructive Pulmonary Disease or COPD, emphysema, or chronic bronchitis?

At Risk: Adults who answered “Yes” are considered at risk.

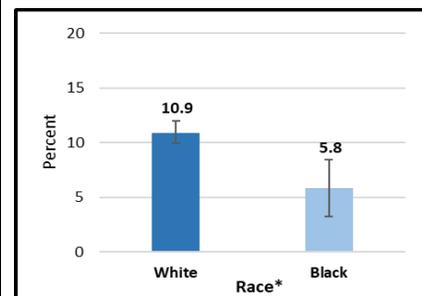
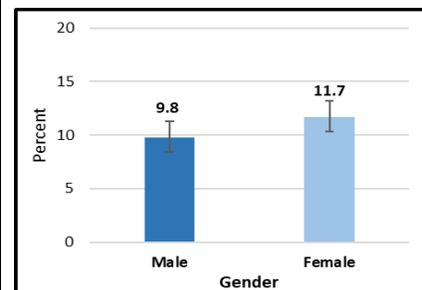
Percent of Adults who have COPD: Kentucky vs. Nationwide (States and DC) — 2019



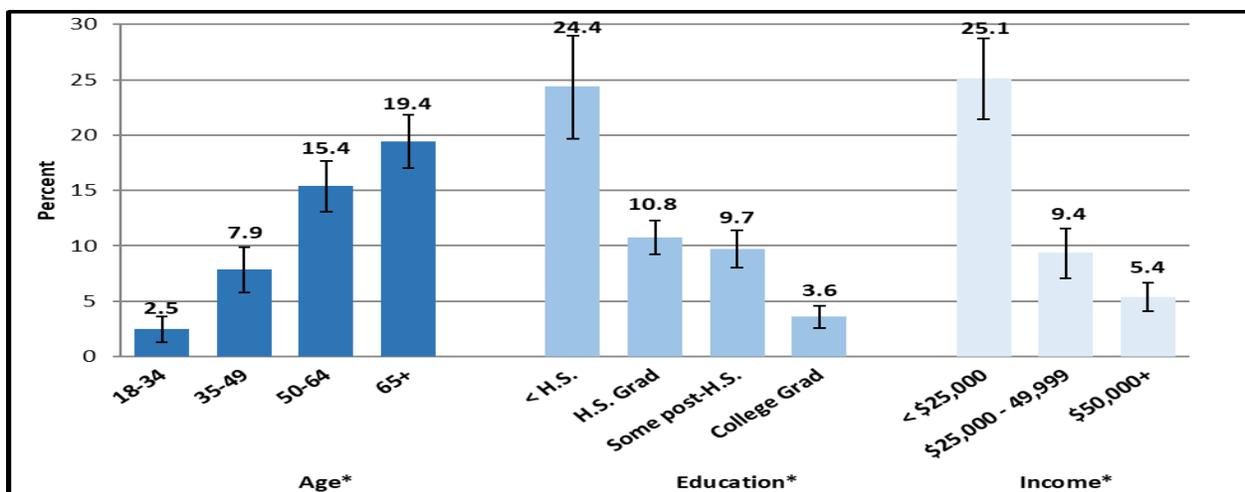
Who is at risk in Kentucky?

- ◆ An estimated 10.8% of Kentucky adults reported ever being told by a doctor or healthcare provider that they had COPD. This was higher compared to 6.5% in the United States.
- ◆ The prevalence of COPD did not significantly differ by gender.
- ◆ The prevalence of COPD was significantly higher among white (10.9%) compared to black (5.8%).
- ◆ The prevalence of COPD increased significantly with age. Adults aged 65 years and older had the highest prevalence of COPD (19.4%).
- ◆ The prevalence of COPD was significantly higher among adults with less than high school education (24.4%) compared to those with a college degree (3.6%).
- ◆ The prevalence of COPD significantly decreased with increasing household income level. The lowest prevalence was among adults with an annual household income of \$50,000 or more (5.4%).

Percent of Kentucky Adults who have COPD by Gender, and by Race — 2019



Percent of Kentucky Adults who have COPD, by Age*, Education*, and Income* — 2019



* Denotes a statistically significant difference among the values.

In this report, the term ‘significant’ only refers to statistically significant differences in prevalence.

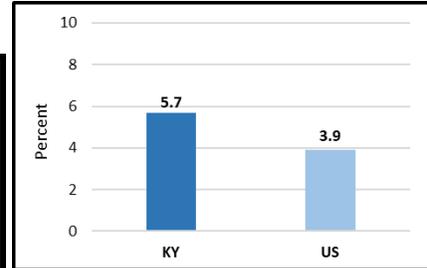
Due to BRFFS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

CORONARY HEART DISEASE

Question: Have you ever been told by a doctor, nurse, or other health professional that you had angina or coronary heart disease?

At Risk: Adults who answered “Yes” are considered at risk.

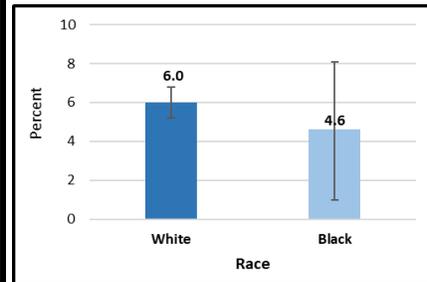
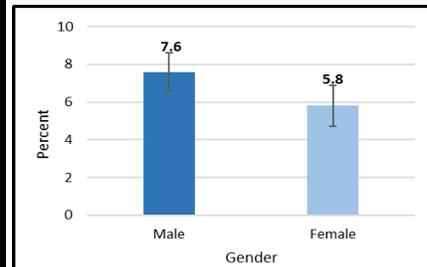
Percent of Adults who have Coronary Heart Disease: Kentucky vs. Nationwide (States and DC) — 2019



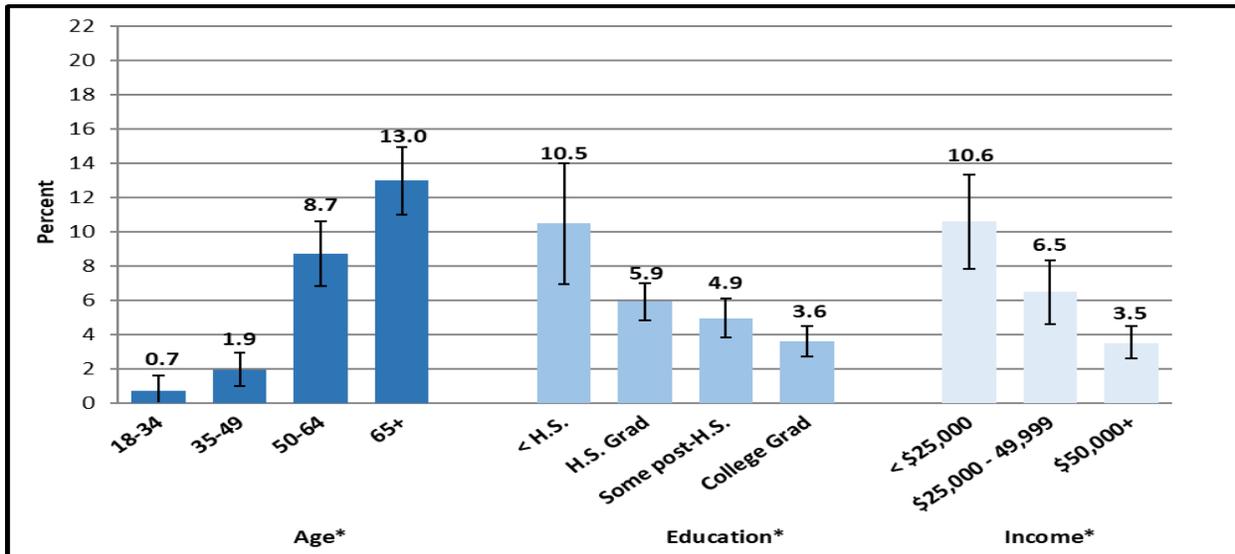
Who is at risk in Kentucky?

- ◆ In 2019, an estimated 5.7% of Kentucky adults reported ever being told by a doctor that they had coronary heart disease. This was higher compared to 3.9% in the United States.
- ◆ The prevalence of coronary heart disease did not significantly differ by gender.
- ◆ The prevalence of coronary heart disease did not significantly differ by race.
- ◆ The prevalence of coronary heart disease increased significantly with age. Adults aged 65 years and older (13.0%) had a higher prevalence of coronary heart disease compared to younger age groups.
- ◆ The prevalence of coronary heart disease was significantly higher among adults with less than high school education than among those with a college degree (10.5% vs 3.6%).
- ◆ The prevalence of coronary heart disease increased with increasing an annual household income. The lowest prevalence was among adults with a annual household income of \$50,000 or more (3.5%).

Percent of Kentucky Adults who have Coronary Heart Disease by Gender*, and by Race — 2019



Percent of Kentucky Adults who have Coronary Heart Disease, by Age*, Education*, and Income* — 2019



* Denotes a statistically significant difference among the values.

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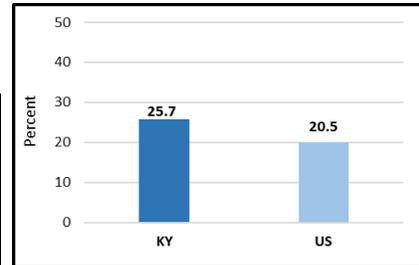
Due to BRFFS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

DEPRESSIVE DISORDER

Question: Have you ever been told by a doctor, nurse, or other health professional that you have a depressive disorder, including depression, major depression, dysthymia, or minor depression?

At Risk: Adults who answered “Yes” are considered at risk.

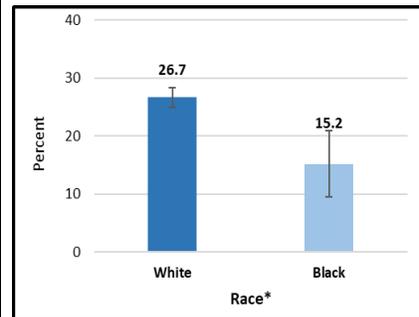
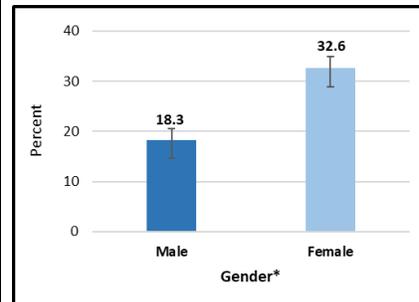
Percent of Adults who have Depressive Disorder: Kentucky vs. Nationwide (States and DC) — 2019



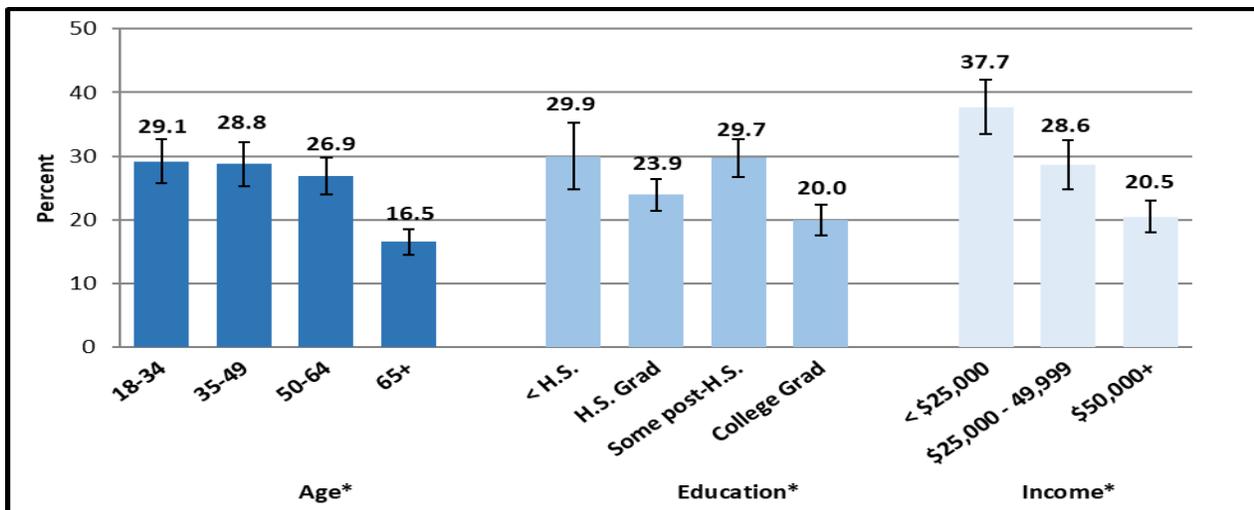
Who is at risk in Kentucky?

- ◆ Approximately 25.7% of Kentucky adults reported ever being told by a health professional that they had a depressive disorder. This was higher compared to 20.5% in the United States.
- ◆ Females (32.6%) reported a significantly higher prevalence of depression than males (18.3%).
- ◆ The prevalence of depression was significantly higher among white (26.7%) compared to black (15.2%).
- ◆ The prevalence of depression was significantly lower among adults aged 65 years and older compared to the other age groups.
- ◆ Adults with less than high school education (29.9%) reported a higher prevalence of depression compared to adults with a college degree (20.0%).
- ◆ The prevalence of depression decreased significantly with increasing income level.

Percent of Kentucky Adults who have Depressive Disorder, by Gender*, and by Race* — 2019



Percent of Kentucky Adults who have Depressive Disorder by Age*, Education*, and Income* — 2019



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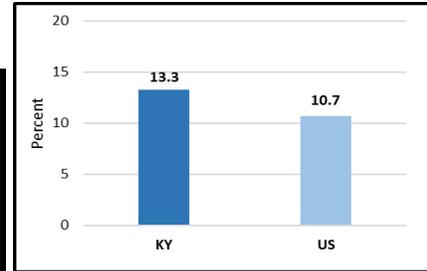
Due to BRFFS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

DIABETES

Question: Have you ever been told by a doctor, nurse, or other health professional that you have diabetes?

At Risk: Adults who answered “Yes” are considered at risk. Those with responses for gestational diabetes, pre-diabetes or borderline diabetes are excluded.

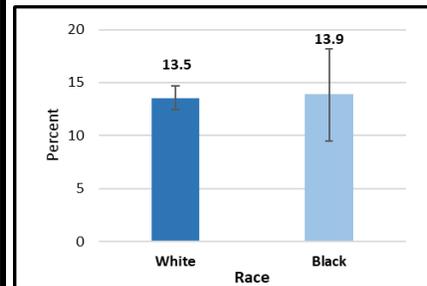
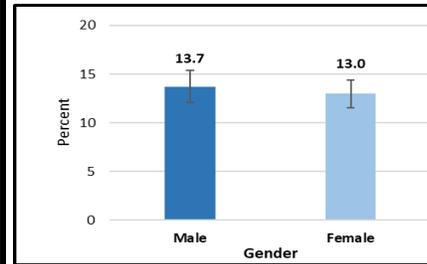
Percent of Adults who have Diabetes: Kentucky vs. Nationwide (States and DC) — 2019



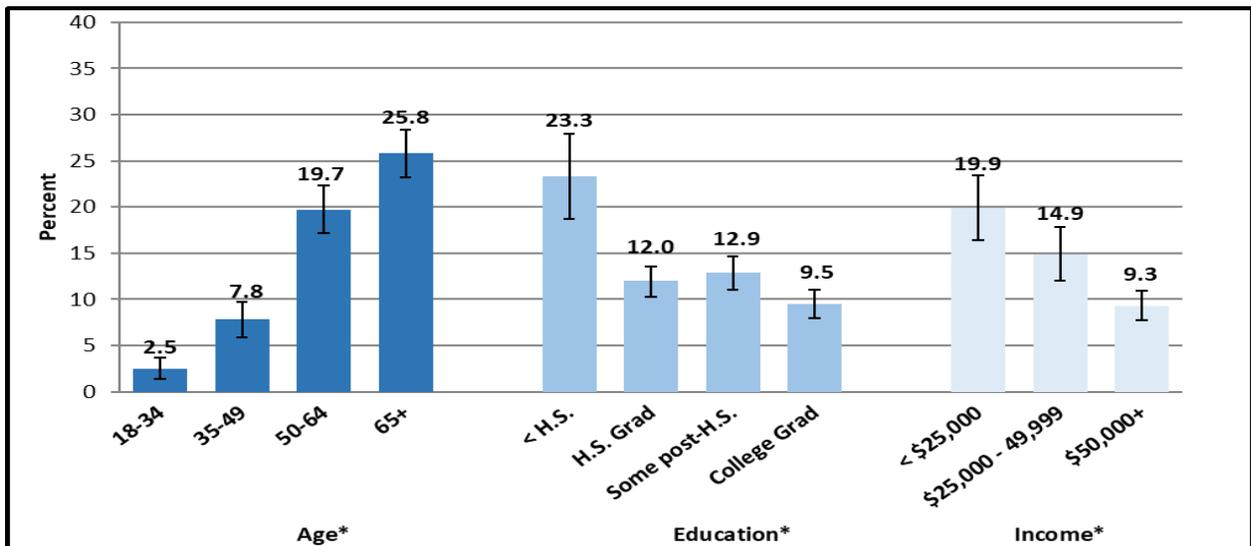
Who is at risk in Kentucky?

- ◆ In 2019, about 13.3% of Kentucky adults reported ever being told by a doctor that they had diabetes. This was a higher prevalence compared to 10.7% in the United States.
- ◆ The prevalence of diabetes was similar by gender.
- ◆ The prevalence of diabetes did not significantly differ by race.
- ◆ The prevalence of diabetes significantly increased with age. Adults aged 65 years and older (25.8%) had a higher prevalence of diabetes compared to the other age groups.
- ◆ The prevalence of diabetes decreased as education level increased. Adults with less than high school education (23.3%) reported a significantly higher prevalence of diabetes than those with a college degree (9.5%).
- ◆ The prevalence of diabetes significantly decreased with increasing annual household income. Adults with an annual household income of less than \$25,000 reported (19.9%) a significantly higher prevalence of diabetes compared to those with household income of \$50,000 or more (9.3%).

Percent of Kentucky Adults who have Diabetes by Gender, and by Race — 2019



Percent of Kentucky Adults who have Diabetes, by Age*, Education*, and Income* — 2019



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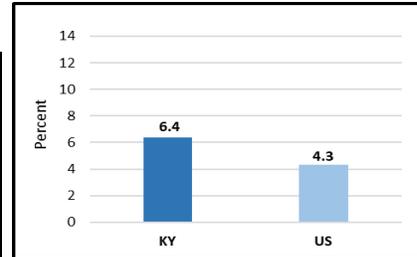
Due to BRFSS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

HEART ATTACK

Question: Have you ever been told by a doctor, nurse, or other health professional that you had a heart attack, also called a myocardial infarction?

At Risk: Adults who answered “Yes” are considered at risk.

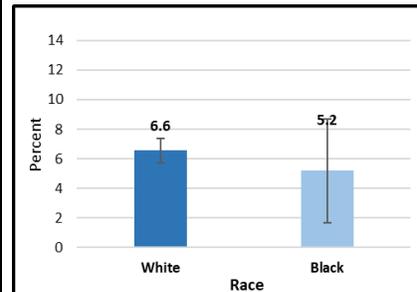
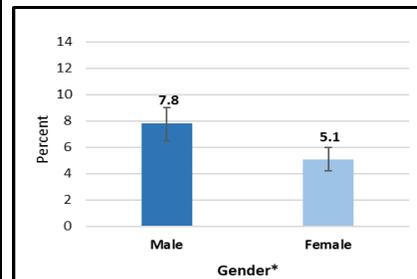
Percent of Adults who have ever been told that they had a Heart Attack: Kentucky vs. Nationwide (States and DC) — 2019



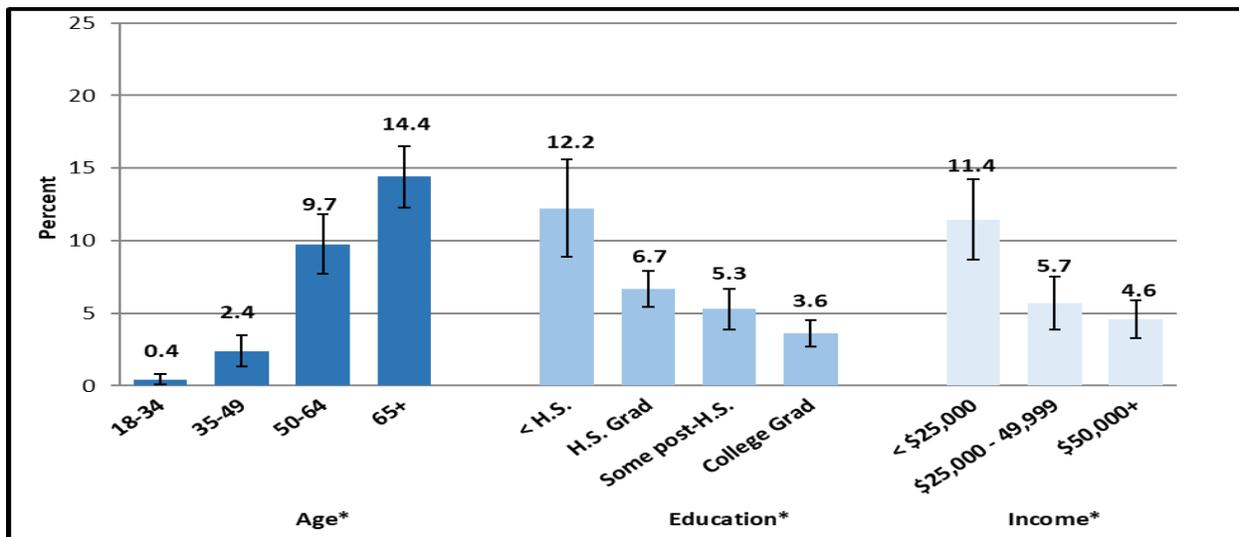
Who is at risk in Kentucky?

- ◆ About 6.4% of Kentucky adults reported ever being told by a doctor that they had a heart attack; this was a higher estimate compared to 4.3% in the United States.
- ◆ Males (7.8%) reported a significantly higher prevalence of heart attack than females (5.1%).
- ◆ The prevalence of heart attack did not significantly differ by race.
- ◆ The prevalence of heart attack significantly increased with age. Adults aged 65 and older reported a much higher prevalence of heart attack compared to the other age groups.
- ◆ The prevalence of heart attack was significantly higher among adults with less than high school education than among those with a college degree (12.2% vs 3.6%).
- ◆ The prevalence of heart attack decreased significantly with increasing annual household income. Adults with an annual household income of less than \$25,000 reported a higher prevalence of heart attack compared to those with household income of \$50,000 or more (11.4% vs 4.6%).

Percent of Kentucky Adults who have ever been told they had a Heart Attack, by Gender*, and by Race — 2019



Percent of Kentucky Adults who have ever been told that they had a Heart Attack, by Age*, Education*, and Income* — 2019



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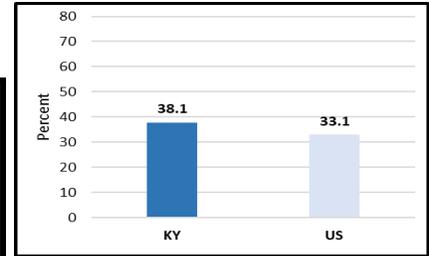
Due to BRFSS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

HIGH BLOOD CHOLESTEROL

Question: Have you ever been told by a doctor, nurse or other health professional that you have high blood pressure?

At Risk: Adults who answered ‘Yes’ are considered at risk.

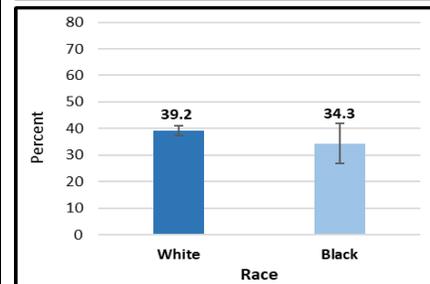
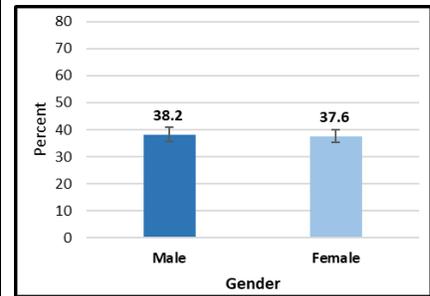
Percent of Adults who have High Blood Cholesterol Kentucky vs. Nationwide (States and DC) — 2019



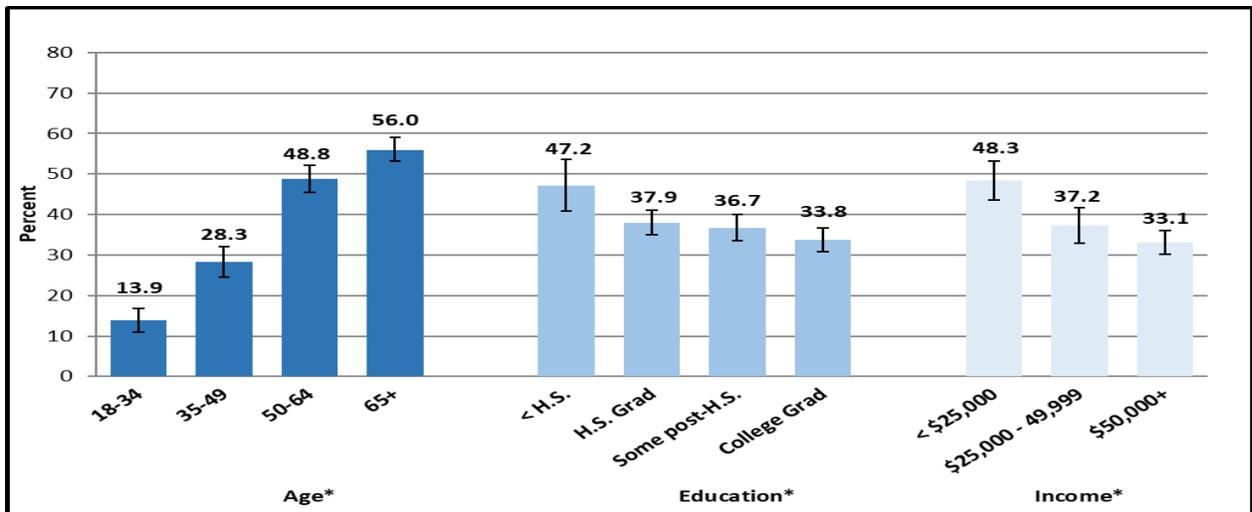
Who is at risk in Kentucky?

- ◆ In 2019, an estimated 38.1% of Kentucky adults reported ever being told by a health professional that they had high blood cholesterol. This estimate was higher compared to 33.1% in the United States.
- ◆ The prevalence of high blood cholesterol did not differ by gender.
- ◆ The prevalence of high blood cholesterol also did not differ by race.
- ◆ The prevalence of high blood cholesterol significantly increased with age. The highest prevalence was among adults age 65 years and older.
- ◆ Adults with less than high school education were significantly more likely to report that they had high blood cholesterol than those with a college degree (47.2% vs 33.8%).
- ◆ The prevalence of high blood cholesterol was significantly higher among adults with an annual household income of less than \$25,000 compared to those with annual household income of \$50,000 or more (48.3% vs 33.1%).

Percent of Kentucky Adults who have High Blood Cholesterol, by Gender, and by Race* — 2019



Percent of Kentucky Adults who have High Blood Cholesterol, by Age*, Education*, and Income* — 2019



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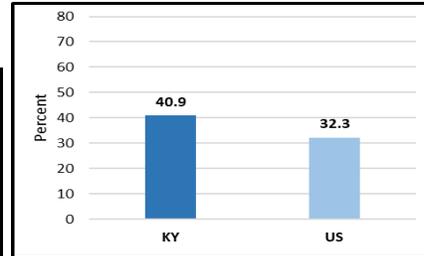
Due to BRFFS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

HIGH BLOOD PRESSURE

Question: Have you ever been told by a doctor, nurse or other health professional that you have High Blood Pressure?

At Risk: Adults who answered ‘Yes’ are considered at risk. Those who were borderline hypertensive and women who had high blood pressure only during pregnancy are excluded.

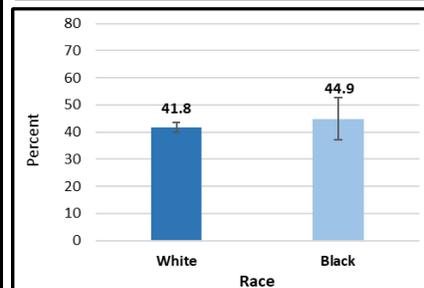
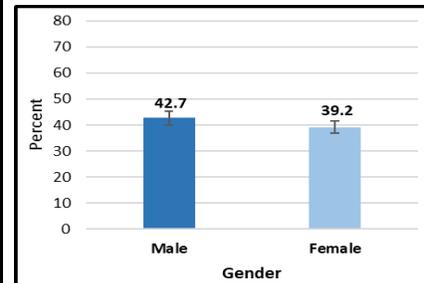
Percent of Adults who have High Blood Pressure: Kentucky vs. Nationwide (States and DC) — 2019



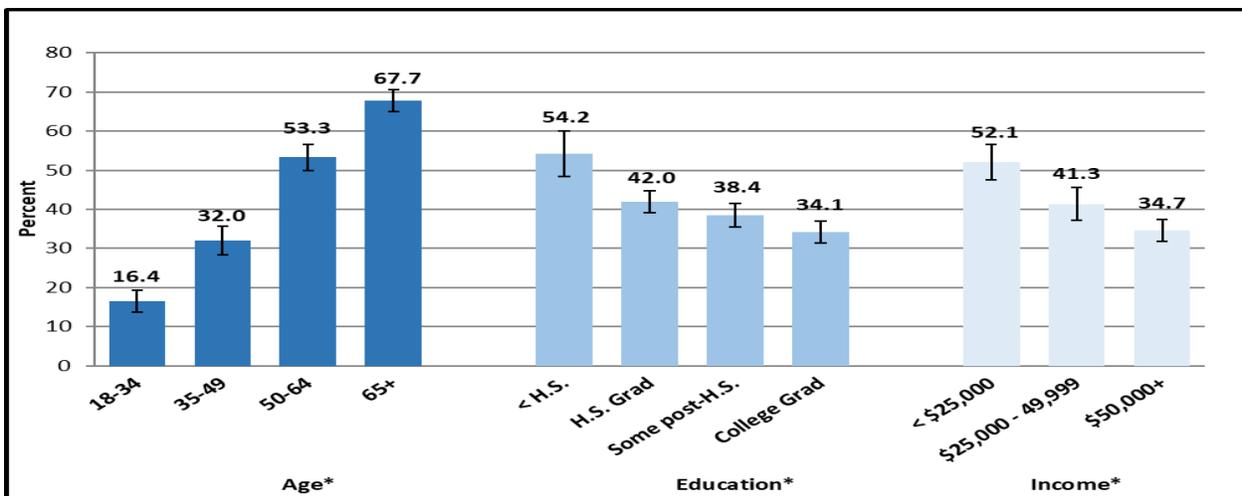
Who is at risk in Kentucky?

- ◆ About 40.9% of Kentucky adults reported ever being told by a health professional that they had high blood pressure compared to 32.3% in the United States.
- ◆ The prevalence of high blood pressure was significantly higher among males (42.7%) than among females (39.2%).
- ◆ No significant differences were observed in prevalence of high blood pressure by race.
- ◆ The prevalence of high blood pressure significantly increased with age. The highest prevalence was among adults aged 65 years and older (67.7%).
- ◆ When compared by educational levels, the prevalence of high blood pressure was significantly higher among adults with less than high school education (54.2%) than among those with a college degree (34.1%).
- ◆ The prevalence of high blood pressure was significantly higher among adults with an annual household income of less than \$25,000 (52.1%) than among those with household income of \$50,000 or more (34.7%).

Percent of Kentucky Adults who have High Blood Pressure, by Gender*, and by Race — 2019



Percent of Kentucky Adults who have High Blood Pressure, by Age*, Education*, and Income* — 2019



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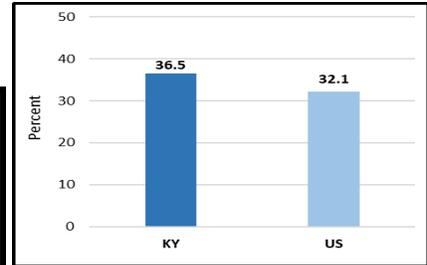
Due to BRFFS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

OBESITY

Question: Body Mass Index (BMI) was calculated by asking:
 1) How much do you weigh without shoes?
 2) How tall are you without shoes?

At Risk: Adults with BMI scores greater or equal to 30.0 are considered obese.

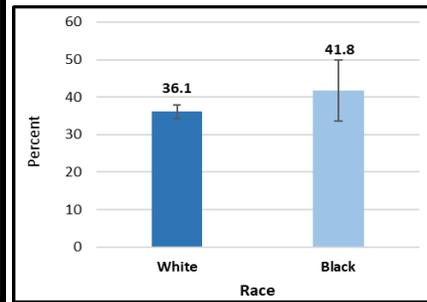
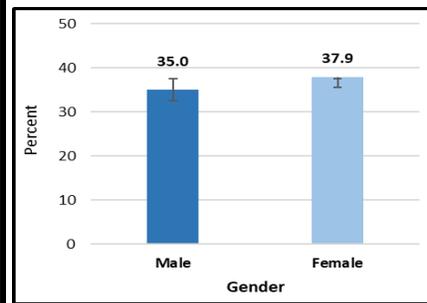
Percent of Adults who are Obese: Kentucky vs. Nationwide (States and DC) — 2019



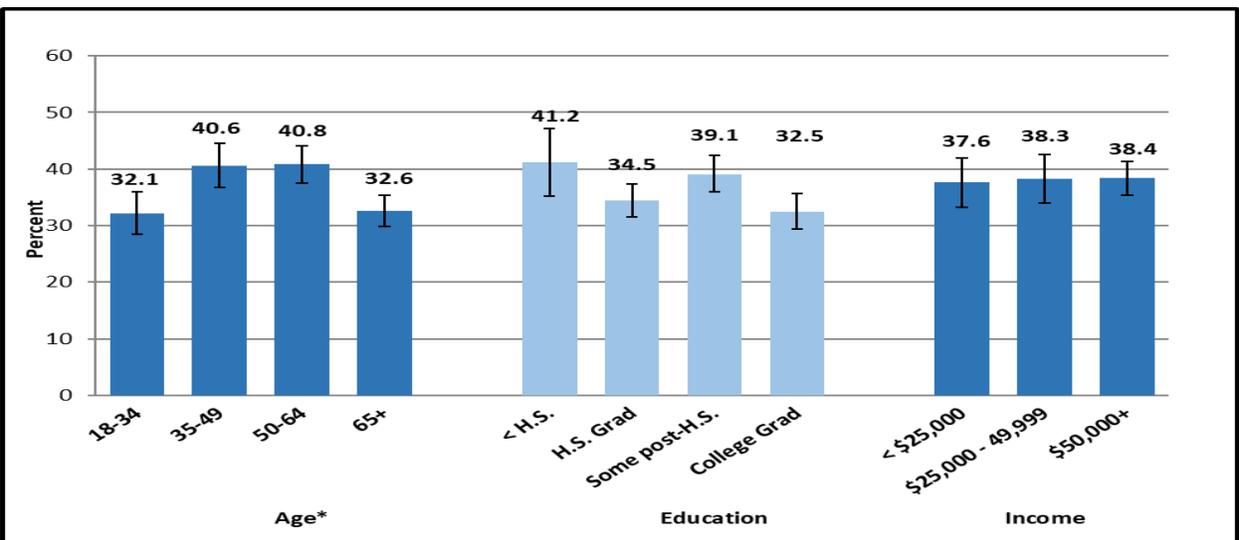
Who is at risk in Kentucky?

- ◆ In 2019, an estimated 36.5% of Kentucky adults were classified as being obese (i.e., Body Mass Index greater or equal to 30). This was higher compared to 32.1% in the United States.
- ◆ The prevalence of obesity did not significantly differ by gender.
- ◆ The prevalence of obesity did not significantly differ by race.
- ◆ The prevalence of obesity was significantly higher among middle-aged adults aged 35-64 years than among adults aged 65 years and older.
- ◆ Adults with a college degree reported a lower prevalence of obesity compared to those with less education; however the differences were not statistically significant.
- ◆ The prevalence of obesity did not significantly differ by income.

Percent of Kentucky Adults who are Obese, by Gender, and by Race — 2019



Percent of Kentucky Adults who are Obese, by Age*, Education, and Income — 2019



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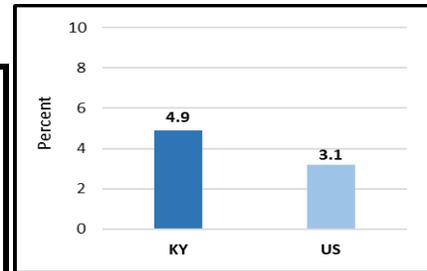
Due to BRFSS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

STROKE

Question: Have you ever been told by a doctor, nurse, or other health professional that you had a stroke?

At Risk: Adults who answered “Yes” are considered at risk.

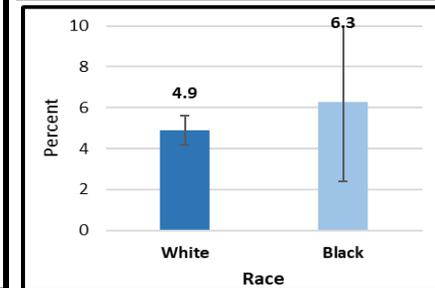
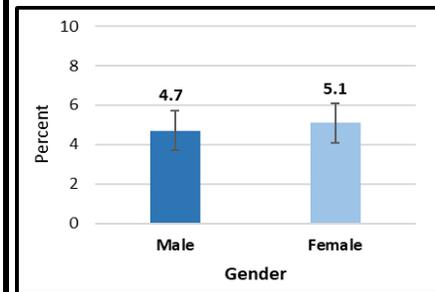
Percent of Adults who have ever been told that they had a Stroke: Kentucky vs. Nationwide (States and DC) — 2019



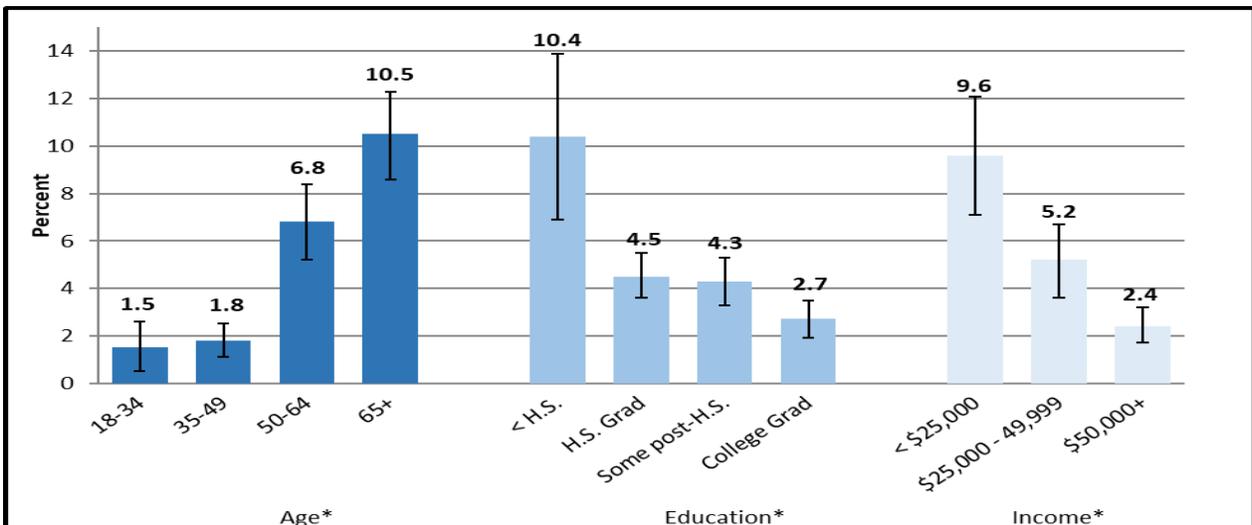
Who is at risk in Kentucky?

- ◆ About 4.9% of Kentucky adults had ever been told by a doctor that they had a stroke. This was higher compared to 3.1% in the United States.
- ◆ The prevalence of stroke was similar by gender.
- ◆ The prevalence of stroke did not significantly differ by race.
- ◆ The prevalence of stroke significantly increased with age. The highest prevalence of stroke was among adults aged 65 years or older (10.5%).
- ◆ The prevalence of stroke decreased with increasing education level. The highest prevalence was among adults with less than high school education (10.4%).
- ◆ The prevalence of stroke decreased as annual household income increased. Adults with an annual household income under \$25,000 significantly reported a higher prevalence of stroke than those with an annual household income of \$50,000 or more (9.6% vs 2.4%).

Percent of Kentucky Adults who have ever been told they had a Stroke, by Gender, and by Race — 2019



Percent of Kentucky Adults who have ever been told they had a Stroke, by Age*, Education*, and Income* — 2019



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Due to BRFFS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

GENERAL HEALTH

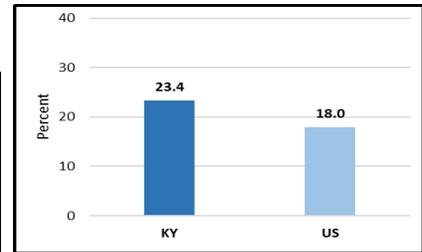
Question: Would you say that your general health is “Excellent”, “Very good”, “Good”, “Fair”, or “Poor”?

At Risk: Adults who answered “Fair” or “Poor” are considered at risk.

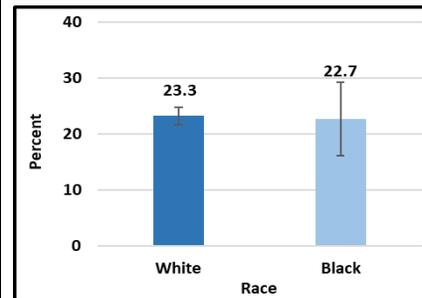
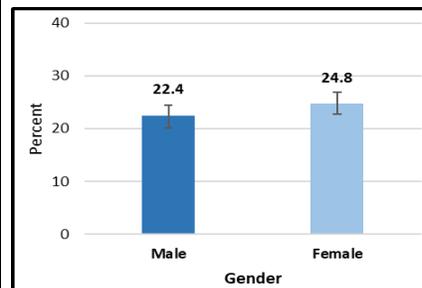
Who is at risk in Kentucky?

- ◆ In 2019, an estimated 23.4% of Kentucky adults reported that their general health was either fair or poor, this was higher compared to 18.0% in the United States.
- ◆ The prevalence of fair or poor health did not significantly differ by gender.
- ◆ The prevalence of fair or poor health did not differ by race.
- ◆ The prevalence of fair or poor health increased with age. Adult aged 65 and older reported a higher prevalence of fair or poor health compared to the other age groups.
- ◆ Adults with less than high school education (46.9%) reported a significantly higher prevalence of fair or poor health compared to those with a college degree (9.9%).
- ◆ The prevalence of fair or poor health significantly decreased with increasing household income level.

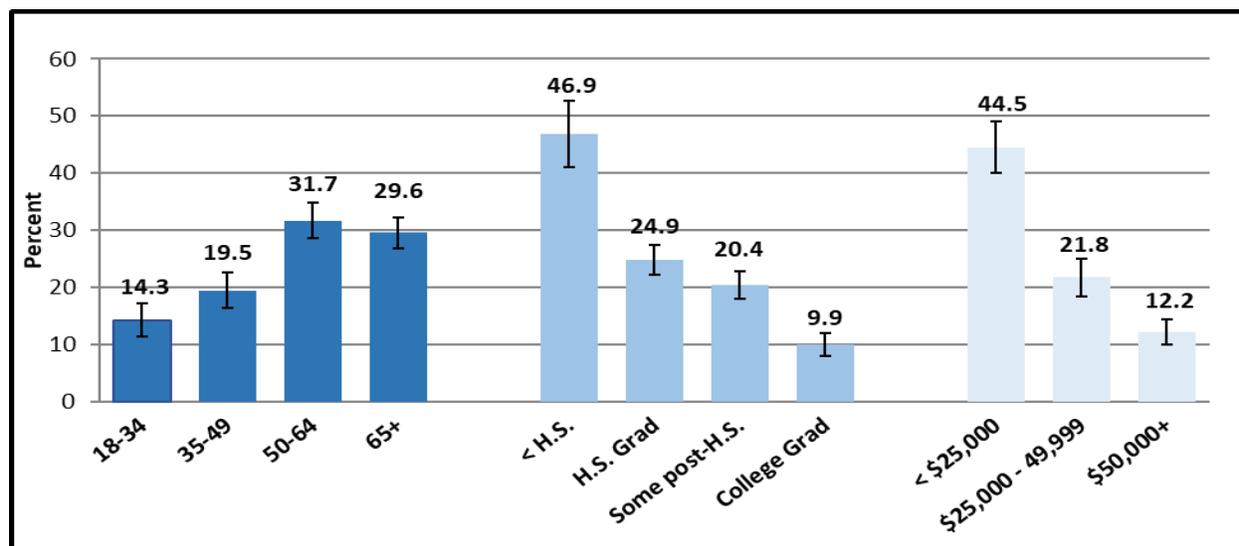
Percent of Adults who reported their General Health as Fair or Poor: Kentucky vs. Nationwide (States and DC) — 2019



Percent of Kentucky Adults who reported their General Health as Fair or Poor, by Gender*, and by Race — 2019



Percent of Kentucky Adults who reported their General Health as Fair or Poor, by Age*, Education*, and Income* — 2019



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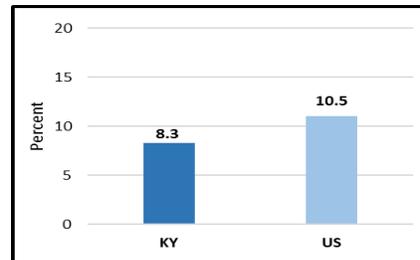
Due to BRFSS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

NO HEALTHCARE ACCESS/COVERAGE

Question: Do you have any kind of healthcare coverage, including health insurance, pre-paid plans such as HMOs or governmental plans such as Medicare?

At Risk: Adults who answered “No” are considered at risk.

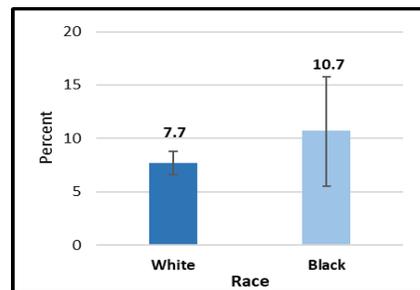
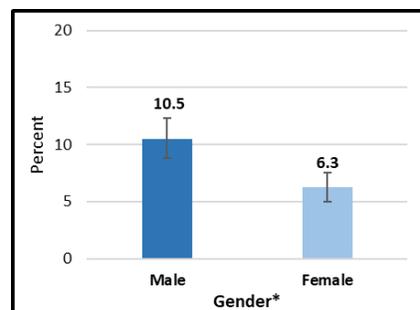
Percent of Adults with No Healthcare Coverage: Kentucky vs. Nationwide (States and DC) — 2019



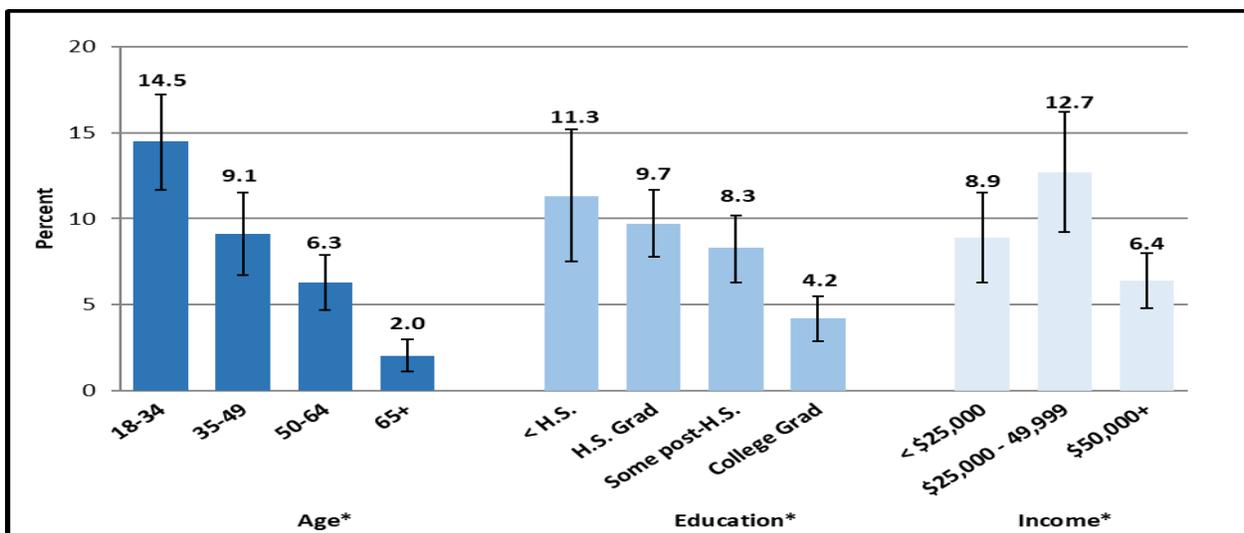
Who is at risk in Kentucky?

- ◆ About 8.3% of Kentucky adults reported having no healthcare coverage. This was lower compared to 10.5% in the United States.
- ◆ Males (10.5%) reported a significantly higher prevalence of no healthcare coverage compared to females (6.3%).
- ◆ The prevalence of adults with no healthcare coverage did not significantly differ by race.
- ◆ Young adults aged 18-34 years reported a significantly higher prevalence of no healthcare coverage compared to other age groups.
- ◆ Adults with less than high school education reported (11.3%) a significantly higher prevalence of no healthcare coverage than those with a college degree (4.2%).
- ◆ The prevalence of no healthcare coverage was significantly higher among adults with an annual household income between \$25,000-49,999 (12.7%) than among those with household income of \$50,000 or more (6.4%).

Percent of Kentucky Adults with No Healthcare Coverage, by Gender*, and by Race — 2019



Percent of Kentucky Adults with No Healthcare Coverage, by Age*, Education*, and Income* — 2019



* Denotes a statistically significant difference among the values.

In this report, the term ‘significant’ only refers to statistically significant differences in prevalence.

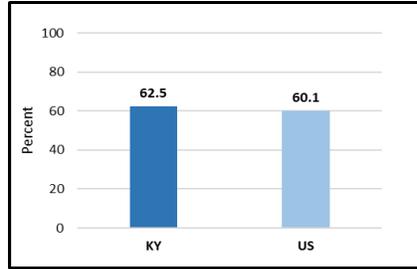
Due to BRFFS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

HIV/AIDS SCREENING

Question: Have you ever been tested for HIV?

At Risk: Adults who answered “No” are considered at risk.

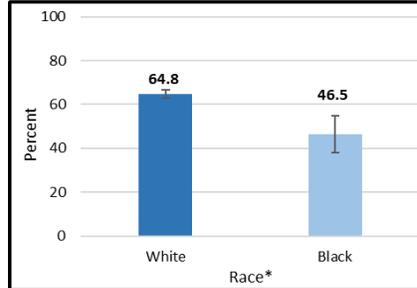
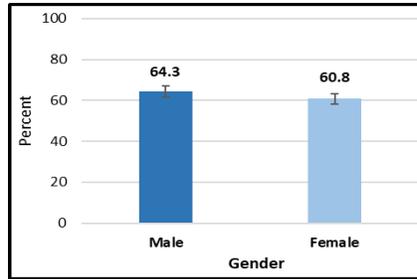
Percent of Adults who have never been tested for HIV: Kentucky vs. Nationwide (States and DC) — 2019



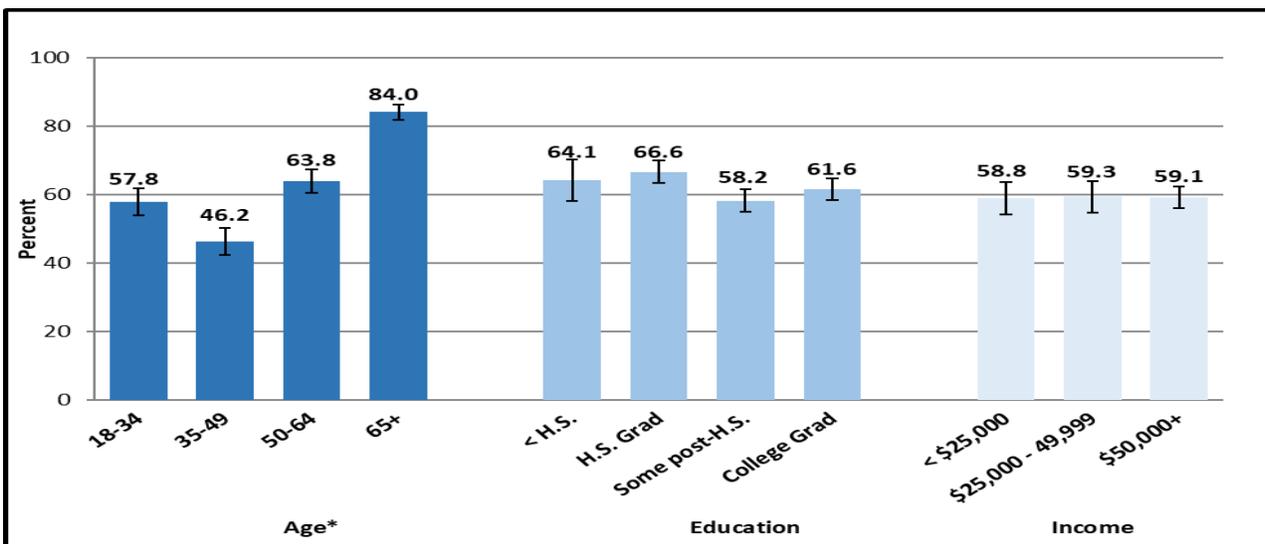
Who is at risk in Kentucky?

- ◆ In 2019, an estimated 62.5% of Kentucky adults reported never been tested for HIV. This estimate was slightly higher compared to 60.1% in the United States.
- ◆ No significant differences were observed in prevalence of adults who had never been tested for HIV by gender.
- ◆ The prevalence of white adults who had never been tested for HIV was significantly higher than black adults (64.8% vs 46.5%).
- ◆ About 84.0% of adults aged 65 years and older reported that they had never been tested for HIV. This estimate was significantly higher compared to young adults aged 18-34 years (57.8%).
- ◆ The prevalence of adults who had never been tested for HIV did not significantly differ by education.
- ◆ The prevalence of adults who had never been tested for HIV did not significantly differ by household income.

Percent of Kentucky Adults who have never been tested for HIV, by Gender, and by Race* — 2019



Percent of Kentucky Adults who have never been tested for HIV, by Age*, Education, and Income — 2019



* Denotes a statistically significant difference among the values.

In this report, the term ‘significant’ only refers to statistically significant differences in prevalence.

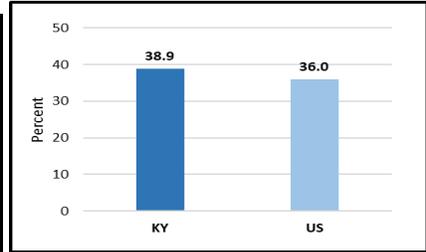
Due to BRFSS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

INFLUENZA IMMUNIZATION (Age 65+)

Question: In the past twelve months, have you had a flu shot?

At Risk: Adults aged 65+ years who did not get a flu shot in the past twelve months are considered at risk.

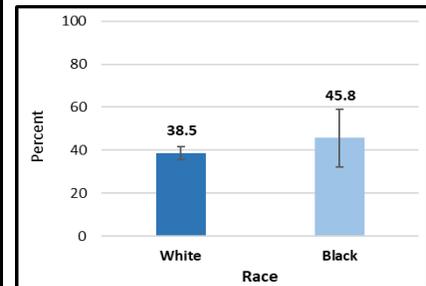
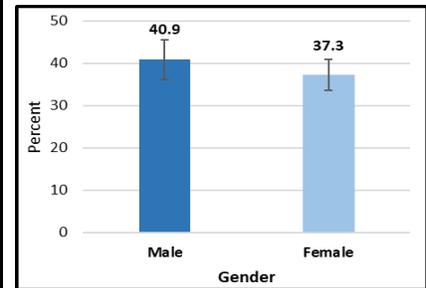
Percent of Adults (aged 65+) who did not get a Flu shot in the Past Year: Kentucky vs. Nationwide (States and DC) — 2019



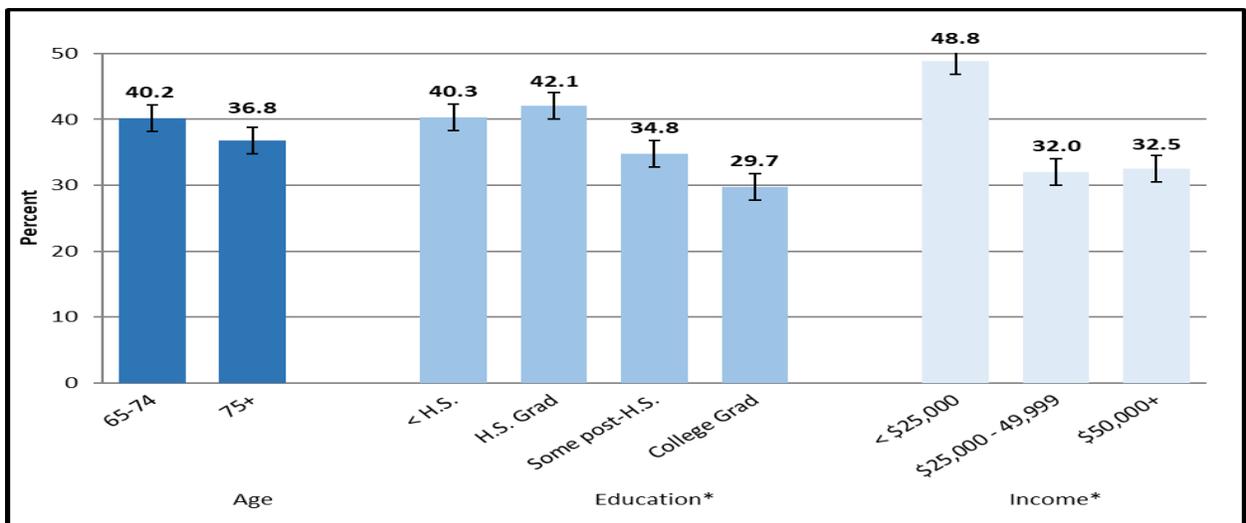
Who is at risk in Kentucky?

- ◆ About 38.9% of Kentucky adults aged 65 years or older reported that they did not get a flu shot in the past year. This was a higher estimate compared to 36.0% in the United States.
- ◆ The prevalence of adults who did not get a flu shot in the past year did not significantly differ by gender.
- ◆ The prevalence of adults who did not get a flu shot in the past year did not significantly differ by race.
- ◆ The prevalence of adults who did not have a flu shot in the past year did not significantly differ by age groups.
- ◆ A significantly higher percentage of adults (aged 65+) with less than high school education did not get a flu shot in the past year compared to adults with a college education (40.3% vs 29.7%).
- ◆ The prevalence of adults who did not get a flu shot in the past year was significantly higher among adults with an annual household income of less than \$25,000 compared to those with higher annual household income.

Percent of Kentucky Adults (aged 65+) who did not get a Flu shot in the Past Year, by Gender, and by Race — 2019



Percent of Kentucky Adults (aged 65+) who did not get a Flu Shot in the Past Year, by Age*, Education*, and Income* — 2019



* Denotes a statistically significant difference among the values.

In this report, the term 'significant' only refers to statistically significant differences in prevalence.

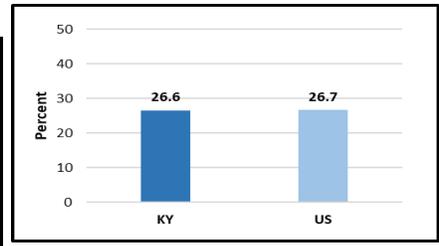
Due to BRFFS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

PNEUMOCOCCAL VACCINATION (Age 65+)

Question: Have you ever had a pneumonia shot?

At Risk: Adults aged 65 years or older who have never had a pneumonia shot (pneumococcal vaccine) are considered at risk.

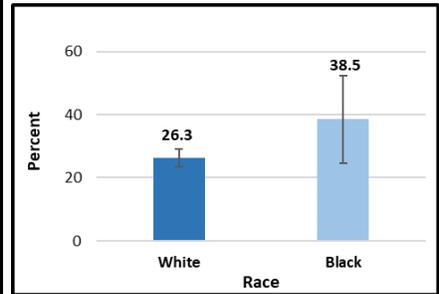
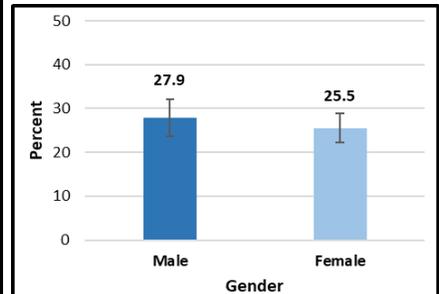
Percent of Adults (aged 65+) who have never had a Pneumococcal Vaccination: Kentucky vs. Nationwide (States and DC) — 2019



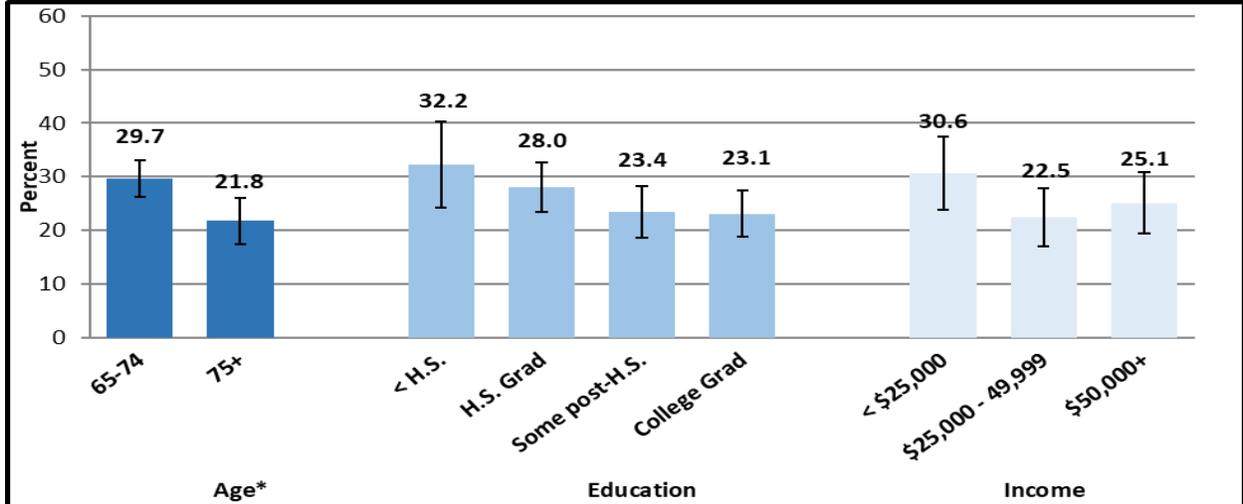
Who is at risk in Kentucky?

- ◆ In 2019, an estimated 26.6% of Kentucky adults aged 65 and older reported that they have never had a pneumococcal vaccination compared to 26.7% in the United States.
- ◆ The prevalence of adults (aged 65+) who have never had a pneumococcal vaccination did not significantly differ by gender.
- ◆ No significant differences were observed in prevalence of adults who have never had a pneumococcal vaccination by race.
- ◆ About an estimated 29.7% of adults aged 65-74 y reported that they have never had a pneumococcal vaccination. This estimate was significantly higher compared to adults aged 75 years and older (21.8%).
- ◆ The prevalence of adults who have never had a pneumococcal vaccination did not significantly differ by education.
- ◆ The prevalence of adults who have never had a pneumococcal vaccination did not significantly differ by household income.

Percent of Kentucky Adults (aged 65+) who have never had a Pneumococcal Vaccination, by Gender, and by Race — 2019



Percent of Kentucky Adults (aged 65+) who have never had a Pneumococcal Vaccination, by Age*, Education, and Income—2019



* Denotes a statistically significant difference among the values.

In this report, the term 'significant' only refers to statistically significant differences in prevalence.

Due to BRFFSS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

Prevalence Estimates by Regions

Kentucky has 120 Counties that are divided into six Regions for program planning. The next section presents a data profile of each sub-state Region based on data collected in each of the six strata. The strata are divided proportional to the population residing in each region.

Counties Included Within Each Region

<p>Bluegrass Region</p> 	<p>Anderson, Bourbon, Boyle, Clark, Estill, Fayette, Franklin, Garrard, Harrison, Jessamine, Lincoln, Madison, Mercer, Nicholas, Powell, Scott, Woodford.</p>
<p>Central KY Region</p> 	<p>Allen, Barren, Butler, Edmonson, Hart, Logan, Metcalfe, Monroe, Simpson, Warren, Breckinridge, Grayson, Hardin, Larue, Marion, Meade, Nelson, Washington, Adair, Casey, Clinton, Cumberland, Green, McCreary, Pulaski, Russell, Taylor, Wayne.</p>
<p>Eastern KY Region</p> 	<p>Bath, Bracken, Fleming, Lewis, Mason, Menifee, Montgomery, Morgan, Robertson, Rowan, Boyd, Carter, Elliott, Greenup, Lawrence, Martin, Breathitt, Floyd, Johnson, Magoffin, Pike, Knott, Lee, Leslie, Letcher, Owsley, Perry, Wolfe, Bell, Clay, Harlan, Jackson, Knox, Laurel, Rockcastle, Whitley.</p>
<p>KIPDA Region</p> 	<p>Bullitt, Henry, Jefferson, Oldham, Shelby, Spencer, Trimble.</p>
<p>Northern KY Region</p> 	<p>Boone, Campbell, Carrol, Gallatin, Grant, Kenton, Owen, Pendleton.</p>
<p>Western KY Region</p> 	<p>Ballard, Calloway, Carlisle, Fulton, Graves, Hickman, Lyon, McCracken, Marshall, Caldwell, Christian, Crittenden, Hopkins, Muhlenberg, Todd, Trigg, Daviess, Hancock, Henderson, Livingston, McLean, Ohio, Union, Webster.</p>

**Percent of Kentucky Adults Classified as Binge Drinkers,
by Regions, 2019**

Regions	%	95% CI
Bluegrass	18.6	(14.6—22.6)
Central	11.8	(9.6—13.9)
Eastern	9.3	(7.6—11.1)
KIPDA	19.5	(15.4—23.5)
Northern	18.9	(14.5—23.3)
Western	13.8	(11.5—16.1)

**Percent of Kentucky Adults who did not Participate in any
Physical Activity in the Past 30 Days,
by Regions, 2019**

Regions	%	95% CI
Bluegrass	29.1	(24.1—34.1)
Central	35.8	(32.7—38.8)
Eastern	38.2	(35.2—41.1)
KIPDA	30.1	(25.5—34.7)
Northern	29.8	(24.7—34.9)
Western	34.2	(31.2—37.2)

Due to BRFSS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

Percent of Kentucky Adults who are Current Smokers, by Regions, 2019

Regions	%	95% CI
Bluegrass	18.7	(14.4—22.9)
Central	27.4	(24.5—30.4)
Eastern	27.8	(24.9—30.7)
KIPDA	21.5	(17.3—25.8)
Northern	23.8	(18.8—28.8)
Western	23.5	(20.7—26.2)

Percent of Kentucky Adults who have Arthritis, by Regions, 2019

Regions	%	95% CI
Bluegrass	28.5	(24.2—32.9)
Central	35.5	(32.6—38.3)
Eastern	43.2	(40.3—46.0)
KIPDA	31.5	(27.1—35.9)
Northern	34.4	(29.6—39.3)
Western	34.7	(31.9—37.6)

Due to BRFSS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

Percent of Kentucky Adults who have Current Asthma, by Regions, 2019

Regions	%	95% CI
Bluegrass	10.0	(6.8—13.2)
Central	9.8	(8.0—11.7)
Eastern	10.6	(8.7—12.5)
KIPDA	7.6	(5.1—10.0)
Northern	8.4	(5.7—11.2)
Western	11.0	(9.1—13.0)

Percent of Kentucky Adults who have COPD, by Regions, 2019

Regions	%	95% CI
Bluegrass	7.3	(4.8—9.7)
Central	11.2	(9.3—13.1)
Eastern	18.1	(15.9—20.3)
KIPDA	9.3	(6.5—12.2)
Northern	7.7	(4.9—10.5)
Western	11.1	(9.3—13.0)

Due to BRFSS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

Percent of Kentucky Adults who have Coronary Heart Disease, by Regions, 2019

Regions	%	95% CI
Bluegrass	5.1	(3.0—7.3)
Central	6.0	(4.7—7.4)
Eastern	7.4	(6.1—8.8)
KIPDA	4.0	(2.2—5.9)
Northern	6.6	(4.0—9.1)
Western	6.4	(5.1—7.6)

Percent of Kentucky Adults who have a Depressive disorder, by Regions, 2019

Regions	%	95% CI
Bluegrass	26.0	(21.6—30.4)
Central	25.3	(22.5—28.0)
Eastern	29.9	(27.1—32.7)
KIPDA	22.1	(18.0—26.1)
Northern	27.2	(22.1—32.3)
Western	25.5	(22.7—28.2)

Due to BRFSS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

Percent of Kentucky Adults who have Diabetes, by Regions, 2019

Regions	%	95% CI
Bluegrass	10.5	(7.5—13.5)
Central	14.5	(12.5—16.5)
Eastern	17.9	(15.7—20.2)
KIPDA	9.7	(7.0—12.4)
Northern	15.0	(11.5—18.4)
Western	15.0	(13.1—17.0)

Percent of Kentucky Adults who have ever had a Heart Attack, by Regions, 2019

Regions	%	95% CI
Bluegrass	4.3	(2.3—6.4)
Central	6.0	(4.7—7.3)
Eastern	9.2	(7.6—10.9)
KIPDA	6.0	(3.8—8.1)
Northern	5.5	(3.1—7.8)
Western	7.5	(6.1—9.0)

Due to BRFSS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

Percent of Kentucky Adults who have High Blood Cholesterol, by Regions, 2019

Regions	%	95% CI
Bluegrass	31.7	(26.8—36.5)
Central	39.7	(36.6—42.8)
Eastern	43.2	(40.1—46.3)
KIPDA	36.8	(31.9—41.6)
Northern	39.2	(33.6—44.8)
Western	38.8	(35.7—41.9)

Percent of Kentucky Adults who have High Blood Pressure, by Regions, 2019

Regions	%	95% CI
Bluegrass	35.8	(31.0—40.5)
Central	43.9	(40.9—47.0)
Eastern	49.9	(47.0—52.8)
KIPDA	36.7	(32.2—42.8)
Northern	37.8	(32.7—41.2)
Western	42.3	(39.4—45.3)

Due to BRFSS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

Percent of Kentucky Adults who are Obese (BMI \geq 30), by Regions, 2019

Regions	%	95% CI
Bluegrass	38.2	(33.1—43.4)
Central	36.1	(33.0—39.2)
Eastern	40.3	(37.4—43.3)
KIPDA	32.8	(27.9—37.6)
Northern	34.0	(28.8—39.3)
Western	37.6	(34.5—40.7)

Percent of Kentucky Adults who have ever had a Stroke, by Regions, 2019

Regions	%	95% CI
Bluegrass	4.0	(2.1—6.0)
Central	4.7	(3.5—5.8)
Eastern	6.1	(4.7—7.5)
KIPDA	4.0	(2.2—5.8)
Northern	5.0	(3.1—7.0)
Western	6.5	(5.1—7.9)

Due to BRFSS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

Percent of Kentucky Adults with fair or poor General Health, by Regions, 2019

Regions	%	95% CI
Bluegrass	18.7	(14.6—22.8)
Central	26.1	(23.4—28.7)
Eastern	33.4	(30.5—36.3)
KIPDA	18.9	(14.8—23.0)
Northern	20.4	(16.0—24.8)
Western	23.8	(21.1—26.5)

Percent of Kentucky Adults with No Health Care Coverage, by Regions, 2019

Regions	%	95% CI
Bluegrass	7.4	(4.5—10.2)
Central	9.2	(7.0—11.4)
Eastern	8.1	(6.1—10.0)
KIPDA	8.7	(5.8—11.6)
Northern	7.0	(3.9—10.2)
Western	9.2	(7.0—11.5)

Due to BRFSS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

Percent of Kentucky Adults who have ever been tested for HIV, by Regions, 2019

Regions	%	95% CI
Bluegrass	35.3	(30.3—40.3)
Central	32.8	(29.6—35.9)
Eastern	32.7	(29.6—35.8)
KIPDA	45.4	(40.3—50.5)
Northern	36.9	(31.4—42.3)
Western	39.6	(36.3—42.8)

Percent of Kentucky Adults (aged 65+) who did not get a Flu Shot in the Past Year, by Regions, 2019

Regions	%	95% CI
Bluegrass	35.7	(27.0—44.4)
Central	37.5	(31.4—43.3)
Eastern	40.6	(35.5—45.7)
KIPDA	41.7	(33.6—49.8)
Northern	40.7	(31.5—49.8)
Western	35.2	(32.7—41.7)

Due to BRFSS methodology changes in 2011, estimates from 2019 cannot be directly compared to estimates from years prior to 2011.

Percent of Kentucky Adults (aged 65+) who have never had a Pneumococcal Vaccination, by Area Development District, 2019

Regions	%	95% CI
Bluegrass	26.5	(18.8—34.1)
Central	29.7	(24.3—35.1)
Eastern	28.0	(23.1—32.9)
KIPDA	25.2	(17.7—32.6)
Northern	22.8	(23.1—32.9)
Western	25.5	(21.5—29.5)

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