



Centers for Disease Control and Prevention  
CDC 24/7: Saving Lives, Protecting People™

## 500 Cities: Local Data for Better Health

### Health Outcomes

#### Arthritis among adults aged ≥18 years

<b>Demographic group</b>	Resident adults aged ≥18 years.
<b>Numerator</b>	Respondents aged ≥18 years who report having been told by a doctor, nurse, or other health professional that they had arthritis.
<b>Denominator</b>	Respondents aged ≥18 years who answered “yes” or “no” to the following question: “Have you ever been told by a doctor, nurse, or other health professional that you have some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia?” (excluding those who refused to answer, had a missing answer, or answered “don’t know/not sure”).
<b>Measures of frequency</b>	Annual prevalence (years 2011–2015) with 95% confidence intervals and by demographic characteristics when feasible.
<b>Time period of case definition</b>	Lifetime.
<b>Background</b>	An estimated 52.5 million adults have physician-diagnosed arthritis, and 22.7 million report arthritis-attributable activity limitations (1). As the population ages, arthritis is expected to affect an estimated 67 million adults in the United States by 2030 (2). In 2003, arthritis cost an estimated \$128 billion in direct medical and indirect costs (3).
<b>Significance</b>	Monitoring the prevalence and public health effects of arthritis are important for estimating the state-specific need for interventions that reduce symptoms, improve physical function, and improve the quality of life for persons with arthritis. These interventions include self-management education programs that have been shown to reduce pain and improve psychological health and health behaviors and physical activity programs that have been shown to improve physical function, mental health, and quality of life.
<b>Limitations of indicator</b>	Physician-diagnosed arthritis is self-reported in the Behavioral Risk Factor Surveillance System and was not confirmed by a health-care provider or objective monitoring; however, such self-reports have been shown to be acceptable for surveillance purposes (4) (despite minor


	changes made in 2011 to the case-finding question to include arthritis on the chronic conditions core).
<b>Data resources</b>	Behavioral Risk Factor Surveillance System (BRFSS). In addition, CDC typically provides this estimate in standard arthritis BRFSS tables produced for each state for odd-numbered years. Unadjusted data are usually presented in these tables to provide actual estimates to help in state-level program planning.
<b>Limitations of data resources</b>	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. In an effort to address noncoverage issues related to phone use, BRFSS began including cell phone interviews in the 2011 data collection. Due to changes in sampling and weighting methodology, 2011 is a new baseline for BRFSS, and comparisons with prior year data are inappropriate.
<b>Related recommendations</b>	<ul style="list-style-type: none"> <li>• <i>Healthy People 2020</i> objectives: AOCBC-1: Reduce the mean level of joint pain among adults with doctor-diagnosed arthritis.</li> <li>• AOCBC-2: Reduce the proportion of adults with doctor-diagnosed arthritis who experience a limitation in activity because of arthritis or joint symptoms.</li> <li>• AOCBC-4: Reduce the proportion of adults with doctor-diagnosed arthritis who have difficulty in performing two or more personal care activities, thereby preserving independence.</li> <li>• AOCBC-5: Reduce the proportion of adults with doctor-diagnosed arthritis who report serious psychological distress.</li> <li>• AOCBC-6: Reduce the impact of doctor-diagnosed arthritis on employment in the working-age population.</li> <li>• AOCBC-7: Increase the proportion of adults with doctor-diagnosed arthritis who receive health-care provider counseling.</li> <li>• AOCBC-8: Increase the proportion of adults with doctor-diagnosed arthritis who have had effective, evidence-based arthritis education as an integral part of the management of their condition.</li> </ul>

1. CDC. Prevalence of doctor-diagnosed arthritis and arthritis-attributable activity limitation—United States, 2010–2012. *MMWR* 2013;62:869–73.
2. Hootman JM, Helmick CG. Projections of U.S. prevalence of arthritis and associated activity limitations. *Arthritis Rheum* 2006;54:226–9.
3. CDC. National and state medical expenditures and lost earnings attributable to arthritis and other rheumatic conditions—United States, 2003. *MMWR* 2007;56:4–7.
4. Sacks JJ, Harrold LR, Helmick CG, Gurwitz JH, Emani S, Yood RA. Validation of a surveillance case definition for arthritis. *J Rheumatol* 2005;32:340–7.

## Current asthma prevalence among adults aged $\geq 18$ years

<b>Demographic group</b>	Civilian noninstitutionalized population.
<b>Numerator</b>	Weighted number of respondents who answer “yes” both to both of the following questions: “Have you ever been told by a doctor, nurse, or other health professional that you have asthma?” and the question “Do you still have asthma?”
<b>Denominator</b>	Weighted number of respondents to BRFSS (or National Survey of Children’s Health) excluding “don’t know” and “refused” responses to the question “Have you ever been told you have asthma?”
<b>Measures of frequency</b>	<p>Annual number of state residents with current asthma and annual current asthma prevalence percentage with 95% confidence intervals and by demographic characteristics when feasible.</p> <p>Annual number of adults (aged <math>\geq 18</math> years) with current asthma and percentage of adults with current asthma with 95% confidence intervals and by demographic characteristics when feasible.</p> <p>Annual number of children (aged 0–17 years) with current asthma and percentage of children with current asthma with 95% confidence intervals and by demographic characteristics when feasible.</p>
<b>Time period of case definition</b>	Calendar year of survey.
<b>Background</b>	<p>Estimates of asthma prevalence indicate the number and percentage of the population with asthma at a given point in time. National estimates indicate that both adult and child current asthma prevalence estimates have been increasing from 20.3 million persons in 2001 to 25.7 million persons in 2010, of which 7.0 million were children (1). Adult current asthma prevalence, available for states from BRFSS since 2001, varies by state and region as well as by many demographic characteristics (2). Current asthma prevalence among children is available for a subset of states from BRFSS annually since 2005 (2). Current asthma prevalence among children is available for all states from the National Survey of Children’s Health for 2003, 2007, and 2011 (3).</p>
<b>Significance</b>	<p>Asthma prevalence describes the size of a state’s population with asthma as well as the overall asthma prevalence relative to other chronic conditions. The greater the prevalence of asthma, the greater the likelihood of adverse outcomes from asthma including emergency department visits, hospitalizations, and death (1). Compared with persons without asthma, persons with asthma have more days of activity limitation and missed school and missed work and are more likely to report comorbid depression (4–8).</p>
<b>Limitations of indicator</b>	<p>Although all states have collected adult BRFSS data annually since 2001, not all states collect child data using the child asthma module of the BRFSS. States that do not collect child asthma data from BRFSS cannot produce the total indicator for all years; they can only produce the adult indicator. However, child asthma prevalence data for all states is available every 4 years using the National</p>

	Survey of Children's Health (2003, 2007, and 2011). (Because NSCH is being redesigned, its mode and future periodicity is unknown at this time.) For these years a total indicator can be produced for all states by combining the adult prevalence from BRFSS with the child prevalence from NSCH. This survey-based indicator requires a doctor diagnosis of asthma, which may not include all persons with asthma. The child information is provided by an adult proxy respondent.
<b>Data resources</b>	BRFSS survey for adults (all states) and for children (some states). National Survey of Children's Health (NSCH) for those states not collecting child data with BRFSS.
<b>Limitations of data resources</b>	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. In an effort to address noncoverage issues related to phone use, BRFSS began including cell phone interviews in the 2011 data collection. Due to changes in sampling and weighting methodology, 2011 is a new baseline for BRFSS, and comparisons with prior year data are inappropriate.

1. Moorman JE, Akinbami LJ, Bailey CM, et al. National surveillance of asthma: United States, 2001–2010. *Vital Health Stat* 2012;3(35).
2. CDC. Behavioral Risk Factor Surveillance System. Atlanta, GA: US Department of Health and Human Services, CDC. Available at [https://www.cdc.gov/brfss/annual\\_data/annual\\_data.htm](https://www.cdc.gov/brfss/annual_data/annual_data.htm).
3. CDC. National Survey of Children's Health. Atlanta, GA: US Department of Health and Human Services, CDC. Available at <https://www.cdc.gov/nchs/slits/nsch.htm>
4. Moonie S, Sterling D, Figgs L, Castro M. Asthma status and severity affects missed school days. *J School Health* 2006;76:18–24.
5. King ME. Serious psychological distress and asthma [Chapter 5]. In: Preedy VR, ed. *Scientific basis of healthcare*. London, England: Science Publishers; 2012:86–107. Available at <http://www.crcnetbase.com/doi/abs/10.1201/b11607-6> 
6. Strine TW, Mokdad AH, Balluz LS, et al. Depression and anxiety in the United States: findings from the 2006 Behavioral Risk Factor Surveillance System. *Psychiatr Serv* 2008;59:1383–90.
7. Chapman DP, Perry GS, Strine TW. The vital link between chronic disease and depressive disorders. *Prev Chronic Dis* 2005;2:A14.
8. Scott KM, Von Korff M, Ormel J, et al. Mental disorders among adults with asthma: results from the World Mental Health Survey. *Gen Hosp Psychiatry* 2007;29:123–33.

## High blood pressure among adults aged ≥18 years

<b>Demographic group</b>	Resident adults aged ≥18 years.
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<b>Numerator</b>	Respondents aged $\geq 18$ years who report ever having been told by a doctor, nurse, or other health professional that they have high blood pressure. Women who were told high blood pressure only during pregnancy and those who were told they had borderline hypertension were not included.
<b>Denominator</b>	Respondents aged $\geq 18$ years (excluding those who refused to answer, had a missing answer, or answered “don’t know/not sure”).
<b>Measures of frequency</b>	Biennial (odd years) prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [1]) with 95% confidence intervals and by demographic characteristics when feasible.
<b>Time period of case definition</b>	Past year.
<b>Background</b>	In the United States, one out of three adults had hypertension (2003–2010 National Health and Nutrition Examination Survey) (2). Behavioral Risk Factor Surveillance System 2009 data showed that the overall age-adjusted prevalence of self-reported high blood pressure in the United States was 28.3% (3).
<b>Significance</b>	Approximately 348,000 American deaths in 2009 included high blood pressure as a primary or contributing cause (4). Approximately 20%–30% of coronary heart disease and 20%–50% of strokes in the United States are attributable to uncontrolled hypertension (4). Blood pressure-related cardiovascular complications can occur before the onset of established hypertension (4). Lifestyle risk factors for hypertension include high sodium intake, excessive caloric intake, physical inactivity, excessive alcohol consumption, and deficient potassium intake. Lifestyle changes and medications can be used to reduce blood pressure (4).
<b>Limitations of indicator</b>	Indicator does not measure the proportion of adults who currently have diagnosed high blood pressure and might result in an underestimate of the prevalence of high blood pressure. Indicator is based on having been told that one has high blood pressure and is subject to recall and actually having been told. Additionally, reports are not validated against actual blood pressure measurements or medical records.
<b>Data resources</b>	Behavioral Risk Factor Surveillance System (BRFSS).
<b>Limitations of data resources</b>	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. In an effort to address noncoverage issues related to phone use, BRFSS began including cell phone interviews in the 2011 data collection. Due to changes in sampling and weighting methodology, 2011 is a new baseline for BRFSS, and comparisons with prior year data are inappropriate.
<b>Related recommendations</b>	<ul style="list-style-type: none"> <li>• <i>Healthy People 2020</i> objective HDS-4: Increase the proportion of adults who have had their blood pressure measured within the preceding 2 years and can state whether their blood pressure was normal or high.</li> <li>• <i>Healthy People 2020</i> objective HDS-5.1: Reduce the proportion of adults with</li> </ul>

hypertension.

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at <https://www.cdc.gov/nchs/data/statnt/statnt20.pdf> .
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3. CDC. Self-reported hypertension and use of antihypertensive medication among adults—United States, 2005–2009. MMWR 2013;62:237–44.
4. Go AS, Mozaffarian D, Roger VL, et al. Heart disease and stroke statistics—2013 update: a report from the American Heart Association. Circulation 2013;127:e6–245.

## Cancer (excluding skin cancer) among adults aged ≥18 years

<b>Demographic group</b>	Resident adults aged ≥18 years.
<b>Numerator</b>	Respondents aged ≥18 years who report ever having been told by a doctor, nurse, or other health professional that they have any other types (besides skin) of cancer.
<b>Denominator</b>	Respondents aged ≥18 years (excluding those who refused to answer, had a missing answer, or answered “don’t know/not sure”).
<b>Measures of frequency</b>	Biennial (odd years) prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [1]) with 95% confidence intervals and by demographic characteristics when feasible.
<b>Time period of case definition</b>	Past year.
<b>Background</b>	Malignant neoplasms (ICD-10: C00-C97) accounted for 572,623 deaths (22.9% of total deaths) among US adults in 2012. (2)
<b>Significance</b>	Continued advances in cancer research, detection, and treatment have resulted in a decline in both incidence and death rates for all cancers from 1975-2006. (3) Among people who develop cancer, more than half will be alive in 5 years. (4) Yet, cancer remains a leading cause of death in the United States, second only to heart disease. (2)


<b>Limitations of indicator</b>	The indicator is based on being diagnosed by a physician and respondent recall of the diagnosis and might underestimate the true prevalence. This indicator is not specific to cancer type.
<b>Data resources</b>	Behavioral Risk Factor Surveillance System (BRFSS).
<b>Limitations of data resources</b>	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. In an effort to address noncoverage issues related to phone use, BRFSS began including cell phone interviews in the 2011 data collection. Due to changes in sampling and weighting methodology, 2011 is a new baseline for BRFSS, and comparisons with prior year data are inappropriate.
<b>Related recommendations</b>	Healthy People 2020 objectives C-1 through C-7, and C-9 through C-11.

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at <https://www.cdc.gov/nchs/data/statnt/statnt20.pdf> .
2. Heron M. Deaths: Leading causes for 2012. National vital statistics reports; vol 64 no 10. Hyattsville, MD: National Center for Health Statistics. 2015.
3. Edwards BK, Ward E, Kohler BA, et al. Annual report to the nation on the status of cancer, 1975–2006, featuring colorectal cancer trends and impact of interventions (risk factors, screening, and treatment) to reduce future rates. Cancer. 2010 Feb 1;116(3):544-73.
4. National Cancer Institute, Surveillance Research Program. Cancer Statistics Review 1975–2006: Age-adjusted SEER incidence and US death rates and 5-year relative survival rates. Bethesda, MD: National Cancer Institute. Available from: [http://seer.cancer.gov/csr/1975\\_2006/results\\_merged/topic\\_survival.pdf](http://seer.cancer.gov/csr/1975_2006/results_merged/topic_survival.pdf)  .

## High cholesterol among adults aged ≥18 years

<b>Demographic group</b>	Resident adults aged ≥18 years.
<b>Numerator</b>	Respondents aged ≥18 years who report having been told by a doctor, nurse, or other health professional that they had high cholesterol.
<b>Denominator</b>	Respondents aged ≥18 years who report having their cholesterol checked within the past 5 years (excluding those who refused to answer, had a missing answer, or answered “don’t know/not sure”).

<b>Measures of frequency</b>	Biennial (odd years) prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [1]) with 95% confidence intervals and by demographic characteristics when feasible.
<b>Time period of case definition</b>	Past 5 years.
<b>Background</b>	Among those who had ever been screened for high blood cholesterol, the percentage who reported ever being told by a health-care provider their blood cholesterol was high was 35.0% in 2009 (2). Only 33.5% (one out of three) adults with high cholesterol have the condition under control, and approximately half of adults with high cholesterol get treatment (3).
<b>Significance</b>	Elevated levels of serum cholesterol can lead to development of atherosclerosis (4). Approximately 30%–40% of coronary heart disease and 10%–20% of strokes in the United States are attributable to elevated serum cholesterol (4). Elevated cholesterol has been associated with physical inactivity, high fat intake, smoking cigarettes, diabetes, and obesity (4). Lifestyle changes and medications can reduce cholesterol and prevent heart disease among persons with elevated serum cholesterol (4).
<b>Limitations of indicator</b>	Validity and reliability of this indicator can be low because patients might not be aware of the specific tests conducted on their blood samples collected in clinical settings. Or the patients cannot afford to go to see doctor to get cholesterol checked.
<b>Data resources</b>	Behavioral Risk Factor Surveillance System (BRFSS).
<b>Limitations of data resources</b>	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. In an effort to address noncoverage issues related to phone use, BRFSS began including cell phone interviews in the 2011 data collection. Due to changes in sampling and weighting methodology, 2011 is a new baseline for BRFSS, and comparisons with prior year data are inappropriate.
<b>Related recommendations</b>	<ul style="list-style-type: none"> <li>• <i>Healthy People 2020</i> objective HDS-6: Increase the proportion of adults who have had their blood cholesterol checked within the preceding 5 years.</li> <li>• <i>Healthy People 2020</i> objective HDS-7: Reduce the proportion of adults with high total blood cholesterol levels.</li> </ul>

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at <https://www.cdc.gov/nchs/data/statnt/statnt20.pdf> .
2. CDC. Prevalence of cholesterol screening and high blood cholesterol among adults—United States, 2005, 2007, and 2009 MMWR 2012;61;697–702
3. CDC. Vital signs: prevalence, treatment, and control of high levels of low-density lipoprotein cholesterol: United States, 1999–2002 and 2005–2008. MMWR 2011;60:109–14.



4. National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III). Third report of the National Cholesterol Education Program (NCEP) expert panel on detection, evaluation, and treatment of high blood cholesterol in adults (Adult Treatment Panel III) final report. *Circulation* 2002;106:3143–421.

## Chronic kidney disease among adults aged ≥18 years

<b>Demographic group</b>	All adults aged ≥18 years.
<b>Numerator</b>	Respondents aged ≥18 years who report ever having been told by a doctor, nurse, or other health professional that they have kidney disease.
<b>Denominator</b>	Respondents aged ≥18 years who report or do not report ever having been told by a doctor, nurse, or other health professional that they have kidney disease (excluding those who refused to answer, had a missing answer, or answered “don’t know/not sure”).
<b>Measures of frequency</b>	Annual prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9) (1) with 95% confidence intervals and by demographic characteristics when feasible.
<b>Time period of case definition</b>	Calendar year.
<b>Background</b>	In 2011, kidney disease was the ninth leading cause of death in the United States (2). Although approximately 600,000 persons have end-stage renal disease (3), approximately 20 million U.S. adults aged ≥20 years are estimated to have chronic kidney disease (CKD) (4), and most of them are unaware of their condition (5).
<b>Significance</b>	If left untreated, CKD can lead to kidney failure, requiring dialysis or transplantation for survival (4). However, persons with CKD are more likely to die from cardiovascular disease than develop end-stage renal disease (4). Controlling blood glucose, blood pressure, and cholesterol can prevent or delay these conditions and improve health outcomes (4). For the first time, <i>Healthy People 2020</i> included objectives addressing the earlier stages of kidney disease (6).
<b>Limitations of indicator</b>	Reducing the proportion of the U.S. population with CKD is likely to be difficult because of the growing prevalence of major risk factors such as diabetes, hypertension, and aging of the population (7). Many years may pass before declining trends are observed.
<b>Data resources</b>	Behavioral Risk Factor Surveillance System (BRFSS).

<b>Limitations of data resources</b>	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. In an effort to address noncoverage issues related to phone use, BRFSS began including cell phone interviews in the 2011 data collection. Due to changes in sampling and weighting methodology, 2011 is a new baseline for BRFSS, and comparisons with prior year data are inappropriate. The estimated prevalence of CKD in the U.S. population is likely to be an underestimate because BRFSS is a telephone survey that excludes the institutionalized population, in whom the prevalence is likely to be higher (8), and because prevalence is based on self-report. Most persons with CKD are unaware of their condition (5). In addition, one data point is available. The following question was asked for the first time in the 2011 BRFSS core questionnaire: "Has a doctor, nurse, or other health professional EVER told you have kidney disease? Do NOT include kidney stones, bladder infection or incontinence." (9).
<b>Related recommendations</b>	<i>Healthy People 2020</i> objective CKD-1: Reduce the proportion of the U.S. population with chronic kidney disease.

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at <https://www.cdc.gov/nchs/data/statnt/statnt20.pdf> .
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4. CDC. National chronic kidney disease fact sheet: general information and national estimates on chronic kidney disease in the United States, 2010. Atlanta, GA: US Department of Health and Human Services, CDC; 2010.
5. Plantinga LC, Boulware LE, Coresh J, et al. Patient awareness of chronic kidney disease: trends and predictors. Arch Intern Med 2008;168:2268–75.
6. US Department of Health and Human Services. Healthy people 2020. Atlanta, GA: US Department of Health and Human Services, CDC. Available at <http://www.healthypeople.gov> .
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8. McClellan WM, Resnick B, Lei L, et al. Prevalence and severity of chronic kidney disease and anemia in the nursing home population. J Am Med Dir Assoc 2010;11:33–41.
9. CDC. Behavioral Risk Factor Surveillance System: questionnaires. Atlanta, GA: US Department of Health and Human Services, CDC. Available at <https://www.cdc.gov/brfss/questionnaires.htm>

## Chronic obstructive pulmonary disease among adults aged ≥18 years

<b>Demographic group</b>	Resident adults aged $\geq 18$ years
<b>Numerator</b>	Respondents aged $\geq 18$ years who report ever having been told by a doctor, nurse, or other health professional that they had chronic obstructive pulmonary disease (COPD), emphysema, or chronic bronchitis.
<b>Denominator</b>	Respondents aged $\geq 18$ years who report or do not report ever having been told by a doctor, nurse, or other health professional that they had COPD, emphysema, or chronic bronchitis (excluding those who refused to answer, had a missing answer, or answered “don’t know/not sure”).
<b>Measures of frequency</b>	Annual prevalence (percentage), crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [1]) with 95% confidence intervals and by demographic characteristics when feasible (age groups: 1] 18–24, 25–34, 35–44, 45–54, 55–64, 65–74, 75–84, and $\geq 85$ years and 2] 45–54, 55–64, 65–74, 75–84, and $\geq 85$ years )
<b>Time period of case definition</b>	Lifetime (ever diagnosed) with COPD, which includes emphysema and chronic bronchitis.
<b>Background</b>	In 2011, 6.3% (15 million) of adults aged $\geq 18$ years reported that they had COPD (2). Another estimated 15 million adults have impaired pulmonary function and COPD symptoms but are unaware of having COPD because the disease has not been diagnosed by their physician with the use of spirometry (3). Approximately 80%–90% of identified COPD cases occur at ages $\geq 45$ years (2,4).
<b>Significance</b>	Elimination of tobacco use or exposure might be the most effective way to reduce COPD because almost 80% of COPD deaths are attributable to smoking (5). Other risk factors for COPD include occupational exposure, ambient air pollution, and long-term severe asthma (6). Public education and awareness of COPD symptoms and earlier diagnosis with spirometry and treatment might slow additional lung damage, improve COPD symptoms, and reduce COPD-related disability and deaths (7).
<b>Limitations of indicator</b>	The indicator is based on being diagnosed by a physician and respondent recall of the diagnosis and might underestimate the true prevalence.
<b>Data resources</b>	Prevalence data from Behavioral Risk Factor Surveillance System (BRFSS) (numerator) and population estimates from the U.S. Census Bureau (denominator).
<b>Limitations of data resources</b>	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. In an effort to address noncoverage issues related to phone use, BRFSS began including cell phone interviews in the 2011 data collection. Due to changes in sampling and weighting methodology, 2011 is a new baseline for BRFSS, and comparisons with prior year data are inappropriate.
<b>Related</b>	<i>Healthy People 2020</i> objective RD-13: (Developmental) Increase the proportion of adults with

<b>recommendations</b>	abnormal lung function whose underlying obstructive disease has been diagnosed.
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4. Ford ES, Croft JB, Mannino DM, Wheaton AG, Zhang X, Giles WH. COPD surveillance—United States, 1999–2011. Chest 2013;144:284–305.
5. CDC. Smoking-attributable mortality, years of potential life lost, and productivity losses—United States, 2000–2004. MMWR 2008;57:1226–8.
6. Mannino DM. Epidemiology and global impact of chronic obstructive pulmonary disease. Semin Respir Crit Care Med 2005;26:204–10.
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## Coronary heart disease among adults aged ≥18 years


<b>Demographic group</b>	Resident adults aged ≥18 years
<b>Numerator</b>	Respondents aged ≥18 years who report ever having been told by a doctor, nurse, or other health professional that they had angina or coronary heart disease.
<b>Denominator</b>	Respondents aged ≥18 years who report or do not report ever having been told by a doctor, nurse, or other health professional that they had angina or coronary heart disease (excluding those who refused to answer, had a missing answer, or answered “don’t know/not sure”).
<b>Measures of frequency</b>	Annual prevalence (percentage), crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [ 1]) with 95% confidence intervals and by demographic characteristics when feasible (age groups: 1] 18–24, 25–34, 35–44, 45–54, 55–64, 65–74, 75–84, and ≥85 years and 2] 45–54, 55–64, 65–74, 75–84, and ≥85 years )
<b>Time period of case definition</b>	Lifetime (ever diagnosed) with angina or coronary heart disease.

<b>Background</b>	About 610,000 people die of heart disease in the United States every year (2). Coronary heart disease (CHD) is the most common type of heart disease, killing over 370,000 people annually (2). Every year about 735,000 Americans have a heart attack. Of these, 525,000 are a first heart attack and 210,000 happen in people who have already had a heart attack (3).
<b>Significance</b>	Heart disease is the leading cause of death for both men and women. More than half of the deaths due to heart disease in 2009 were in men (2). Heart disease is the leading cause of death for people of most ethnicities in the US, including African Americans, Hispanics, and whites. For American Indians or Alaska Natives or Pacific Islanders, heart disease is second only to cancer (4).
<b>Limitations of indicator</b>	The indicator is based on being diagnosed by a physician and respondent recall of the diagnosis and might underestimate the true prevalence.
<b>Data resources</b>	Prevalence data from Behavioral Risk Factor Surveillance System (BRFSS) (numerator) and population estimates from the U.S. Census Bureau (denominator).
<b>Limitations of data resources</b>	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. In an effort to address noncoverage issues related to phone use, BRFSS began including cell phone interviews in the 2011 data collection. Due to changes in sampling and weighting methodology, 2011 is a new baseline for BRFSS, and comparisons with prior year data are inappropriate.
<b>Related recommendations</b>	<i>Healthy People 2020</i> objective HDS-2: Reduce coronary heart disease deaths.

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at <https://www.cdc.gov/nchs/data/statnt/statnt20.pdf> .
2. CDC, NCHS. Underlying Cause of Death 1999-2013 on CDC WONDER Online Database, released 2015. Data are from the Multiple Cause of Death Files, 1999-2013, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed Feb. 3, 2015.
3. Mozaffarian D, Benjamin EJ, Go AS, et al. Heart disease and stroke statistics—2015 update: a report from the American Heart Association. *Circulation*. 2015;131:e29-322.
4. CDC. Deaths, percent of total deaths, and death rates for the 15 leading causes of death in 10-year age groups, by race and sex: United States, 2013.

## Diagnosed diabetes among adults aged ≥18 years

<b>Demographic group</b>	Resident adults aged $\geq 18$ years.
<b>Numerator</b>	Respondents aged $\geq 18$ years who report ever been told by a doctor, nurse, or other health professional that they have diabetes other than diabetes during pregnancy.
<b>Denominator</b>	Respondents aged $\geq 18$ years who report or do not report ever been told by a doctor, nurse, or other health professional that they have diabetes (excluding those who refused to answer, had a missing answer, or answered “don’t know/not sure”).
<b>Measures of frequency</b>	Annual prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 8 [1]) with 95% confidence intervals and by demographic characteristics when feasible.
<b>Time period of case definition</b>	Lifetime (ever diagnosed).
<b>Background</b>	In 2011, 9% of the U.S. adult population aged $\geq 18$ years had diagnosed diabetes (2). Substantial differences in diabetes prevalence exist by age, race, and ethnicity (3).
<b>Significance</b>	The impact of diabetes in the United States has increased with the increasing prevalence of obesity (3). Multiple long-term complications of diabetes can be prevented through improved patient education and self-management and provision of adequate and timely screening services and medical care (4).
<b>Limitations of indicator</b>	Approximately one fourth of cases of diabetes are undiagnosed (4).
<b>Data resources</b>	Behavioral Risk Factor Surveillance System (BRFSS).
<b>Limitations of data resources</b>	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. In an effort to address noncoverage issues related to phone use, BRFSS began including cell phone interviews in the 2011 data collection. Due to changes in sampling and weighting methodology, 2011 is a new baseline for BRFSS, and comparisons with prior year data are inappropriate.
<b>Related recommendations</b>	None.

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at <https://www.cdc.gov/nchs/data/statnt/statnt20.pdf> .
2. CDC. National Diabetes Surveillance System. Atlanta, GA: US Department of Health and Human Services, CDC.

Available at <https://www.cdc.gov/diabetes/statistics/us>.

3. Geiss LS, Cowie C. Type 2 diabetes and persons at high risk of diabetes. In: Venkat Narayan KM, Williams D, Gregg EW, Cowie C, eds. Diabetes public health: from data to policy. New York, NY: Oxford University Press; 2011:15–32.
4. CDC. National diabetes fact sheet: national estimates and general information on diabetes and prediabetes in the United States, 2011. Atlanta, GA: US Department of Health and Human Services, CDC; 2011.

## Mental health not good for $\geq 14$ days among adults aged $\geq 18$ years

<b>Demographic group</b>	Resident adults aged $\geq 18$ years.
<b>Numerator</b>	Respondents aged $\geq 18$ years who report 14 or more days during the past 30 days during which their mental health was not good.
<b>Denominator</b>	Respondents aged $\geq 18$ years who report or do not report the number of days during the past 30 days during which their mental health was not good (excluding those who refused to answer, had a missing answer, or answered “don’t know/not sure”).
<b>Measures of frequency</b>	Annual prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [1]) with 95% confidence intervals and by demographic characteristics when feasible.
<b>Time period of case definition</b>	Current.
<b>Background</b>	Only about 17% of US adults are considered to be in a state of optimal mental health. (2) In 2010, 79.1% of US adults self-reported having good or better mental health. (3)
<b>Significance</b>	Evidence has shown that mental disorders, especially depressive disorders, are strongly related to the occurrence, successful treatment, and course of many chronic diseases including diabetes, cancer, cardiovascular disease, asthma, and obesity (4) and many risk behaviors for chronic disease; such as, physical inactivity, smoking, excessive drinking, and insufficient sleep. Mental health is an important component of Health-related quality of life (HRQOL), a multi-dimensional concept that focuses on the impact of health status on quality of life.
<b>Limitations of indicator</b>	This measure is based on self-assessment only and does not include an objective health component. Self-rated health status is a subjective measure; therefore, assessing the reliability and validity is difficult.
<b>Data resources</b>	Behavioral Risk Factor Surveillance System (BRFSS).



<b>Limitations of data resources</b>	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. In an effort to address noncoverage issues related to phone use, BRFSS began including cell phone interviews in the 2011 data collection. Due to changes in sampling and weighting methodology, 2011 is a new baseline for BRFSS, and comparisons with prior year data are inappropriate.
<b>Related recommendations</b>	<i>Healthy People 2020</i> objective HRQOL/WB-1.2: Increase the proportion of adults who self-report good or better mental health.


1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at <https://www.cdc.gov/nchs/data/statnt/statnt20.pdf> .
2. U.S. Department of Health and Human Services. *Mental Health: A Report of the Surgeon General*. Rockville, MD: U.S. Department of Health and Human Services; Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health, 1999.
3. CDC. National Health Interview Survey (NHIS), 2010.
4. Chapman DP, Perry GS, Strine TW. The vital link between chronic disease and depressive disorders. *Prev Chronic Dis* 2005;2(1):A14.

## Physical health not good for $\geq 14$ days among adults aged $\geq 18$ years

<b>Demographic group</b>	Resident adults aged $\geq 18$ years.
<b>Numerator</b>	Respondents aged $\geq 18$ years who report 14 or more days during the past 30 days during which their physical health was not good.
<b>Denominator</b>	Respondents aged $\geq 18$ years who report or do not report the number of days during the past 30 days during which their physical health was not good (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
<b>Measures of frequency</b>	Annual prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [1]) with 95% confidence intervals and by demographic characteristics when feasible.
<b>Time period of case definition</b>	Current.





<b>Background</b>	In 2010, 78.8% of US adults self-reported having good or better physical health. (2)
<b>Significance</b>	Physical health is an important component of Health-related quality of life (HRQOL), a multi-dimensional concept that focuses on the impact of health status on quality of life.
<b>Limitations of indicator</b>	This measure is based on self-assessment only and does not include an objective health component. Self-rated health status is a subjective measure; therefore, assessing the reliability and validity is difficult.
<b>Data resources</b>	Behavioral Risk Factor Surveillance System (BRFSS).
<b>Limitations of data resources</b>	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. In an effort to address noncoverage issues related to phone use, BRFSS began including cell phone interviews in the 2011 data collection. Due to changes in sampling and weighting methodology, 2011 is a new baseline for BRFSS, and comparisons with prior year data are inappropriate.
<b>Related recommendations</b>	Healthy People 2020 objective HRQOL/WB-1.1: Increase the proportion of adults who self-report good or better physical health.

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at <https://www.cdc.gov/nchs/data/statnt/statnt20.pdf>  .
2. CDC. National Health Interview Survey (NHIS), 2010.

## All teeth lost among adults aged ≥65 years

<b>Demographic group</b>	Resident adults aged ≥65 years.
<b>Numerator</b>	Respondents aged ≥65 years who report having lost all of their natural teeth because of tooth decay or gum disease.
<b>Denominator</b>	Respondents aged ≥65 years (exclude unknowns and refusals).
<b>Measures of frequency</b>	Biennial prevalence (even years): crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 18 [1]) with 95% confidence intervals and by demographic characteristics when feasible.

<b>Time period of case definition</b>	Current.
<b>Background</b>	Behavioral Risk Factor Surveillance System data from 2010 indicated that 16.9% (median) of adults aged $\geq 65$ years in the United States were edentulous (had no natural teeth) (2). Among persons aged 65–74 years, 14.2% were edentulous. Among persons aged $\geq 75$ years, 19.9% were edentulous (2).
<b>Significance</b>	Loss of all natural permanent teeth (complete tooth loss) substantially reduces quality of life, self-image, and daily functioning (3).
<b>Limitations of indicator</b>	Health beliefs, societal attitudes, and history of dental treatment affect the levels of complete tooth loss. The indicator does not consider these questions.
<b>Data resources</b>	Behavioral Risk Factor Surveillance System (BRFSS).
<b>Limitations of data resources</b>	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone-only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
<b>Related indicators or recommendations</b>	<i>Healthy People 2020</i> objective OH-4.2: Reduce the proportion of older adults aged 65–74 years who have lost all of their natural teeth.

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at <https://www.cdc.gov/nchs/data/statnt/statnt20.pdf>  .
2. CDC. Behavioral Risk Factor Surveillance System—prevalence and trends data. Atlanta, GA: US Department of Health and Human Services, CDC. Available at <https://www.cdc.gov/brfss/brfssprevalence>.
3. National Institute of Dental and Craniofacial Research; CDC. Dental, oral, and craniofacial data resource center—oral health U.S. 2002. Atlanta, GA: US Department of Health and Human Services, CDC. Available at <http://drc.hhs.gov/report.htm>  .

## Stroke among adults aged $\geq 18$ years

<b>Demographic group</b>	Resident adults aged $\geq 18$ years
<b>Numerator</b>	Respondents aged $\geq 18$ years who report ever having been told by a doctor, nurse, or other health professional that they have had a stroke.
<b>Denominator</b>	Respondents aged $\geq 18$ years who report or do not report ever having been told by a doctor, nurse, or other health professional that they have had a stroke (excluding those who refused to answer, had a missing answer, or answered “don’t know/not sure”).
<b>Measures of frequency</b>	Annual prevalence (percentage), crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [1]) with 95% confidence intervals and by demographic characteristics when feasible (age groups: 1] 18–24, 25–34, 35–44, 45–54, 55–64, 65–74, 75–84, and $\geq 85$ years and 2] 45–54, 55–64, 65–74, 75–84, and $\geq 85$ years )
<b>Time period of case definition</b>	Lifetime (ever diagnosed) with a stroke.
<b>Background</b>	Every year, more than 795,000 people in the United States have a stroke. About 610,000 of these are first or new strokes. About 185,000 strokes are in people who have had a previous stroke. (2) About 87% of all strokes are ischemic strokes, when blood flow to the brain is blocked. (2)
<b>Significance</b>	Stroke kills almost 130,000 Americans each year – approximately 1 out of every 20 deaths. (3) Stroke is a leading cause of serious long-term disability. (2) Stroke costs the US an estimated \$34 billion each year, which includes the cost of health care services, medications to treat stroke, and missed days of work. (2) Stroke is the fifth leading cause of death for Americans, but the risk of having a stroke varies with race and ethnicity. Risk of having a first stroke is nearly twice as high for blacks than for whites, and blacks are more likely to die following a stroke than are whites. (2) Hispanics’ risk for stroke falls between that of whites and blacks. (2) American Indians, Alaska Natives, and blacks are more likely to have had a stroke than are other groups. (4) Although stroke risk increases with age, strokes can—and do—occur at any age. In 2009, 34% of people hospitalized for stroke were younger than 65 years. (5)
<b>Limitations of indicator</b>	The indicator is based on being diagnosed by a physician and respondent recall of the diagnosis and might underestimate the true prevalence.
<b>Data resources</b>	Prevalence data from Behavioral Risk Factor Surveillance System (BRFSS) (numerator) and population estimates from the U.S. Census Bureau (denominator).
<b>Limitations of data resources</b>	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. In an effort to address noncoverage issues related to phone use, BRFSS began including cell phone interviews in the 2011 data collection. Due to changes in sampling and weighting methodology, 2011 is a new baseline for BRFSS, and comparisons with prior year data are inappropriate.

Related recommendations	Healthy People 2020 Objective HDS-3: Reduce stroke deaths.
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1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at <https://www.cdc.gov/nchs/data/statnt/statnt20.pdf> .
2. Mozaffarian D, Benjamin EJ, Go AS, et al. Heart disease and stroke statistics—2015 update: a report from the American Heart Association. *Circulation*. 2015 ;e29-322.
3. CDC, NCHS. Underlying Cause of Death 1999-2013 on [CDC WONDER Online Database](#), released 2015. Data are from the Multiple Cause of Death Files, 1999-2013, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed Feb. 3, 2015.
4. CDC. [Prevalence of stroke — United States, 2006–2010](#). *MMWR*. 2012;61(20):379–82.
5. Fang J, Keenan NL, Ayala C, Dai S, Merritt R, Denny CH. [Awareness of stroke warning symptoms—13 states and the District of Columbia, 2005](#). *MMWR*. 2008;57(18):481–5.

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