

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

20 Years of the Cancer Trends Progress Report!

The Cancer Trends Progress Report, continually updated since its first issue in 2001, summarizes our nation's advances against cancer in relation to Healthy People targets set forth by the Department of Health and Human Services. The report, intended for policy makers, researchers, and public health professionals, includes key measures of progress along the cancer control continuum and uses national trend data to illustrate where improvements have been made and where attention is demanded. New measures this year include Sleep, Melanoma of the Skin Treatment, Outdoor Tanning, and Evidence-based Smoking Cessation Aids.

Read our [Introduction](#) and [Division Director's Message](#) to learn more about the report.

## **Home Prevention**

Tobacco, Physical Activity, Diet, Sun, Environment, HPV Vaccination, Genetic Testing, Sleep, Weight

## **Early Detection**

Breast, Cervical, Colorectal, Lung, Prostate Cancer Screening

## **Diagnosis**

Incidence, Stage at Diagnosis

## **Treatment**

Trends in Cancer Treatment

## **Life After Diagnosis**

Financial Burden of Cancer Care, Cancer Survivorship

## **End of Life**

Mortality, Years of Life Lost

The report, available only online, can be printed in part or in its entirety. Portions of the report are updated annually, while other sections are updated as new data become available. The full report is updated every year.

## **Suggested Citation:**

Cancer Trends Progress Report

National Cancer Institute, NIH, HHS, Bethesda, MD, October 2022, <https://progressreport.cancer.gov>.

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## About the Report

This section provides an overview of the Cancer Trends Progress Report and includes a message from NCI's Director of the Division of Cancer Control and Population Sciences, the methodology used for characterizing trends, frequently asked questions and answers, acknowledgments, and a downloadable PDF fact sheet.

- [Introduction](#)
- [Division Director's Message](#)
- [Methodology for Characterizing Trends](#)
- [Frequently Asked Questions](#)
- [Acknowledgments](#)
- [Fact Sheet \(PDF\)](#)

## Printable Version of Report

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National Cancer Institute, NIH, DHHS, Bethesda, MD, July 2021, <https://progressreport.cancer.gov>.

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures

### Introduction

The nation's investment in cancer research is making a difference. The rate of death from cancer continues to decline among both men and women, among all major racial and ethnic groups, and for many types of cancer, including the four most common (lung, colorectal, breast, and prostate cancers). The death rate from all cancers combined continues to decline, as it has since the early 1990s. Many people who have had cancer live longer and enjoy a better quality of life than was possible years ago. This steady improvement in mortality from cancer reflects public health prevention and screening initiatives and improvements in the diagnosis and treatment of cancer.

Still, cancer remains a major public health problem that profoundly affects more than 1.7 million people diagnosed each year, as well as their families and friends.

- Cancer is the second most common cause of death in the United States (exceeded only by heart disease), accounting for nearly one in every four deaths.
- The incidence of some cancers, including leukemia, myeloma (cancer of plasma cells), melanoma of the skin, thyroid, liver, oral cavity and pharynx, pancreas, uterus, kidney, and female breast, is rising.
- The burden of some types of cancer weighs more heavily on some groups than on others. The rates of both new cases and deaths from cancer vary by socioeconomic status, sex, and racial and ethnic group.
- The economic burden of cancer also is taking its toll. As the U.S. population ages and newer technologies and treatments become available, national expenditures for cancer continue to rise and could potentially exceed overall medical care expenditures combined.

### Why a Progress Report Is Needed

Since the signing of the National Cancer Act in 1971, our country has vigorously fought the devastating effects of cancer. Now it is time to see how far we have come. The *Cancer Trends Progress Report* is a series of reports that describe the nation's progress against cancer through research and related efforts. The report is based on the most recent data at the time of analysis from the National Cancer Institute, the Centers for Disease Control and Prevention, other federal agencies, professional groups, and cancer researchers.

The *Cancer Trends Progress Report* is designed to help the nation review past efforts and plan future ones. The report can help the public better understand the nature of cancer, as well as the results of current strategies to fight cancer. Researchers, clinicians, and public health providers can focus on the gaps and opportunities identified in the report, paving the way for future progress against cancer. Policymakers can use the report to evaluate our progress relative to our investment in cancer research discovery, program development, and service delivery.

### What's in the Report

The *Cancer Trends Progress Report* includes key measures of progress along the cancer control continuum.

- Prevention. The measures in this section cover behaviors that can help people prevent cancer, the most important of which is avoiding tobacco use and secondhand smoke exposure. This section also addresses physical activity, dietary intakes, alcohol consumption, exposure to the sun and chemicals in the environment, HPV vaccination, tobacco policy and regulatory factors, smoking cessation, and genetic testing.
- Early Detection. Screening tests help find cancers early, which greatly increases the chances of successful treatment. This section describes the extent to which people are following recommended screening guidelines to detect breast, cervical, colorectal, lung, and prostate cancers.
- Diagnosis. We can learn much about our progress against cancer by looking at the rates of new cancer cases (incidence) and cancers diagnosed at late stages. This section reviews both of these areas.
- Treatment. This section describes common treatment options and measures the rates at which people are undergoing treatments for certain cancers. It also describes new treatment options emerging from ongoing research and monitoring activities.

- Life After Diagnosis. This section addresses trends in the proportion of cancer patients who are alive five years after their diagnosis, costs of cancer care, and health behaviors among survivors.
- End of Life. This section includes the rate of deaths (mortality) due to cancer and the estimated number of years of life lost due to cancer.

Where possible, the *Cancer Trends Progress Report* shows changes in these data over time (trends). The report indicates whether trends are "rising", "falling", or "stable" using standard definitions and tests of statistical significance (see Methodology for Categorizing Trends). For some measures, differences in the cancer burden among various racial and ethnic groups, income groups, and groups by level of educational attainment, are also presented.

Many of the measures shown in this report are identical to those presented in Healthy People 2030, a comprehensive set of 10-year health objectives for the nation sponsored by the U.S. Department of Health and Human Services. Using identical measures enables us to show the nation's progress against cancer in relation to cancer-related Healthy People 2030 targets.

## How Data Are Selected

In selecting measures that would be meaningful to readers of this report, we relied largely on long-term national - rather than state or local - data collection efforts. (State and local data are available online at State Cancer Profiles). The report includes more measures for prevention than for other segments of the continuum, because preventive measures hold so much potential in positively impacting national progress to reduce the burden of cancer. Behavioral choices can greatly reduce the risk of many cancers, making prevention a key focus of the report.

Data in the *Cancer Trends Progress Report* come from a variety of sources with different collection techniques and reporting times, so time periods for the data may vary by section. The starting point or baseline year against which to measure how well the nation is progressing toward the Healthy People 2030 targets depends on the data available. For example, data for most Diagnosis, Life After Cancer, and End of Life measures are available starting in 1975, while data for most Prevention, Early Detection, and Treatment measures are available beginning in the late 1980s or early 1990s.

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National Cancer Institute, NIH, DHHS, Bethesda, MD, March 2021, <https://progressreport.cancer.gov>.

# Cancer Trends Progress Report

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## Division Director's Message

One of the most important responsibilities of the National Cancer Institute is communicating our nation's progress against cancer to the public. The *Cancer Trends Progress Report* is one way that we fulfill this responsibility. As an online summary of trends in US cancer control measures, this web-based report provides up-to-date information on a wide range of topics across the cancer control continuum—from disease prevention to cancer-related mortality or survivorship. It also includes data to help us track the successful implementation of research-based methods of early detection and risk reduction.

The *Cancer Trends Progress Report* draws on data from numerous federal departments and agencies, including the Environmental Protection Agency, the Department of Agriculture, and several offices and agencies within the Department of Health and Human Services, such as the Agency for Toxic Substances and Disease Registry, the Centers for Disease Control and Prevention, the Office of Disease Prevention and Health Promotion, the Substance Abuse and Mental Health Administration, and the National Institute on Alcohol Abuse and Alcoholism. As the report details, the nation is making important progress toward major cancer-related targets but losing ground in some areas. Mortality trends are the best indicators of progress against cancer. The rate of death from all cancers combined continues to decline among both men and women, among all major racial and ethnic groups, and for the most common types of cancer, including colon, lung, female breast, and prostate cancers. Nevertheless, mortality rates are increasing for some cancers, and important differences among subpopulations reflect chronic health disparities that are substantial for some groups. Along with mortality rates and other standard measures of cancer control, this report includes new and updated measures that address current issues like sleep, treatment for melanoma of the skin, outdoor tanning, and evidence-based smoking cessation aids. We frequently update relevant graphs with the latest information. We look forward to continuing to improve this report as we add more measures to inform readers.

Researchers and cancer control professionals can use the *Cancer Trends Progress Report* to advance cancer control progress by stimulating research ideas and setting priorities for cancer control program planning. We at NCI, along with our partners in this initiative, intend for this report to be a valuable reference tool and a catalyst for action. The numbers in this report reflect the lives and struggles of millions of people. NCI remains committed to advancing scientific progress and facilitating the application of scientific evidence. This report reflects our overarching mission: the support of cancer research to help all people live longer, healthier lives.

Katrina A. B. Goddard, Ph.D.

Director, Division of Cancer Control and Population Sciences  
National Cancer Institute



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## Methodology for Characterizing Trends

The *Cancer Trends Progress Report* features joinpoint statistical methodology to present a consistent characterization of population trends for factors related to the prevention, early detection, or treatment of cancer. Joinpoint methodology characterizes a trend using joined linear segments on a logarithmic scale; the point where two segments meet is called a "joinpoint." The methodology is useful for identifying trends in cancer incidence and mortality rates (e.g., in the SEER Cancer Statistics Review).

The Joinpoint software uses statistical criteria to determine:

- the fewest number of segments necessary to characterize a trend
- where the segments begin and end; and
- the annual percent change (APC) for each segment (a linear trend on a log scale implies a constant APC).

In addition, we the report authors used a 95-percent confidence interval around the APC to determine if the APC for each segment differed significantly from zero. Whenever possible, we calculated weighted regression lines (utilizing standard errors) using the Joinpoint software. Using a log response variable, the weight (motivated by the delta method) equals the square of the response variable divided by the square of the standard error. If the standard errors were unavailable, we used an unweighted regression.

With the results of these analyses, we characterized trends in this report with respect to both their public health importance and statistical significance. If a trend was:

- Changing less than or equal to 0.5% per year ( $-0.5 \leq \text{APC} \leq 0.5$ ), and the APC was not statistically significant, we characterized it as **STABLE**
- Changing more than 0.5% per year ( $\text{APC} < -0.5$  or  $\text{APC} > 0.5$ ), and the APC was not statistically significant, we characterized it as **NON-SIGNIFICANT CHANGE**
- Changing with a statistically significant  $\text{APC} > 0$ , we characterized it as **RISING**
- Changing with a statistically significant  $\text{APC} < 0$ , we characterized it as **FALLING**

While these categorizations are somewhat arbitrary, they do provide a consistent method to characterize trends across disparate measures. Additionally, the statistical significance and absolute value of change for incidence and mortality trends were used to ensure consistency with all major publications on national cancer trends.

To avoid statistical anomalies, a joinpoint segment must contain at least 3 observed data points, and no joinpoint segment can begin or end closer than 3 data points from the beginning or end of the data series. Due to these constraints on the joinpoint models, data series with a smaller set of data points are limited as to where a joinpoint can occur and how many joinpoints can be fit into the series. For example, if there are 4 data points or fewer, only 1 segment and no joinpoints can be fit to the series; for 5 to 7 data points, up to 2 segments and 1 joinpoint can be fit to the series; for 8 to 10 data points, up to 3 segments and 2 joinpoints can be fit. To avoid some of these limitations and allow a degree of flexibility as to where a joinpoint can be placed in a series, we established a set of guidelines on what method to use for calculating the APC of a data series based on the number of estimates that make up the data series:

- 2-6 data points: because of the limited number of data points, we did not use Joinpoint. Instead, we calculated an APC between each consecutive data point, and we calculated the statistical significance of the APC using a two-sample test based on the standard errors derived from the survey/data source.
- 7-11 data points: a joinpoint analysis with a maximum of 1 joinpoint.
- 12-16 data points: a joinpoint analysis with a maximum of 2 joinpoints.
- 17-21 data points: a joinpoint analysis with a maximum of 3 joinpoints.
- 22-26 data points: a joinpoint analysis with a maximum of 4 joinpoints.
- 27 or more data points: a joinpoint analysis with a maximum of 5 joinpoints.

In addition to the annual percent change (APC) estimates, this report also presents the average annual percent change (AAPC), which is characterized in the same way as the APC. The AAPC is a measure which uses the underlying joinpoint model to compute a summary measure of the trend over a fixed pre-specified interval. The AAPC is useful for comparing the most recent trend across different groups (e.g., racial/ethnic groups or sex) when the final joinpoint segments are not directly comparable because they are of different lengths. Regardless of where the joinpoints occur for the different series, the AAPC can be computed over the same fixed interval for all the series (e.g., 2007–2011 to characterize the most recent trend). The AAPC is computed as a weighted average of the APC's from the joinpoint model, with the weights equal to the length of the APC intervals included. When there were seven or fewer data points, the AAPC was computed based on the connected data points, rather than an underlying joinpoint model. The derivation of the AAPC and its standard error based on a series of connected points is presented in a technical report from the Surveillance Research Program.

Measures were age-adjusted to the 2000 U.S. standard population using the direct method of standardization (see the tutorial on Calculating Age-adjusted Rates). Whenever possible, age-adjustment for measures was done using the age-adjustment groups specified for the Healthy People 2030 objective that corresponds to the data series.

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## Frequently Asked Questions

### **What is the *Cancer Trends Progress Report*?**

The National Cancer Institute's *Cancer Trends Progress Report* is an online report that tracks the nation's progress against cancer across the cancer continuum - from prevention through end of life - and compares that progress to Healthy People 2030 goals set forth by the Department of Health and Human Services.

### **Why is the report important?**

The *Cancer Trends Progress Report* is currently the only report of its kind to present the most up-to-date information on trends in the nation's progress against cancer all in one place. Key cancer agencies and groups, including the National Cancer Institute, the Centers for Disease Control and Prevention, other federal agencies, professional groups, and cancer researchers gather the information in this report through a collaborative effort.

### **What is the main message of the report?**

The nation has met or is making progress toward many major cancer-related Healthy People 2030 targets. However, we are losing ground in other important areas that demand attention. For more information, visit the Highlights section of the report.

### **What is in the report?**

The *Cancer Trends Progress Report* includes key measures in the areas of prevention, screening, diagnosis, treatment, life after diagnosis, and end of life. Progress against cancer is tracked over time and determined by the availability of data. This progress is measured in relation to certain cancer-related Healthy People 2030 targets.

The body of the report includes standardized information for each measure, including background, definition of measure, Healthy People targets, data source, trends and most recent estimates, related cancers, and additional references for each topic area. This information is also summarized in chart form in the Summary Tables section of the report, where special color-coded graphics show whether the trend is going in the desired direction and how the nation's progress compares to the Healthy People targets.

### **How is the information displayed and explained?**

Most of the trend graphs were made using Joinpoint regression analysis. This statistical method illustrates real changes in direction instead of merely connecting one dot to another. The report shows whether trends are rising or falling and explains why changes might have occurred. Where data are available, differences in the cancer burden are also illustrated by race and ethnicity, educational attainment, and socioeconomic status. A bulleted summary of recent trends is presented in the Highlights section of the report. Data are downloadable as Excel spreadsheets, and graphs within the report are downloadable as JPEG files, which can be used in PowerPoint slides. The report is also available in PDF format and may be downloaded and printed using the 'Custom Report (PDF)' tool.

### **Where does the data come from?**

The data in the *Cancer Trends Progress Report* come from a variety of sources with different collection techniques and reporting times, so time periods for the data may vary by section. Data is gathered through a collaborative effort by the National Cancer Institute, the Centers for Disease Control and Prevention, other federal agencies, professional groups, and cancer researchers.

## **How are the data selected?**

Measures are selected based on scientific evidence and the availability of periodic or longitudinal national - rather than state or local - data collection and analysis efforts. Criteria for selecting measures include the relevance of what is being measured (e.g., impact on cancer, national policy implications); the scientific rigor underlying the measure (e.g., validity, reliability, and explicitness of evidence base); the feasibility of using the measure (e.g., availability of long-term data); and the usability by target audiences (e.g., ease of understanding and applicability). The report includes more measures for prevention than other sections because there are more trends data available in that area. Where possible, 1990 was used as the starting point or baseline against which to measure how well the nation is progressing toward the Healthy People 2030 targets.

## **What data are not in the report?**

Not all measures for all relevant areas of cancer progress could be included in this report. In some cases, trend information on a national level is not available. In other cases, there is no reliable information at the time of report publication. Although dramatic advances have been made in the treatment of many cancers (breast and colorectal cancers are two of the featured sites in the report), a national data system for tracking and assessing progress over time is not yet in place. Some measures such as quality of life, while important in assessing the cancer burden, are not included because there simply is no consensus on how best to track those measures in a population at this time. As data and information become available, future editions of the report will include new measures (e.g., population-level measures like the one in this edition describing state smoke-free air laws).

## **Where can I find state- and county-level cancer data?**

The *Cancer Trends Progress Report* only presents data at the national level. For cancer data at the state and county level or behavioral risk factor data at the state level, go to NCI's [State Cancer Profiles](#) website.

## **Who can use the report?**

The report can help the public better understand the nature of cancer, as well as the results of current strategies to fight cancer. Researchers, clinicians, and public health providers can focus on the gaps and opportunities identified, and work to make future progress against cancer. Policymakers can use the report to evaluate our progress relative to our investment in cancer research discovery, program development, and service delivery.

## **How often will the report be updated?**

The report is updated annually, where data are available. Page notes display the date of the most recent update.

## **What is the rationale for the report?**

In 1996, the NCI Director and the NCI Board of Scientific Advisors assembled the Cancer Control Program Review Group (CCPRG) to evaluate the full scope of the institute's cancer control research program. The NCI Director also established the Surveillance Implementation Group (SIG) to provide advice and recommendations for expanding and enhancing NCI's cancer surveillance research program. Thus, in the late 1990s the *Cancer Trends Progress Report* was created based on recommendations from CCPRG and SIG to develop a national progress report on the burden of cancer.

## **How can I get a copy of the report?**

The *Cancer Trends Progress Report* is available online only, however portions of the report or the entire report may be downloaded and printed using the ['Custom Report \(PDF\)'](#) tool. Archived reports from previous releases since 2001 are available on the [Recent Updates and Archive](#) page.

## **Where can more information on cancer be found?**

- <https://www.cancer.gov>
- 1-800-4-CANCER (1-800-422-6237)

**Where should I direct my questions or comments about the *Cancer Trends Progress Report*?**

Send questions or comments about the report to [Progress Report Help](#).

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Acknowledgments

NCI wishes to acknowledge the following Federal agencies for their data contributions:

- Agency for Toxic Substances and Disease Registry
- National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention
- National Center for Environmental Health, Centers for Disease Control and Prevention
- National Center for Immunization and Respiratory Diseases, Centers for Disease Control and Prevention
- National Center for Health Statistics, Centers for Disease Control and Prevention
- National Institute on Alcohol Abuse and Alcoholism
- Office of Disease Prevention and Health Promotion
- Substance Abuse and Mental Health Services Administration
- U.S. Census Bureau
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- U.S. Environmental Protection Agency

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### Data Sources

#### Americans for Nonsmokers' Rights Foundation

Americans for Nonsmokers' Rights is the leading national lobbying organization (501 (c) 4), dedicated to nonsmokers' rights, taking on the tobacco industry at all levels of government, protecting nonsmokers from exposure to secondhand smoke, and preventing tobacco addiction among youth. ANR pursues an action-oriented program of policy and legislation.

**Measures:** Smokefree workplace rules and laws.

#### Berkeley Mortality Database

This database contains life tables for national populations and, whenever available, the raw data used in constructing these tables. The raw data generally consist of birth and death counts from vital statistics, plus population counts from periodic censuses.

**Measures:** Financial burden of cancer care.

#### Continuing Survey of Food Intakes by Individuals

A part of the National Nutrition Monitoring System, which was the first nationwide dietary intake survey designed to be conducted annually.

**Measures:** Fruit and vegetable consumption, Red meat consumption, Fat consumption.

#### Federal Trade Commission and Staff Reports

The Federal Trade Commission provides annual reports on sales, advertising, and promotion for both cigarettes and smokeless tobacco.

**Measures:** Tobacco company marketing expenditures.

#### Morbidity and Mortality Weekly Report

Often called "the voice of CDC," the MMWR series is the agency's primary vehicle for scientific publication of timely, reliable, authoritative, accurate, objective, and useful public health information and recommendations.

**Measures:** Medicaid coverage of tobacco dependence.

#### National Center for Health Statistics (NCHS) Life-Tables

The life tables in this report are current life tables for the U.S. based on age-specific death rates.

**Measures:** Years of life lost.

#### National Health and Nutrition Examination Survey

The National Health and Nutrition Examination Survey (NHANES) is a program of studies designed to assess the health and nutritional status of adults and children in the United States. The survey is unique in that it combines interviews and physical examinations.

**Measures:** Fruit and vegetable consumption, Red meat consumption, Fat consumption, Weight, Secondhand smoke exposure, Arsenic, Benzene, Cadmium, Nitrate.

#### National Health Interview Survey Cancer Control Topical Module

The National Health Interview Survey (NHIS) is an annual nationwide survey of 36,000 households conducted by the National Center for Health Statistics and administered by the U.S. Census Bureau. In 2019 the NHIS questionnaire was redesigned to increase relevance, enhance data quality, and minimize respondent burden. In addition, the COVID-19 pandemic created challenges conducting in-person interviews for the 2020 NHIS, requiring changes to field procedures to conduct most surveys by telephone, which impacted survey response rates. For details, please refer to [Potential Impact of NHIS Redesign and COVID-19 on the Cancer Trends Progress Report](#).

**Measures:** Adult tobacco use, Quitting smoking, Physical activity, Sleep, Sun protection, Indoor tanning, Outdoor tanning, Sunburn, Genetic testing, Breast cancer screening, Cervical cancer screening, Colorectal cancer screening, Lung cancer screening, Prostate cancer screening, Cancer survivors and smoking, Cancer survivors and physical activity, Cancer survivors and obesity.

#### National Immunization Surveys

The National Immunization Surveys (NIS) are a group of phone surveys used to monitor vaccination coverage among children 19–35 months and teens 13–17 years, and flu vaccinations for children 6 months–17 years. The surveys are sponsored and conducted by the National Center for Immunization and Respiratory Diseases (NCIRD) of the Centers for Disease Control and Prevention (CDC) and authorized by the Public Health Service Act [Sections 306].

**Measures:** HPV Immunization.

#### National Institute on Alcohol Abuse and Alcoholism Surveillance Reports

The Division of Epidemiology and Prevention Research within the National Institute on Alcohol Abuse and Alcoholism prepares annual reports highlighting per capita alcohol consumption in the U.S.

**Measures:** Alcohol consumption.

#### National Report on Human Exposure to Environmental Chemicals

The National Report on Human Exposure to Environmental Chemicals (National Exposure Report) is a series of ongoing assessments of the U.S. population's exposure to environmental chemicals.

**Measures:** Arsenic, Benzene, Cadmium, Nitrate.

#### National Survey on Drug Use and Health

The National Survey on Drug Use and Health (NSDUH), formerly called the National Household Survey on Drug Abuse (NHSDA), is an annual survey sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA). The survey is the primary source of information on the use of illicit drugs, alcohol, and tobacco in the civilian, non-institutionalized population of the United States aged 12 years old or older.

**Measures:** Age at smoking initiation.

#### National Youth Tobacco Survey

The National Youth Tobacco Survey (NYTS) was designed to provide national data on long-term, intermediate, and short-term indicators key to the design, implementation, and evaluation of comprehensive tobacco prevention and control programs. The NYTS also serves as a baseline for comparing progress toward meeting selected Healthy People 2020 goals for reducing tobacco use among youth.

**Measures:** Youth tobacco use.

#### National Vital Statistics System

These data are provided through contracts between NCHS and vital registration systems operated in the various jurisdictions legally responsible for the registration of vital events – births, deaths, marriages, divorces, and fetal deaths.

**Measures:** Financial burden of cancer care, Mortality.

#### Surveillance, Epidemiology, and End Results (SEER)

The Surveillance, Epidemiology and End Results (SEER) Program collects information on incidence, prevalence and survival from specific geographic areas representing 34.6 percent of the US population and compiles reports on all of these plus cancer mortality for the entire country.

**Measures:** Incidence, Stage at diagnosis, Breast cancer treatment, Kidney cancer treatment, Survival.

#### SEER-Medicare Linked Database

The SEER-Medicare data reflect the linkage of two large population-based sources of data that provide detailed information about Medicare beneficiaries with cancer. The data come from the SEER Program of cancer registries that collect clinical, demographic, and cause of death information for persons with cancer and the Medicare claims for covered health care services from the time of a person's Medicare eligibility until death.

**Measures:** Financial burden of cancer care.

#### SEER Patterns of Care

The SEER Patterns of Care (POC) studies provide important information on cancer treatments as documented in hospital records.

**Measures:** Bladder cancer treatment, Breast cancer treatment, Colorectal cancer treatment, Lung cancer treatment, Ovarian cancer treatment, Prostate cancer treatment.

#### State Tobacco Activities Tracking and Evaluation (STATE) System

The State Tobacco Activities Tracking and Evaluation (STATE) System is an electronic data warehouse containing up-to-date and historical state-level data on tobacco use prevention and control. The STATE System is designed to integrate many data sources to provide comprehensive summary data and facilitate research and consistent interpretation of the data. The STATE System was developed by the Centers for Disease Control and Prevention in the Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion.

**Measures:** Medicaid coverage of tobacco dependence.

#### Tobacco Use Supplement to the Current Population Survey

The Tobacco Use Supplement to the Current Population Survey (TUS-CPS) is an NCI-sponsored survey of tobacco use that has been administered as part of the U.S. Census Bureau's Current Population Survey. The TUS-CPS is a key source of national- and state- level data on smoking and other tobacco use in the U.S. household population. These data can be used by researchers to monitor progress in the control of tobacco use, conduct tobacco-related research, and evaluate tobacco control programs.

**Measures:** Clinician's advice to quit smoking, Smokefree home rules, Smokefree workplace rules and laws.

#### U.S. Census Bureau Population Projections

The population projections associated with this release were produced by the Population Division as an interim product to meet the immediate needs of our user community for national projections that incorporate the results of Census 2000.

**Measures:** Financial burden of cancer care.

#### Radon Vent Fan Manufacturers' Sales Data

**Measures:** Radon.

#### U.S. EPA. An Inventory of Sources and Environmental Releases of Dioxin-Like Compounds in the U.S.

In November 2006, EPA released the report: An inventory of sources and environmental releases of dioxin-like compounds in the United States for the years 1987, 1995 and 2000. The report presented an evaluation of sources and emissions of dioxins (CDDs), dibenzofurans (CDFs) and coplanar PCBs to the air, land and water of the U.S.

**Measures:** Information to come.

#### Youth Risk Behavior Surveillance System

The Youth Risk Behavior Surveillance System (YRBSS) monitors priority health-risk behaviors and the prevalence of obesity and asthma among youth and young adults.

**Measures:** Youth tobacco use, Indoor Tanning, Sunburn.

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Highlights

### Last Updated:

March 2022

Report highlights are categorized into one of the three following groups: Making Progress, Areas of Concern, and Other Trends to Consider.

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## Making Progress

**The nation is making progress toward major cancer-related targets for Healthy People 2030, a comprehensive set of 10-year health objectives sponsored by the U.S. Department of Health and Human Services.**

### Prevention

- Cigarette smoking prevalence among adults has declined steadily since we began monitoring trends in 1965. In 2020, 12.6% of adults aged 18 and older reported current cigarette smoking.
- Cigarette smoking prevalence among adolescents has declined since at least 2011, with 3.3% of middle and high school students in 2020 having smoked cigarettes in the past 30 days.
- Initiation of the use of cigarettes among adolescents and young adults aged 12 to 25 years has been falling. As of 2019, it was 2.6%.
- Cigarette smoking cessation among adults has risen since 2003. In 2020, 8.5% of adult smokers quit successfully in the prior 6-12 months, approaching the Healthy People 2030 target of 10.2%.
- Indoor tanning has decreased significantly among female high school students since 2013. Many states have enacted policies to control the indoor tanning industry, and some are restricting minors' access to indoor tanning facilities. The most recent estimate (2019) of the percentage of female adolescents in grades 9 through 12 who used an indoor tanning device in the past year is 5.7% (4.5% for both sexes).
- Recent trends for inorganic arsenic exposure have been decreasing since 2009/2010. Inorganic arsenic compounds are more toxic than organic arsenic compounds, and inorganic arsenic has been linked to bladder, lung, skin, prostate, liver and intrahepatic bile duct, and some kidney cancers. Inorganic arsenic compounds are found in industry, in building products (in some "pressure-treated" woods), and in arsenic-contaminated water and soil. We typically take in small amounts of inorganic arsenic in the food we eat (in particular, rice and fish), the water we drink, and the air we breathe.
- The percentage of adolescents aged 13 to 17 years who are up-to-date on recommended HPV vaccinations (based on the guidelines set forth by the Centers for Disease Control and Prevention's [CDC] Advisory Committee on Immunization Practices [ACIP]) has been increasing, and in 2019 was 56.8% for females and 51.8% for males.

### Early Detection

- The percentage of adults aged 50 to 75 years who are up-to-date with colorectal cancer screening (based on the 2016 U.S. Preventive Services Task Force recommendations) has been increasing, and in 2019 it was 67.1%.

### Diagnosis

- Lung cancer incidence (new cases) rates have continued to fall since at least 1991 among males, and since 2006 among females.
- Recent trends show a decline in the incidence of thyroid, urinary bladder, ovarian, and larynx cancers at 2% or more a year, as well as smaller but still statistically significant decreases in stomach and brain cancers, and Hodgkin and non-Hodgkin lymphoma.
- Trends for distant-stage colon cancer have been decreasing since 2004.
- Colorectal cancer incidence rates have been decreasing since 1998; however, the rate of decline slowed starting in 2011. Since then, the trend has flattened somewhat. The declines in colorectal cancer incidence

can be attributed to increased screening, which not only contributes to reduced incidence through the identification and removal of precancerous lesions but also improves the detection of cancer at an earlier stage.

- Trends for distant-stage lung cancer have been decreasing since 2008, with a larger decline since 2015.

## Treatment

- The proportion of patients aged 20 years and older diagnosed with stage IIIB or IV non-small cell lung cancer receiving any chemotherapy has increased from 2015 to 2017/2018. In 2017/2018, 61.9% of patients aged 20 years and older diagnosed with stage IIIB or IV non-small cell lung cancer received chemotherapy.
- The proportion of patients aged 20 years and older diagnosed with advanced-stage melanoma of the skin receiving any chemotherapy increased from 2001 to 2011 and increased further from 2011 to 2018. In 2018, 79.4% of patients aged 20 years and older diagnosed with stage III or IV melanoma of the skin received chemotherapy.

## Life After Diagnosis

- The proportion of adult cancer survivors who are current smokers continues to decline, with the greatest improvement seen among survivors aged 18 to 44 years.
- The percentage of cancer survivors aged 18 years and older reporting no physical activity in their leisure time has been declining steadily since 2005. Likewise, the percentage of survivors who meet current federal guidelines for aerobic and muscle-strengthening physical activity continues to improve.

## End of Life

- The rate of death from cancer continues to decline among both males and females in all major racial and ethnic groups.
- Mortality for the four most common types of cancer (colorectal, female breast, lung, and prostate) continues to fall.
- Recent trends show a decline of 2% or more a year in mortality for ovarian, larynx, and kidney and renal pelvis cancers, non-Hodgkin and Hodgkin lymphomas, melanoma of the skin, and leukemia, as well as smaller but still statistically significant decreases for myeloma, esophagus, cervix uteri, urinary bladder, and stomach cancers.

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## Areas of Concern

**The nation is losing ground in other important areas that demand attention.**

### Prevention

- Although the percentage of smokers making a quit attempt in the past year has been rising since 2005 and was 53.9% in 2020, it is still well below the Healthy People 2030 target of 65.7%.
- All subgroups examined show a statistically significant increasing trend in recent smoking cessation success, except for people with less than a high school education.
- Progress has been made in reducing exposure to secondhand smoke among all populations; however, non-Hispanic black individuals still have higher rates of exposure than individuals of other races and ethnicities. Additionally, people of lower socioeconomic status and with lower educational attainment remain less likely to be covered by smokefree laws in worksites, restaurants, and bars. Private settings such as homes and vehicles remain major sources of exposure for some populations, including youth.
- Since 2014, e-cigarettes have been the most commonly used tobacco product among youth. In 2020, 19.6% of high school students and 4.7% of middle school students reported current use of e-cigarettes.
- Tobacco advertising and promotion are causally related to increased tobacco initiation and use. The U.S. Federal Trade Commission reports cigarette and smokeless tobacco advertising and promotion expenditures for the largest cigarette companies and major smokeless tobacco product manufacturers. In 2020, the combined annual expenditure for advertising and promotion (adjusted to 2020 dollars) was \$7.8

billion for cigarettes and \$567.3 million for smokeless tobacco products —amounting to about \$22.9 million every day.

- Although more than 69.4% of adults reported practicing sun-protective behaviors in 2020, more than 29% reported having had one or more sunburns in the past 12 months. An even higher rate of sunburn (57.2% in 2017) was reported among teens. Sunburn is a primary modifiable risk factor for melanoma skin cancer, and the rate has changed very little from 2015-2017 for adults and between 2015-2017 among teens. Non-Hispanic whites were more likely to experience sunburn than other racial/ethnic groups, and sunburn occurred more often among those aged 18 to 24 years (40.6% in 2020) than among those aged 25 years and older (27.4%).
- Outdoor tanning also poses significant risk for skin cancer; intentional outdoor tanning appears to be more prevalent than indoor tanning and warrants public health monitoring.
- Sun sensitivity occurs in all racial/ethnic groups. Sun-sensitive adults, who are at greatest risk for melanoma, continue to report slightly higher rates of tanning bed use, outdoor tanning, and higher sunburn incidence than those without sun sensitivity (45.3% for sun-sensitive individuals versus 13.5% among those who are not sun-sensitive in 2020).
- Although sunbathing and tanning are strongly associated with sunburn, recent data indicate that most sunburns occur in contexts unrelated to intentional tanning. Results suggest the need to promote multiple forms of sun protection tailored to specific contexts, especially when engaged in physical activity and when spending time near the water.
- Per capita alcohol consumption, which can increase the risk of some cancers, has risen slightly since the mid-1990s.
- Excess weight and obesity are associated with elevated cancer risk. Obesity prevalence continues to increase, with an estimated 42.4% of adults with obesity and an additional 31.2% with overweight.
- Despite modest increases over time, only 25.4% of adults report meeting federal guidelines for aerobic and muscle-strengthening physical activity. Rates among low-income and low-education groups of any race were well below the Healthy People 2030 target of 28.4%.
- Overall diet quality has not improved for years; Americans are not meeting recommendations for intake of fruits and vegetables, which have been linked to prevention of several cancer types.

## Early Detection

- The *Cancer Trends Progress Report* includes rates of Pap testing since 1987. To accommodate the addition of HPV testing and Pap/HPV co-testing as recommended approaches to cervical cancer screening, the current report tracks the percentage of females who were up-to-date with current U.S. Preventive Services Task Force (USPSTF) cervical cancer screening recommendations. In 2019, 73.5% of females aged 21 to 65 years were up-to-date with respect to their cervical screening recommendations, which is below the Healthy People 2030 target of 84.3%.
- Since 2010, uptake of lung cancer screening with chest computed tomography (CT) has been fairly stable—but limited. The USPSTF first recommended low-dose radiation CT screening for lung cancer in 2013 for adults aged 55 to 80 years who had a 30 pack-year smoking history or more and who currently smoked or had quit within the past 15 years. In March 2021, the USPSTF published revised guidelines recommending annual low-dose radiation CT (LDCT) screening for lung cancer in adults aged 50 to 80 years who 1) have a 20 pack-year smoking history or more and 2) who currently smoke or have quit within the past 15 years. The percentage of adults at risk for lung cancer due to smoking, aged 55-80 years, who had a CT scan to check for lung cancer within the past year was 4.5% in 2015. The Healthy People 2030 target is to increase to 7.5 percent the proportion of adults aged 55 to 80 years who receive lung cancer screening based on the 2013 USPSTF recommendations.

## Diagnosis

- The incidence of several cancers, including leukemia, melanoma of the skin, esophageal adenocarcinoma, and cancers of the oral cavity and pharynx, testis, and pancreas, has been increasing annually.
- Although age-specific trends in incidence and mortality are not generally covered in this report, it should be noted that incidence trends of colorectal cancer for those aged under 50 years have been rising and

are of enough concern that some guideline-setting organizations either have, or are considering, lowering the age to initiate screening.

- Although the incidence rates for late-stage prostate cancer remain low, the rates of late-stage cases have been increasing since 2011.

## Treatment

- The proportion of patients aged 20 years and older diagnosed with localized/regional kidney cancer receiving partial nephrectomy has remained stable since 2012.

## Life After Diagnosis

- Estimates of national expenditures for cancer care in 2020 for the top five most costly cancer sites were \$29.8, \$24.3, \$23.8, \$22.3, and \$18.6 billion for female breast, colorectal, lung, and prostate cancers, and non-Hodgkin lymphoma, respectively.
- The proportion of adult cancer survivors who are obese has been rising and is now 33%. Efforts are needed to help cancer survivors adopt or maintain a healthy weight after diagnosis, which has the potential to reduce both cancer- and non-cancer-related morbidity.

## End of Life

- Recent trends in the death rates have been increasing for several cancers, including oral cavity and pharynx, pancreas, and corpus uteri (endometrial) cancers.

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## Other Trends to Consider

**While this report provides trends in cancer rates, and factors that influence cancer rates, for some trends it is not possible to characterize the direction of the trend as either progress or an area of concern.**

### Early Detection

- After a long decline, the incidence rates for prostate cancer started rising in 2014, and death rates flattened out starting in 2013. Prostate cancer incidence rates are very sensitive to changes in PSA screening rates and subsequent referral for biopsy. In 2012, USPSTF recommended against prostate cancer screening. In 2018, the task force changed its recommendation to call for an individualized, shared decision-making approach. Prostate cancer testing rates in the year prior to being surveyed fell between 2010 and 2013 (from 46.1% to 38.2%), probably as a result of the 2012 USPSTF guidelines, but have been fairly stable since. Mortality rates are a function of many factors, including changes in screening rates and advances in treatment. While PSA screening may reduce mortality for some patients, it must be balanced against a significant number of patients who are diagnosed with disease that is relatively indolent and may not have progressed prior to the person eventually dying of other unrelated causes.

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures

### Trends at a Glance

#### Last Updated:

October 2021

The Trends-at-a-Glance offers an overview of trend direction measure by measure. Trends noted as stable or non-significant change (NSC) are not changing significantly. The difference between "stable" and "non-significant change" is based on statistical computations described in the [Methodology for Characterizing Trends](#) appendix. The table below provides a snapshot of recent national trends (as characterized by the Average Annual Percent Change (AAPC)) for measures included in this report. Green indicates that the recent trend is moving in the desired direction. Red indicates that the recent trend is not moving in the desired direction. Purple indicates that the recent trend is moving but it is indeterminate whether the direction is desired or not. There is no background color for trends that are stable or show a non-significant change in direction. The column labeled "Recent trend time period" shows the dates associated with each trend. These dates depend upon the recency of available data.

Click on any measure title in the "Measure" column to read more about the measure. For a more complete summary of the measures, including their progress compared with the Healthy People 2030 target (where one exists), see the [Summary Tables](#) by topic.

Cancer Trends Progress Report - Trends at a Glance

Measure	Desired Direction	Recent Trend	Recent Trend Time Period
<u>Prevention</u>			
<u>Tobacco Use Initiation (Ages 12-17)</u>			
All Tobacco Products	Falling	Falling	2015-2019
Cigarettes	Falling	Falling	2015-2019
Smokeless Tobacco	Falling	Falling	2015-2019
Cigars	Falling	Falling	2015-2019
<u>Youth Tobacco Use</u>			
All Tobacco	Falling	Stable	2014-2018
Cigarettes	Falling	Non-Significant Change	2014-2018
E-Cigarettes	Falling	Rising	2014-2018
Smokeless Tobacco	Falling	Non-Significant Change	2014-2018
Cigars	Falling	Falling	2014-2018
<u>Adult Tobacco Use</u>			
Cigarettes	Falling	Falling	2016-2020

*1 The desired direction of the recent trend is difficult to interpret due to outside factors which may be driving its direction (e.g., early detection driving breast cancer incidence rates upward temporarily, screening rates for older tests such as home FOBT going down as they are replaced by newer technologies such as colonoscopy).*

Measure	Desired Direction	Recent Trend	Recent Trend Time Period
<b>Smokeless Tobacco</b>	Falling	Non-Significant Change	2016-2020
<b>Cigars</b>	Falling	Stable	2016-2020
<b>E-Cigarettes</b>	Falling	Non-Significant Change	2016-2020
<u>Quitting Smoking</u>			
<b>Attempted to quit smoking</b>	Rising	Rising	2016-2020
<b>Successfully quit smoking</b>	Rising	Rising	2016-2020
<u>Evidence-based Cessation Aids</u>	Rising	Stable	2010-2019
<u>Clinicians' Advice to Quit Smoking</u>	Rising	Rising	2014-2019
<u>Fruit and Vegetable Consumption</u>			
<b>Fruit and Vegetables Combined</b>	Rising	Non-Significant Change	2013-2018
<b>Fruit</b>	Rising	Falling	2013-2018
<b>Vegetables</b>	Rising	Stable	2013-2018
<u>Red Meat and Processed Meat Consumption</u>	Falling	Falling	2013-2018
<u>Fat Consumption (Saturated fat)</u>	Falling	Non-Significant Change	2013-2018
<u>Alcohol Consumption</u>	Falling	Rising	2015-2019
<u>Physical Activity</u>			
<b>No physical activity in leisure time</b>	Falling	Falling	2016-2020
<b>Meet physical activity guidelines</b>	Rising	Rising	2016-2020
<u>Weight</u>			
<b>Healthy Weight</b>	Rising	Falling	2013-2018
<b>Overweight</b>	Falling	Falling	2013-2018
<b>Obese</b>	Falling	Rising	2013-2018
<u>Sleep</u>	Rising	Rising	2016-2020
<u>Sun-Protective Behavior</u>			
<u>Sun-Protective Behavior</u>			
<b>Use sun protective measures</b>	Rising	Falling	2015-2020
<b>Use sunscreen (SPF 15+)</b>	Rising	Rising	2015-2020
<b>Wear protective clothing</b>	Rising	Falling	2015-2020

1 The desired direction of the recent trend is difficult to interpret due to outside factors which may be driving its direction (e.g., early detection driving breast cancer incidence rates upward temporarily, screening rates for older tests such as home FOBT going down as they are replaced by newer technologies such as colonoscopy).

Measure	Desired Direction	Recent Trend	Recent Trend Time Period
<b>Seek shade</b>	Rising	Stable	2015-2020
<u>Indoor Tanning</u>			
<b>Adolescents</b>	Falling	Falling	2015-2019
<b>Adults</b>	Falling	Falling	2010-2015
<u>Sunburn</u>			
<b>Adolescents</b>	Falling	Non-Significant Change	2015-2017
<b>Adults</b>	Falling	Falling	2015-2020
<u>HPV Vaccination</u> <b>(Up-to-date on HPV vaccination)</b>			
<b>Females, Ages 13-15</b>	Rising	Rising	2016-2020
<b>Males, Ages 13-15</b>	Rising	Rising	2016-2020
<b>Female</b>	Rising	Rising	2016-2020
<u>Genetic Testing</u> <b>(Received Genetic Counseling)</b>	Rising	Non-Significant Change	2010-2015
<u>Tobacco Company Marketing Expenditures</u>			
<b>Cigarettes</b>	Falling	Falling	2016-2020
<b>Smokeless tobacco</b>	Falling	Falling	2016-2020
<u>Medicaid Coverage of Tobacco Dependency Treatments</u>	Rising	Rising	2006-2010
<u>Secondhand Smoke Exposure</u>	Falling	Falling	2013-2018
<u>Smokefree Home Rules</u>	Rising	Rising	2014-2019
<u>Smokefree Workplace Rules and Laws</u>			
<b>Smokefree workplace</b>	Rising	Non-Significant Change	2014-2019
<b>Indoor air laws for workplaces</b>	Rising	Rising	2017-2021
<b>Indoor air laws for restaurants</b>	Rising	Non-Significant Change	2017-2021
<b>Indoor air laws for bars</b>	Rising	Stable	2017-2021
<u>Arsenic Exposure</u>	Falling	Non-Significant Change	2013-2018
<u>Benzene Exposure</u>	Falling	Non-Significant Change	2013-2018

1 The desired direction of the recent trend is difficult to interpret due to outside factors which may be driving its direction (e.g., early detection driving breast cancer incidence rates upward temporarily, screening rates for older tests such as home FOBT going down as they are replaced by newer technologies such as colonoscopy).

Measure	Desired Direction	Recent Trend	Recent Trend Time Period
<u>Cadmium Exposure</u>	Falling	Falling	2013-2018
<u>Nitrate Exposure</u>	Falling	Non-Significant Change	2011-2016
<u>Radon</u>	Rising	Rising	2009-2013
<u>Early Detection</u>			
Breast Cancer Screening	Rising	Stable	2015-2019
Cervical Cancer Screening	Rising	Falling	2015-2019
Colorectal Cancer Screening			
<b>Guideline screening</b>	Rising	Rising	2015-2019
<b>Home FOBT</b>	<u>Indeterminate</u> <sup>1</sup>	Non-Significant Change	2015-2019
<b>Sigmoidoscopy/colonoscopy</b>	Rising	Rising	2015-2019
<u>Lung Cancer Screening</u>	Rising	Non-Significant Change	2010-2015
<u>Prostate Cancer Screening</u>	<u>Indeterminate</u> <sup>1</sup>	Stable	2013-2018
<u>Diagnosis</u>			
<u>Incidence</u>			
<b>All cancer sites combined</b>	Falling	Stable	2015-2019
<b>Colon and rectum</b>	Falling	Falling	2015-2019
<b>Lung and bronchus</b>	Falling	Falling	2015-2019
<b>Female breast</b>	<u>Indeterminate</u> <sup>1</sup>	Rising	2015-2019
<b>Prostate</b>	Falling	Rising	2015-2019
<u>Stage at Diagnosis</u>			
<b>Late stage breast cancer</b>	Falling	Falling	2013-2017
<b>Distant stage colon cancer</b>	Falling	Falling	2013-2017
<b>Distant stage rectum cancer</b>	Falling	Rising	2013-2017
<b>Distant stage cervix cancer</b>	Falling	Rising	2013-2017
<b>Distant stage lung cancer</b>	Falling	Falling	2013-2017
<b>Distant stage prostate cancer</b>	Falling	Rising	2013-2017
<u>Treatment</u>			

<sup>1</sup> The desired direction of the recent trend is difficult to interpret due to outside factors which may be driving its direction (e.g., early detection driving breast cancer incidence rates upward temporarily, screening rates for older tests such as home FOBT going down as they are replaced by newer technologies such as colonoscopy).

Measure	Desired Direction	Recent Trend	Recent Trend Time Period
<u>Bladder Cancer Treatment</u> <u>(Intravesical therapy for disease Ta G1-2)</u>	Rising	Non-Significant Change	2003-2009
<u>Breast Cancer Treatment</u> <u>(Breast conserving surgery with radiation)</u>	Rising	Rising	2015-2019
<u>Colorectal Cancer Treatment</u> <u>(Guideline therapy)</u>	Rising	Rising	2010-2015
<u>Kidney Cancer Treatment</u> <u>(Partial nephrectomy)</u>	Rising	Non-Significant Change	2015-2019
<u>Lung Cancer Treatment</u> <u>(Chemotherapy)</u>	Rising	Rising	2010-2018
<u>Melanoma of the Skin Treatment</u> <u>(Chemotherapy)</u>	Rising	Rising	2011-2018
<u>Ovarian Cancer Treatment</u> <u>(Chemotherapy)</u>			
<u>Stage I/II Diagnoses</u>	Rising	Rising	2002-2011
<u>Stage III/IV Diagnoses</u>	Rising	Rising	2002-2011
<u>Prostate Cancer Treatment</u> <u>(Hormonal therapy)</u>	Indeterminate <sup>1</sup>	Falling	2002-2008
<u>Life After Cancer</u>			
<u>Survival</u>			
<u>All cancer sites combined</u>	Rising	Stable	2010-2014
<u>Colon and rectum</u>	Rising	Stable	2010-2014
<u>Lung and bronchus</u>	Rising	Rising	2010-2014
<u>Female breast</u>	Rising	Rising	2010-2014
<u>Prostate</u>	Rising	Falling	2010-2014
<u>Cancer Survivors and Smoking</u>	Falling	Falling	2016-2020
<u>Cancer Survivors and Physical Activity</u>	Falling	Falling	2016-2020
<u>Cancer Survivors and Weight</u>	Falling	Falling	2016-2020
<u>End of Life</u>			
<u>Mortality</u>			
<u>All cancer sites combined</u>	Falling	Falling	2016-2020
<u>Colon and rectum</u>	Falling	Falling	2016-2020
<u>Lung and bronchus</u>	Falling	Falling	2016-2020

<sup>1</sup> The desired direction of the recent trend is difficult to interpret due to outside factors which may be driving its direction (e.g., early detection driving breast cancer incidence rates upward temporarily, screening rates for older tests such as home FOBT going down as they are replaced by newer technologies such as colonoscopy).

Measure	Desired Direction	Recent Trend	Recent Trend Time Period
<b>Female breast</b>	Falling	Falling	2016-2020
<b>Prostate</b>	Falling	Falling	2016-2020

*1 The desired direction of the recent trend is difficult to interpret due to outside factors which may be driving its direction (e.g., early detection driving breast cancer incidence rates upward temporarily, screening rates for older tests such as home FOBT going down as they are replaced by newer technologies such as colonoscopy).*

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures

### Prevention

Cancer can be caused by a variety of factors and may develop over a number of years. Some risk factors can be controlled. Choosing the right health behaviors and preventing exposure to certain environmental risk factors can help prevent the development of cancer. For this reason, it is important to follow national trends data to monitor the reduction of these risk factors. This section focuses on national trends data from four major groups of risk factors: behavioral, environmental, policy/regulatory, and genetic testing.

### Behavioral Factors

Tobacco use, poor nutrition, and physical inactivity are just some of the human behaviors that have been linked to the development of many common cancers. This section describes trends in the following behaviors, which can influence the likelihood of getting cancer.

#### Tobacco Use

Smoking causes at least 30 percent of all cancer deaths in the United States. Avoiding tobacco use is the single most important step Americans can take to reduce the cancer burden in this country.

- [Tobacco Use Initiation](#)
- [Youth Tobacco Use](#)
- [Adult Tobacco Use](#)

#### Smoking Cessation

Tobacco use can lead to nicotine dependence and serious health problems. Quitting smoking greatly reduces the risk of developing smoking-related diseases, including cancer.

- [Quitting Smoking](#)
- [Evidence-based Cessation Aids](#)
- [Clinicians' Advice to Quit Smoking](#)

#### Diet, Physical Activity, Weight, and Sleep

Considerable evidence indicates that maintaining a healthy lifestyle has the potential to reduce cancer-related morbidity. Up to one-third of cancer cases in the United States are related to poor nutrition, physical inactivity, and/or excess body weight or obesity, and thus could be prevented.

- [Fruit and Vegetable Consumption](#)
- [Red Meat and Processed Meat Consumption](#)
- [Fat Consumption](#)
- [Alcohol Consumption](#)
- [Physical Activity](#)
- [Weight](#)
- [Sleep](#)

#### UV Exposure and Sun-Protective Behavior

Reducing unprotected exposure to the sun and avoiding artificial ultraviolet (UV) light from indoor tanning beds, tanning booths, and sun lamps can lower the risk of skin cancer.

- [Sun-Protective Behavior](#)
- [Indoor and Outdoor Tanning](#)
- [Sunburn](#)

#### HPV Vaccination

A number of cancers that affect men and women can be prevented through vaccination against human papillomavirus (HPV) and effective screening. HPV can cause cancers of the penis, in men; of the cervix, vagina and vulva, in women; and in the anus and back of the throat, for women and men.

- [HPV Vaccination](#)

## **Genetic Testing**

Genetic test results can help guide a person's future medical care as specific genetic mutations may increase a person's chance of developing cancer.

- [Genetic Testing](#)

## **Tobacco Policy/Regulatory Factors**

Effective policy and regulation are necessary to reduce the burden of cancer on the country. Federal law prohibits the advertising of cigarettes, little cigars, or smokeless tobacco products on radio, television, or other media regulated by the Federal Communications Commission. The U.S. Food and Drug Administration has primary federal regulatory authority with respect to the manufacturing, distribution, and marketing of tobacco products. FDA has adopted regulations limiting certain marketing activities for cigarette and smokeless tobacco products to reduce youth exposure to tobacco product marketing. Federal law also requires state Medicaid programs to make tobacco cessation services available to pregnant women, but an expansion of coverage is needed to make these services available to more people.

- [Tobacco Company Marketing Expenditures](#)
- [Medicaid Coverage of Tobacco Dependency Treatments](#)

## **Environmental Factors**

Certain chemicals, biological agents, toxins, and other environmental factors are associated with the development of cancer. This section reports national trends data associated with environmental exposures and their relationship to cancer. The environmental measures highlighted here were chosen based on the availability of national trends data and, in some cases, the measures' inclusion in Healthy People 2030.

### **Secondhand Smoke**

Secondhand smoke continues to be a leading environmental hazard. Conclusive scientific evidence shows that secondhand smoke causes premature death and disease in children and adults who do not smoke, including lung cancer in adults.

- [Secondhand Smoke Exposure](#)
- [Smokefree Home Rules](#)
- [Smokefree Workplace Rules and Laws](#)

## **Chemical and Environmental Exposures**

Exposure to carcinogens that exist as pollutants in our air, food, water, and soil, also influence the incidence of cancer. Most exposure to toxic substances and hazardous wastes results from human activities, particularly through agricultural and industrial production. Chemicals were selected for inclusion in this report based on the following set of criteria: (1) likely or probable carcinogen as classified by IARC classification (Group 1 or 2A), (2) available biomarker data from the National Health and Nutrition Examination Survey (NHANES) since 2004, and (3) ubiquitous (i.e. >50% with detectable levels) in the U.S. general population (based on NHANES data).

- [Arsenic](#)
- [Benzene](#)
- [Cadmium](#)
- [Nitrate](#)
- [Radon](#)

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## **Tobacco Use**

Smoking causes at least 30 percent of all cancer deaths in the United States. Avoiding tobacco use is the single most important step Americans can take to reduce the cancer burden in this country.

- [Tobacco Use Initiation](#)
- [Youth Tobacco Use](#)
- [Adult Tobacco Use](#)

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Tobacco Use Initiation

**Data Up to Date as of:**

April 2022

### Background

Because cigarette smoking typically begins during adolescence, tobacco use is often described as a “pediatric disease.” Nearly 90 percent of adult daily smokers in the United States began smoking by age 18, and 98 percent first smoked by age 26. Nicotine is highly addictive; initiation of smoking during adolescence is linked to persistent smoking in adulthood and the many adverse health effects caused by smoking. Further, exposure to nicotine during adolescence may harm normal brain development, which continues until age 25. Specifically, nicotine exposure may impair development of brain regions involved in attention, learning, and impulse control, and it may prime the brain for addiction to other drugs.

Understanding trends in youth initiation of tobacco products – including cigarettes, electronic cigarettes, cigars, and smokeless tobacco – helps policy makers determine how to allocate prevention resources more effectively.

Effective strategies to reduce youth initiation of tobacco use include federal regulation of tobacco products; significant increases in tobacco prices, including excise taxes; smokefree air laws; restrictions on tobacco advertising and promotion; restricting the availability of tobacco products to youth; mass-media public education campaigns; and full implementation of comprehensive state and community tobacco control programs. On December 20, 2019, the President signed legislation to amend the Federal Food, Drug, and Cosmetic Act, and raise the federal minimum age of sale of tobacco products from 18 to 21 years.

### Measure

The percentage of individuals among those aged 12 to 25 years who said they had initiated cigarette smoking during the past 12 months.

The percentage of individuals among those aged 12 to 25 years who said they had initiated cigar smoking during the past 12 months.

The percentage of individuals among those aged 12 to 25 years who said they had initiated smokeless tobacco use during the past 12 months.

The percentage of individuals among those aged 12 to 25 years who said they had initiated use of any of these tobacco products during the past 12 months.

Note: Initiation measures included a numerator of the number of adolescents and young adults aged 12 to 25 years who used the specified tobacco product for the first time in the past 12 months and a denominator of the number of adolescents and young adults aged 12 to 25 years who did not use the specified tobacco product in their lifetime or who used the specified tobacco product for the first time in the past 12 months.

Note: Cigars include premium cigars, little filtered cigars, and cigarillos.

Note: E-cigarettes are not included in the tobacco-related questions of the National Household Survey on Drug Use and Health that is used as the data source for these measures.

### Healthy People 2030 Target

- Eliminate the initiation of the use of cigarettes among adolescents and young adults.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

### Data Source

Substance Abuse and Mental Health Services Administration, National Household Survey on Drug Use and Health, 2008-2019.

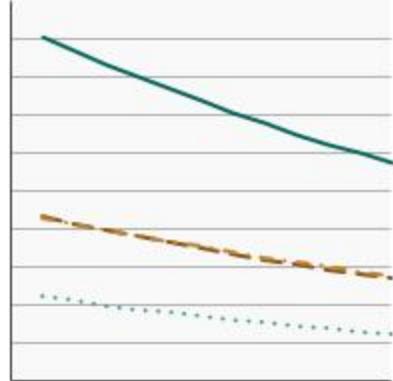
**Note:** NSDUH, like many surveys, experienced significant challenges and changes during the 2020 fielding. The COVID-19 pandemic interrupted data collection in mid-March, and the survey did not resume until September of 2020. In the interim, many aspects of daily life were drastically altered, and these may have affected substance use behaviors. Beginning in October of 2020, data collection became almost entirely web-based, with very few in-

person interviews. Overall response rates, and particularly youth interview response rates, dropped, and many interviews were not completed. As a result, 2020 data may not be internally consistent (i.e., Q1 to Q4) or comparable with previous survey years. Data points from 2020 are therefore not included in this report.

## Trends and Most Recent Estimates

### By Type of Tobacco Product

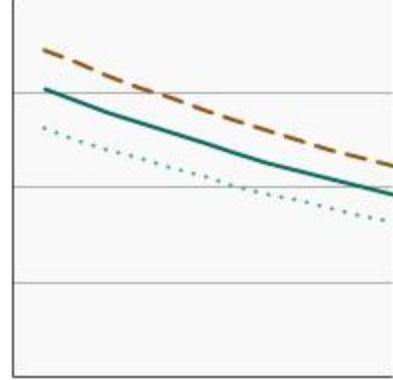
Initiation of the use of cigarettes, cigars, or smokeless tobacco among adolescents and young adults aged 12-25 years by type of tobacco product, 2008-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent</b>	<b>95% Confidence Interval</b>
	<u>All Tobacco Products</u>	5.7	5.4 - 6.1
	<u>Cigarettes</u>	2.6	2.3 - 2.8
	<u>Smokeless Tobacco</u>	1.3	1.1 - 1.5
	<u>Cigars</u>	2.7	2.5 - 3.0

### Cigarettes, Cigars and Smokeless Tobacco

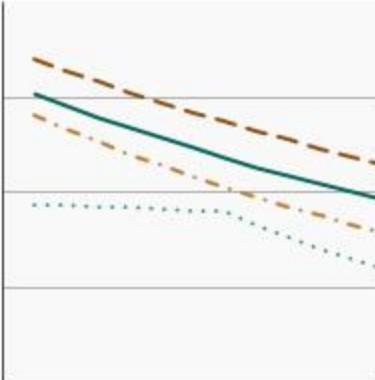
#### By Sex

Initiation of the use of cigarettes, cigars, or smokeless tobacco among adolescents and young adults aged 12-25 years by sex, 2008-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	5.7	5.4 - 6.1
	<u>Male</u>	6.7	6.2 - 7.2
	<u>Female</u>	4.8	4.3 - 5.2

## By Race/Ethnicity

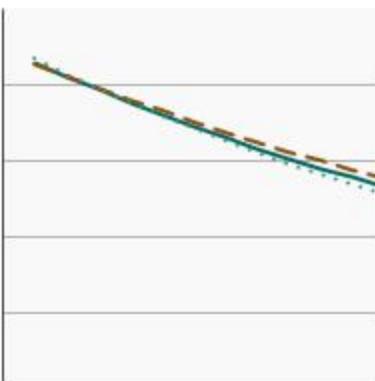
Initiation of the use of cigarettes, cigars, or smokeless tobacco among adolescents and young adults aged 12-25 years by race/ethnicity, 2008-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	5.7	5.4 - 6.1
	<u>Non-Hispanic White</u>	6.9	6.4 - 7.4
	<u>Non-Hispanic Black</u>	3.6	3.0 - 4.3
	<u>Hispanic</u>	5.0	4.3 - 5.8

## Cigarettes

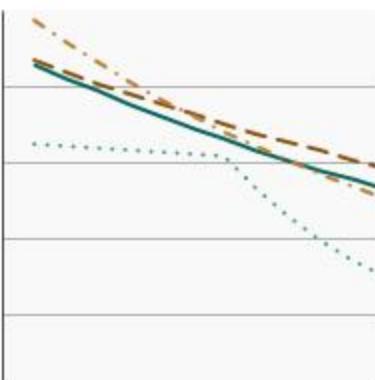
### By Sex

Initiation of the use of cigarettes among adolescents and young adults aged 12-25 years by sex, 2008-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	2.6	2.3 - 2.8
	<u>Male</u>	2.8	2.5 - 3.2
	<u>Female</u>	2.3	2.0 - 2.6

### By Race/Ethnicity

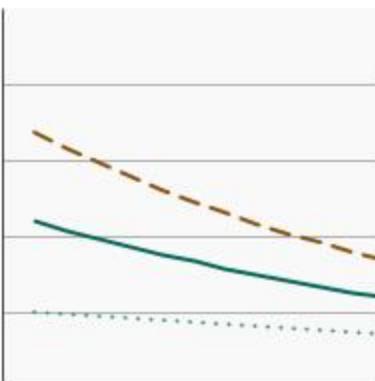
Initiation of the use of cigarettes among adolescents and young adults aged 12-25 years by race/ethnicity, 2008-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	2.6	2.3 - 2.8
	<u>Non-Hispanic White</u>	3.0	2.7 - 3.4
	<u>Non-Hispanic Black</u>	1.5	1.1 - 2.0
	<u>Hispanic</u>	2.3	1.9 - 2.9

## Smokeless Tobacco

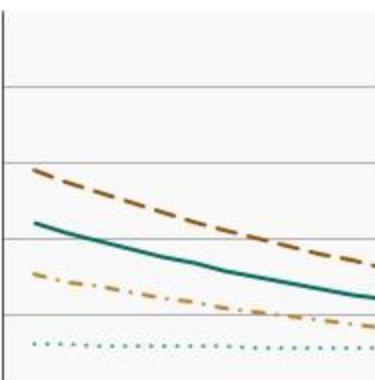
### By Sex

Initiation of the use of smokeless tobacco among adolescents and young adults aged 12-25 years, 2008-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	1.3	1.1 - 1.5
	<u>Male</u>	1.7	1.5 - 1.9
	<u>Female</u>	0.9	0.7 - 1.1

### By Race/Ethnicity

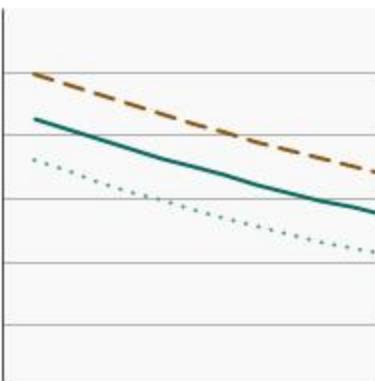
Initiation of the use of smokeless tobacco among adolescents and young adults aged 12-25 years by race/ethnicity, 2008-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	1.3	1.1 - 1.5
	<u>Non-Hispanic White</u>	1.6	1.4 - 1.9
	<u>Non-Hispanic Black</u>	0.5	0.3 - 0.9
	<u>Hispanic</u>	1.2	0.9 - 1.6

## Cigars

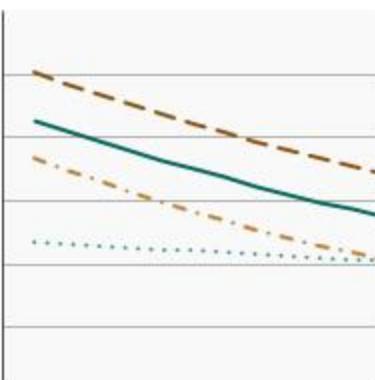
### By Sex

Initiation of the use of cigars among adolescents and young adults aged 12-25 years, 2008-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	2.7	2.5 - 3.0
	<u>Male</u>	3.4	3.0 - 3.8
	<u>Female</u>	2.0	1.8 - 2.3

### By Race/Ethnicity

Initiation of the use of cigars among adolescents and young adults aged 12-25 years by race/ethnicity, 2008-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	2.7	2.5 - 3.0
	<u>Non-Hispanic White</u>	3.3	3.0 - 3.7
	<u>Non-Hispanic Black</u>	2.0	1.6 - 2.5
	<u>Hispanic</u>	2.1	1.6 - 2.6

## Cancers Related to Tobacco Use

Statistical summaries from NCI's SEER Cancer Stat Fact Sheets:

- [Acute Myeloid Leukemia \(AML\)](#)

- [Anus](#)

- [Bladder](#)

- [Cervix Uteri](#)

- [Colon and Rectum](#)

- [Esophagus](#)

- [Kidney and Renal Pelvis](#)

- [Larynx](#)

- [Liver and Intrahepatic Bile Duct](#)

- [Lung and Bronchus](#)

- [Oral Cavity and Pharynx](#)

- [Pancreas](#)

- [Stomach](#)

## Additional Information on Tobacco Use Initiation

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures

### Youth Tobacco Use

#### Data Up to Date as of:

April 2022

#### Background

Cigarette smoking is the leading preventable cause of disease, disability, and death in the United States. Smoking causes cancers of the lung, esophagus, larynx (voice box), mouth, throat, kidney, bladder, liver, pancreas, stomach, cervix, colon and rectum, as well as acute myeloid leukemia. Tobacco use is initiated and established primarily during adolescence (defined as ages 10-19): nearly 90 percent of adult cigarette smokers in the U.S. first tried cigarettes by age 18, and 98 percent first tried cigarettes by age 26. Each day in the U.S., around 1,600 youth aged 18 or younger smoke their first cigarette and another 200 become daily cigarette smokers.

E-cigarettes (also known as vapes or Electronic Nicotine Delivery Systems [ENDS]) are battery-powered devices that convert a liquid ("e-liquid") into an aerosol. E-liquids typically contain nicotine, flavorings, vegetable glycerin, propylene glycol, and other chemicals. In addition to nicotine, e-cigarette aerosol may contain heavy metals, volatile organic compounds, and fine and ultrafine particles that can be inhaled deeply into the lungs by both users and bystanders. Nicotine use among youth increases the risk of lifelong tobacco addiction and may also increase the risk for future addiction to other drugs. In August 2016, the FDA finalized a rule extending its regulatory authority to all tobacco products, including e-cigarettes, cigars, and hookah and pipe tobacco.

Teen cigarette smoking prevalence peaked around 1996/1997 but has been declining since. However, a substantial portion of youth use other tobacco products, including e-cigarettes, cigars, smokeless tobacco, and hookah. According to data from the 2020 National Youth Tobacco Survey (NYTS), 16.2% of middle and high school students reported current use of a tobacco product. Youth use of more than one tobacco product (dual use) is also common. Since 2014, e-cigarettes have been the most commonly used tobacco product among youth, and, in 2018, former U.S. Surgeon General Jerome Adams issued an advisory calling youth e-cigarette use an epidemic.

According to data from the NYTS, in 2020, more than 3.6 million U.S. youth, including nearly 1 in 5 high school students (19.6%) and 1 in 20 middle school students (4.7%), were current users of e-cigarettes. Moreover, among high school students who reported current e-cigarette use, 38.9% reported using the products frequently (on 20 or more of the past 30 days) and 22.5% reported daily use. The 2021 NYTS data indicated that 11.3% of high schoolers and 2.8% of middle schoolers currently used e-cigarettes. However, NYTS data from 2021 should not be compared with previous years because of differences in data collection due to the COVID-19 pandemic. There are many factors associated with youth tobacco use, including social, environmental, cognitive, and genetic influences. In addition, Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General, published by the Centers for Disease Control and Prevention in 2012, concluded that tobacco advertising, promotion, and depictions of smoking in movies are causally related to youth tobacco use. Initiation of smoking during adolescence is linked to persistent smoking during adult life and the many adverse health effects caused by smoking.

Understanding trends in youth initiation and use of tobacco products – including cigarettes, e-cigarettes, cigars, and smokeless tobacco – helps policy makers determine how to allocate prevention resources. Effective strategies to reduce youth initiation of tobacco use include federal regulation of tobacco products; significant increases in tobacco prices, including excise taxes; smokefree air laws; restrictions on tobacco advertising and promotion; restricting the availability of tobacco products to youth; mass-media public education campaigns; and full implementation of comprehensive state and community tobacco control programs. On December 20, 2019, the President signed legislation to amend the Federal Food, Drug, and Cosmetic Act, and raise the federal minimum age of sale of tobacco products from 18 to 21 years.

#### Measure

The percentage of middle and high school students (grades 6–12) who reported use of cigarettes, cigars, smokeless tobacco, or e-cigarettes on at least 1 day during the 30 days before the survey.

The percentage of middle and high school students who reported use of any tobacco product (cigarettes, e-cigarettes, cigars, smokeless tobacco—including chewing tobacco, snuff, dip—hookah, pipe tobacco, bidis, dissolvable tobacco, or snus) on at least 1 day during the 30 days before the survey.

## **Healthy People 2030 Target**

- Reduce to 11.3 percent the proportion of adolescents in grades 6–12 who used tobacco products (cigarettes, e-cigarettes, cigars, smokeless tobacco, hookah, pipe tobacco, and/or bidis) in the past 30 days.
- Reduce to 10.5 percent the proportion of adolescents in grades 6–12 who used e-cigarettes in the past 30 days.
- Reduce to 3.4 percent the proportion of adolescents in grades 6–12 who smoked cigarettes in the past 30 days.
- Reduce to 3 percent the proportion of adolescents in grades 6–12 who smoked cigars in the past 30 days.
- Reduce to 2.3 percent the proportion of adolescents in grades 6–12 who used smokeless tobacco products (chewing tobacco or snuff) in the past 30 days.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

## **Data Source**

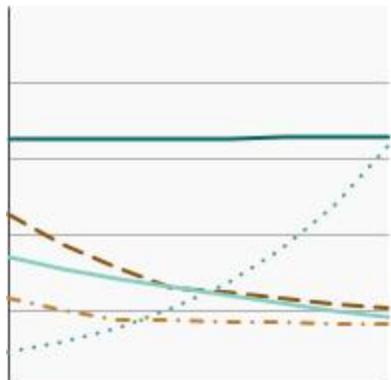
Centers for Disease Control and Prevention, National Youth Tobacco Survey (NYTS), 2011–2018<sup>1</sup>.

<sup>1</sup>The NYTS survey releases data through 2020 but this report only includes data through 2018 for two reasons. First, the mode of administration changed to an electronic survey in 2019, making the 2019 estimate incomparable to the prior estimates.

## Trends and Most Recent Estimates

### By Type of Tobacco Product

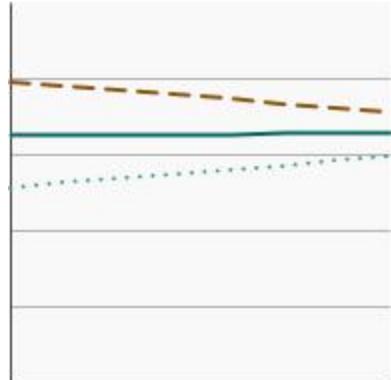
Percentage of adolescents in grades 6 to 12 who were current tobacco product users by type of tobacco product, 2011-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2018)</b>	
		<b>Percent of adolescents</b>	<b>95% Confidence Interval</b>
	<u>All Tobacco</u>	18.3	16.9 - 19.9
	<u>Cigarettes</u>	5.4	4.6 - 6.2
	<u>E-Cigarettes</u>	13.8	12.4 - 15.3
	<u>Smokeless Tobacco</u>	4.1	3.5 - 4.9
	<u>Cigars</u>	5.0	4.4 - 5.7

### All Tobacco Products

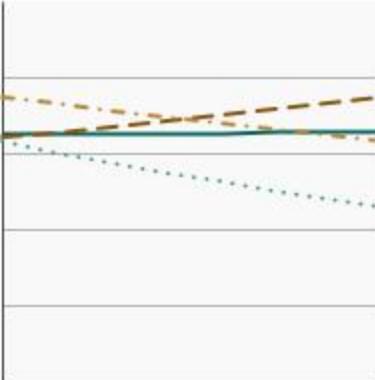
#### By Sex

Percentage of adolescents in grades 6 to 12 who were current tobacco product users by sex, 2011-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2018)</b>	
		<b>Percent of adolescents</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	18.3	16.9 - 19.9
	<u>Male</u>	19.7	18.1 - 21.3
	<u>Female</u>	16.8	15.3 - 18.5

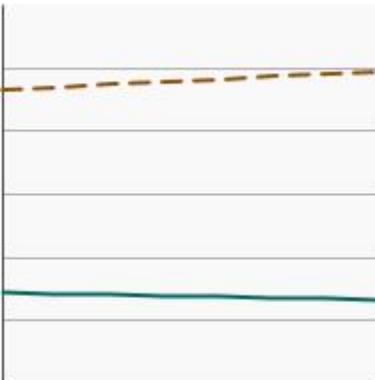
## By Race/Ethnicity

Percentage of adolescents in grades 6 to 12 who were current tobacco product users by race/ethnicity, 2011-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2018)</b>	
		<b>Percent of adolescents</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	18.3	16.9 - 19.9
	<u>Non-Hispanic White</u>	21.5	19.7 - 23.5
	<u>Non-Hispanic Black</u>	12.5	10.6 - 14.7
	<u>Hispanic</u>	16.2	14.5 - 18.0

## By Current Grade Level

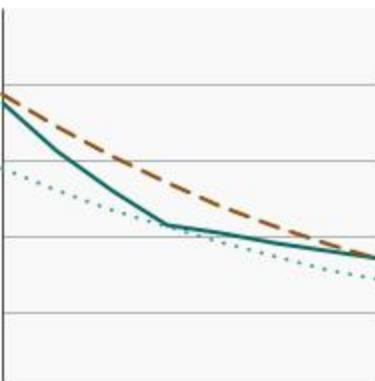
Percentage of adolescents in grades 6 to 12 who were current tobacco product users by grade level, 2011-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2018)</b>	
		<b>Percent of adolescents</b>	<b>95% Confidence Interval</b>
	<u>Middle School (Grades 6-8)</u>	7.2	6.3 - 8.2
	<u>High School (Grades 9-12)</u>	27.1	25.2 - 29.1

## Cigarettes

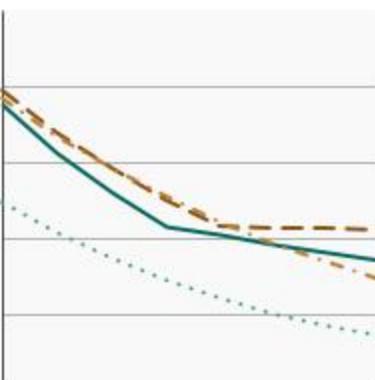
### By Sex

Percentage of adolescents in grades 6 to 12 who were current cigarette users by sex, 2011-2018

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2018)</b>	
		<b>Percent of adolescents</b>	<b>95% Confidence Interval</b>
	<a href="#"><u>Both Sexes</u></a>	5.4	4.6 - 6.2
	<a href="#"><u>Male</u></a>	5.8	5.0 - 6.8
	<a href="#"><u>Female</u></a>	4.8	4.0 - 5.8

### By Race/Ethnicity

Percentage of adolescents in grades 6 to 12 who were current cigarette users by race/ethnicity, 2011-2018

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2018)</b>	
		<b>Percent of adolescents</b>	<b>95% Confidence Interval</b>
	<a href="#"><u>All Races</u></a>	5.4	4.6 - 6.2
	<a href="#"><u>Non-Hispanic White</u></a>	6.4	5.4 - 7.6
	<a href="#"><u>Non-Hispanic Black</u></a>	2.3	1.6 - 3.3
	<a href="#"><u>Hispanic</u></a>	5.1	4.3 - 6.1

## By Current Grade Level

Percentage of adolescents in grades 6 to 12 who were current cigarette users by grade level, 2011-2018

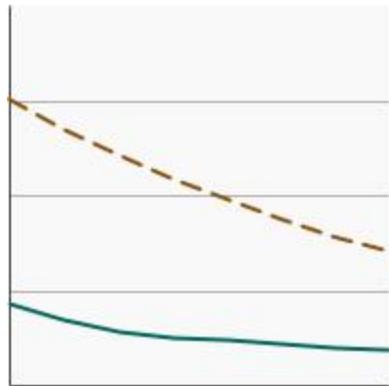
[Overview Graph](#)

[\*\*Detailed Trend  
Graphs\*\*](#)

**Most Recent Estimates (2018)**

**Percent of  
adolescents**

**95% Confidence  
Interval**



Middle School  
(Grades 6-8)

1.8

1.4 - 2.2

High School  
(Grades 9-12)

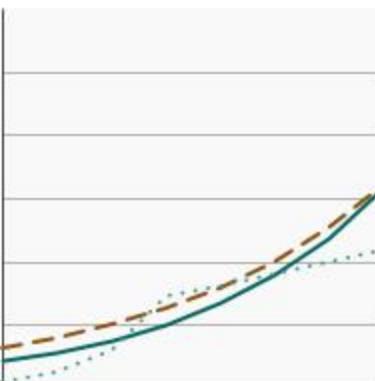
8.1

7.0 - 9.5

## E-Cigarettes

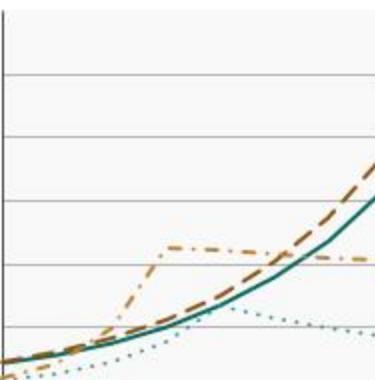
### By Sex

Percentage of adolescents in grades 6 to 12 who were current e-cigarette users by sex, 2011-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2018)</b>	
		<b>Percent of adolescents</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	13.8	12.4 - 15.3
	<u>Male</u>	14.7	13.2 - 16.4
	<u>Female</u>	12.7	11.3 - 14.3

### By Race/Ethnicity

Percentage of adolescents in grades 6 to 12 who were current e-cigarette users by race/ethnicity, 2011-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2018)</b>	
		<b>Percent of adolescents</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	13.8	12.4 - 15.3
	<u>Non-Hispanic White</u>	17.6	15.8 - 19.5
	<u>Non-Hispanic Black</u>	5.4	4.2 - 6.9
	<u>Hispanic</u>	11.1	9.7 - 12.8

## By Current Grade Level

Percentage of adolescents in grades 6 to 12 who were current e-cigarette users by grade level, 2011-2018

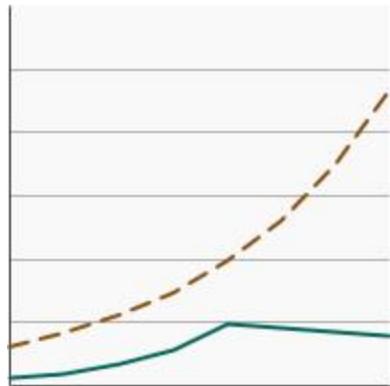
[Overview Graph](#)

[\*\*Detailed Trend  
Graphs\*\*](#)

**Most Recent Estimates (2018)**

**Percent of  
adolescents**

**95% Confidence  
Interval**



Middle School  
(Grades 6-8)

4.9

4.2 - 5.8

High School  
(Grades 9-12)

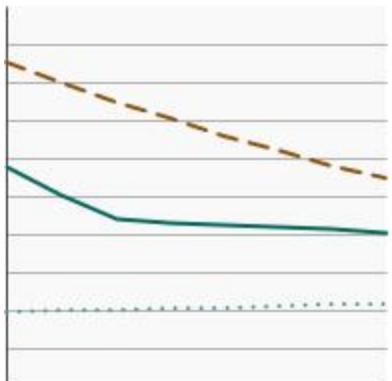
20.8

18.8 - 23.0

## Smokeless Tobacco

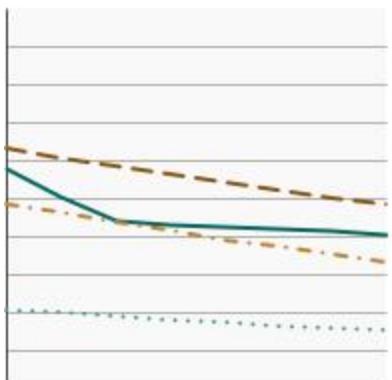
### By Sex

Percentage of adolescents in grades 6 to 12 who were current smokeless tobacco users by sex, 2011-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2018)</b>	
		<b>Percent of adolescents</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	4.1	3.5 - 4.9
	<u>Male</u>	5.9	4.9 - 7.0
	<u>Female</u>	2.2	1.8 - 2.8

### By Race/Ethnicity

Percentage of adolescents in grades 6 to 12 who were current smokeless tobacco users by race/ethnicity, 2011-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2018)</b>	
		<b>Percent of adolescents</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	4.1	3.5 - 4.9
	<u>Non-Hispanic White</u>	5.2	4.2 - 6.3
	<u>Non-Hispanic Black</u>	1.7	1.2 - 2.4
	<u>Hispanic</u>	3.4	2.8 - 4.1

## By Current Grade Level

Percentage of adolescents in grades 6 to 12 who were current smokeless tobacco users by grade level, 2011-2018

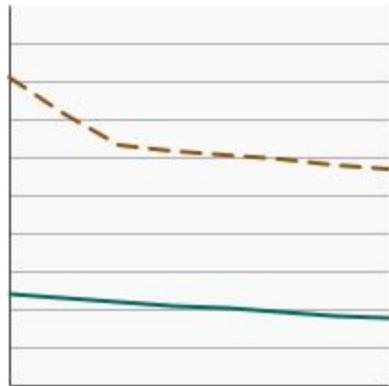
[Overview Graph](#)

[\*\*Detailed Trend  
Graphs\*\*](#)

**Most Recent Estimates (2018)**

**Percent of  
adolescents**

**95% Confidence  
Interval**



Middle School  
(Grades 6-8)

1.8

1.5 - 2.3

High School  
(Grades 9-12)

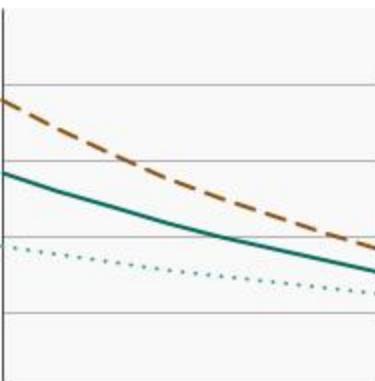
5.9

4.9 - 7.1

## Cigars

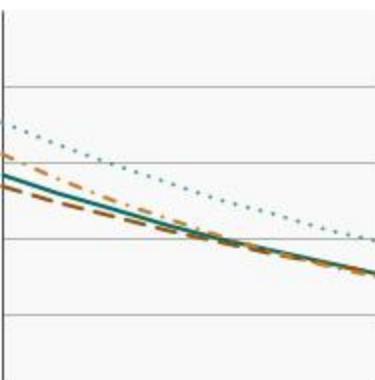
### By Sex

Percentage of adolescents in grades 6 to 12 who were current cigar users by sex, 2011-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2018)</b>	
		<b>Percent of adolescents</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	5.0	4.4 - 5.7
	<u>Male</u>	5.8	5.1 - 6.5
	<u>Female</u>	4.1	3.4 - 5.0

### By Race/Ethnicity

Percentage of adolescents in grades 6 to 12 who were current cigar users by race/ethnicity, 2011-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2018)</b>	
		<b>Percent of adolescents</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	5.0	4.4 - 5.7
	<u>Non-Hispanic White</u>	5.0	4.2 - 5.9
	<u>Non-Hispanic Black</u>	6.3	4.7 - 8.3
	<u>Hispanic</u>	5.1	4.2 - 6.1

## By Current Grade Level

Percentage of adolescents in grades 6 to 12 who were current cigar users by grade level, 2011-2018

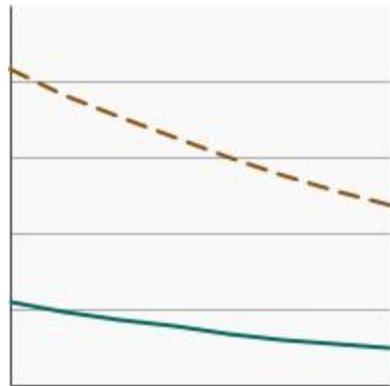
[Overview Graph](#)

[\*\*Detailed Trend  
Graphs\*\*](#)

**Most Recent Estimates (2018)**

**Percent of  
adolescents**

**95% Confidence  
Interval**



Middle School  
(Grades 6-8)

1.7

1.3 - 2.2

High School  
(Grades 9-12)

7.6

6.7 - 8.7

## Cancers Related to Tobacco Use

Statistical summaries from NCI's SEER Cancer Stat Fact Sheets:

- [Acute Myeloid Leukemia \(AML\)](#)
- [Anus](#)
- [Bladder](#)
- [Cervix Uteri](#)
- [Colon and Rectum](#)
- [Esophagus](#)
- [Kidney and Renal Pelvis](#)
- [Larynx](#)
- [Liver and Intrahepatic Bile Duct](#)
- [Lung and Bronchus](#)
- [Oral Cavity and Pharynx](#)
- [Pancreas](#)
- [Stomach](#)

## Additional Information on Youth Tobacco Use

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures

### Adult Tobacco Use

#### Data Up to Date as of:

April 2022

#### Background

The prevalence of adult cigarette smoking in the U.S. has steadily declined since the first Surgeon General's Report on the harms of smoking was published in 1964, when smoking prevalence was 42 percent. While the prevalence of daily smoking has dropped over time, and the average number of cigarettes smoked per day among daily smokers has decreased, nondaily smoking has remained relatively stable. Many studies show that there is no safe level of smoking. For example, individuals who smoke even a few cigarettes per month over their lifetime are at a higher risk of smoking-related death than never smokers, according to the [Dose-Response Association of Low-Intensity and Nondaily Smoking With Mortality in the United States](#) article, published in the journal JAMA Network Open.

Besides cigarettes, other tobacco products are also used by U.S. adults. According to 2019 NHIS data, reported that 8.7 million adults (3.7%) smoked cigars, 5.9 million adults (2.5%) used smokeless tobacco and 10.9 million (4.8%) used e-cigarettes.

A cigar is defined as a roll of tobacco wrapped in leaf tobacco or in a substance that contains tobacco (whereas a cigarette is defined as a roll of tobacco wrapped most often in paper or some other non-tobacco substance). There are three major types of cigars currently sold in the U.S. – large cigars, cigarillos, and little cigars. Cigarillos are short (3-4 inches), narrow cigars that contain approximately 3 grams of tobacco and typically do not include a filter. Little cigars are about the same size as a cigarette and often include a filter. The marketplace of cigar products in the U.S. has recently been characterized by increasing product diversity, and marketing of these products has been targeted to specific population groups, including urban Black adults. Cigars, especially little cigars and cigarillos, come in a variety of flavors, including menthol, fruit and alcohol flavors, such as grape and wine, which appeals to adolescents and young adults.

Like cigarette smoke, cigar smoke contains toxic and carcinogenic compounds that are harmful to both smokers and nonsmokers. Cigar smoking causes oral cavity cancers (cancers of the lip, tongue, mouth, and throat) and cancers of the larynx (voice box), esophagus, and lung. Gum disease and tooth loss are also linked to cigar smoking, and people who smoke cigars heavily or inhale deeply may further be at increased risk of developing coronary heart disease. Smoking cigars heavily also increases the risk for lung diseases, such as emphysema and chronic bronchitis, which can be risk factors for lung cancer.

Smokeless tobacco is also known as chewing tobacco, spit tobacco, snuff, dip, or snus. Snuff is a finely cut or powdered tobacco that is either placed between the cheek and gum, or snuffed through the nose, respectively. Some moist snuff and all snus come in tea bag-like pouches. Chewing tobacco is used by putting a wad (loose leaves, plug, or twist) of tobacco inside the cheek. The prevalence of smokeless tobacco use tends to be higher among men, compared with women, and residents of rural areas, compared with residents of urban areas.

Chewing tobacco and snuff contain at least 28 cancer-causing agents. Use of smokeless tobacco causes oral, esophageal, and pancreatic cancer. Smokeless tobacco also causes serious oral health problems, including gum disease, other non-cancerous oral lesions, and tooth loss, and increases the risk of heart disease.

E-cigarettes (also known as vapes or Electronic Nicotine Delivery Systems (ENDS)) are battery-powered devices that convert a liquid ("e-liquid") into an aerosol. E-liquids typically contain nicotine, flavorings, vegetable glycerin, propylene glycol and other chemicals. In addition to nicotine, e-cigarette aerosol may contain heavy metals, volatile organic compounds, and fine and ultrafine particles that can be inhaled deeply into the lungs by both users and by-standers.

E-cigarette use among adults may potentially reduce the health risks associated with conventional cigarette smoking if users switch completely to e-cigarettes. However, a large percentage of U.S. adults who use e-cigarettes also smoke conventional cigarettes and are at continued risk for exposure to their toxic and carcinogenic compounds, and subsequent smoking-related morbidity and mortality. Furthermore, almost a quarter of those who use e-cigarettes report never having smoked, and the majority of this group is 18-24 years old. As noted above, overall, 4.8 percent of U.S. adults (10.9 million people) were current e-cigarette users in 2019. E-

cigarette use was higher among men than women (5.7% vs. 3.8%), among young adults (aged 18-24) than adults overall (9.2% vs. 4.1%), and among those who identify as lesbian, gay, or bisexual than heterosexual/straight (11.5% vs. 4.2%).

In 2019, the U.S. experienced an outbreak of e-cigarette, or vaping, product use-associated lung injury (EVALI). As of February 18, 2020, a total of 2,807 EVALI cases or deaths were reported to the Centers for Disease Control and Prevention (CDC). The U.S. Food and Drug Administration (FDA), CDC, and state health authorities have determined that tetrahydrocannabinol (THC)-containing e-cigarette, or vaping, products are linked to most EVALI cases. Vitamin E acetate is strongly linked to the EVALI outbreak; however, evidence is not sufficient to rule out the contribution of other chemicals of concern.

Cigarette smoking is the leading preventable cause of disease, disability, and death in the United States. Smoking causes cancers of the lung, esophagus, larynx, mouth, throat, kidney, bladder, liver, pancreas, stomach, cervix, colon and rectum, anus, as well as acute myeloid leukemia. Altogether, smoking causes approximately 30 percent of all U.S. cancer deaths each year. The American Cancer Society estimates that in 2021, almost 182,571 of the estimated 608,570 cancer-related deaths will be caused by cigarette smoking.

Presently, the COVID-19 pandemic poses a major threat to public health in the U.S. and across the world. Current and former cigarette smoking can increase an individual's risk of severe illness from COVID-19. To reduce the chance of severe illness, current smokers should quit, and former and never smokers should refrain from using cigarettes.

## Measure

**Any tobacco product:** Percentage of adults aged 18 years and older who, at the time of the interview, currently used cigarettes; cigars, cigarillos, filtered little cigars; regular pipes, water pipes, hookah; e-cigarettes; and/or smokeless tobacco products.

**Cigarettes:** Percentage of adults aged 18 years and older who had smoked at least 100 cigarettes in their lifetime and, at the time of the interview, smoked cigarettes every day or some days.

**Smokeless Tobacco:** Percentage of adults aged 18 years and older who used smokeless tobacco at least once in their lifetime and, at the time of the interview, used smokeless tobacco every day or some days.

**Cigars:** Percentage of adults aged 18 years and older who smoked cigars at least once in their lifetime and, at the time of the interview, smoked cigars every day or some days.

**E-cigarettes:** Percentage of adults aged 18 years and older who used e-cigarettes at least once in their lifetime and, at the time of the interview, used e-cigarettes every day or some days.

**Combustible tobacco products:** Percentage of adults aged 18 years and older who, at the time of the interview, currently used cigarettes; cigars, cigarillos, filtered little cigars; and/or regular pipes, water pipes, or hookah.

## Healthy People 2030 Target

- Reduce to 16.2 percent the proportion of adults who are current users of any tobacco product.
- Reduce to 5 percent the proportion of adults who are current cigarette smokers.
- Reduce to 5 percent the proportion of adults who are combustible tobacco product users.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

## Data Source

Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 1965–2020.

In 2019 the NHIS questionnaire was redesigned to increase relevance, enhance data quality, and minimize respondent burden. In addition, the COVID-19 pandemic created challenges conducting in-person interviews for the 2020 NHIS, requiring changes to field procedures to conduct most surveys by telephone, which impacted survey response rates. For details related to the potential impacts of these issues, please refer to Potential Impact of NHIS Redesign and COVID-19 on the Cancer Trends Progress Report.

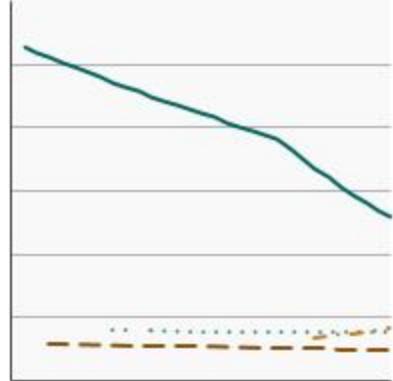
In 2020, NHIS data collection shifted from being conducted in person to being conducted primarily over the telephone, and response rates subsequently declined. To augment data from the 2020 sample, followback

interviews were conducted with 2019 NHIS participants. Estimates presented here use the 2020 sample, which includes both new 2020 respondents and re-interviewed 2019 respondents.

## Trends and Most Recent Estimates

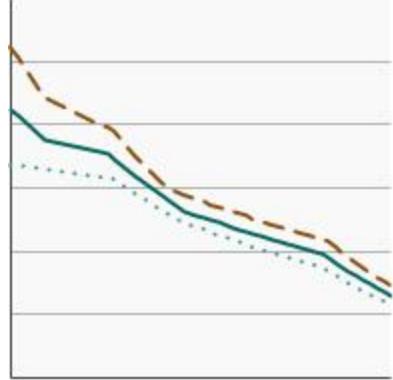
### By Type of Tobacco Product

Percentage of adults aged 18 years and older who were current tobacco product users by type of tobacco product used, 1991-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Cigarettes</u>	12.6	12.1 - 13.2
	<u>Smokeless Tobacco</u>	2.4	2.1 - 2.7
	<u>Cigars</u>	3.7	3.4 - 4.0
	<u>E-Cigarettes</u>	4.0	3.7 - 4.3

### Cigarettes, Long Term Trends (1965+)

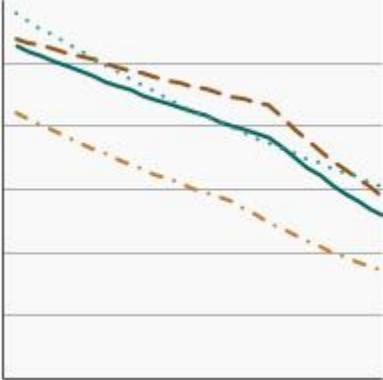
Percentage of adults aged 18 years and older who were current cigarette users by sex, 1965-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	12.6	12.1 - 13.2
	<u>Male</u>	14.3	13.5 - 15.2
	<u>Female</u>	11.1	10.4 - 11.8

### Cigarettes

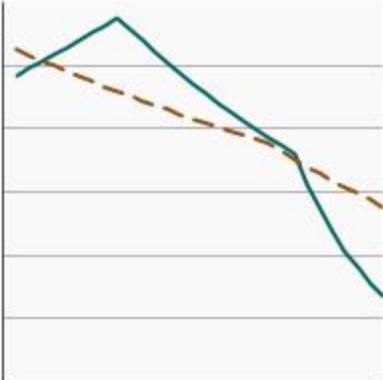
## By Race/Ethnicity

Percentage of adults aged 18 years and older who were current cigarette users by race/ethnicity, 1991-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	12.6	12.1 - 13.2
	<u>Non-Hispanic White</u>	13.7	13.1 - 14.5
	<u>Non-Hispanic Black</u>	14.5	12.8 - 16.5
	<u>Hispanic</u>	8.2	7.2 - 9.4

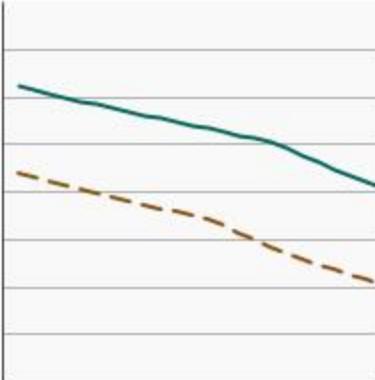
## By Age

Percentage of adults aged 18 years and older who were current cigarette users by age, 1991-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Ages 18-24</u>	7.0	5.7 - 8.6
	<u>Ages 25+</u>	13.4	12.8 - 14.0

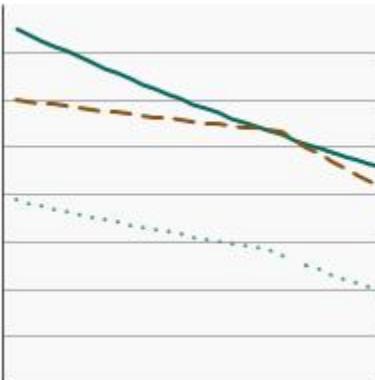
## By Poverty Income Level

Percentage of adults aged 18 years and older who were current cigarette users by poverty income level, 1997-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of federal poverty level</u>	20.0	18.8 - 21.3
	<u><math>\geq 200\%</math> of federal poverty level</u>	10.0	9.4 - 10.6

## By Education Level

Percentage of adults aged 25 years and older who were current cigarette users by highest level of education obtained, 1991-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Less than High School</u>	23.3	20.6 - 26.2
	<u>High School</u>	19.9	18.6 - 21.3
	<u>Greater than High School</u>	9.0	8.5 - 9.6

## By Smoking Frequency

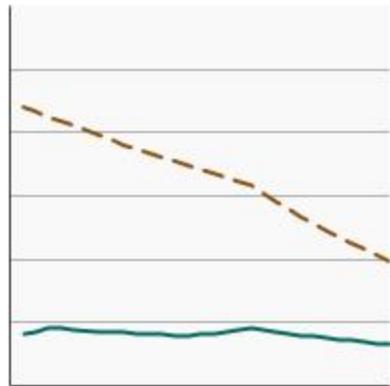
Percentage of adults aged 18 years and older who were current cigarette users by smoking frequency, 1991-2020

[Overview Graph](#)

[\*\*Detailed Trend  
Graphs\*\*](#)

**Most Recent Estimates (2020)**

Percent of adults	95% Confidence Interval
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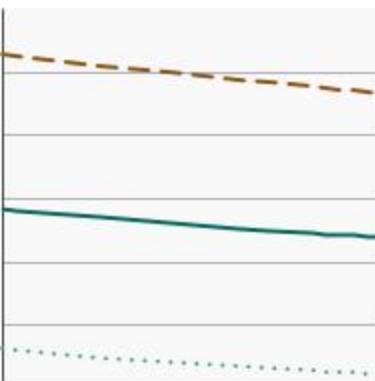
<u>Nondaily Smoker</u>	3.1	2.9 - 3.4
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<u>Daily Smoker</u>	9.5	9.0 - 10.0
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## Smokeless Tobacco

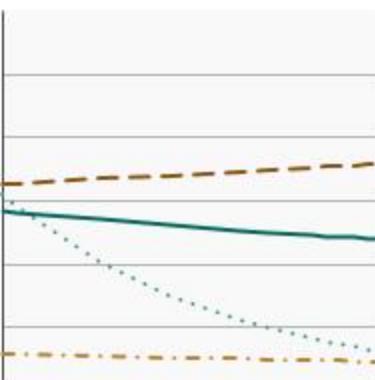
### By Sex

Percentage of adults aged 18 years and older who were current smokeless tobacco users by sex, 1993-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<a href="#">Both Sexes</a>	2.4	2.1 - 2.7
	<a href="#">Male</a>	4.6	4.1 - 5.1
	<a href="#">Female</a>	0.3	0.2 - 0.5

### By Race/Ethnicity

Percentage of adults aged 18 years and older who were current smokeless tobacco users by race/ethnicity, 1993-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<a href="#">All Races</a>	2.4	2.1 - 2.7
	<a href="#">Non-Hispanic White</a>	3.4	3.1 - 3.9
	<a href="#">Non-Hispanic Black</a>	0.8	0.4 - 1.6
	<a href="#">Hispanic</a>	0.4	0.2 - 0.7

## By Age

Percentage of adults aged 18 years and older who were current smokeless tobacco users by age, 1993-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Ages 18-24</u>	2.3	1.6 - 3.3
	<u>Ages 25+</u>	2.4	2.1 - 2.7

## By Poverty Income Level

Percentage of adults aged 18 years and older who were current smokeless tobacco users by poverty income level, 2000-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of federal poverty level</u>	2.0	1.5 - 2.6
	<u>≥200% of federal poverty level</u>	2.6	2.3 - 2.9

## By Education Level

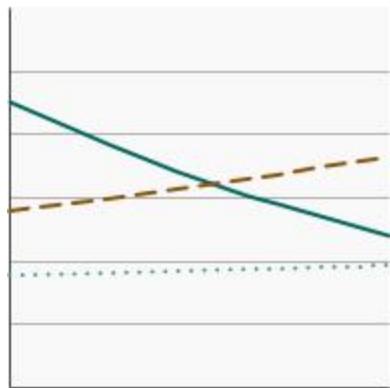
Percentage of adults aged 25 years and older who were current smokeless tobacco users by highest level of education obtained, 1993-2020

Overview Graph

**Detailed Trend  
Graphs**

**Most Recent Estimates (2020)**

**Percent of  
adults**      **95% Confidence  
Interval**



Less than High  
School

2.5

1.7 - 3.6

High School

3.5

2.9 - 4.3

Greater than High  
School

1.9

1.6 - 2.2

## Cigars

### By Sex

Percentage of adults aged 18 years and older who were current cigar users by sex, 1998-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<a href="#">Both Sexes</a>	3.7	3.4 - 4.0
	<a href="#">Male</a>	6.5	6.0 - 7.2
	<a href="#">Female</a>	0.9	0.7 - 1.2

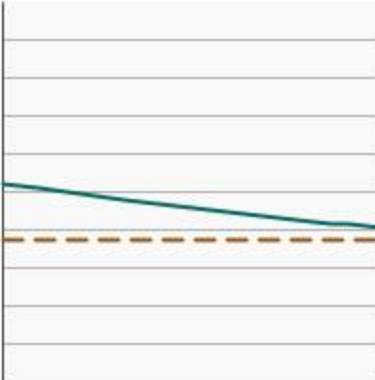
### By Race/Ethnicity

Percentage of adults aged 18 years and older who were current cigar users by race/ethnicity, 1998-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<a href="#">All Races</a>	3.7	3.4 - 4.0
	<a href="#">Non-Hispanic White</a>	4.2	3.8 - 4.7
	<a href="#">Non-Hispanic Black</a>	4.6	3.8 - 5.6
	<a href="#">Hispanic</a>	2.2	1.7 - 2.7

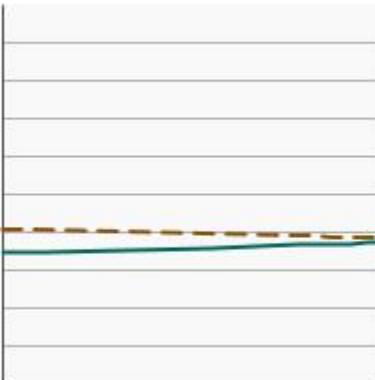
## By Age

Percentage of adults aged 18 years and older who were current cigar users by age, 1998-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Ages 18-24</u>	4.0	3.1 - 5.2
	<u>Ages 25+</u>	3.6	3.3 - 3.9

## By Poverty Income Level

Percentage of adults aged 18 years and older who were current cigar users by poverty income level, 1998-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of federal poverty level</u>	3.1	2.7 - 3.7
	<u>&gt;=200% of federal poverty level</u>	3.9	3.5 - 4.3

## By Education Level

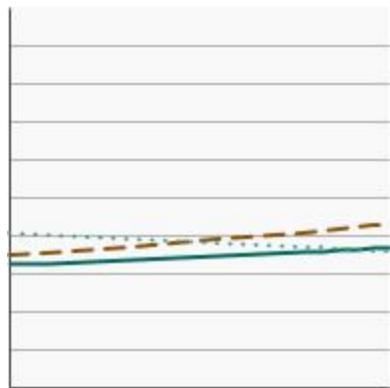
Percentage of adults aged 25 years and older who were current cigar users by highest level of education obtained, 1998-2020

Overview Graph

**Detailed Trend  
Graphs**

**Most Recent Estimates (2020)**

**Percent of  
adults**      **95% Confidence  
Interval**



Less than High  
School

4.0

2.7 - 5.7

High School

3.6

3.0 - 4.2

Greater than High  
School

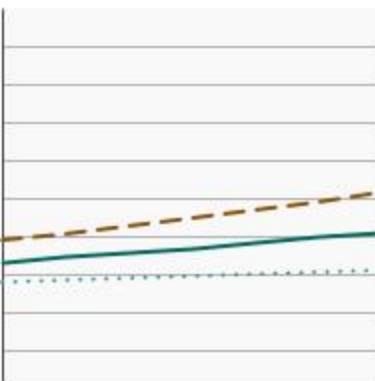
3.6

3.3 - 4.0

## E-Cigarettes

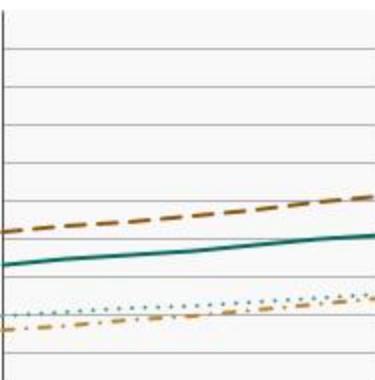
### By Sex

Percentage of adults aged 18 years and older who were current e-cigarette users by sex, 2014-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	4.0	3.7 - 4.3
	<u>Male</u>	4.9	4.5 - 5.5
	<u>Female</u>	3.0	2.6 - 3.5

### By Race/Ethnicity

Percentage of adults aged 18 years and older who were current e-cigarette users by race/ethnicity, 2014-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	4.0	3.7 - 4.3
	<u>Non-Hispanic White</u>	5.0	4.5 - 5.5
	<u>Non-Hispanic Black</u>	1.6	1.1 - 2.3
	<u>Hispanic</u>	2.4	1.9 - 3.0

## By Age

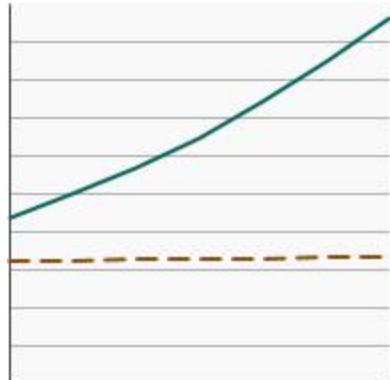
Percentage of adults aged 18 years and older who were current e-cigarette users by age, 2014-2020

[Overview Graph](#)

**Detailed Trend  
Graphs**

**Most Recent Estimates (2020)**

Percent of adults	95% Confidence Interval
-------------------	-------------------------



Ages 18-24

9.3

7.7 - 11.2

Ages 25+

3.2

2.9 - 3.5

## By Sex and Age

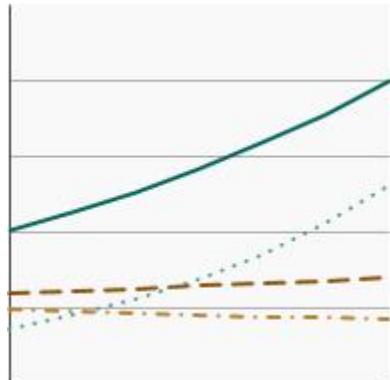
Percentage of adults aged 18 years and older who were current e-cigarette users by sex and age, 2014-2020

[Overview Graph](#)

**Detailed Trend  
Graphs**

**Most Recent Estimates (2020)**

Percent of adults	95% Confidence Interval
-------------------	-------------------------



Males, Ages 18-24 12.1

9.6 - 15.1

Males, Ages 25+ 3.9

3.5 - 4.3

Females, Ages 18-24 6.5

4.7 - 9.0

Females, Ages 25+ 2.5

2.2 - 2.9

## Cancers Related to Tobacco Use

Statistical summaries from NCI's SEER Cancer Stat Fact Sheets:

- [Acute Myeloid Leukemia \(AML\)](#)
- [Anus](#)
- [Bladder](#)
- [Cervix Uteri](#)
- [Colon and Rectum](#)
- [Esophagus](#)
- [Kidney and Renal Pelvis](#)
- [Larynx](#)
- [Liver and Intrahepatic Bile Duct](#)
- [Lung and Bronchus](#)
- [Oral Cavity and Pharynx](#)
- [Pancreas](#)
- [Stomach](#)

## Additional Information on Adult Tobacco Use

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## **Smoking Cessation**

Tobacco use can lead to nicotine dependence and serious health problems. Quitting smoking greatly reduces the risk of developing smoking-related diseases, including cancer.

- [Quitting Smoking](#)
- [Evidence-based Cessation Aids](#)
- [Clinicians' Advice to Quit Smoking](#)

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Quitting Smoking

**Data Up to Date as of:**

April 2022

### Background

Quitting smoking has major and immediate health benefits for men and women of all ages. Quitting smoking dramatically reduces the risk of lung and other cancers caused by smoking, coronary heart disease, stroke, and chronic obstructive pulmonary disease (COPD). For example, 10-15 years after quitting, the risk of lung cancer decreases to about one-half that of a person who continues to smoke; with continued abstinence from smoking, the risk of lung cancer decreases even further.

Although quitting smoking is beneficial at any age, the earlier in life a person quits, the more likely it is that he or she will avoid the devastating health effects of continued tobacco use. Few smokers can quit successfully on their first attempt; most people will require many attempts before they are able to permanently quit. This emphasizes the need for smokers to begin trying to quit as early in life as possible.

A number of strategies can increase the likelihood of successful smoking cessation, including comprehensive, barrier-free, and widely promoted access to insurance coverage for smoking cessation treatment, and the use of FDA approved smoking cessation medications together with behavioral counseling to support quit attempts.

Behavioral counseling and support can be delivered using individual or group counseling, or by quitlines, web and internet, or text-messaging platforms. Cessation rates can also be improved by adopting population-level policies, such as tobacco product price increases or comprehensive smokefree policies, implementing anti-tobacco mass media campaigns, requiring pictorial health warnings on tobacco products, and maintaining comprehensive statewide tobacco control programs.

### Measure

**Attempt to quit:** The percentage of adult smokers aged 18 years and older who attempted smoking cessation within the past 12 months. The attempt-to-quit measure includes both current smokers who smoke every day or some days and who, at the time of the survey, had quit smoking for at least 1 day during the past 12 months, as well as recent former smokers, who quit smoking less than or equal to 1 year ago.

**Successful quitting:** The percentage of recent smoking cessation success for adult smokers (aged 18 years and older) includes recent former smokers who quit 6-12 months prior to the survey interview among those who met any of the three conditions:

1. Former smokers who had quit smoking 6-12 months prior to the survey interview.
2. Former smokers who had quit smoking less than 6 months prior to the survey interview.
3. Current smokers at the time of the survey interview who initiated smoking at least 2 years prior to the survey interview.

### Healthy People 2030 Target

- Increase to 65.7 percent the proportion of adult current smokers (aged 18 years and older) who stopped smoking for a day or longer because they were trying to quit.
- Increase to 10.2 percent the proportion of adult smokers (aged 18 years and older) who successfully quit smoking.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

### Data Source

Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey 1998-2020.

In 2019 the NHIS questionnaire was redesigned to increase relevance, enhance data quality, and minimize respondent burden. In addition, the COVID-19 pandemic created challenges conducting in-person interviews for

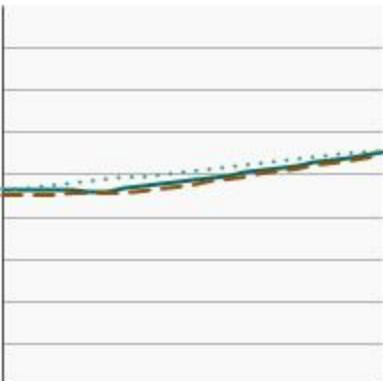
the 2020 NHIS, requiring changes to field procedures to conduct most surveys by telephone, which impacted survey response rates. For details related to the potential impacts of these issues, please refer to [Potential Impact of NHIS Redesign and COVID-19 on the Cancer Trends Progress Report](#).

## Trends and Most Recent Estimates

### Attempted to Quit Smoking

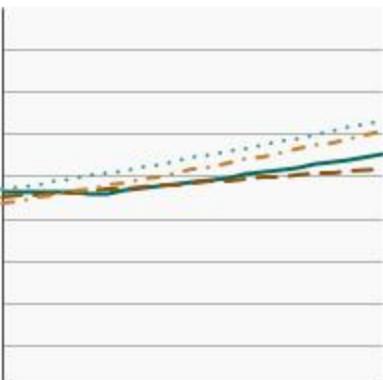
#### By Sex

Percentage of smokers aged 18 years and older who attempted to stop smoking for one day or longer in the past year by sex, 1998-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adult smokers</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	53.9	51.6 - 56.1
	<u>Male</u>	53.5	50.6 - 56.5
	<u>Female</u>	54.1	50.8 - 57.4

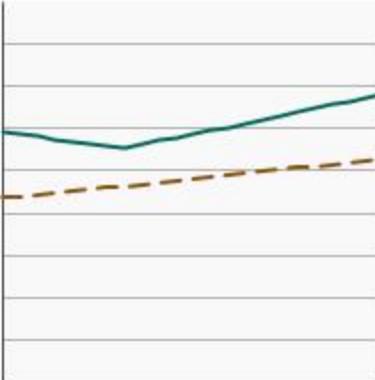
#### By Race/Ethnicity

Percentage of smokers aged 18 years and older who attempted to stop smoking for one day or longer in the past year by race/ethnicity, 1998-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adult smokers</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	53.9	51.6 - 56.1
	<u>Non-Hispanic White</u>	51.1	48.4 - 53.8
	<u>Non-Hispanic Black</u>	60.4	52.8 - 67.5
	<u>Hispanic</u>	55.4	48.6 - 61.9

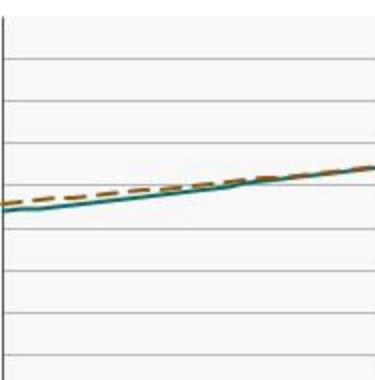
## By Age

Percentage of smokers aged 18 years and older who attempted to stop smoking for one day or longer in the past year by age, 1998-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adult smokers</b>	<b>95% Confidence Interval</b>
	<u>Ages 18-24</u>	63.4	50.4 - 74.7
	<u>Ages 25 and older</u>	52.2	50.1 - 54.3

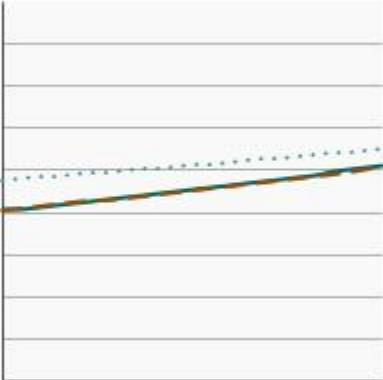
## By Poverty Income Level

Percentage of smokers aged 18 years and older who attempted to stop smoking for one day or longer in the past year by poverty income level, 1998-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adult smokers</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of federal poverty level</u>	55.0	51.4 - 58.6
	<u>≥200% of federal poverty level</u>	53.0	50.0 - 55.9

## By Education Level

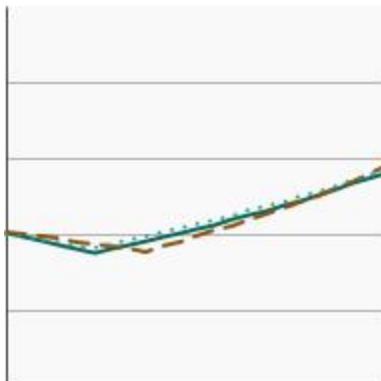
Percentage of smokers aged 25 years and older who attempted to stop smoking for one day or longer in the past year by highest level of education obtained, 1998-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adult smokers</b>	<b>95% Confidence Interval</b>
	<u>Less than High School</u>	51.8	46.0 - 57.5
	<u>High School</u>	51.7	48.2 - 55.2
	<u>Greater than High School</u>	52.6	49.7 - 55.4

## Successfully Quit Smoking

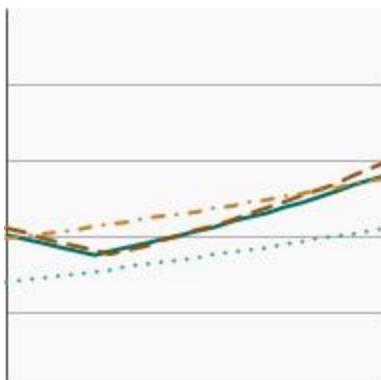
### By Sex

Percentage of recent smoking cessation success among smokers aged 18 years and older by sex, 1998-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adult smokers</b>	<b>95% Confidence Interval</b>
	<a href="#">Both Sexes</a>	8.5	7.3 - 9.8
	<a href="#">Male</a>	8.1	6.7 - 9.9
	<a href="#">Female</a>	8.8	6.9 - 11.2

### By Race/Ethnicity

Percentage of recent smoking cessation success among smokers aged 18 years and older by race/ethnicity, 1998-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adult smokers</b>	<b>95% Confidence Interval</b>
	<a href="#">All Races</a>	8.5	7.3 - 9.8
	<a href="#">Non-Hispanic White</a>	9.6	8.1 - 11.4
	<a href="#">Non-Hispanic Black</a>	7.8	4.8 - 12.5
	<a href="#">Hispanic</a>	5.2	3.2 - 8.3

## By Age

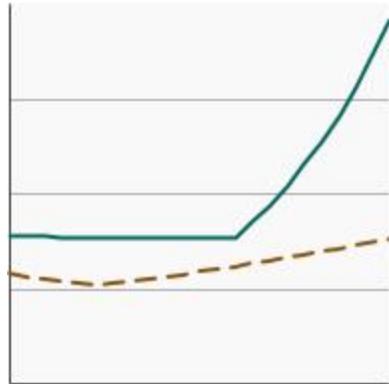
Percentage of recent smoking cessation success among smokers aged 18 years and older by age, 1998-2020

[Overview Graph](#)

[Detailed Trend  
Graphs](#)

**Most Recent Estimates (2020)**

Percent of adult smokers	95% Confidence Interval
--------------------------	-------------------------



Ages 18-24

15.8

8.6 - 27.3

Ages 25 and older

7.6

6.6 - 8.7

## By Poverty Income Level

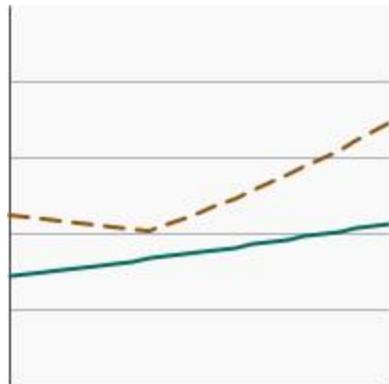
Percentage of recent smoking cessation success among smokers aged 18 years and older by poverty income level, 1998-2020

[Overview Graph](#)

[Detailed Trend  
Graphs](#)

**Most Recent Estimates (2020)**

Percent of adult smokers	95% Confidence Interval
--------------------------	-------------------------



<200% of federal  
poverty level

6.2

4.6 - 8.4

>=200% of federal  
poverty level

10.0

8.4 - 11.9

## By Education Level

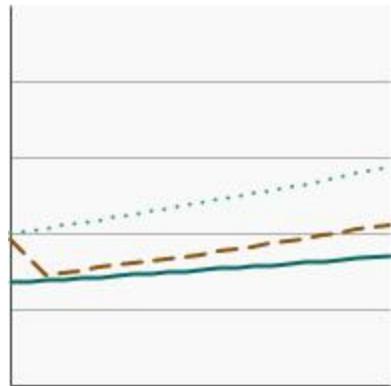
Percentage of recent smoking cessation success among smokers aged 25 years and older by highest level of education obtained, 1998-2020

Overview Graph

**Detailed Trend  
Graphs**

**Most Recent Estimates (2020)**

**Percent of adult  
smokers**      **95% Confidence  
Interval**



Less than High  
School

5.8

3.7 - 9.1

High School

6.3

4.8 - 8.1

Greater than  
High School

9.4

7.9 - 11.0

## **Additional Information on Quitting Smoking**

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Evidence-based Cessation Aids

### Data Up to Date as of:

April 2022

### Background

Quitting smoking has major and immediate health benefits for men and women of all ages. It dramatically reduces the risk of lung and other cancers caused by smoking, as well as risks of coronary heart disease, stroke, and chronic obstructive pulmonary disease.

Cessation success is increased by the use of evidence-based treatment, including the use of behavioral counseling and medications. The combination of behavioral counseling and medication is especially effective. FDA-approved cessation medications include various forms of nicotine replacement therapy (NRT), and two medications that do not contain nicotine: bupropion (also known as Zyban), and varenicline (also known as Chantix). Behavioral support can be delivered in person, in group settings, over the phone (quitlines and telehealth sessions), and through mHealth modalities. However, few smokers use evidence-based cessation treatments when attempting to quit, which decreases their likelihood of success.

E-cigarettes (also known as vapes or Electronic Nicotine Delivery Systems) are battery-powered devices that convert a liquid ("e-liquid") into an aerosol. E-liquids typically contain nicotine, flavorings, vegetable glycerin, propylene glycol and other chemicals. In addition to nicotine, e-cigarette aerosol may contain heavy metals, volatile organic compounds, and fine and ultrafine particles that can be inhaled deeply into the lungs by both users and bystanders. Many smokers report using e-cigarettes in an effort to quit smoking. However, the Surgeon General has concluded that there is presently inadequate evidence to conclude that e-cigarettes, in general, increase smoking cessation.

### Measure

**Denominator:** The three measures presented here ("Any Cessation Aid," "Any Cessation Medication," and "Any Cessation Counseling") use a common denominator for any given data time point consisting of current smokers at time of interview who report a quit attempt during the past 12 months and recent former smokers who quit smoking within the past 12 months.

**Numerator: Any Cessation Medication Use:** current smokers who made a quit attempt during the past 12 months and recent former smokers who quit smoking during the past 12 months who reported using ANY NRT(s) (patch, gum, lozenge, nasal spray or oral inhaler) and/or reported using ANY of the following medications: Bupropion (Zyban®) and/or Varenicline (Chantix®).

**Numerator: Any Cessation Counseling Use:** current smokers who made a quit attempt during the past 12 months and recent former smokers who quit smoking during the past 12 months who reported using ANY of the following type(s) of behavioral counseling: from a quit-line; one-on-one with a clinician; at a clinic, class or support group; or from the internet (i.e., web-based), a smartphone app, or a texting program. (Note: The 2020 Surgeon General's Report on Smoking Cessation concluded that evidence is inadequate to infer that smartphone apps for smoking cessation are independently effective in increasing smoking cessation.)

**Numerator: Any Cessation Aid Use:** current smokers who made a quit attempt during the past 12 months and recent former smokers who quit smoking during the past 12 months who reported using one or more of the cessation medications and/or cessation counseling types included in the above two measures.

### Healthy People 2030 Target

- Healthy People 2030 includes a goal to increase the use of smoking cessation counseling and medication in adults who smoke (TU-13) which relies on National Health Interview Survey (NHIS) data. In 2015, 32.1 percent of current adult smokers aged 18 years and over who tried to quit during the past year (and former adult smokers who quit during the past 2 years) reported using cessation counseling and/or medication as part of a quit attempt. The 2030 target for this goal is 43.8%.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

## **Data Source**

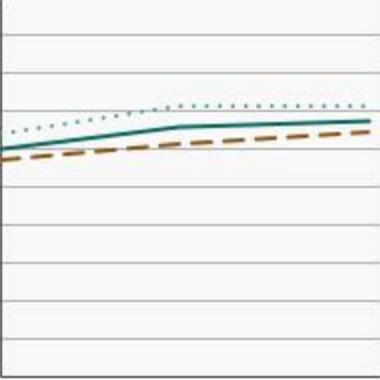
The Tobacco Use Supplement to the Current Population Survey Harmonized Data, National Cancer Institute, 1992–2019.

US Department of Commerce, Census Bureau (2005, 2013, 2020). Tobacco Use Supplement to the Current Population Survey- National Cancer Institute sponsored in 2003 and 2010-11 and National Cancer Institute and Food and Drug Administration co-sponsored in 2018-19.

## Trends and Most Recent Estimates

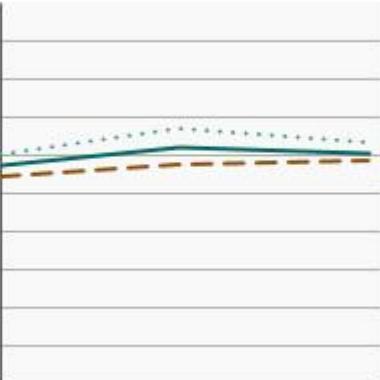
### Any Cessation Aid

Percentage of smokers aged 18 years and older who used a smoking cessation aid (counseling and/or medication) in an attempt to quit smoking in the past year, 2003-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2018 to 2019)</b>	
		<b>Percent</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	33.7	32.5 - 34.9
	<u>Male</u>	32.0	30.4 - 33.7
	<u>Female</u>	35.4	33.6 - 37.2

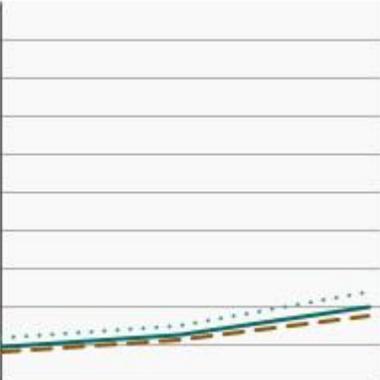
### Cessation Medication

Percentage of smokers aged 18 years and older who used a smoking cessation medication in an attempt to quit smoking in the past year, 2003-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2018 to 2019)</b>	
		<b>Percent</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	30.4	29.2 - 31.6
	<u>Male</u>	29.2	27.6 - 30.8
	<u>Female</u>	31.5	29.9 - 33.2

## Cessation Counseling

Percentage of smokers aged 18 years and older who used smoking cessation counseling in an attempt to quit smoking in the past year, 2003-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2018 to 2019)</b>	
		<b>Percent</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	10.1	9.4 - 10.9
	<u>Male</u>	8.6	7.6 - 9.7
	<u>Female</u>	11.7	10.6 - 12.9

## Additional Information on Evidence-based Cessation Aids

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Clinicians' Advice to Quit Smoking

### Data Up to Date as of:

April 2022

### Background

Clinicians' advice to quit smoking can, by itself, increase quit attempts and quit success and can have even greater impact if coupled with cessation counseling and/or medication. In addition, even brief clinical interventions have been shown to be cost effective in increasing smokers' motivation to quit.

Clinical guidelines recommend clinicians utilize the "5 A's" (ask, advise, assess, assist, and arrange) when screening for tobacco use and providing cessation interventions. For patients ready to quit, clinicians can provide cessation assistance and support, including medication, counseling, referral to treatment extenders, and follow-up. For patients who are not yet ready to quit, clinicians can instead provide a brief intervention designed to promote the motivation to quit. A wide variety of clinicians, including dentists, physicians, and other health professionals such as pharmacists, can effectively implement brief strategies to increase future quit attempts. Many individual pharmacies and one national pharmacy chain have decided not to sell tobacco products, recognizing that the sale of tobacco products is not compatible with their important role in health care.

### Measure

The percentage of adult smokers (aged 18 years and older) who have seen a physician in the past 12 months and report that the physician advised them to quit smoking.

### Healthy People 2030 Target

- Increase to 66.6 percent the proportion of adult smokers who receive advice to quit from a health professional.

This Healthy People 2030 (HP2030) goal is focused on all health professionals, including a medical doctor, dentist, or other health professional, and the chosen data source for this goal is the National Health Interview Survey. In contrast, the data presented in the Cancer Trends Progress Report are based on reports from patients regarding whether they received smoking cessation advice from their physicians, and data presented are drawn from the Tobacco Use Supplement to the Current Population Survey. Therefore, the data presented in this report cannot be directly compared to the HP2030 objective.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

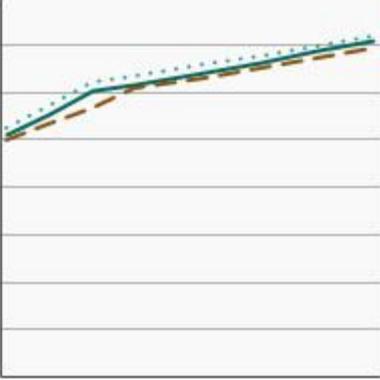
### Data Source

The Tobacco Use Supplement to the Current Population Survey Harmonized Data, National Cancer Institute, 1992–2019.

## Trends and Most Recent Estimates

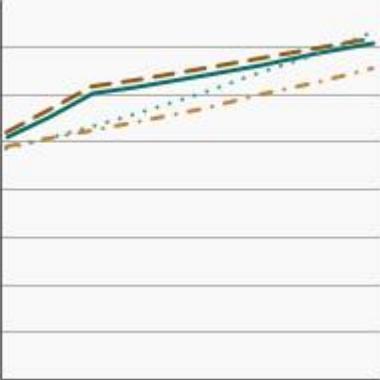
### By Sex

Percentage of smokers aged 18 years and older who have seen a physician in the past year and were advised to quit smoking by sex, 1992-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2018 to 2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	69.5	68.3 - 70.8
	<u>Male</u>	67.9	66.1 - 69.6
	<u>Female</u>	71.2	69.4 - 72.8

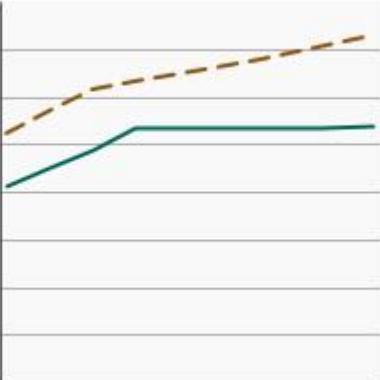
### By Race/Ethnicity

Percentage of smokers aged 18 years and older who have seen a physician in the past year and were advised to quit smoking by race/ethnicity, 1992-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2018 to 2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	69.5	68.3 - 70.8
	<u>Non-Hispanic White</u>	71.0	69.4 - 72.5
	<u>Non-Hispanic Black</u>	67.3	63.5 - 70.9
	<u>Hispanic</u>	60.9	56.5 - 65.2

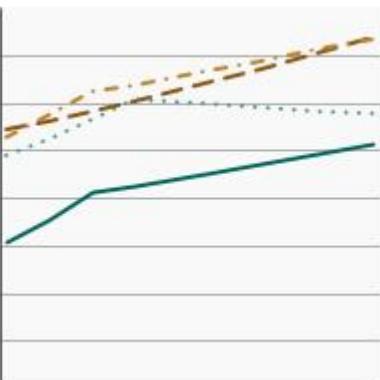
## By Age

Percentage of smokers aged 18 years and older who have seen a physician in the past year and were advised to quit smoking by age, 1992-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2018 to 2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Ages 18-24</u>	55.9	48.8 - 62.8
	<u>Ages 25+</u>	71.5	70.4 - 72.7

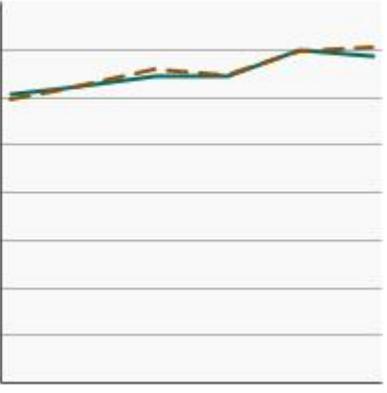
## By Sex and Age

Percentage of smokers aged 18 years and older who have seen a physician in the past year and were advised to quit smoking by sex and age, 1992-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2018 to 2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Males, ages 18-24</u>	54.0	43.4 - 64.3
	<u>Males, ages 25+</u>	70.2	68.5 - 71.8
	<u>Females, ages 18-24</u>	58.0	48.1 - 67.4
	<u>Females, ages 25+</u>	72.9	71.3 - 74.4

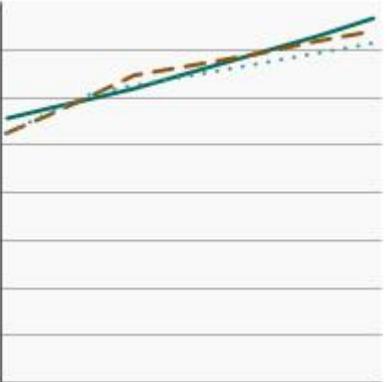
## By Poverty Income Level

Percentage of smokers aged 18 years and older who have seen a physician in the past year and were advised to quit smoking by poverty income level, 1998-2019

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	Most Recent Estimates (2018 to 2019)	
		Percent of adults	95% Confidence Interval
	<u>&lt; 200% of the federal poverty level</u>	68.5	66.6 - 70.3
	<u>&gt;= 200% of the federal poverty level</u>	70.5	68.4 - 72.4

## By Education Level

Percentage of smokers aged 25 years and older who have seen a physician in the past year and were advised to quit smoking by highest level of education obtained, 1992-2019

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	Most Recent Estimates (2018 to 2019)	
		Percent of adults	95% Confidence Interval
	<u>Less than High School</u>	71.6	68.3 - 74.7
	<u>High School</u>	72.1	70.3 - 73.8
	<u>Greater than High School</u>	70.9	69.2 - 72.5

## Additional Information on Clinicians' Advice to Quit Smoking

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures

### **Diet, Physical Activity, Weight, and Sleep**

Considerable evidence indicates that maintaining a healthy lifestyle has the potential to reduce cancer-related morbidity. Up to one-third of cancer cases in the United States are related to poor nutrition, physical inactivity, and/or excess body weight or obesity, and sleep, and thus could be prevented.

- [Fruit and Vegetable Consumption](#)
- [Red Meat and Processed Meat Consumption](#)
- [Fat Consumption](#)
- [Alcohol Consumption](#)
- [Physical Activity](#)
- [Weight](#)
- [Sleep](#)

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Fruit and Vegetable Consumption

**Data Up to Date as of:**

April 2022

### Background

People whose diets are rich in plant foods such as fruits and vegetables have a lower risk of getting cancers of the mouth, pharynx, larynx, esophagus, stomach, and lung, and some evidence suggests that maintaining a diet rich in plant foods also lowers the risk of cancers of the colon, pancreas, and prostate. This diet also reduces the risk of diabetes, heart disease, and hypertension, helps to reduce calorie intake, and may help to control weight.

To help prevent the aforementioned cancers and other chronic diseases, experts recommend the daily consumption of 2 to 6.5 cups of fruits and vegetables, depending on one's energy needs. This includes 1 to 2.5 cups of fruits and 1 to 4 cups of vegetables, with special emphasis on dark green and orange vegetables and legumes. There is no evidence that the popular white potato protects against cancer.

### Measure

Average daily cup equivalents per 1,000 calories of fruits and vegetables for people aged 2 years and older. This measure includes fruits and vegetables from all sources.

### Healthy People 2030 Target

- Increase the consumption of fruits by persons aged 2 years and over to 0.56 cup equivalents of fruit per 1,000 calories.
- Increase the consumption of total vegetables by persons aged 2 years and over to 0.84 cup equivalents of total vegetables per 1,000 calories.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

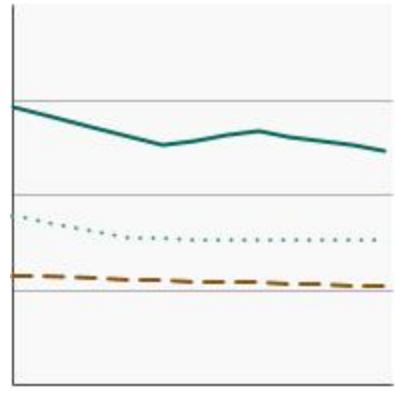
### Data Source

U.S. Department of Agriculture, Agricultural Research Service, Beltsville Human Nutrition Research Center, Food Surveys Research Group (Beltsville, MD). Continuing Survey of Food Intakes by Individuals 1994-96, 1998. Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey, 1994–2018.

## Trends and Most Recent Estimates

### Overall Comparison

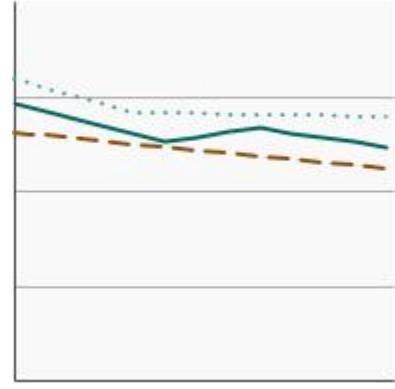
Average cups of fruit and vegetables consumed per 1,000 calories by individuals aged 2 years and older, 1994-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Average cups per 1,000 calories</b>	<b>95% Confidence Interval</b>
	<u>Fruit and Vegetables Combined</u>	1.2	1.2 - 1.3
	<u>Fruit</u>	0.5	0.5 - 0.5
	<u>Vegetables</u>	0.7	0.7 - 0.8

### Fruit and Vegetables Combined

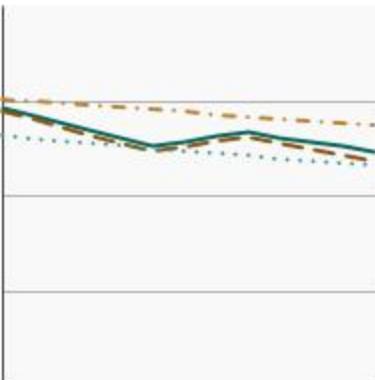
#### By Sex

Average cups of fruit and vegetables consumed per 1,000 calories by individuals aged 2 years and older by sex, 1994-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Average cups per 1,000 calories</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	1.2	1.2 - 1.3
	<u>Male</u>	1.1	1.0 - 1.2
	<u>Female</u>	1.4	1.3 - 1.4

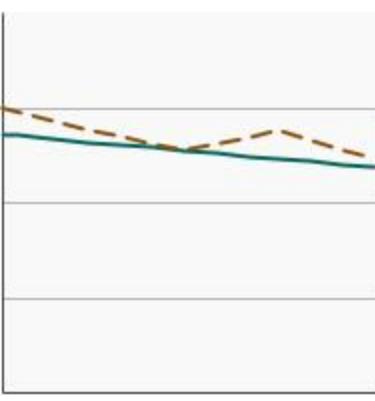
## By Race/Ethnicity

Average cups of fruit and vegetables consumed per 1,000 calories by individuals aged 2 years and older by race/ethnicity, 1994-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Average cups per 1,000 calories</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	1.2	1.2 - 1.3
	<u>Non-Hispanic White</u>	1.2	1.1 - 1.2
	<u>Non-Hispanic Black</u>	1.2	1.1 - 1.3
	<u>Hispanic</u>	1.5	1.3 - 1.6

## By Poverty Income Level

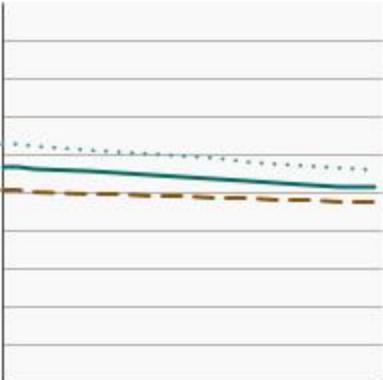
Average cups of fruit and vegetables consumed per 1,000 calories by individuals aged 2 years and older by poverty income level, 1994-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Average cups per 1,000 calories</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of Federal Poverty Level</u>	1.2	1.1 - 1.3
	<u>≥200% of Federal Poverty Level</u>	1.3	1.2 - 1.3

## Fruit

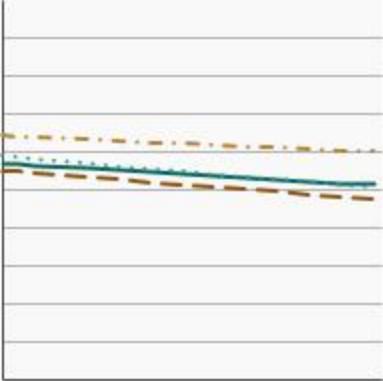
### By Sex

Average cups of fruit consumed per 1,000 calories by individuals aged 2 years and older by sex, 1994-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Average cups per 1,000 calories</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	0.5	0.5 - 0.5
	<u>Male</u>	0.4	0.4 - 0.5
	<u>Female</u>	0.5	0.5 - 0.6

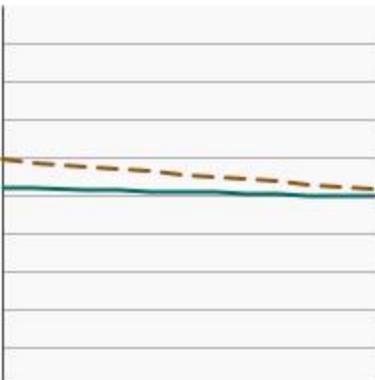
### By Race/Ethnicity

Average cups of fruit consumed per 1,000 calories by individuals aged 2 years and older by race/ethnicity, 1994-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Average cups per 1,000 calories</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	0.5	0.5 - 0.5
	<u>Non-Hispanic White</u>	0.4	0.4 - 0.5
	<u>Non-Hispanic Black</u>	0.5	0.4 - 0.6
	<u>Hispanic</u>	0.6	0.6 - 0.7

## By Poverty Income Level

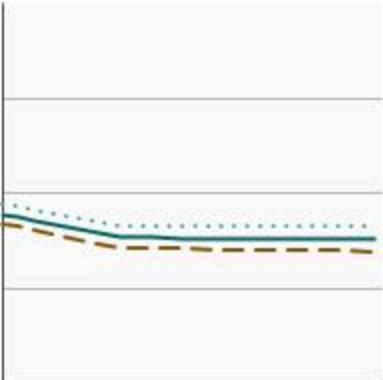
Average cups of fruit consumed per 1,000 calories by individuals aged 2 years and older by poverty income level, 1994-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Average cups per 1,000 calories</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of Federal Poverty Level</u>	0.5	0.4 - 0.5
	<u>&gt;=200% of Federal Poverty Level</u>	0.5	0.5 - 0.5

## Vegetables

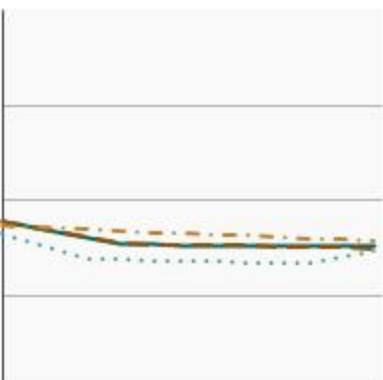
### By Sex

Average cups of vegetables consumed per 1,000 calories by individuals aged 2 years and older by sex, 1994-2018

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Average cups per 1,000 calories</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	0.7	0.7 - 0.8
	<u>Male</u>	0.7	0.6 - 0.7
	<u>Female</u>	0.8	0.8 - 0.9

### By Race/Ethnicity

Average cups of vegetables consumed per 1,000 calories by individuals aged 2 years and older by race/ethnicity, 1994-2018

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Average cups per 1,000 calories</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	0.7	0.7 - 0.8
	<u>Non-Hispanic White</u>	0.7	0.7 - 0.8
	<u>Non-Hispanic Black</u>	0.7	0.6 - 0.8
	<u>Hispanic</u>	0.8	0.8 - 0.9

## By Poverty Income Level

Average cups of vegetables consumed per 1,000 calories by individuals aged 2 years and older by poverty income level, 1994-2018

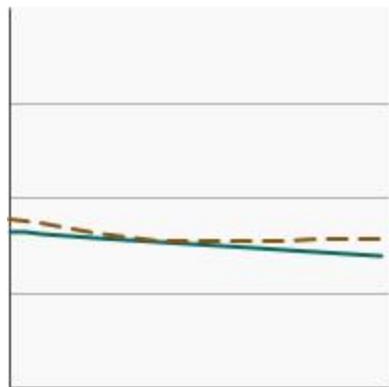
Overview Graph

**Detailed Trend  
Graphs**

**Most Recent Estimates (2017 to  
2018)**

**Average cups per  
1,000 calories**

**95%  
Confidence  
Interval**



<200% of Federal  
Poverty Level 0.7

0.7 - 0.8

>=200% of  
Federal Poverty  
Level 0.8

0.7 - 0.8

## **Cancers Related to Fruit and Vegetable Consumption**

Statistical summaries from NCI's SEER Cancer Stat Fact Sheets:

- [Colon and Rectum](#)
- [Esophagus](#)
- [Larynx](#)
- [Lung and Bronchus](#)
- [Oral Cavity and Pharynx](#)
- [Pancreas](#)
- [Prostate](#)
- [Stomach](#)

## **Additional Information on Fruit and Vegetable Consumption**

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures **Red Meat and Processed Meat Consumption**

### **Data Up to Date as of:**

April 2022

### **Background**

Red meat is associated with an increased risk of colon and rectum cancer, and evidence also suggests it is associated with some other cancers, such as prostate and pancreatic cancer. Examples of red meat include beef, pork, and lamb.

Processed meats are red meat and poultry products that have been preserved by smoking, curing, salting, and/or the addition of chemical preservatives. Examples of processed meat include hot dogs, sausages, bacon, and luncheon meats. Processed meat is associated with an increased risk of colorectal cancer, and evidence also suggests it is associated with stomach cancer.

However, more research is needed to understand how red meat and processed meats influence cancer risk. The increased risk may be explained by the iron and fat content in red meat, and/or the salt and nitrates/nitrites in processed meats. Additionally, when meat is cooked at high temperatures, substances are formed that may cause cancer.

### **Measure**

Average daily ounce equivalents of total red meat (includes processed and unprocessed red meat) and processed red meat and poultry (includes processed red meat and processed poultry) per 1000 calories for people aged 2 years and older.

The [Standardized Method for Estimating Intakes of Processed Red Meat and Processed Poultry](#) used to estimate total red meat intake in the U.S. population was automated beginning with NHANES 2007-2008. Organ meats were excluded when the method was automated, based on the definition of red meat in the Dietary Guidelines for Americans. Organ meat intake in the U.S. population is low and therefore did not meaningfully influence total red meat intake estimates when excluded.

### **Healthy People 2030 Target**

- There is no Healthy People target for red meat and processed meat consumption.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

### **Data Source**

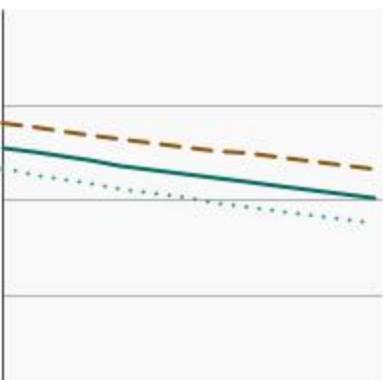
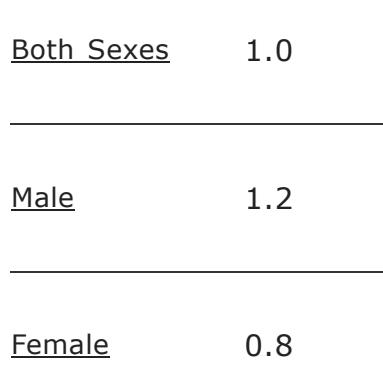
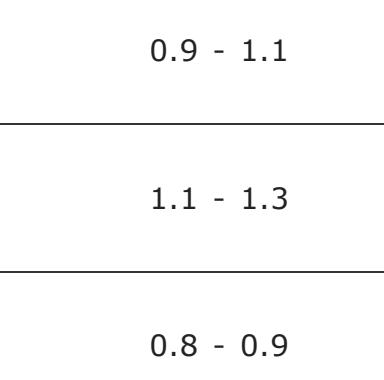
U.S. Department of Agriculture, Agricultural Research Service, Beltsville Human Nutrition Research Center, Food Surveys Research Group (Beltsville, MD). Continuing Survey of Food Intakes by Individuals 1994-96, 1998 Centers for Disease Control and Prevention, National Center for Health Statistics, [National Health and Nutrition Examination Survey, 1999–2018](#).

## Trends and Most Recent Estimates

### Total Red Meat

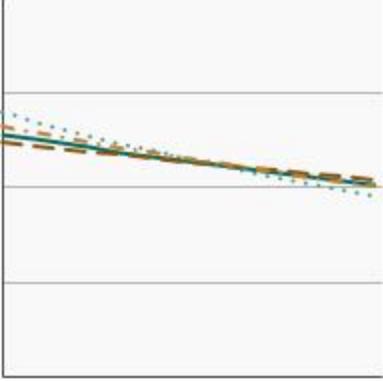
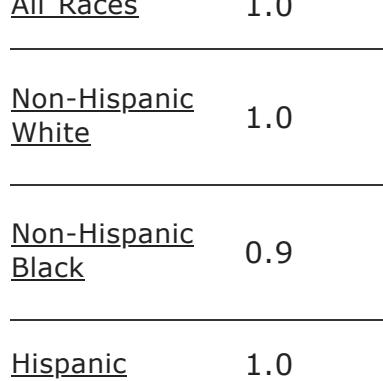
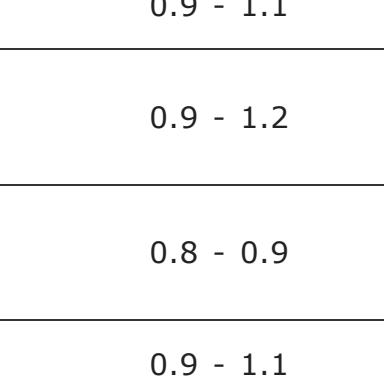
#### By Sex

Average ounces of total red meat consumed per 1,000 calories by individuals aged 2 years and older by sex, 1994-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Average ounces per 1,000 calories</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	1.0	0.9 - 1.1
	<u>Male</u>	1.2	1.1 - 1.3
	<u>Female</u>	0.8	0.8 - 0.9

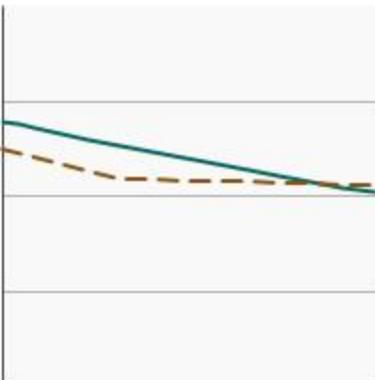
#### By Race/Ethnicity

Average ounces of total red meat consumed per 1,000 calories by individuals aged 2 years and older by race/ethnicity, 1994-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Average ounces per 1,000 calories</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	1.0	0.9 - 1.1
	<u>Non-Hispanic White</u>	1.0	0.9 - 1.2
	<u>Non-Hispanic Black</u>	0.9	0.8 - 0.9
	<u>Hispanic</u>	1.0	0.9 - 1.1

## By Poverty Income Level

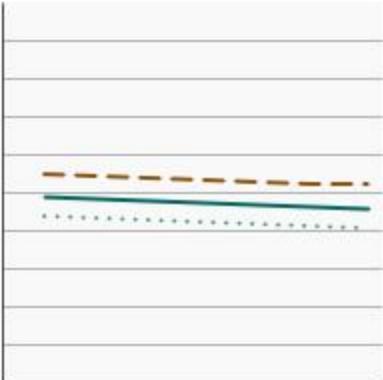
Average ounces of total red meat consumed per 1,000 calories by individuals aged 2 years and older by poverty income level, 1994-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<u>Most Recent Estimates (2017 to 2018)</u>	
		<u>Average ounces per 1,000 calories</u>	<u>95% Confidence Interval</u>
	<u>&lt;200% of Federal Poverty Level</u>	1.0	0.9 - 1.1
	<u>&gt;=200% of Federal Poverty Level</u>	1.0	0.9 - 1.1

## Processed Red Meat and Poultry

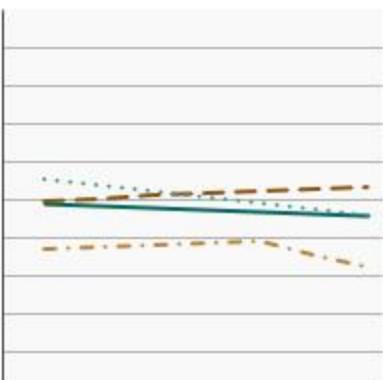
### By Sex

Average ounces of processed red meat and poultry consumed per 1,000 calories by individuals aged 2 years and older by sex, 2005-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Average ounces per 1,000 calories</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	0.4	0.4 - 0.5
	<u>Male</u>	0.5	0.5 - 0.6
	<u>Female</u>	0.4	0.3 - 0.4

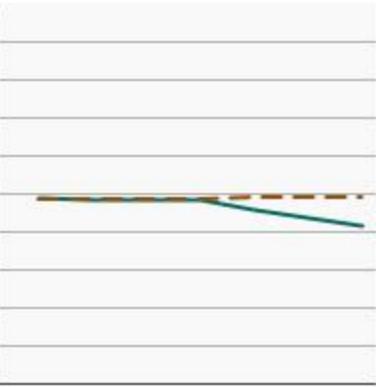
### By Race/Ethnicity

Average ounces of processed red meat and poultry consumed per 1,000 calories by individuals aged 2 years and older by race/ethnicity, 2005-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Average ounces per 1,000 calories</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	0.4	0.4 - 0.5
	<u>Non-Hispanic White</u>	0.5	0.4 - 0.6
	<u>Non-Hispanic Black</u>	0.5	0.4 - 0.6
	<u>Hispanic</u>	0.3	0.3 - 0.4

## By Poverty Income Level

Average ounces of processed red meat and poultry consumed per 1,000 calories by individuals aged 2 years and older by poverty income level, 2005-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<u>Most Recent Estimates (2017 to 2018)</u>	
		<u>Average ounces per 1,000 calories</u>	<u>95% Confidence Interval</u>
		<u>&lt;200% of Federal Poverty Level</u> 0.4	0.4 - 0.5
		<u>&gt;=200% of Federal Poverty Level</u> 0.5	0.4 - 0.5

## **Cancers Related to Red Meat and Processed Meat Consumption**

Statistical summaries from NCI's SEER Cancer Stat Fact Sheets:

- [Colon and Rectum](#)
- [Prostate](#)
- [Pancreatic](#)
- [Stomach](#)

## **Additional Information on Red Meat and Processed Meat Consumption**

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Fat Consumption

### Data Up to Date as of:

April 2022

### Background

Some studies suggest that high-fat diets or high intakes of different types of fat in the diet may be linked to several cancers, including colon, lung, and postmenopausal breast cancer, as well as heart disease and other chronic diseases.

More research is needed to better understand which types of fat should be avoided and how much of each type alters cancer risk. Although monounsaturated and polyunsaturated fatty acids have been studied for a number of years, their effects are still unclear. More recent research on the effects of trans fatty acids also has yet to reach definitive conclusions.

The 2015-2020 Dietary Guidelines for Americans, issued by the U.S. Department of Agriculture and the U.S. Department of Health and Human Services, recommend getting less than 10 percent of calories from saturated fatty acids and keeping trans fatty acid consumption as low as possible for general health and the prevention of chronic disease, including cancer and heart disease. The guidelines also recommend keeping total fat intake between 20 and 35 percent of calories for adults, with most fats coming from sources of polyunsaturated and monounsaturated fatty acids, such as fish, nuts, and vegetable oils.

### Measure

Intakes of total fat, and of the major fatty acids - saturated, monounsaturated, and polyunsaturated - as a percentage of total calories.

### Healthy People 2030 Target

- Reduce the consumption of saturated fat by persons aged 2 years and over to 8.4 percent of calories consumed.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

### Data Source

U.S. Department of Agriculture, Agricultural Research Service, Beltsville Human Nutrition Research Center, Food Surveys Research Group (Beltsville, MD). Continuing Survey of Food Intakes by Individuals 1989-1991, 1994-96, 1998

Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey, 1999-2018.

## Trends and Most Recent Estimates

### Fat Intake Comparison

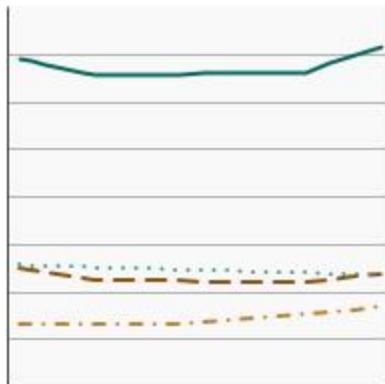
Fat intake as a percentage of total calories, 1989-2018

Overview Graph

**Detailed Trend  
Graphs**

**Most Recent Estimates (2017 to  
2018)**

**Percent of total  
calories**      **95% Confidence  
Interval**



Total      35.8

Saturated Fat      11.8

Monounsaturated  
Fat      12.1

Polyunsaturated  
Fat      8.4

### Total Fat Intake

#### By Sex

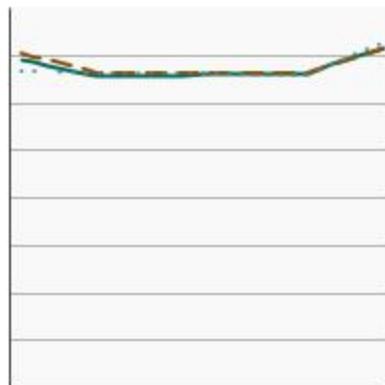
Total fat intake as a percentage of total calories by sex, 1989-2018

Overview Graph

**Detailed Trend  
Graphs**

**Most Recent Estimates (2017 to  
2018)**

**Percent of total  
calories**      **95% Confidence  
Interval**



Both Sexes      35.8

Male      35.6

Female      36.0

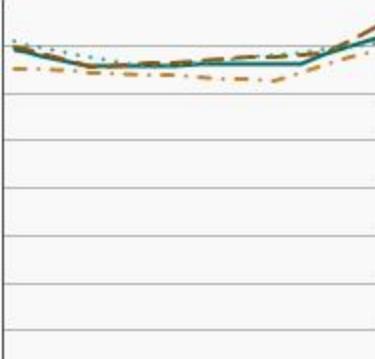
35.4 - 36.2

35.1 - 36.2

35.4 - 36.5

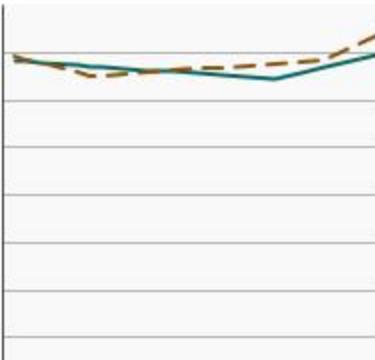
## By Race/Ethnicity

Total fat intake as a percentage of total calories by race/ethnicity, 1989-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of total calories</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	35.8	35.4 - 36.2
	<u>Non-Hispanic White</u>	36.6	36.0 - 37.2
	<u>Non-Hispanic Black</u>	35.8	35.0 - 36.7
	<u>Hispanic</u>	33.8	33.1 - 34.4

## By Poverty Income Level

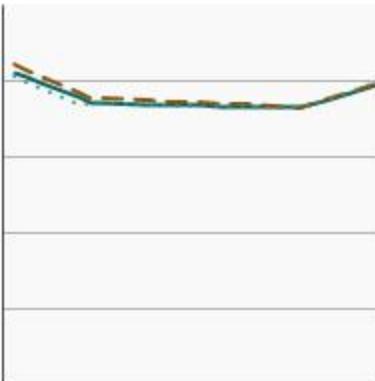
Total fat intake as a percentage of total calories by poverty income level, 1989-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of total calories</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of Federal Poverty Level</u>	34.8	34.4 - 35.2
	<u>&gt;=200% of Federal Poverty Level</u>	36.4	35.9 - 37.0

## Saturated Fat Intake

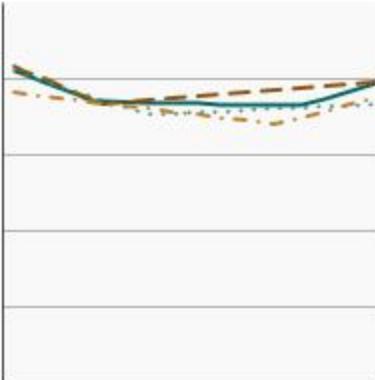
### By Sex

Saturated fat intake as a percentage of total calories by sex, 1989-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of total calories</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	11.8	11.6 - 12.0
	<u>Male</u>	11.8	11.6 - 12.0
	<u>Female</u>	11.8	11.6 - 12.1

### By Race/Ethnicity

Saturated fat intake as a percentage of total calories by race/ethnicity, 1989-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of total calories</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	11.8	11.6 - 12.0
	<u>Non-Hispanic White</u>	12.3	12.0 - 12.6
	<u>Non-Hispanic Black</u>	11.2	10.9 - 11.6
	<u>Hispanic</u>	10.9	10.6 - 11.1

## By Poverty Income Level

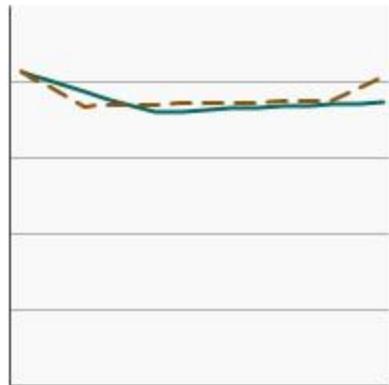
Saturated fat intake as a percentage of total calories by poverty income level, 1989-2018

Overview Graph

**Detailed Trend  
Graphs**

**Most Recent Estimates (2017 to  
2018)**

<b>Percent of total calories</b>	<b>95% Confidence Interval</b>
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<200% of Federal  
Poverty Level

11.4

11.0 - 11.7

>=200% of Federal  
Poverty Level

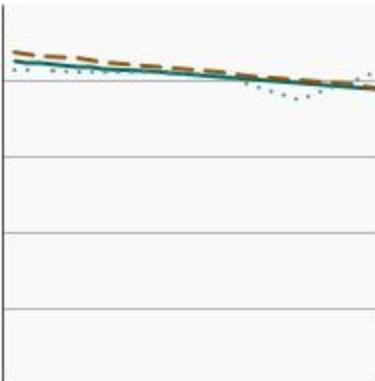
12.1

11.9 - 12.3

## Monosaturated Fat Intake

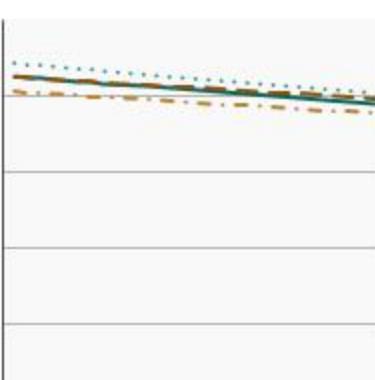
### By Sex

Monosaturated fat intake as a percentage of total calories by sex, 1989-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of total calories</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	12.1	11.9 - 12.3
	<u>Male</u>	12.1	11.8 - 12.3
	<u>Female</u>	12.1	11.8 - 12.3

### By Race/Ethnicity

Monosaturated fat intake as a percentage of total calories by race/ethnicity, 1989-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of total calories</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	12.1	11.9 - 12.3
	<u>Non-Hispanic White</u>	12.3	12.1 - 12.6
	<u>Non-Hispanic Black</u>	12.2	11.9 - 12.5
	<u>Hispanic</u>	11.3	11.0 - 11.6

## By Poverty Income Level

Monosaturated fat intake as a percentage of total calories by poverty income level, 1989-2018

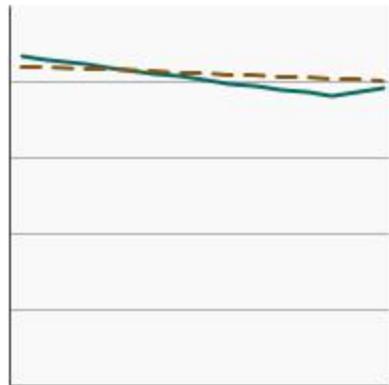
Overview Graph

**Detailed Trend  
Graphs**

**Most Recent Estimates (2017 to  
2018)**

**Percent of  
total calories**

**95%  
Confidence  
Interval**



<200% of Federal  
Poverty Level

11.7

11.5 - 11.9

>=200% of Federal  
Poverty Level

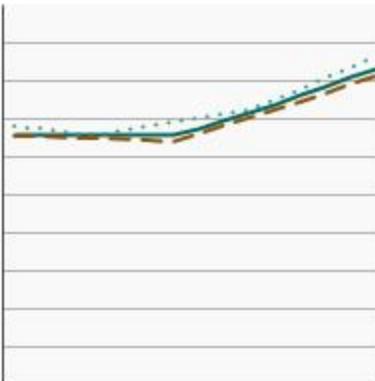
12.3

12.1 - 12.6

## Polyunsaturated Fat Intake

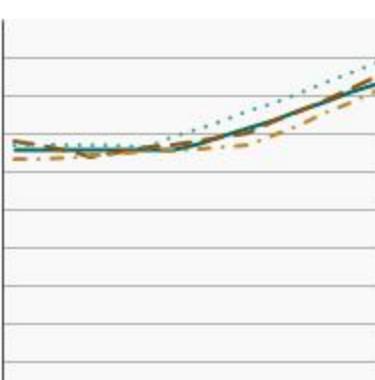
### By Sex

Polyunsaturated fat intake as a percentage of total calories by sex, 1989-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of total calories</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	8.4	8.2 - 8.6
	<u>Male</u>	8.2	7.9 - 8.5
	<u>Female</u>	8.5	8.3 - 8.8

### By Race/Ethnicity

Polyunsaturated fat intake as a percentage of total calories by race/ethnicity, 1989-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of total calories</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	8.4	8.2 - 8.6
	<u>Non-Hispanic White</u>	8.4	8.1 - 8.7
	<u>Non-Hispanic Black</u>	8.9	8.7 - 9.2
	<u>Hispanic</u>	8.0	7.8 - 8.2

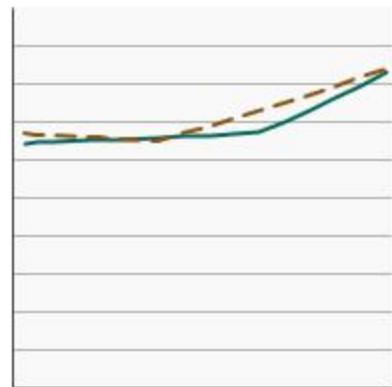
## By Poverty Income Level

Polyunsaturated fat intake as a percentage of total calories by poverty income level, 1989-2018

### Overview Graph

### Detailed Trend Graphs

### Most Recent Estimates (2017 to 2018)



<200% of Federal  
Poverty Level

8.2

8.0 - 8.5

$\geq 200\%$  of Federal  
Poverty Level

8.4

8.2 - 8.7

## **Cancers Related to Fat Consumption**

Statistical summaries from NCI's SEER Cancer Stat Fact Sheets:

- [Breast](#)
- [Colon and Rectum](#)
- [Lung and Bronchus](#)

## **Additional Information on Fat Consumption**

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Alcohol Consumption

### Data Up to Date as of:

April 2022

### Background

Drinking alcohol increases the risk of cancers of the mouth, esophagus, pharynx, larynx, liver, colon, and rectum in men and women and of breast cancer in women. In general, these risks increase after about one daily drink for women and two daily drinks for men. (A drink is defined as 12 ounces of regular beer, 5 ounces of wine, or 1.5 ounces of 80-proof liquor.)

The chances of getting liver cancer increase markedly with five or more drinks per day. Heavy alcohol use may also increase the risk of colorectal cancer and leads to greater increases in risk for most of the alcohol-related cancers. The sooner long-term, heavy alcohol use begins, the greater the cancer risk. Also, using alcohol with tobacco is riskier than using either one alone because it further increases the chances of getting cancers of the mouth, throat, and esophagus.

### Measure

Per capita alcohol consumption: The estimated number of gallons of pure alcohol consumed per person (aged 14 years and older), per year. This measure accounts for the varying alcohol content of wine, beer, and liquor.

People as young as 14 are included because a large number of adolescents begin drinking at an early age.

### Healthy People 2030 Target

- There are no Healthy People 2030 targets regarding per capita alcohol consumption, but there are other goals related to reducing the misuse of alcohol and reducing alcohol addiction.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

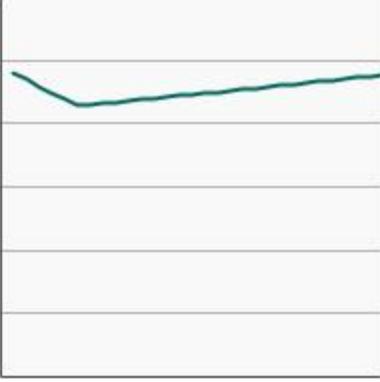
### Data Source

National Institute on Alcohol Abuse and Alcoholism. Surveillance report #117 – Apparent per capita alcohol consumption: national, state, and regional trends, 1977–2019. April 2021.

## Trends and Most Recent Estimates

### Alcohol Consumption

Apparent per capita alcohol consumption in gallons by individuals aged 14 years and older, 1990-2019

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	Most Recent Estimates (2019)	
		Gallons of Alcohol	95% Confidence Interval
	<a href="#">All Types of Alcoholic Beverages</a>	2.4	Not available

### Cancers Related to Alcohol Consumption

Statistical summaries from NCI's SEER Cancer Stat Fact Sheets:

- [Breast](#)
- [Colon and Rectum](#)
- [Esophagus](#)
- [Larynx](#)
- [Liver and Intrahepatic Bile Duct](#)
- [Oral Cavity and Pharynx](#)

### Additional Information on Alcohol Consumption

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Physical Activity

### Data Up to Date as of:

April 2022

### Background

Maintaining a healthy lifestyle has the potential to reduce both cancer- and non-cancer-related morbidity. In particular, physical activity may reduce the risk of several types of cancer, including bladder, breast, colon, endometrium (lining of the uterus), esophagus (adenocarcinoma), kidney, and stomach. Physical activity may also lower a person's risk of other health problems such as heart disease, high blood pressure, diabetes, and osteoporosis (bone thinning). Being active may also help to prevent weight gain and obesity, which can reduce the risk of developing cancers that have been linked to excess body weight.

Physical activity also improves the quality of life among cancer patients and survivors. For people with colorectal cancer, women with breast cancer, and men with prostate cancer, greater amounts of physical activity are associated with reduced risk of mortality from the original type of cancer. For people with colorectal cancer and women with breast cancer, greater amounts of physical activity are also associated with reduced risk of all-cause mortality.

Several national groups offer recommendations for engaging in regular physical activity. The U.S. Department of Health and Human Services recommends at least 1 hour of physical activity every day for children and adolescents, and 2.5 hours of moderate-intensity aerobic activity, or 1 hour and 15 minutes of vigorous-intensity aerobic activity, for adults each week. Adults should also do muscle-strengthening activities on 2 or more days a week.

### Measure

Percentage of adults aged 18 years and older who reported no leisure-time physical activity during the past month and percentage of adults who meet both the aerobic and muscle-strengthening guidelines.

### Healthy People 2030 Target

- Reduce the percentage of adults who engage in no leisure-time physical activity to 21.2 percent.
- Increase the proportion of adults who meet the objectives for aerobic physical activity and for muscle-strengthening activity to 28.4 percent.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

### Data Source

Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey 1992–2020.

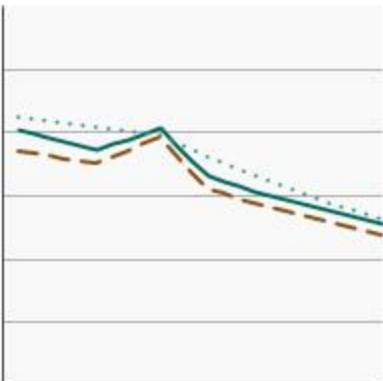
In 2019 the NHIS questionnaire was redesigned to increase relevance, enhance data quality, and minimize respondent burden. In addition, the COVID-19 pandemic created challenges conducting in-person interviews for the 2020 NHIS, requiring changes to field procedures to conduct most surveys by telephone, which impacted survey response rates. For details related to the potential impacts of these issues, please refer to Potential Impact of NHIS Redesign and COVID-19 on the Cancer Trends Progress Report.

## ② Trends and Most Recent Estimates

### No Leisure Time Physical Activity

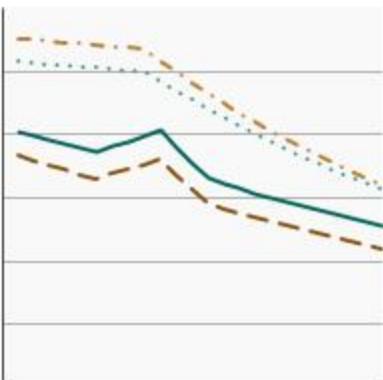
#### By Sex

Percentage of adults aged 18 years and older reporting no physical activity in their leisure time by sex, 1997-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	26.1	25.1 - 27.0
	<u>Male</u>	24.4	23.3 - 25.5
	<u>Female</u>	27.6	26.5 - 28.8

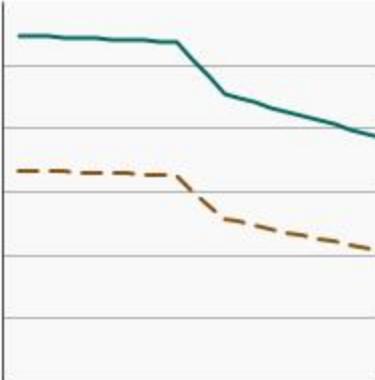
#### By Race/Ethnicity

Percentage of adults aged 18 years and older reporting no physical activity in their leisure time by race/ethnicity, 1997-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	26.1	25.1 - 27.0
	<u>Non-Hispanic White</u>	22.8	21.8 - 23.8
	<u>Non-Hispanic Black</u>	32.0	29.5 - 34.6
	<u>Hispanic</u>	34.4	31.9 - 36.9

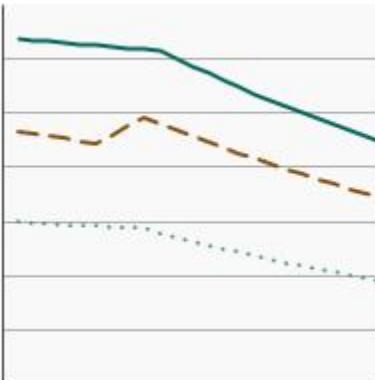
## By Poverty Income Level

Percentage of adults aged 18 years and older reporting no physical activity in their leisure time by poverty income level, 1997-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of federal poverty level</u>	40.2	38.3 - 42.0
	<u>&gt;=200% of federal poverty level</u>	20.7	19.9 - 21.6

## By Education Level

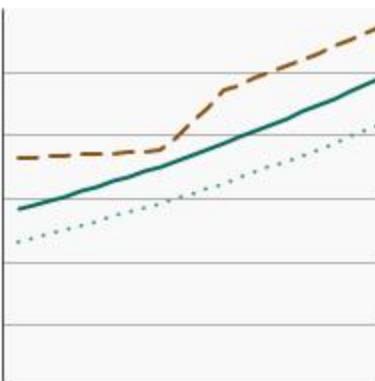
Percentage of adults aged 25 years and older reporting no physical activity in their leisure time by highest level of education obtained, 1997-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Less than High School</u>	48.4	45.2 - 51.7
	<u>High School</u>	35.0	33.3 - 36.7
	<u>Greater than High School</u>	19.6	18.7 - 20.4

## Meet Federal Guidelines

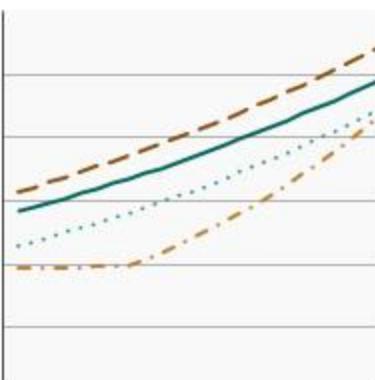
### By Sex

Percentage of adults aged 18 years and older who meet current Federal guidelines for aerobic and muscle-strengthening physical activity by sex, 1997-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	25.2	24.5 - 26.0
	<u>Male</u>	29.0	28.0 - 30.2
	<u>Female</u>	21.5	20.6 - 22.5

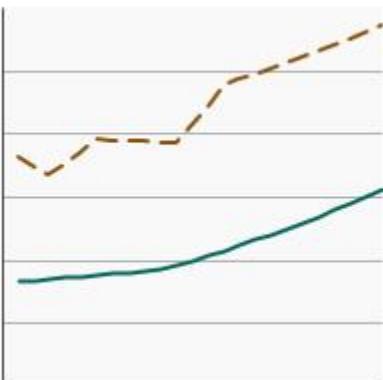
### By Race/Ethnicity

Percentage of adults aged 18 years and older who meet current Federal guidelines for aerobic and muscle-strengthening physical activity by race/ethnicity, 1997-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	25.2	24.5 - 26.0
	<u>Non-Hispanic White</u>	27.3	26.4 - 28.3
	<u>Non-Hispanic Black</u>	22.3	20.4 - 24.3
	<u>Hispanic</u>	20.7	19.0 - 22.6

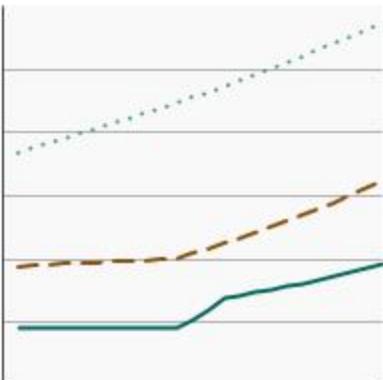
## By Poverty Income Level

Percentage of adults aged 18 years and older who meet current Federal guidelines for aerobic and muscle-strengthening physical activity by poverty income level, 1997-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of federal poverty level</u>	14.7	13.6 - 16.0
	<u>&gt;=200% of federal poverty level</u>	29.2	28.3 - 30.1

## By Education Level

Percentage of adults aged 25 years and older who meet current Federal guidelines for aerobic and muscle-strengthening physical activity by highest level of education obtained, 1997-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Less than High School</u>	9.6	7.9 - 11.7
	<u>High School</u>	16.3	15.1 - 17.5
	<u>Greater than High School</u>	28.8	27.9 - 29.7

## **Cancers Related to Physical Activity**

Statistical summaries from NCI's SEER Cancer Stat Fact Sheets:

- [Breast](#)
- [Colon and Rectum](#)
- [Uterus](#)

## **Additional Information on Physical Activity**

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Weight

### Data Up to Date as of:

April 2022

## Background

Consistent evidence indicates that preventing excess body weight and obesity reduces the risk of several types of cancer, including colorectal, breast (among women who have gone through menopause), uterine, esophageal, renal cell (kidney), liver, and pancreatic cancers.

Research has also identified an association between obesity and worse prognosis and outcomes among some cancer patients, particularly those with breast, prostate, liver, and colon cancer. Excess body weight is thought to contribute to as many as one in five cancer-related deaths in the United States.

While there is still much to be learned about the link between excess weight and cancer, people who are overweight or obese are encouraged to lose weight and maintain a healthy lifestyle. Doing so has the potential to reduce both cancer- and non-cancer-related morbidity.

## Measure

The percentage of adults aged 20 years and older who are at a healthy weight, overweight, or obese. These weight groups are defined by a measurement called body mass index (BMI), which is calculated by dividing weight in kilograms by height in meters squared. For most adults, experts consider a BMI within the range of 18.5 to 24.9 to be healthy, a BMI between 25 and 29.9 to be overweight, and a BMI of 30 and over to be obese.

## Healthy People 2030 Target

- Reduce the proportion of adults with obesity to 36.0 percent.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

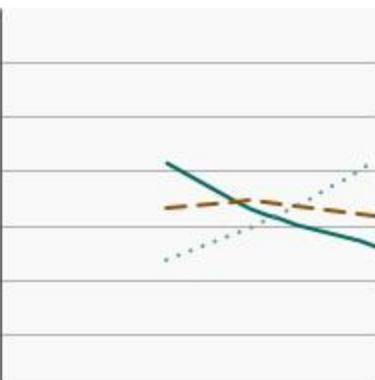
## Data Source

Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey, 1971–2018.

## Trends and Most Recent Estimates

### Body Weight Comparison

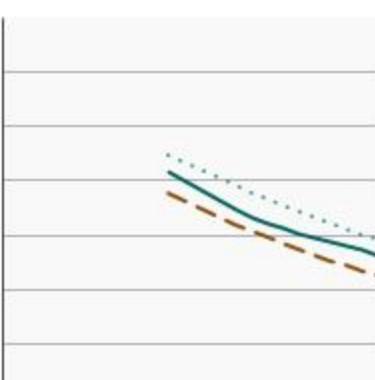
Percentage of adults aged 20 years and older who were at a healthy weight, overweight, or obese, 1971-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Healthy Weight</u>	24.9	22.4 - 27.3
	<u>Overweight</u>	31.2	29.1 - 33.3
	<u>Obese</u>	42.4	39.0 - 45.8

### Healthy Weight

#### By Sex

Percentage of adults aged 20 years and older who were at a healthy weight by sex, 1971-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	24.9	22.4 - 27.3
	<u>Male</u>	21.3	18.0 - 24.6
	<u>Female</u>	28.4	25.4 - 31.4

## By Race/Ethnicity

Percentage of adults aged 20 years and older who were at a healthy weight by race/ethnicity, 1971-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	24.9	22.4 - 27.3
	<u>Non-Hispanic White</u>	27.0	23.4 - 30.5
	<u>Non-Hispanic Black</u>	22.2	19.6 - 24.8
	<u>Hispanic</u>	16.1	14.0 - 18.1

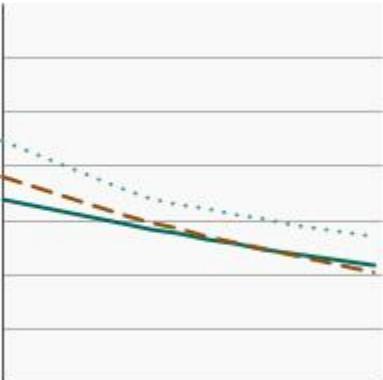
## By Poverty Income Level

Percentage of adults aged 20 years and older who were at a healthy weight by poverty status, 1971-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>&lt; 200% of the federal poverty level</u>	24.1	20.9 - 27.4
	<u>≥ 200% of the federal poverty level</u>	24.5	21.4 - 27.5

## By Education Level

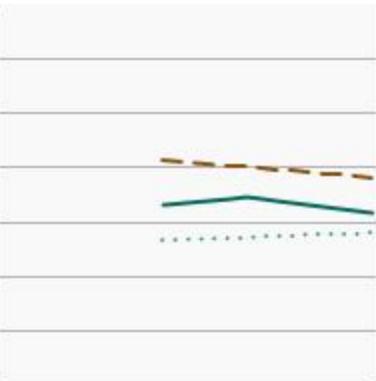
Percentage of adults aged 25 years and older who were at a healthy weight by highest level of education obtained, 1991-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Less than High School</u>	22.5	19.3 - 25.6
	<u>High School</u>	20.1	17.4 - 22.7
	<u>Greater than High School</u>	24.9	22.1 - 27.8

## Overweight

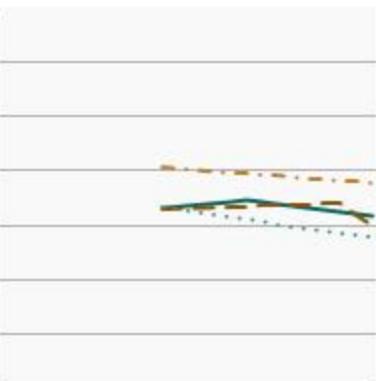
### By Sex

Percentage of adults aged 20 years and older who were overweight by sex, 1971-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	31.2	29.1 - 33.3
	<u>Male</u>	34.6	31.0 - 38.2
	<u>Female</u>	28.0	26.2 - 29.8

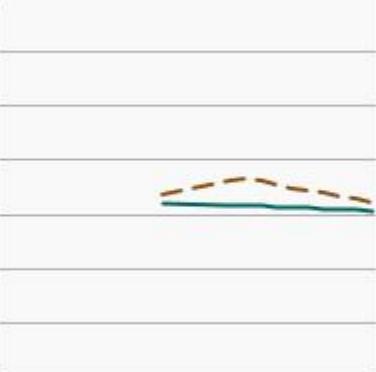
### By Race/Ethnicity

Percentage of adults aged 20 years and older who were overweight by race/ethnicity, 1971-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	31.2	29.1 - 33.3
	<u>Non-Hispanic White</u>	29.0	25.8 - 32.3
	<u>Non-Hispanic Black</u>	26.8	23.8 - 29.9

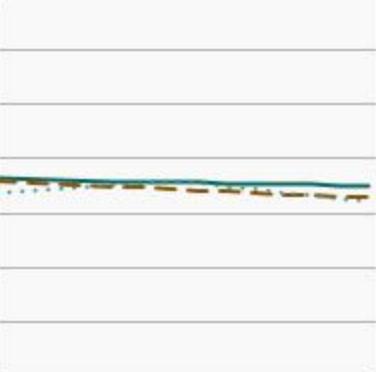
## By Poverty Income Level

Percentage of adults aged 20 years and older who were at a healthy weight by poverty status, 1971-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>&lt; 200% of the federal poverty level</u>	29.2	26.5 - 32.0
	<u><math>\geq 200\%</math> of the federal poverty level</u>	32.4	29.4 - 35.4

## By Education Level

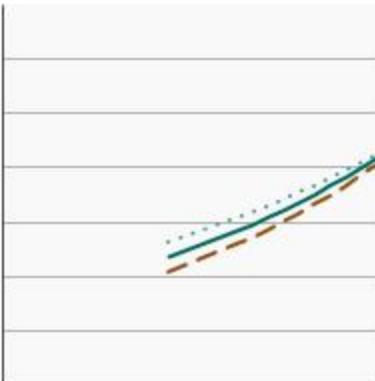
Percentage of adults aged 25 years and older who were overweight by highest level of education obtained, 1991-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Less than High School</u>	33.8	28.8 - 38.9
	<u>High School</u>	29.3	26.3 - 32.4
	<u>Greater than High School</u>	32.7	29.8 - 35.7

## Obese

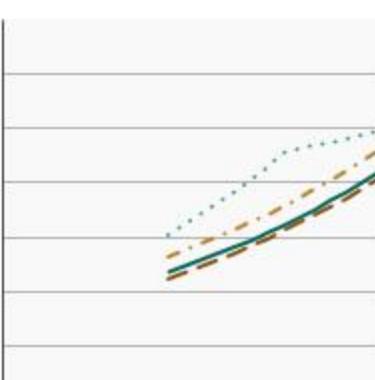
### By Sex

Percentage of adults aged 20 years and older who were obese by sex, 1971-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	42.4	39.0 - 45.8
	<u>Male</u>	42.9	37.8 - 48.1
	<u>Female</u>	41.9	38.1 - 45.6

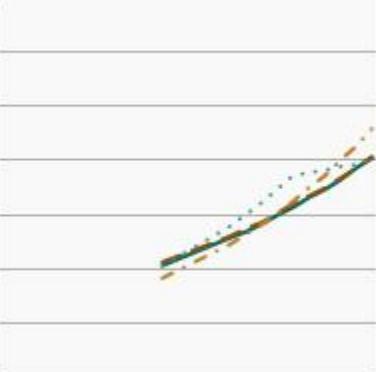
### By Race/Ethnicity

Percentage of adults aged 20 years and older who were obese by race/ethnicity, 1971-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	42.4	39.0 - 45.8
	<u>Non-Hispanic White</u>	42.3	37.5 - 47.0
	<u>Non-Hispanic Black</u>	49.4	46.0 - 52.7

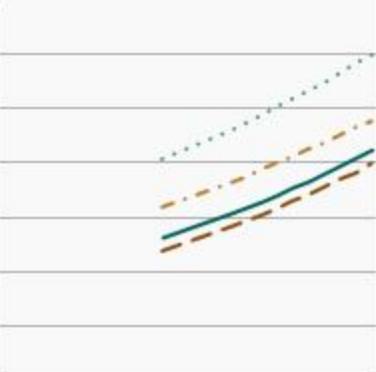
## **Males by Race/Ethnicity**

Percentage of males aged 20 years and older who were obese by race/ethnicity, 1971-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	42.9	37.8 - 48.1
	<u>Non-Hispanic White</u>	44.6	37.6 - 51.6
	<u>Non-Hispanic Black</u>	40.7	36.1 - 45.4

## **Females by Race/Ethnicity**

Percentage of females aged 20 years and older who were obese by race/ethnicity, 1971-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	41.9	38.1 - 45.6
	<u>Non-Hispanic White</u>	39.9	34.5 - 45.4
	<u>Non-Hispanic Black</u>	56.5	52.4 - 60.5

## By Poverty Income Level

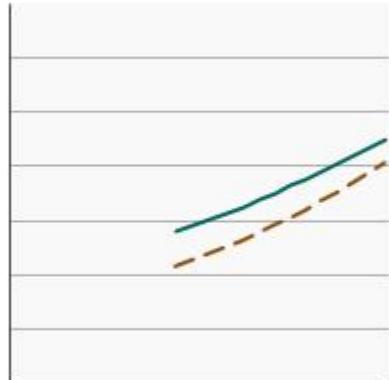
Percentage of adults aged 20 years and older who were at a healthy weight by poverty status, 1971-2018

Overview Graph

**Detailed Trend Graphs**

**Most Recent Estimates  
(2017 to 2018)**

**Percent of adults**      **95% Confidence Interval**



< 200% of the federal poverty level      44.3

40.4 - 48.2

$\geq 200\%$  of the federal poverty level      42.1

38.0 - 46.2

## By Education Level

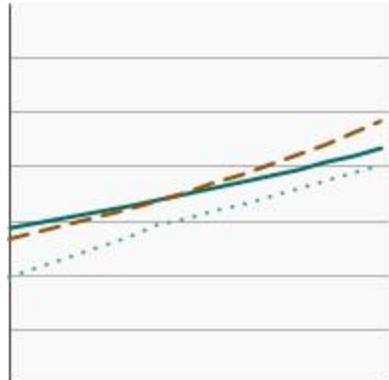
Percentage of adults aged 25 years and older who were obese by highest level of education obtained, 1991-2018

Overview Graph

**Detailed Trend Graphs**

**Most Recent Estimates (2017 to 2018)**

**Percent of adults**      **95% Confidence Interval**



Less than High School      42.8

37.8 - 47.8

High School      48.7

44.6 - 52.9

Greater than High School      41.6

37.6 - 45.6

## Cancers Related to Weight

Statistical summaries from NCI's SEER Cancer Stat Fact Sheets:

- [Brain and Other Nervous System](#)
- [Breast](#)
- [Colon and Rectum](#)
- [Esophagus](#)
- [Kidney and Renal Pelvis](#)
- [Liver and Intrahepatic Bile Duct](#)
- [Gallbladder](#)
- [Myeloma](#)
- [Ovary](#)
- [Pancreas](#)
- [Stomach](#)
- [Thyroid](#)
- [Uterus](#)

## Additional Information on Weight

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures

### Sleep

#### Data Up to Date as of:

April 2022

#### Background

Sleep health – including sleep duration, efficiency, and quality, as well as sleep timing and regularity – is important to overall health. Poor sleep may directly affect mortality risk and influence risk for cancer and other non-communicable diseases through its impact on immune function, stress response and inflammation, DNA repair, and metabolic and hormonal activity. It may also impact mortality through its effect on modifiable risk factors, including physical activity, diet, alcohol, and tobacco use.

Existing evidence indicates that sleep duration is associated with cancer mortality. However, across sites, risk may vary by sleep duration – both short (<7 hours/night) and long (>9 hours/night) sleep duration. Findings are also mixed regarding the association between sleep duration and cancer risk. Other aspects of poor sleep health, including poor sleep quality and irregular sleep timing due to shift work, have also been linked to increased risk of cancer, highlighting the need for future research in these areas.

Additionally, poor sleep health is associated with poorer treatment efficacy, adverse physical and mental health outcomes, and increased mortality in cancer survivors. The mechanisms connecting sleep health and cancer survivorship are not fully understood and are an evolving area of study.

The recommendations stratified by age are 7 or more hours/night for adults 18-60 years, 7-9 hours for adults 31-64 years, and 7-8 hours for adults 65 years and older.

#### Measure

Percentage of adults aged 18 years and older who report getting sufficient sleep, defined as an average of 7 or more hours of sleep per day.

#### Healthy People 2030 Target

- Increase the proportion of adults who get sufficient sleep to 68.6 percent.

*Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.*

*Note: Goals are indicated as a blue line on Detailed Trend Graphs.*

#### Data Source

Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey 2004 - 2020.

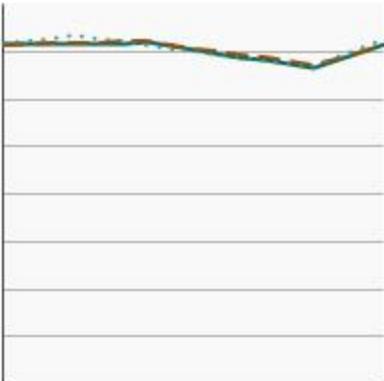
In 2019 the NHIS questionnaire was redesigned to increase relevance, enhance data quality, and minimize respondent burden. In addition, the COVID-19 pandemic created challenges conducting in-person interviews for the 2020 NHIS, requiring changes to field procedures to conduct most surveys by telephone, which impacted survey response rates. For details related to the potential impacts of these issues, please refer to [Potential Impact of NHIS Redesign and COVID-19 on the Cancer Trends Progress Report](#).

## ?

## Trends and Most Recent Estimates

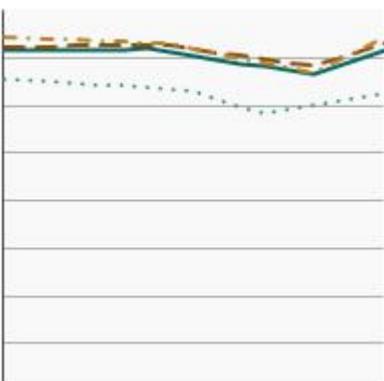
### By Sex

Percentage of adults aged 18 years and older who report getting sufficient sleep, defined as an average of 7 or more hours of sleep per day by sex, 2004-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	72.1	71.3 - 72.8
	<u>Male</u>	71.4	70.3 - 72.4
	<u>Female</u>	72.8	71.9 - 73.7

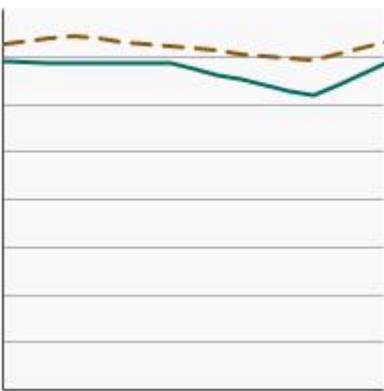
### By Race/Ethnicity

Percentage of adults aged 18 years and older who report getting sufficient sleep, defined as an average of 7 or more hours of sleep per day by race/ethnicity, 2004-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	72.1	71.3 - 72.8
	<u>Non-Hispanic White</u>	73.1	72.2 - 73.9
	<u>Non-Hispanic Black</u>	62.9	60.5 - 65.2
	<u>Hispanic</u>	74.4	72.5 - 76.2

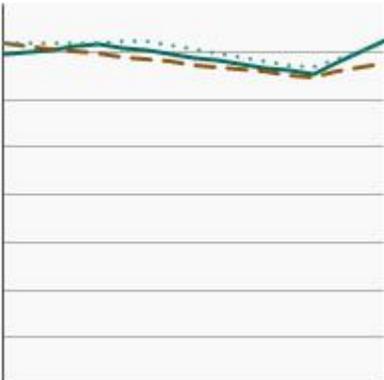
## By Poverty Income Level

Percentage of adults aged 18 years and older who report getting sufficient sleep, defined as an average of 7 or more hours of sleep per day by poverty income level, 2004-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of federal poverty level</u>	69.0	67.5 - 70.5
	<u>&gt;=200% of federal poverty level</u>	73.2	72.3 - 74.0

## By Education Level

Percentage of adults aged 25 years and older who report getting sufficient sleep, defined as an average of 7 or more hours of sleep per day by highest level of education obtained, 2004-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Less than High School</u>	72.7	70.1 - 75.2
	<u>High School</u>	68.1	66.4 - 69.8
	<u>Greater than High School</u>	71.8	70.9 - 72.6

## Additional Information on Sleep

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## **UV Exposure and Sun-Protective Behavior**

Reducing unprotected exposure to the sun and avoiding artificial ultraviolet (UV) light from indoor tanning beds, tanning booths, and sun lamps can lower the risk of skin cancer.

- [Sun-Protective Behavior](#)
- [Indoor and Outdoor Tanning](#)
- [Sunburn](#)

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures

### Sun-Protective Behavior

#### Data Up to Date as of:

April 2022

#### Background

Avoiding sunburns and intermittent high-intensity sun exposure (especially in children, teens, and young adults) reduces the chances of getting melanoma skin cancer. Engaging in sun-protective behaviors when outside can reduce one's exposure to ultraviolet (UV) radiation and sunburn. For example, avoiding intense sun when possible and seeking shade can reduce the risk of sunburn, and one of the goals of the Surgeon General's Call To Action to Prevent Skin Cancer is to increase the availability of shade in outdoor recreation, education, and workplace environments. Additional behaviors such as wearing sun-protective clothing (e.g., long sleeve shirt, long pants, and wide brim hat) and sunglasses can help prevent excessive exposure to UV. Broad spectrum sunscreen (protects against UVA and UVB) with a sun protection factor of 15 or higher (SPF15 or higher) should be used in combination with other sun-protective behaviors and applied appropriately (e.g., proper amount applied prior to sun exposure and with timely reapplication).

Although sunbathing and tanning are strongly associated with sunburn, recent data indicate that most sunburns occur in contexts unrelated to intentional tanning. Results suggest the need to promote multiple forms of sun protection tailored to specific contexts, especially when being physically active and when spending time near the water.

Protective behaviors are most needed when UV intensity is greatest, which occurs during the summer time and between 10 am and 4 pm. However, UV index can also be high during cloudy days, and for some regions of the U.S., such as the southeast and southwest, UV intensity is high year-round. To help maximize one's protection, multiple sun-protective behaviors should be practiced, especially for those with sun sensitive skin. People with sun sensitive skin are relatively more likely to incur sunburn and are at greater risk for skin cancer. Sun sensitivity reflects a person's characteristic skin response (e.g., a burn, a burn and then tan, etc.) after prolonged sun exposure or after a long period or season of being relatively unexposed. Though related to sun sensitivity, skin color and ethnicity are not adequate proxies for sun sensitivity.

In recent years, the Food and Drug Administration has improved standards for sunscreen content and labeling to minimize misleading statements and better ensure formulations deliver the advertised benefits.

#### Measure

The percentage of adults aged 18 years and older who reported that they usually or always practice at least one of three sun-protective behaviors - using sunscreen, wearing protective clothing (a long-sleeve shirt, and/or wide brimmed hat shading the face, ears, and neck, and/or long pants/long skirt), or seeking shade when going outside on a sunny day for more than an hour.

Beginning in 2005, the question on hat use (as part of protective clothing) was modified to more accurately distinguish baseball caps (which do not fully protect the face, neck, and ears) from other types of fully protective hats. Graphic illustrations of different hats were used, and respondents were asked a separate question about baseball cap and sun visor use. Also, long pants/long skirt was an item added in 2005.

The data series for this measure page have differing years of availability with 'protective clothing' available for 2005+, 'sunscreen use (SPF 15+)' available for 2000+ and 'likely to seek shade' available for 1992+. For the graphs that compare the different methods or present a total of all three protection types, trends were calculated for 2005+. For graphs that show the series individually, the full range of available data is shown.

#### Healthy People 2030 Target

- There are no Healthy People 2030 targets regarding protective measures that may reduce the risk of skin cancer.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

#### Data Source

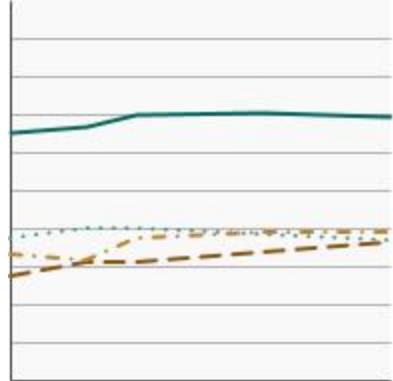
Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey NCI and CDC co-sponsored Cancer Control Supplement, 1992-2010, 2005–2015.

In 2019 the NHIS questionnaire was redesigned to increase relevance, enhance data quality, and minimize respondent burden. In addition, the COVID-19 pandemic created challenges conducting in-person interviews for the 2020 NHIS, requiring changes to field procedures to conduct most surveys by telephone, which impacted survey response rates. For details related to the potential impacts of these issues, please refer to [Potential Impact of NHIS Redesign and COVID-19 on the Cancer Trends Progress Report](#).

## Trends and Most Recent Estimates

### Sun Protection Methods

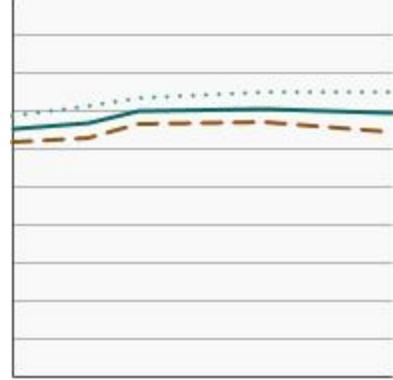
Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by type of protective measure, 2005-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Total</u>	69.4	68.5 - 70.3
	<u>Sunscreen (SPF 15+)</u>	36.5	35.7 - 37.3
	<u>Protective Clothing</u>	36.7	35.8 - 37.6
	<u>Seek Shade</u>	39.1	38.1 - 40.0

### Use Some Type of Protection

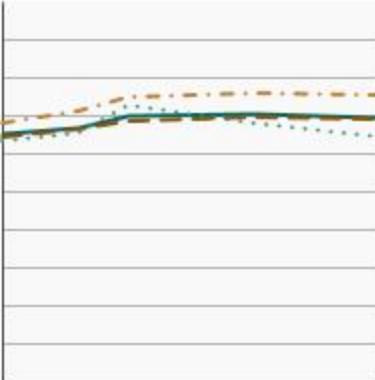
#### By Sex

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by sex, 2005-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	69.4	68.5 - 70.3
	<u>Male</u>	64.2	63.0 - 65.4
	<u>Female</u>	74.5	73.4 - 75.5

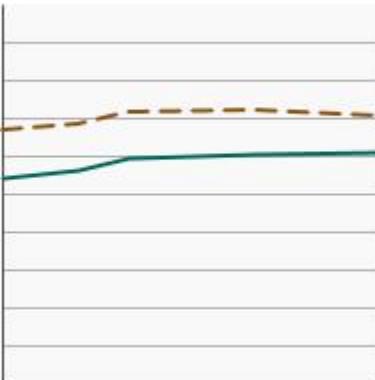
## By Race/Ethnicity

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by race/ethnicity, 2005-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	69.4	68.5 - 70.3
	<u>Non-Hispanic White</u>	69.1	68.0 - 70.1
	<u>Non-Hispanic Black</u>	64.5	62.0 - 66.9
	<u>Hispanic</u>	75.1	73.3 - 76.8

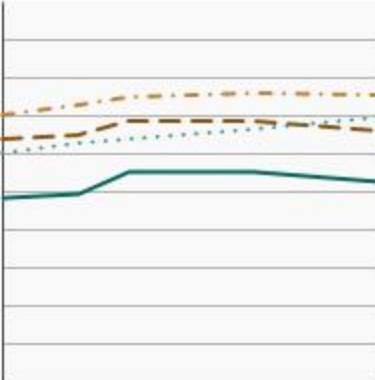
## By Age

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by age, 2005-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Ages 18-24</u>	61.1	58.2 - 63.9
	<u>Ages 25+</u>	70.6	69.7 - 71.5

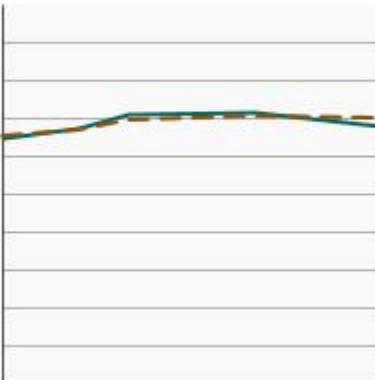
## By Sex and Age

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by sex and age, 2005-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Males, Ages 18-24</u>	52.7	48.4 - 56.9
	<u>Males, Ages 25+</u>	65.8	64.6 - 67.0
	<u>Females, Ages 18-24</u>	69.5	65.5 - 73.3
	<u>Females, Ages 25+</u>	75.2	74.1 - 76.2

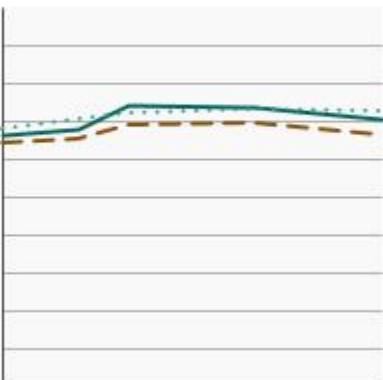
## By Poverty Income Level

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by poverty income level, 2005-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of federal poverty level</u>	67.7	66.2 - 69.3
	<u>&gt;=200% of federal poverty level</u>	70.0	69.1 - 71.0

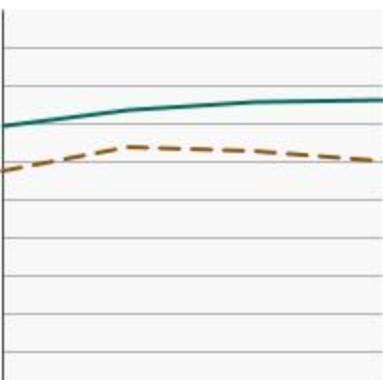
## By Education Level

Percentage of adults aged 25 years and older who always or most of the time protect themselves from the sun by highest level of education obtained, 2005-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Less than High School</u>	70.5	67.4 - 73.4
	<u>High School</u>	66.4	64.7 - 68.0
	<u>Greater than High School</u>	72.4	71.5 - 73.3

## By Sun Sensitivity

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by sun sensitivity, 2005-2020

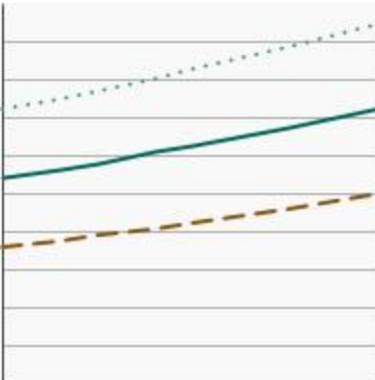
<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Sun-Sensitive</u>	76.5	75.5 - 77.5
	<u>Not Sun-Sensitive</u>	60.0	58.7 - 61.3

*Sun sensitivity reflects a person's biological response (e.g., a burn, a burn and then tan, etc.) after prolonged sun exposure or after a long period or season of being relatively unexposed. Although race is related to sun sensitivity, race and ethnicity are not adequate proxies for sun sensitivity.*

## Use Sunscreen

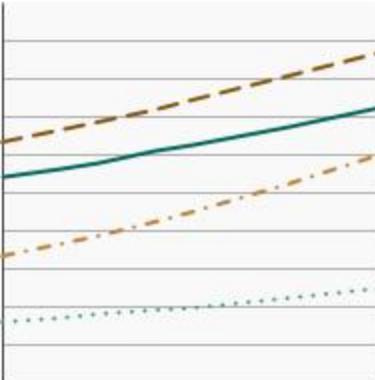
### By Sex

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by using SPF 15 or higher sunscreen by sex, 2000-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	36.5	35.7 - 37.3
	<u>Male</u>	25.0	24.1 - 25.9
	<u>Female</u>	47.5	46.4 - 48.7

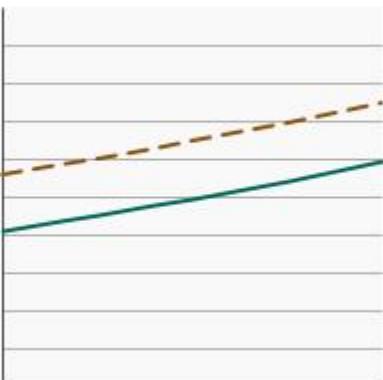
### By Race/Ethnicity

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by using SPF 15 or higher sunscreen by race/ethnicity, 2000-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	36.5	35.7 - 37.3
	<u>Non-Hispanic White</u>	43.5	42.5 - 44.5
	<u>Non-Hispanic Black</u>	12.0	10.5 - 13.8
	<u>Hispanic</u>	31.4	29.4 - 33.6

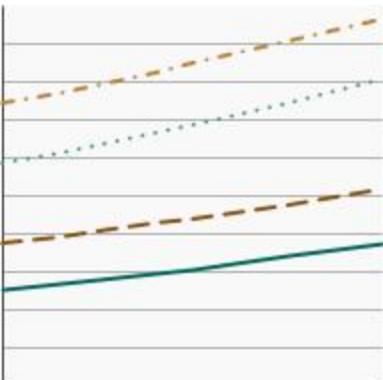
## By Age

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by using SPF 15 or higher sunscreen by age, 2000-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Ages 18-24</u>	31.7	29.2 - 34.4
	<u>Ages 25+</u>	37.2	36.3 - 38.0

## By Sex and Age

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by using SPF 15 or higher sunscreen by sex and age, 2000-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Males, Ages 18-24</u>	20.2	17.4 - 23.4
	<u>Males, Ages 25+</u>	25.7	24.8 - 26.7
	<u>Females, Ages 18-24</u>	43.2	39.1 - 47.4
	<u>Females, Ages 25+</u>	48.1	46.9 - 49.3

## By Poverty Income Level

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by using SPF 15 or higher sunscreen by poverty income level, 2000-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of federal poverty level</u>	25.0	23.5 - 26.5
	<u>&gt;=200% of federal poverty level</u>	40.7	39.8 - 41.7

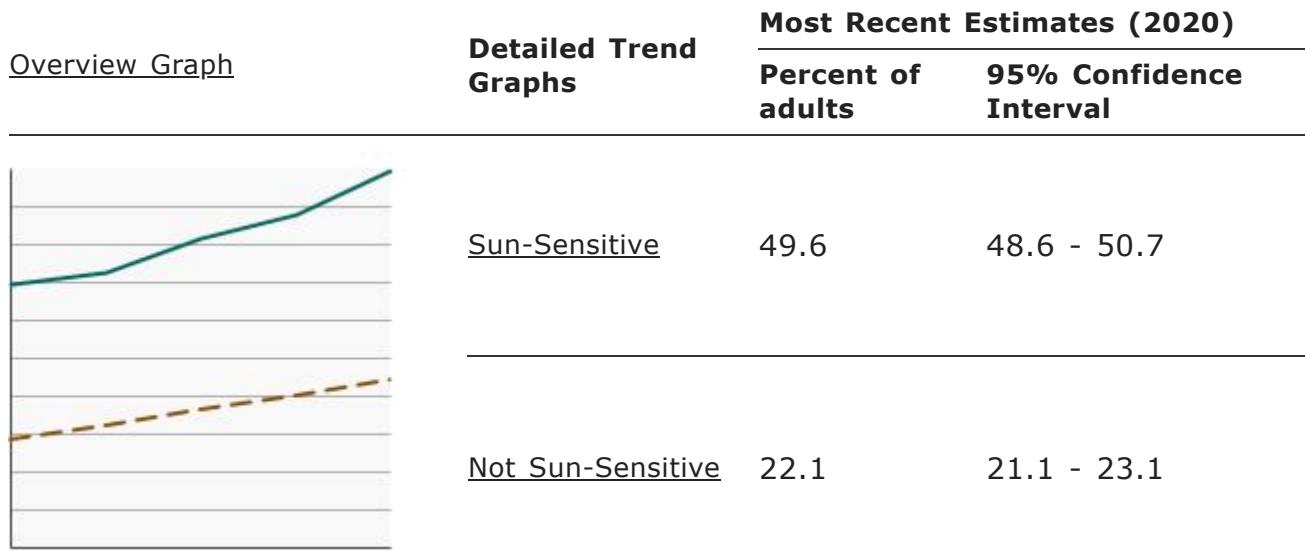
## By Education Level

Percentage of adults aged 25 years and older who always or most of the time protect themselves from the sun by using SPF 15 or higher sunscreen by highest level of education obtained, 2000-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Less than High School</u>	20.5	17.6 - 23.6
	<u>High School</u>	28.0	26.6 - 29.5
	<u>Greater than High School</u>	44.1	43.1 - 45.0

## By Sun Sensitivity

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by using SPF 15 or higher sunscreen by sun sensitivity, 2000-2020

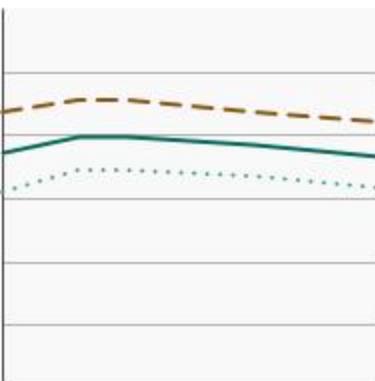


*Sun sensitivity reflects a person's biological response (e.g., a burn, a burn and then tan, etc.) after prolonged sun exposure or after a long period or season of being relatively unexposed. Although race is related to sun sensitivity, race and ethnicity are not adequate proxies for sun sensitivity.*

## Wear Protective Clothing

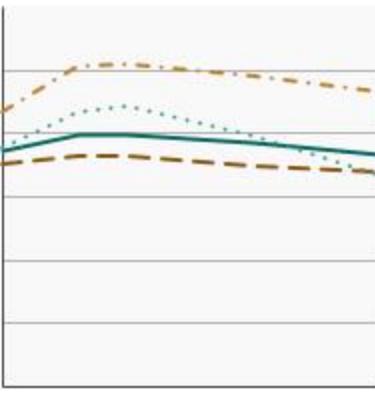
### By Sex

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by wearing protective clothing by sex, 2005-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	36.7	35.8 - 37.6
	<u>Male</u>	42.0	40.7 - 43.3
	<u>Female</u>	31.6	30.6 - 32.7

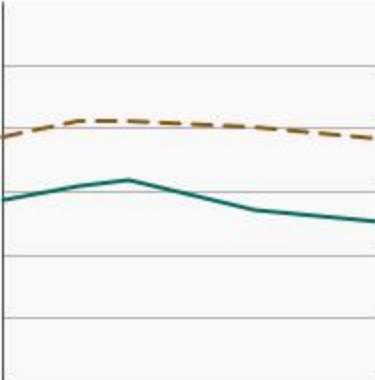
### By Race/Ethnicity

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by wearing protective clothing by race/ethnicity, 2005-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	36.7	35.8 - 37.6
	<u>Non-Hispanic White</u>	33.9	32.9 - 35.0
	<u>Non-Hispanic Black</u>	33.3	31.1 - 35.5
	<u>Hispanic</u>	46.3	44.0 - 48.5

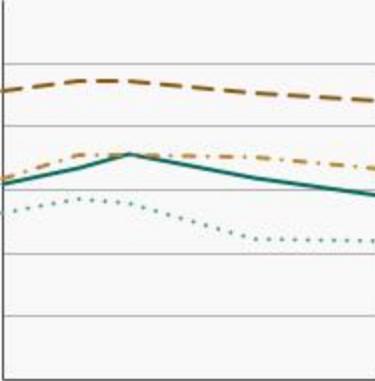
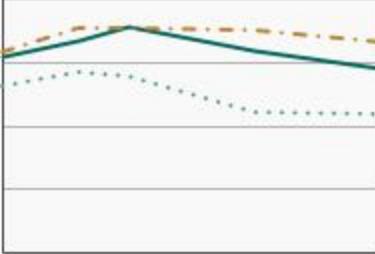
## By Age

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by wearing protective clothing by age, 2005-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Ages 18-24</u>	25.4	22.8 - 28.2
	<u>Ages 25+</u>	38.3	37.4 - 39.3

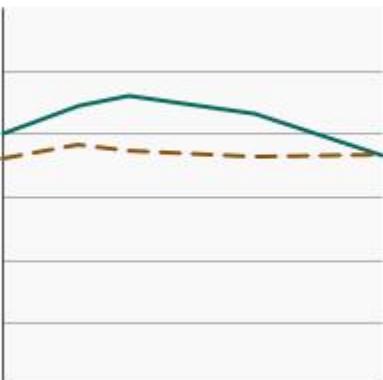
## By Sex and Age

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by wearing protective clothing by sex and age, 2005-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Males, Ages 18-24</u>	29.1	25.3 - 33.1
	<u>Males, Ages 25+</u>	43.8	42.5 - 45.1
	<u>Females, Ages 18-24</u>	21.7	18.3 - 25.6
	<u>Females, Ages 25+</u>	33.1	32.0 - 34.3

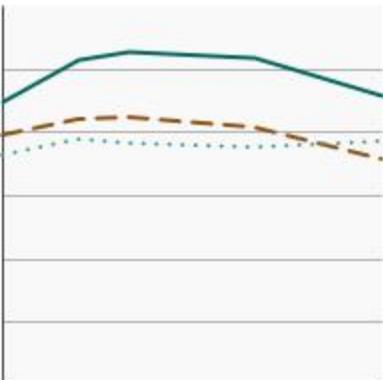
## By Poverty Income Level

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by wearing protective clothing by poverty income level, 2005-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of federal poverty level</u>	36.5	35.1 - 38.1
	<u>&gt;=200% of federal poverty level</u>	36.7	35.7 - 37.8

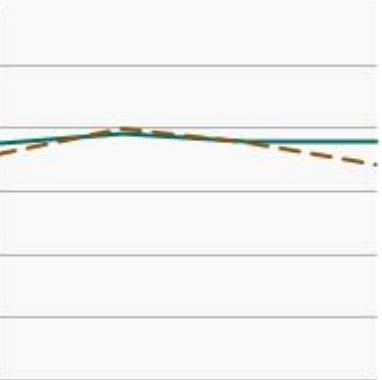
## By Education Level

Percentage of adults aged 25 years and older who always or most of the time protect themselves from the sun by wearing protective clothing by highest level of education obtained, 2005-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Less than High School</u>	45.9	42.6 - 49.2
	<u>High School</u>	35.7	34.0 - 37.4
	<u>Greater than High School</u>	38.5	37.5 - 39.5

## By Sun Sensitivity

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by wearing protective clothing by sun sensitivity, 2005-2020

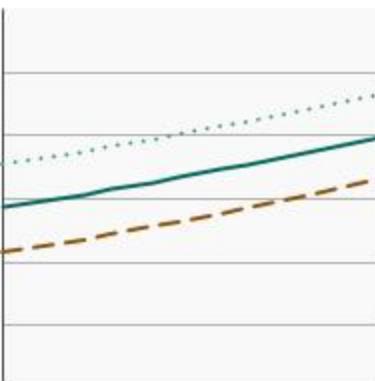
<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Sun-Sensitive</u>	38.0	36.9 - 39.1
	<u>Not Sun-Sensitive</u>	34.1	32.9 - 35.3

*Sun sensitivity reflects a person's biological response (e.g., a burn, a burn and then tan, etc.) after prolonged sun exposure or after a long period or season of being relatively unexposed. Although race is related to sun sensitivity, race and ethnicity are not adequate proxies for sun sensitivity.*

## Seek Shade

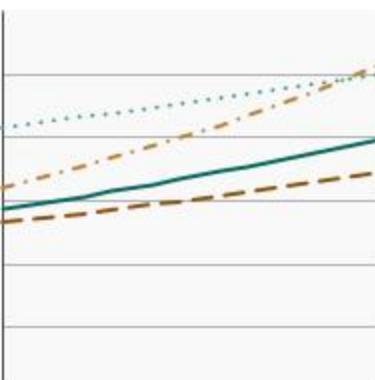
### By Sex

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by seeking shade by sex, 1992-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	39.1	38.1 - 40.0
	<u>Male</u>	32.5	31.4 - 33.7
	<u>Female</u>	45.3	44.1 - 46.6

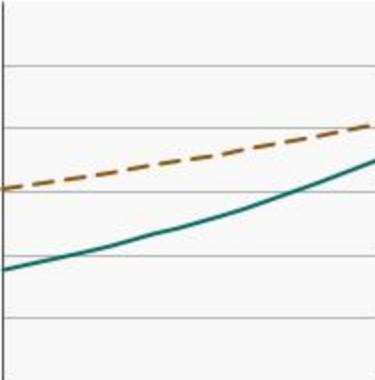
### By Race/Ethnicity

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by seeking shade by race/ethnicity, 1992-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	39.1	38.1 - 40.0
	<u>Non-Hispanic White</u>	34.6	33.5 - 35.7
	<u>Non-Hispanic Black</u>	46.7	44.0 - 49.4
	<u>Hispanic</u>	47.9	45.9 - 50.0

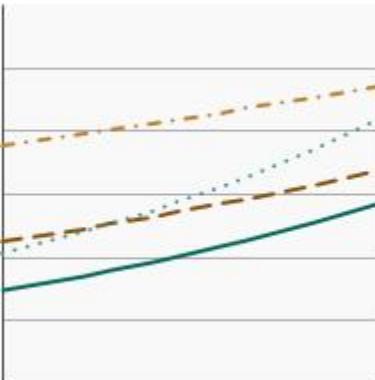
## By Age

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by seeking shade by age, 1992-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Ages 18-24</u>	33.7	30.8 - 36.8
	<u>Ages 25+</u>	39.8	38.9 - 40.8

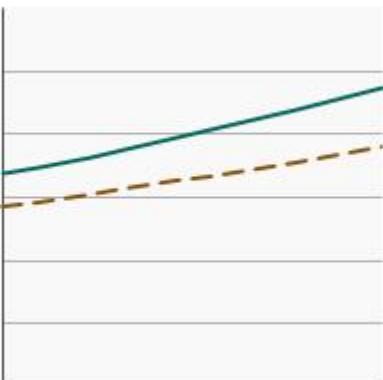
## By Sex and Age

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by seeking shade by sex and age, 1992-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Males, Ages 18-24</u>	27.0	23.1 - 31.3
	<u>Males, Ages 25+</u>	33.3	32.1 - 34.5
	<u>Females, Ages 18-24</u>	40.6	36.5 - 44.8
	<u>Females, Ages 25+</u>	46.0	44.7 - 47.2

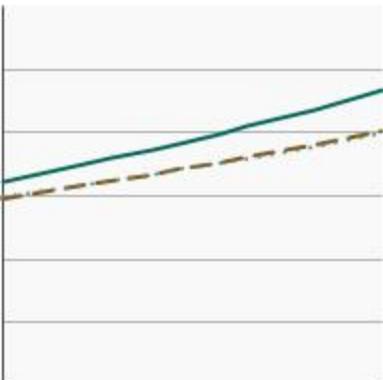
## By Poverty Income Level

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by seeking shade by poverty income level, 1998-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of federal poverty level</u>	44.6	42.9 - 46.4
	<u>&gt;=200% of federal poverty level</u>	37.1	36.0 - 38.1

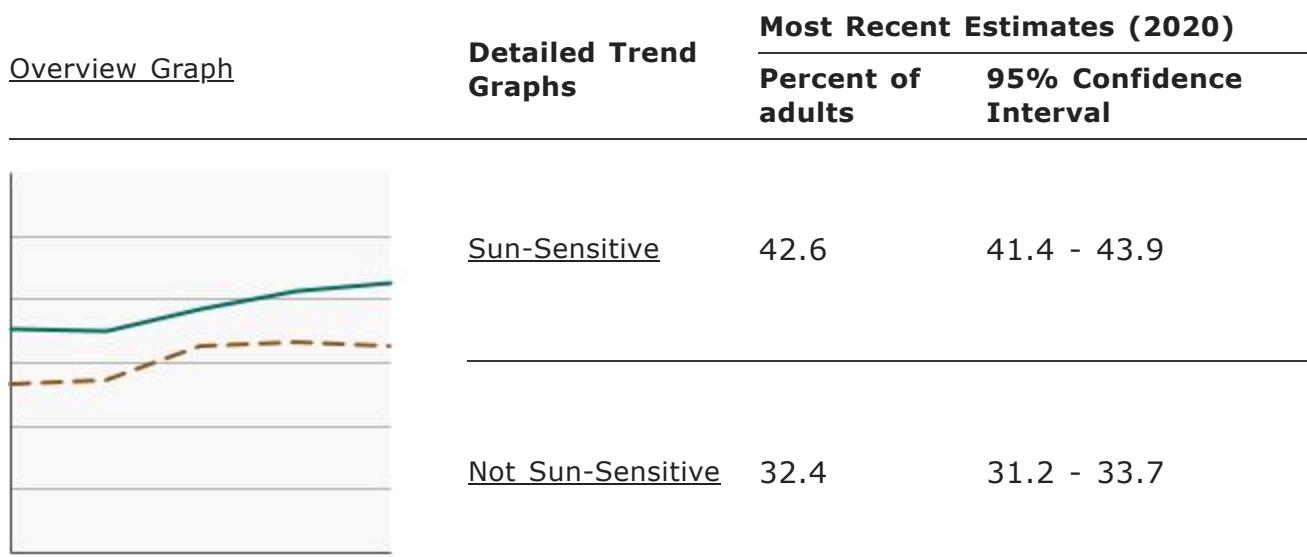
## By Education Level

Percentage of adults aged 25 years and older who always or most of the time protect themselves from the sun by seeking shade by highest level of education obtained, 1992-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Less than High School</u>	43.1	40.0 - 46.4
	<u>High School</u>	40.0	38.4 - 41.7
	<u>Greater than High School</u>	39.0	38.0 - 40.0

## By Sun Sensitivity

Percentage of adults aged 18 years and older who always or most of the time protect themselves from the sun by seeking shade by sun sensitivity, 2000-2020



*Sun sensitivity reflects a person's biological response (e.g., a burn, a burn and then tan, etc.) after prolonged sun exposure or after a long period or season of being relatively unexposed. Although race is related to sun sensitivity, race and ethnicity are not adequate proxies for sun sensitivity.*

## **Cancers Related to Sun-Protective Behavior**

Statistical summaries from NCI's SEER Cancer Stat Fact Sheets:

- [Melanoma of the Skin](#)

## **Additional Information on Sun-Protective Behavior**

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures

### Indoor and Outdoor Tanning

#### Data Up to Date as of:

April 2022

#### Background

Guy et al. 2017 estimated that restricting indoor tanning among minors under 18 years old may prevent melanoma incidence and mortality and save millions of dollars in treatment costs in the United States. Subsequent international modeling studies accounting for more stringent indoor policies in the US, Canada, and Europe since 2018 estimate reduced skin cancer burden and reduced health care costs if indoor tanning were banned among minors or banned completely.

Reports indicate that age restriction laws have been associated with less indoor tanning, and teens who do not tan before age 18 are two to four times less likely to tan as adults. Several states have adopted laws restricting youth access to tanning beds, and the FDA has proposed a nationwide restriction for minors' (under 18 years) access to tanning beds. Bowers et al. 2020 reported that indoor tanning rates among adults over age 18 also decreased in states that banned indoor tanning among minors as compared to adults in states without tanning restrictions for minors.

While reduction of indoor tanning is estimated to significantly reduce melanoma, outdoor sun exposure is the primary modifiable melanoma risk factor and includes intentional outdoor tanning and unintentional sun exposure. Among US adolescents, outdoor tanning (15.6%) appears to be more prevalent than indoor tanning (3%). The 2020 National Health Interview Survey provides the most recent intentional outdoor tanning data for US adults. Overall, 33.7% of US adults reported intentional outdoor tanning in the last 12-months, and outdoor tanning was more common among women (38.7%) than men (28.7%) and among adults aged under 25 years (45.1%) than those aged 25 years and over (32%), and among sun-sensitive adults (39.9%) than adults who are not sun-sensitive (29.2%). Considering the context of sunburn, other data indicate, leisure pursuits near water, physical activity, and work around the home as the most frequent contexts of sunburn in addition to intentional outdoor tanning.

#### Measure

#### Measures

The percentage of high school students (grades 9-12) who reported use of an indoor tanning device such as a sunlamp, sunbed, or tanning booth (not counting receipt of a spray-on tan) one or more times during the 12 months before the survey.

The percentage of adults aged 18 years and older who have used an indoor tanning device one or more times during the past 12 months. Although NHIS-CCS also collected this data for adults in 2005 and 2008, the methodology used likely resulted in overestimates, and these data are not included in the report.

The percentage of adults aged 18 years and older who reported spending time outdoors for the purpose of developing a tan (i.e., always, most times, sometimes, or rarely) during the past 12 months

#### Healthy People 2030 Target

There are no Healthy People 2030 targets regarding indoor or outdoor tanning.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

#### Data Source

**Adolescents:** Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Youth Risk Behavior Surveillance System (YRBSS), 2009–2019.

**Adults:** Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey NCI and CDC co-sponsored Cancer Control Supplement, 2010-2015. Outdoor tanning only available for 2020.

In 2019 the NHIS questionnaire was redesigned to increase relevance, enhance data quality, and minimize respondent burden. In addition, the COVID-19 pandemic created challenges conducting in-person interviews for the 2020 NHIS, requiring changes to field procedures to conduct most surveys by telephone, which impacted

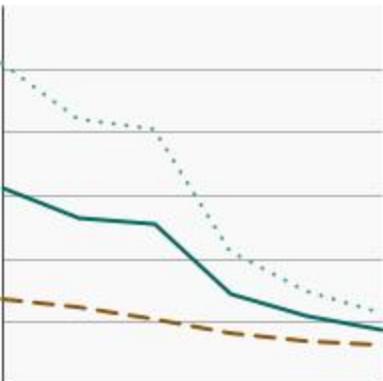
survey response rates. For details related to the potential impacts of these issues, please refer to [Potential Impact of NHIS Redesign and COVID-19 on the Cancer Trends Progress Report](#).

## ② Trends and Most Recent Estimates

### Adolescents

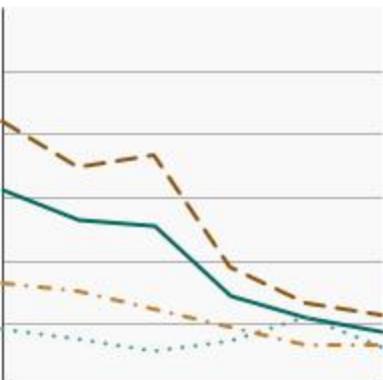
#### By Sex

Percentage of adolescents in grades 9 through 12 who used an indoor tanning device in the past year by sex, 2009-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of adolescents</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	4.5	3.5 - 5.6
	<u>Male</u>	3.2	2.5 - 4.1
	<u>Female</u>	5.7	4.2 - 7.7

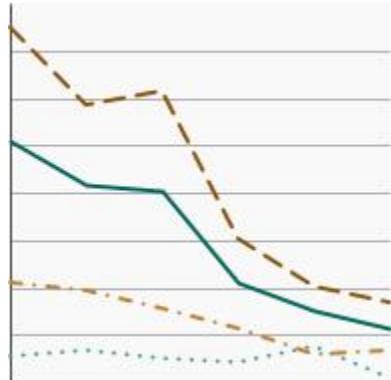
#### By Race/Ethnicity

Percentage of adolescents in grades 9 through 12 who used an indoor tanning device in the past year by race/ethnicity, 2009-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of adolescents</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	4.5	3.5 - 5.6
	<u>Non-Hispanic White</u>	5.6	4.2 - 7.4
	<u>Non-Hispanic Black</u>	3.2	2.2 - 4.7
	<u>Hispanic</u>	3.4	2.5 - 4.5

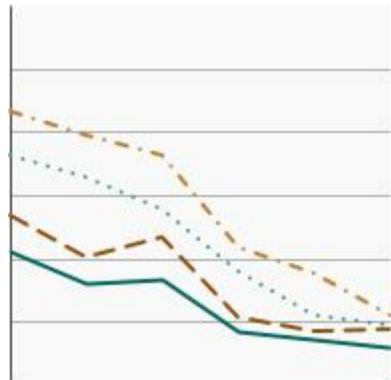
## Females by Race/Ethnicity

Percentage of female adolescents in grades 9 through 12 who used an indoor tanning device in the past year by race/ethnicity, 2009-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of female adolescents</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	5.7	4.2 - 7.7
	<u>Non-Hispanic White</u>	8.4	6.0 - 11.7
	<u>Non-Hispanic Black</u>	0.5	0.3 - 0.9
	<u>Hispanic</u>	3.3	2.5 - 4.4

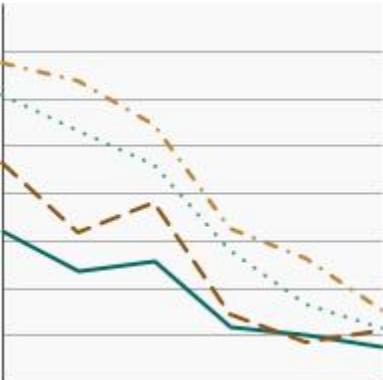
## By High School Grade

Percentage of adolescents in grades 9 through 12 who used an indoor tanning device in the past year by grade level, 2009-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of adolescents</b>	<b>95% Confidence Interval</b>
	<u>Grade 9</u>	3.0	2.1 - 4.3
	<u>Grade 10</u>	4.4	3.2 - 6.1
	<u>Grade 11</u>	4.7	3.2 - 7.0
	<u>Grade 12</u>	5.5	4.0 - 7.4

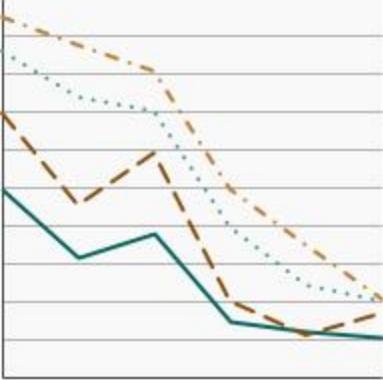
## Females by High School Grade

Percentage of female adolescents in grades 9 through 12 who used an indoor tanning device in the past year by grade level, 2009-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of female adolescents</b>	<b>95% Confidence Interval</b>
	<u>Grade 9</u>	3.7	2.4 - 5.6
	<u>Grade 10</u>	5.5	3.7 - 8.1
	<u>Grade 11</u>	5.6	3.5 - 9.0
	<u>Grade 12</u>	7.5	5.0 - 11.3

## Non-Hispanic White Female by High School Grade

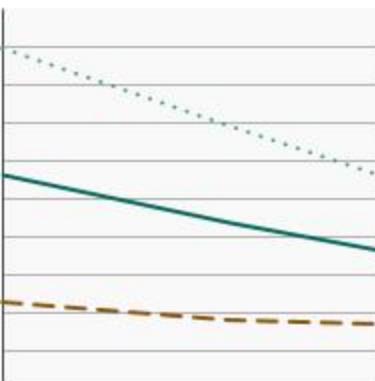
Percentage of Non-Hispanic White female adolescents in grades 9 through 12 who used an indoor tanning device in the past year by grade level, 2009-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of female Non-Hispanic White adolescents</b>	<b>95% Confidence Interval</b>
	<u>Grade 9</u>	5.3	3.3 - 8.4
	<u>Grade 10</u>	8.5	5.7 - 12.6
	<u>Grade 11</u>	9.9	6.1 - 15.8
	<u>Grade 12</u>	10.1	6.2 - 16.2

## Adults

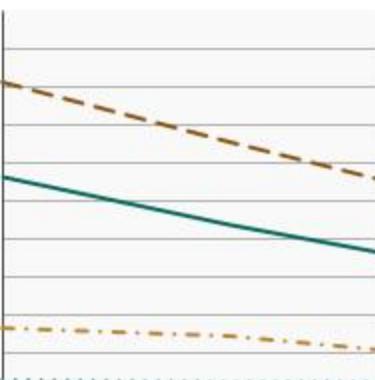
### By Sex

Percentage of adults aged 18 years and older who used an indoor tanning device in the past year by sex, 2010-2015

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2015)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	3.6	3.3 - 4.0
	<u>Male</u>	1.7	1.4 - 2.0
	<u>Female</u>	5.6	5.1 - 6.2

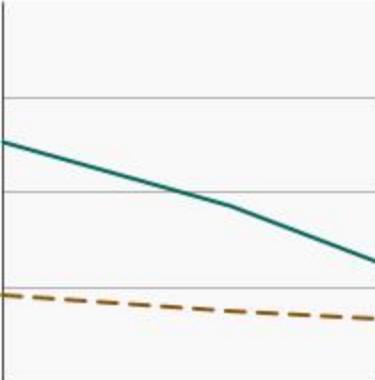
### By Race/Ethnicity

Percentage of adults aged 18 years and older who used an indoor tanning device in the past year by race/ethnicity, 2010-2015

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2015)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	3.6	3.3 - 4.0
	<u>Non-Hispanic White</u>	5.5	5.0 - 6.1
	<u>Non-Hispanic Black</u>	0.2	0.1 - 0.4
	<u>Hispanic</u>	1.0	0.8 - 1.4

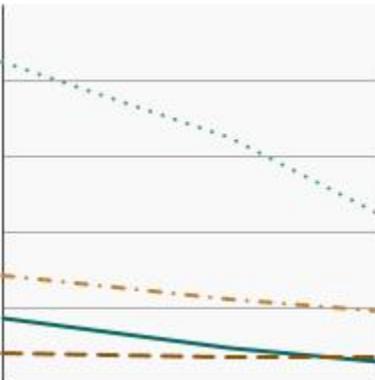
## By Age

Percentage of adults aged 18 years and older who used an indoor tanning device in the past year by age, 2010-2015

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2015)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Ages 18-24</u>	6.2	5.1 - 7.5
	<u>Ages 25 and older</u>	3.3	2.9 - 3.6

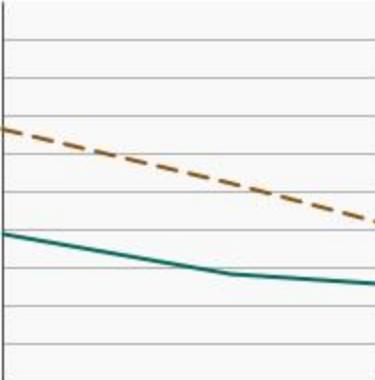
## By Sex and Age

Percentage of adults aged 18 years and older who used an indoor tanning device in the past year by sex and age, 2010-2015

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2015)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Males, Ages 18-24</u>	1.5	0.9 - 2.5
	<u>Males, Ages 25 and older</u>	1.7	1.4 - 2.0
	<u>Females, Ages 18-24</u>	11.0	9.0 - 13.4
	<u>Females, Ages 25 and older</u>	4.8	4.3 - 5.4

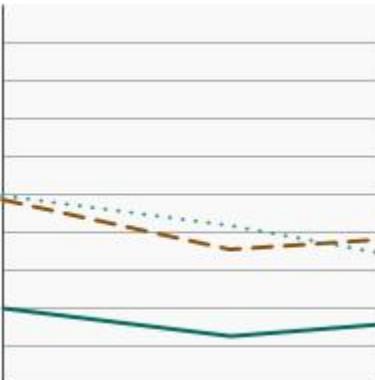
## By Poverty Income Level

Percentage of adults aged 18 years and older who used an indoor tanning device in the past year by poverty income level, 2010-2015

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2015)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of federal poverty level</u>	2.6	2.2 - 3.0
	<u>&gt;=200% of federal poverty level</u>	4.2	3.7 - 4.6

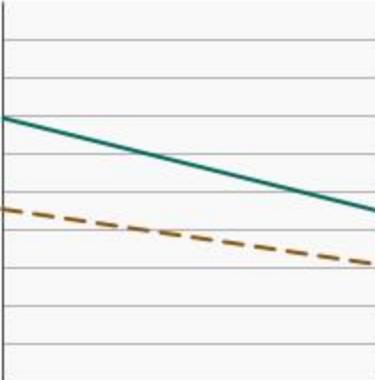
## By Education Level

Percentage of adults aged 25 years and older who used an indoor tanning device in the past year by highest level of education obtained, 2010-2015

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2015)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Less than High School</u>	1.6	1.1 - 2.2
	<u>High School</u>	3.8	3.1 - 4.6
	<u>Greater than High School</u>	3.4	3.0 - 3.8

## By Sun Sensitivity

Percentage of adults aged 18 years and older who used an indoor tanning device in the past year by sun sensitivity, 2010-2015

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2015)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Sun-Sensitive</u>	4.5	4.0 - 5.0
	<u>Not Sun-Sensitive</u>	3.0	2.6 - 3.5

*Sun sensitivity reflects a person's biological response (e.g., a burn, a burn and then tan, etc.) after prolonged sun exposure or after a long period or season of being relatively unexposed. Although race is related to sun sensitivity, race and ethnicity are not adequate proxies for sun sensitivity.*

## **Cancers Related to Indoor and Outdoor Tanning**

Statistical summaries from NCI's SEER Cancer Stat Fact Sheets:

- [Melanoma of the Skin](#)

## **Additional Information on Indoor and Outdoor Tanning**

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## **Sunburn**

### **Data Up to Date as of:**

April 2022

### **Background**

Sunburn, also known as erythema, is caused by excessive exposure to ultraviolet radiation (UVR), which results in an acute cutaneous inflammatory response. Sunburn results from over exposure to UVR and can occur from use of indoor tanning beds or over exposure to outdoor sunlight. Although sunbathing and tanning are strongly associated with sunburn, recent data indicate that most sunburns occur in contexts unrelated to intentional tanning, such as engaging in physical activity and when spending time near the water. Sunburn symptoms include redness, warmth, tenderness, or edema, and may cause pain or blistering. Annually, over 33,000 sunburns are reported that require emergency room visits and may occur among people of all racial/ethnic groups. Previous sun burning, particularly experienced at younger ages, is a strong predictor of future skin cancer and especially melanoma, the deadliest form of skin cancer. People with sun sensitive skin are more likely to incur sunburn and are at greater risk for skin cancer, especially melanoma, than those with relatively less sun sensitivity. Sun sensitivity reflects a person's characteristic skin response (e.g., a burn, a burn and then tan, etc.) after prolonged sun exposure or after a long period or season of being relatively unexposed. Though related to sun sensitivity, skin color and ethnicity are not adequate proxies for sun sensitivity because they are not accurate biological descriptors of at-risk populations.

### **Measure**

The percentage of high school students (grades 9-12) who reported having been sunburned in the past 12 months.

The percentage of adults aged 18 years and older who reported having been sunburned in the past 12 months.

### **Healthy People 2030 Target**

- Reduce to 52.2 percent the proportion of adolescents in grades 9 through 12 who report sunburn.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

### **Data Source**

**Adolescents:** Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Youth Risk Behavior Surveillance System (YRBSS), 2015-2017.

**Adults:** Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey NCI and CDC co-sponsored Cancer Control Supplement, 2000-2010, 2010-2020.

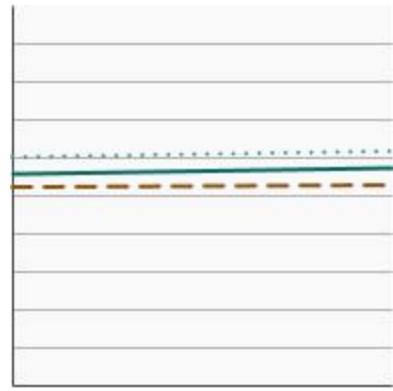
In 2019 the NHIS questionnaire was redesigned to increase relevance, enhance data quality, and minimize respondent burden. In addition, the COVID-19 pandemic created challenges conducting in-person interviews for the 2020 NHIS, requiring changes to field procedures to conduct most surveys by telephone, which impacted survey response rates. For details related to the potential impacts of these issues, please refer to Potential Impact of NHIS Redesign and COVID-19 on the Cancer Trends Progress Report.

## Trends and Most Recent Estimates

### Adolescents

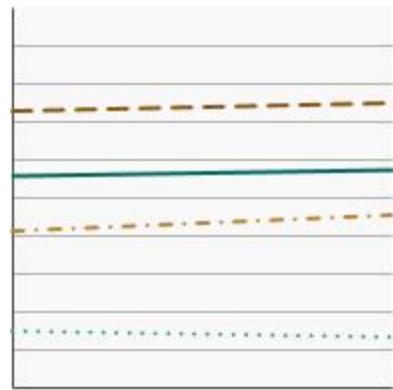
#### By Sex

Percentage of students in grades 9-12 who were sunburned in the past year by sex, 2015-2017

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017)</b>	
		<b>Percent of adolescents</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	57.2	54.1 - 60.3
	<u>Male</u>	52.8	49.4 - 56.0
	<u>Female</u>	61.6	58.4 - 64.7

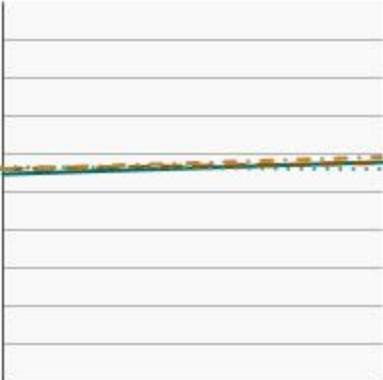
#### By Race/Ethnicity

Percentage of students in grades 9-12 who were sunburned in the past year by race/ethnicity, 2015-2017

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017)</b>	
		<b>Percent of adolescents</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	57.2	54.1 - 60.3
	<u>Non-Hispanic White</u>	74.8	73.0 - 76.6
	<u>Non-Hispanic Black</u>	13.0	10.4 - 16.1
	<u>Hispanic</u>	45.1	42.4 - 47.8

## By High School Grade

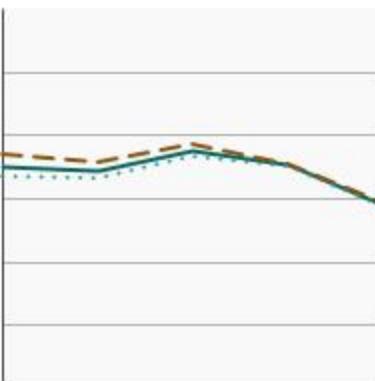
Percentage of students in grades 9-12 who were sunburned in the past year by grade level, 2015-2017

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017)</b>	
		<b>Percent of adolescents</b>	<b>95% Confidence Interval</b>
	<u>Grade 9</u>	57.7	53.9 - 61.4
	<u>Grade 10</u>	57.2	53.1 - 61.2
	<u>Grade 11</u>	55.6	51.5 - 59.7
	<u>Grade 12</u>	58.7	54.5 - 62.9

## Adults

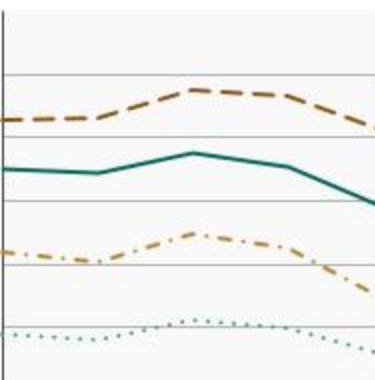
### By Sex

Percentage of adults aged 18 years and older who were sunburned in the past year by sex, 2000-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<a href="#">Both Sexes</a>	29.1	28.2 - 30.1
	<a href="#">Male</a>	29.5	28.3 - 30.6
	<a href="#">Female</a>	28.9	27.7 - 30.0

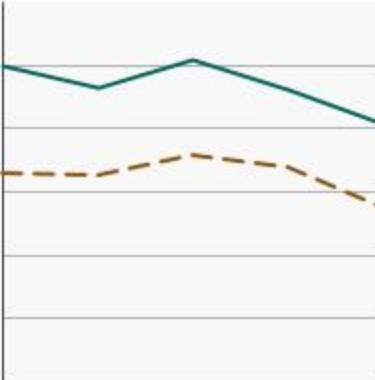
### By Race/Ethnicity

Percentage of adults aged 18 years and older who were sunburned in the past year by race/ethnicity, 2000-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<a href="#">All Races</a>	29.1	28.2 - 30.1
	<a href="#">Non-Hispanic White</a>	41.1	40.1 - 42.2
	<a href="#">Non-Hispanic Black</a>	5.6	4.6 - 6.7
	<a href="#">Hispanic</a>	14.4	12.9 - 16.0

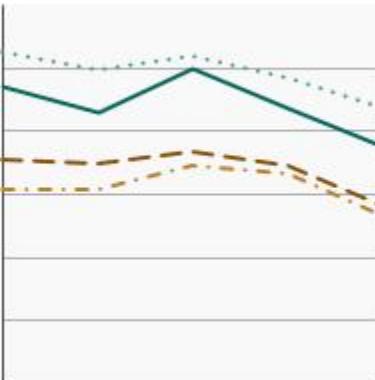
## By Age

Percentage of adults aged 18 years and older who were sunburned in the past year by age, 2000-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Ages 18-24</u>	40.6	37.7 - 43.6
	<u>Ages 25 and older</u>	27.4	26.5 - 28.3

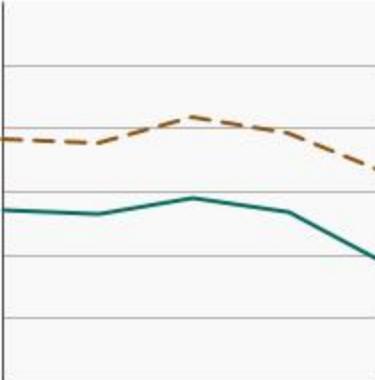
## By Sex and Age

Percentage of adults aged 18 years and older who were sunburned in the past year by sex and age, 2000-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Males, Ages 18-24</u>	37.7	33.8 - 41.7
	<u>Males, Ages 25 and older</u>	28.2	27.1 - 29.4
	<u>Females, Ages 18-24</u>	43.6	39.4 - 47.8
	<u>Females, Ages 25 and older</u>	26.7	25.6 - 27.8

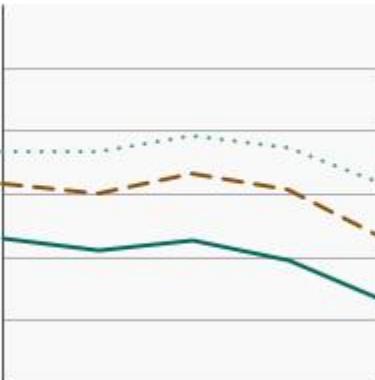
## By Poverty Income Level

Percentage of adults aged 18 years and older who were sunburned in the past year by poverty income level, 2000-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of federal poverty level</u>	19.1	17.8 - 20.5
	<u><math>\geq 200\%</math> of federal poverty level</u>	33.1	32.1 - 34.1

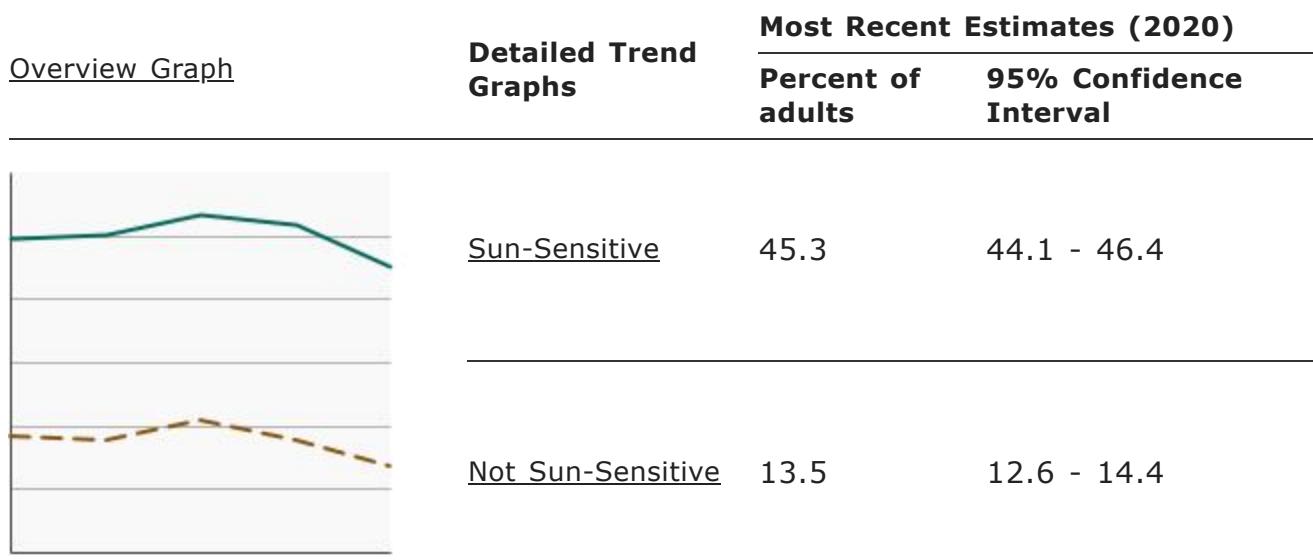
## By Education Level

Percentage of adults aged 25 years and older who were sunburned in the past year by highest level of education obtained, 2000-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Less than High School</u>	13.2	11.1 - 15.6
	<u>High School</u>	23.0	21.4 - 24.7
	<u>Greater than High School</u>	31.7	30.7 - 32.7

## By Sun Sensitivity

Percentage of adults aged 18 years and older who were sunburned in the past year by sun sensitivity, 2000-2020



*Sun sensitivity reflects a person's biological response (e.g., a burn, a burn and then tan, etc.) after prolonged sun exposure or after a long period or season of being relatively unexposed. Although race is related to sun sensitivity, race and ethnicity are not adequate proxies for sun sensitivity.*

## **Cancers Related to Sunburn**

Statistical summaries from NCI's SEER Cancer Stat Fact Sheets:

- [Melanoma of the Skin](#)

## **Additional Information on Sunburn**

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures

### HPV Vaccination

#### Data Up to Date as of:

April 2022

#### Background

Human papillomavirus (HPV) is a common virus, some types of which spread through sexual contact. Some sexually transmitted HPVs can cause genital warts, whereas others, called high-risk or oncogenic HPVs, can cause cancer. High-risk HPVs cause virtually all cervical cancers, most anal cancers, and some vaginal, vulvar, penile, and oropharyngeal cancers. Many HPV infections go away on their own within 1 to 2 years. However, infections that last for many years increase a person's risk of developing cancer.

HPV vaccines work like other immunizations (a technique used to cause an immune response that results in resistance to a specific disease) that guard against viral infections. According to the Centers for Disease Control and Prevention (CDC), both males and females aged 11 to 12 years should get vaccinated. People aged 9 to 26 years are recommended to receive the vaccine. People aged 27 to 45 years may decide to get vaccinated after talking with their doctors about their risks for new HPV infections.

Because the vaccines do not protect against all HPV infections that cause cervical cancer, it is important for vaccinated women to continue cervical cancer screening.

#### Measure

Percentage of adolescents aged 13-15 years who had received 2 or 3 doses of the human papillomavirus (HPV) vaccine as recommended at time of immunization.

From 2008-2011, the recommendation by the CDC's Advisory Committee on Immunization Practices (ACIP) was for a 3-dose series for females only. From 2011-2016, the recommendation included both males and females using a 3-dose series. Beginning in 2016, ACIP recommended males and females beginning their vaccination series before 15 years of age receive a 2-dose, rather than 3-dose series.

The National Immunization Survey Teen (NIS-Teen) vaccination coverage estimates are based on provider-reported vaccination histories from adolescents with adequate provider data (APD). NIS-Teen implemented a revised APD definition in 2014, thus estimates in 2014 and after are not directly comparable to those from prior years. However, the change in APD definition does not impact overall vaccination coverage trends; vaccines routinely recommended during adolescence, such as HPV, were less affected than vaccines routinely recommended in childhood. Additional information on implementation of the revised APD definition and assessment of impact on vaccine coverage estimates is available on the [National Immunization Survey-Teen \(NIS-Teen\): Revised Definition of Adequate Provider Data \(APD\)](#) website, published by the CDC.

#### Healthy People 2030 Target

- Increase to 80 percent the proportion of adolescents who receive recommended doses of the human papillomavirus (HPV) vaccine.

[Healthy People 2030](#) is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

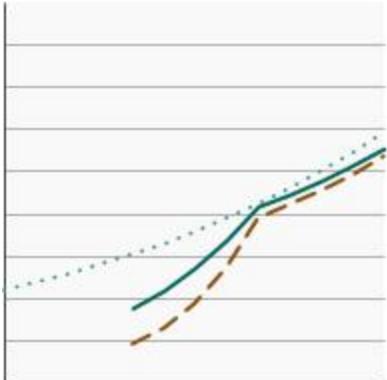
#### Data Source

Centers for Disease Control and Prevention, The National Immunization Surveys (NIS), 2008-2020.

## ② Trends and Most Recent Estimates

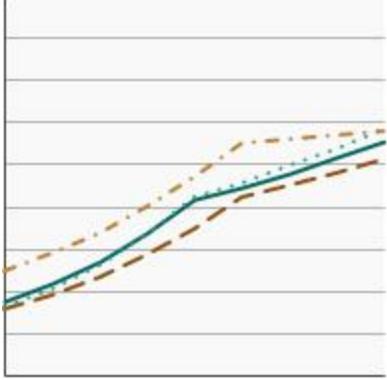
### By Sex

Percentage of adolescents aged 13-15 years who had received 2 or 3 doses of the human papillomavirus (HPV) vaccine as recommended at time of immunization by sex, 2008-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	54.5	52.8 - 56.2
	<u>Male</u>	52.6	50.2 - 54.9
	<u>Female</u>	56.4	53.9 - 58.8

### By Race/Ethnicity

Percentage of adolescents aged 13-15 years who had received 2 or 3 doses of the human papillomavirus (HPV) vaccine as recommended at time of immunization by race/ethnicity, 2012-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	54.5	52.8 - 56.2
	<u>Non-Hispanic White</u>	51.0	49.1 - 53.0
	<u>Non-Hispanic Black</u>	58.8	53.8 - 63.6
	<u>Hispanic</u>	57.6	53.1 - 62.0

### by poverty income level

Percentage of adolescents aged 13-15 years who had received 2 or 3 doses of the

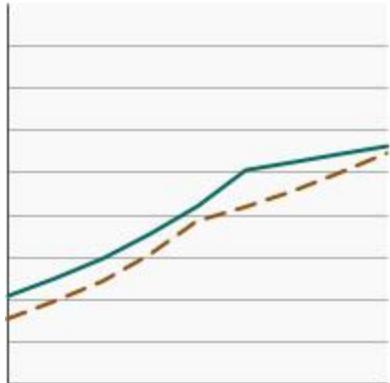
human papillomavirus (HPV) vaccine as recommended at time of immunization by poverty income level, 2012-2020

Overview Graph

**Detailed Trend Graphs**

**Most Recent Estimates  
(2020)**

Percent	95% Confidence Interval
---------	-------------------------



<u>&lt;200% of Federal Poverty Level</u>	56.1	53.1 - 59.1
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<u>&gt;=200% of Federal Poverty Level</u>	54.0	51.9 - 56.1
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## Cancers Related to HPV

Statistical summaries from NCI's SEER Cancer Stat Fact Sheets:

- [Anus](#)
- [Cervix Uteri](#)
- [Oral Cavity and Pharynx](#)
- [Vulva](#)

## Additional Information on HPV Vaccination

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Genetic Testing

### Data Up to Date as of:

April 2022

### Background

Genetic testing looks for specific inherited changes in a person's DNA (or genetic mutations) that may increase a person's chance of developing a disease such as cancer. Genetic testing should be considered if personal or family history suggests an inherited cancer risk condition. The test results can help guide a person's future medical care.

A genetic counselor is a health professional who has special training in medical genetics and counseling. Any person who is considering genetic testing should speak with a genetic counselor before deciding whether to be tested. Genetic counselors can also discuss the risks, benefits, and limitations of genetic testing for individuals to help them understand their situation.

### Measure

Percentage of females aged 18 years and older with a family history of breast and/or ovarian cancer who had discussed the possibility of getting a genetic test for cancer risk with a doctor or other health professional, 2005-2015.

Percentage of adults aged 18 years and older with a personal history of colorectal cancer who had discussed the possibility of getting a genetic test for cancer risk with a doctor or other health professional, by sex, 2005-2015.

Percentage of adults aged 18 years and older with a personal history of colorectal cancer who had a genetic test for cancer risk, by sex, 2005-2015.

### Healthy People 2030 Target

- (Developmental Objective) Increase the proportion of women with a family history of breast and/or ovarian cancer who receive genetic counseling.
- (Research Objective) Increase the proportion of persons with newly diagnosed colorectal cancer who receive genetic testing to identify Lynch syndrome or familial colorectal cancer syndromes.

*Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.*

*Note: Healthy People 2030 Developmental and Research Objectives do not have targets, so there is no target line on the Detailed Trend Graphs. Learn more about [different types of Healthy People Objectives](#).*

### Data Source

Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey NCI and CDC co-sponsored Cancer Control Supplement, 2005-2015.

In 2019 the NHIS questionnaire was redesigned to increase relevance, enhance data quality, and minimize respondent burden. In addition, the COVID-19 pandemic created challenges conducting in-person interviews for the 2020 NHIS, requiring changes to field procedures to conduct most surveys by telephone, which impacted survey response rates. For details related to the potential impacts of these issues, please refer to [Potential Impact of NHIS Redesign and COVID-19 on the Cancer Trends Progress Report](#).

## ?

## Trends and Most Recent Estimates

### Breast and Ovarian Cancer

Percentage of females aged 18 years and older with a family history of breast and/or ovarian cancer who had discussed the possibility of getting a genetic test for cancer risk with a doctor or other health professional<sup>1</sup>, 2005-2015

Overview Graph

**Detailed Trend Graphs**

**Most Recent Estimates  
(2015)**

Percent of females	95% Confidence Interval
--------------------------	-------------------------------



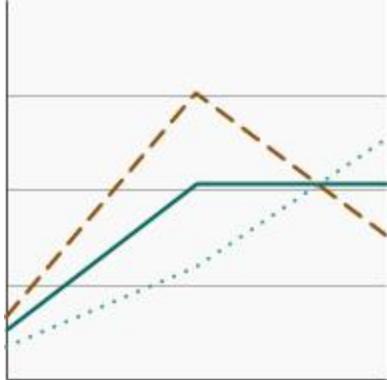
Discussed the Possibility of a  
Genetic Test for Cancer Risk 22.9 12.8 - 37.6

<sup>1</sup> Analysis includes females who met the USPSTF guidelines based on family history of breast and ovarian cancer.

### Colorectal Cancer

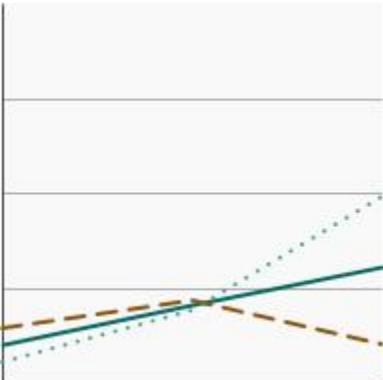
## Genetic Counseling

Percentage of adults aged 18 years and older with a personal history of colorectal cancer who had discussed the possibility of getting a genetic test for cancer risk with a doctor or other health professional by sex, 2005-2015

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2015)</b>	
		<b>Percent of adults with personal history of colorectal cancer</b>	<b>95% Confidence Interval</b>
		<u>Both Sexes</u> 10.3	6.0 - 17.1
		<u>Male</u> 7.6	3.3 - 16.6
		<u>Female</u> 12.6	6.2 - 23.9

## Genetic Testing

Percentage of adults aged 18 years and older with a personal history of colorectal cancer who had a genetic test for cancer risk by sex, 2005-2015

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2015)</b>	
		<b>Percent of adults with personal history of colorectal cancer</b>	<b>95% Confidence Interval</b>
		<u>Both Sexes</u> 6.1	2.9 - 12.3
		<u>Male</u> 2.0	0.7 - 5.4
		<u>Female</u> 9.8	4.3 - 21.1

## Cancers Related to Genetic Testing

Statistical summaries from NCI's [SEER Cancer Stat Fact Sheets](#):

- Adrenal Gland
- [Bone and Joint](#)
- [Brain and Other Nervous System](#)
- [Breast](#)
- [Colon and Rectum](#)
- Eye
- [Kidney and Renal Pelvis](#)
- [Leukemia](#)
- [Liver and Intrahepatic Bile Duct](#)
- [Melanoma of the Skin](#)
- [Ovary](#)
- [Pancreas](#)
- Pineal Gland
- Pituitary Gland
- [Prostate](#)
- [Small Intestine](#)
- [Soft Tissue including Heart](#)
- [Stomach](#)
- [Thyroid](#)
- [Uterus](#)

## Additional Information on Genetic Testing

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## **Tobacco Policy/Regulatory Factors**

Effective policy and regulation are necessary to reduce the burden of cancer on the country. Federal law restricts the time, manner, and place of tobacco advertising and promotions because they are known to increase Americans' tobacco use. Federal law also requires state Medicaid programs to make tobacco cessation services available to pregnant women, but an expansion of coverage is needed to make these services available to more people.

- [Tobacco Company Marketing Expenditures](#)
- [Medicaid Coverage of Tobacco Dependence Treatments](#)

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Tobacco Company Marketing Expenditures

**Data Up to Date as of:**

April 2022

### Background

Tobacco advertising and promotion are causally related to increased tobacco use. Cigarettes are one of the most heavily marketed products in the U.S. The U.S. Federal Trade Commission has reported cigarette sales and marketing expenditures annually since 1967 and smokeless tobacco sales and marketing expenditures periodically since 1987. These reports highlight spending on advertising and promotion by the largest cigarette companies and major smokeless tobacco product manufacturers in the U.S. The sales and marketing expenditures reported include categories such as direct mail, Internet, point of sale, price discounts, coupons, sampling distribution, and sponsorships. The Federal Trade Commission has issued orders to six e-cigarette manufacturers seeking similar information to accompany the cigarette and smokeless tobacco product reports on sales and marketing.

The Family Smoking Prevention and Tobacco Control Act, signed into law on June 22, 2009, provides the U.S. Food and Drug Administration with broad authority to regulate tobacco product marketing. This legislation affirms state and community authority to regulate, among other things, the sale, distribution, access to, advertising and promotion of, or use of tobacco products.

### Measure

Combined cigarette annual advertising and promotional expenditures by the parent companies of the major manufacturers of cigarettes sold in the U.S., adjusted, as reported by manufacturers to the U.S. Federal Trade Commission.

Combined smokeless tobacco annual advertising and promotional expenditures by the parent companies of the major manufacturers of smokeless tobacco products in the U.S., adjusted, as reported by manufacturers to the U.S. Federal Trade Commission.

### Healthy People 2030 Target

- There are no Healthy People 2030 targets for reducing tobacco company marketing expenditures.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

### Data Source

Federal Trade Commission Cigarette Report for 2020.

Federal Trade Commission Smokeless Tobacco Report for 2020.

## Trends and Most Recent Estimates

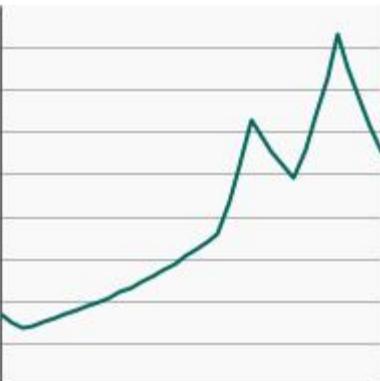
### Cigarettes

Domestic cigarette advertising and promotional expenditures by U.S. tobacco companies adjusted to 2020 dollars, 1970-2020

Most Recent Estimates (2020)			
<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	Dollars spent (in billions)	95% Confidence Interval
	<u>Total Marketing Expenditures</u>	7.8	Not available

### Smokeless Tobacco

Domestic smokeless tobacco advertising and promotional expenditures by U.S. tobacco companies adjusted to 2020 dollars, 1985-2020

Most Recent Estimates (2020)			
<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	Dollars spent (in millions)	95% Confidence Interval
	<u>Total Marketing Expenditures</u>	576.3	Not available

### Additional Information on Tobacco Company Marketing Expenditures

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Medicaid Coverage of Tobacco Dependence Treatments

**Data Up to Date as of:**

April 2022

### Background

Medicaid enrollees have a higher smoking prevalence than the general population. Smoking-related diseases are a major contributor to Medicaid costs. Providing people who use tobacco access to evidence-based tobacco dependence treatments can reduce morbidity and mortality from cancers and other tobacco-related diseases and reduce Medicaid costs.

All state Medicaid programs must provide tobacco cessation services (both counseling and medications) for pregnant women under section 4107 of the 2010 Patient Protection and Affordable Care Act (ACA). Additionally, effective 2014, section 2502 of the ACA barred state Medicaid programs that participate in the Medicaid drug rebate program from excluding coverage for cessation medications approved by the U.S. Food and Drug Administration. However, coverage of cessation counseling still varies widely by state. As of September 30, 2021, only 20 states provided comprehensive coverage of all evidence-based cessation treatments (medications, individual and group counseling) for all Medicaid enrollees. Expansion of treatment coverage and eligibility while reducing barriers to treatment access (e.g., copays, duration limits on treatment) are still needed.

### Measure

The number of states that provide coverage under Medicaid for any evidence-based tobacco dependence treatment (pharmacotherapy or counseling), either to their entire Medicaid population or to only pregnant women.

The number of states that provide coverage under Medicaid for individual or group tobacco cessation counseling.

1

The number of states that provide coverage under Medicaid for smoking cessation medications. Over-the-counter medications include Nicotine Patch, Nicotine Gum, and/ or Nicotine Lozenge; Prescription medications include Nicotine Oral Inhaler, Nicotine Nasal Spray, Bupropion (Zyban®) and/or Varenicline (Chantix®).<sup>1</sup>

### 1 Definitions

**Covered:** This service is provided for all individuals enrolled in Medicaid through either fee-for-service, managed care plans, or both.

**Coverage Varies by Plan:** If the managed care plans vary, or if the fee-for-service plan and managed care plans had different coverage, it was classified as "Varies by Plan."

**Pregnant Women Only:** This service is provided only for pregnant women

**Note:** Both fee-for-service and managed care plans were considered. If a state reported "Not Applicable" for one plan, what was reported for the other plan was used.

### Healthy People 2030 Target

- Increase comprehensive Medicaid insurance coverage of evidence-based treatment for nicotine dependency in States and the District of Columbia.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

### Data Source

Data from 2009 to present: Centers for Disease Control and Prevention. [State Tobacco Activities Tracking and Evaluation \(STATE\) System](#).

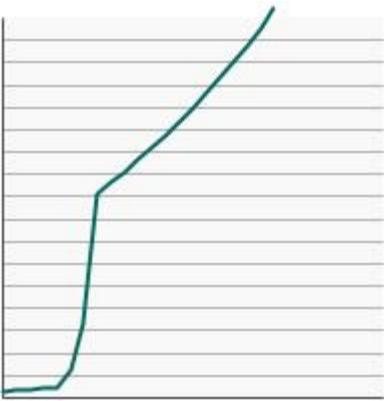
Data through 2008: McMenamin SB, Halpin HA, Bellows MN, Husten CG, Rosenthal A. State Medicaid coverage for tobacco-dependence treatments - United States, 2007. Morbidity and Mortality Weekly Report 2009;58(43):1199-1204.

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## Trends and Most Recent Estimates

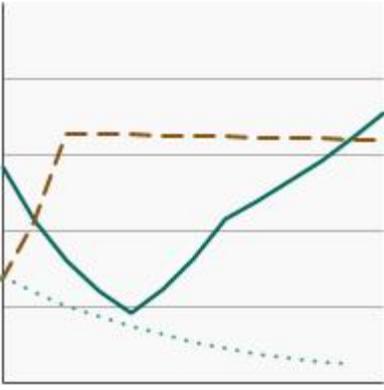
### Medicaid Coverage of Cessation Treatments

Medicaid coverage of at least one tobacco-dependence treatment (pharmacotherapy or counseling), either to their entire Medicaid population or only to pregnant women, in the 50 states and DC, 1990-2021

		Most Recent Estimates (2021)	
<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	Number of States	95% Confidence Interval
	<u>Medicaid Coverage of Cessation Treatments</u>	51.0	Not available

### Medicaid Coverage for Group Cessation Counseling

State Medicaid coverage for tobacco cessation group counseling by population covered, 2008-2020

		Most Recent Estimates (2020)	
<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	Number of U.S. states	95% Confidence Interval
	<u>Covered</u> <u>Coverage Varies by Plan</u> <u>Pregnant Women Only</u>	18.0 16.0 0.0	Not available Not available Not available

## Medicaid Coverage for Individual Cessation Counseling

State Medicaid coverage for tobacco cessation individual counseling by population covered, 2008-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Number of U.S. states</b>	<b>95% Confidence Interval</b>
	<u>Covered</u>	33.0	Not available
	<u>Coverage Varies by Plan</u>	14.0	Not available
	<u>Pregnant Women Only</u>	3.0	Not available

## Medicaid Coverage for Cessation Aids

State Medicaid coverage for tobacco cessation aids by population covered, 2008-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Number of U.S. states</b>	<b>95% Confidence Interval</b>
	<u>Over-the-Counter Aids Covered</u>	48.0	Not available
	<u>Prescription Aids Covered</u>	50.0	Not available
	<u>OTC Coverage Varies by Plan</u>	1.0	Not available
	<u>Prescription Coverage Varies by Plan</u>	1.0	Not available

## Additional Information on Medicaid Coverage of Tobacco Dependence Treatments

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures

### **Secondhand Smoke**

Secondhand smoke (SHS) is a mixture of the side stream smoke released by a smoldering cigarette, pipe, hookah/waterpipe, or cigar, and the mainstream smoke exhaled by a smoker. SHS is a complex mixture containing thousands of chemicals, including formaldehyde, cyanide, carbon monoxide, ammonia, and nicotine. More than 250 of the chemicals in SHS are known to be harmful, and at least 69 are known to cause cancer. Conclusive scientific evidence documents that SHS causes premature death and disease in children and adults who do not smoke. Among adults, exposure to SHS has immediate adverse effects on the cardiovascular system, and long-term exposure to SHS causes coronary heart disease and lung cancer. Children exposed to SHS are at increased risk for sudden infant death syndrome, acute respiratory infections, middle ear disease, more severe asthma, respiratory symptoms, and slowed lung growth.

Secondhand aerosol is a mixture of chemicals in the aerosol exhaled by e-cigarette users. Some of the chemicals found in SHS are also present in secondhand aerosol. Although these levels are generally lower than in secondhand smoke, exposure is not risk-free. In addition to nicotine, e-cigarette aerosol may contain heavy metals, volatile organic compounds, and fine and ultrafine particles that can be inhaled deeply into the lungs by both users and bystanders. Secondhand aerosol is often incorrectly referred to as "vapor".

- [Secondhand Smoke Exposure](#)
- [Smokefree Home Rules](#)
- [Smokefree Workplace Rules and Laws](#)

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Secondhand Smoke Exposure

**Data Up to Date as of:**

April 2022

### Background

Secondhand smoke (SHS) is a mixture of the sidestream smoke released by a smoldering cigarette, pipe, hookah/waterpipe, or cigar, and the mainstream smoke exhaled by a smoker. SHS is a complex mixture containing thousands of chemicals, including formaldehyde, cyanide, carbon monoxide, ammonia, and nicotine. More than 250 of the chemicals in SHS are known to be harmful, and at least 69 are known to cause cancer. Conclusive scientific evidence documents that SHS causes premature death and disease in children and adults who do not smoke. Among adults, exposure to SHS has immediate adverse effects on the cardiovascular system, and long-term exposure to SHS causes coronary heart disease and lung cancer. Children exposed to SHS are at increased risk for sudden infant death syndrome, acute respiratory infections, middle ear disease, more severe asthma, respiratory symptoms, and slowed lung growth.

There is no risk-free level of exposure to SHS, and only eliminating smoking in indoor spaces fully protects nonsmokers from exposure to SHS. Exposure to SHS among nonsmokers can be assessed by measurement of cotinine, a metabolite of nicotine. While cotinine levels may vary by individual due to the speed of nicotine metabolism and cotinine clearance, detection of cotinine above a minimum threshold is a validated measure of exposure to SHS in nonsmokers.

### Measure

The percentage of nonsmokers exposed to secondhand smoke. (The percentage of nonsmokers aged 3 years and older with a serum cotinine level greater than 0.05 ng/mL and less than or equal to 10 ng/mL.)

### Healthy People 2030 Target

- Reduce the proportion of people who do not smoke but are exposed to secondhand smoke to 17.3%.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

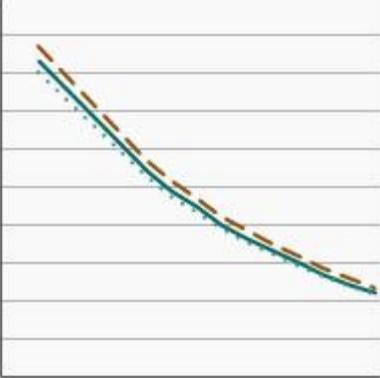
### Data Source

Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey. “Secondhand smoke exposure” measure.

## Trends and Most Recent Estimates

### By Sex

Percentage of nonsmokers aged 3 years and older<sup>1</sup> exposed to secondhand smoke<sup>2</sup> by sex, 1988-2018

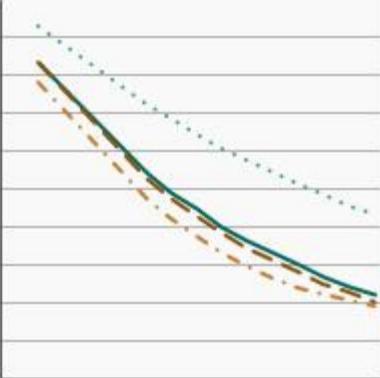
<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of nonsmokers</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	25.8	22.8 - 28.7
	<u>Male</u>	27.1	22.6 - 31.6
	<u>Female</u>	24.6	22.1 - 27.1

<sup>1</sup>The 1988-1994 estimate starts at age 4 instead of age 3.

<sup>2</sup>As measured by a serum cotinine level of greater than 0.05 ng/ml and less than or equal to 10 ng/ml.

### By Race/Ethnicity

Percentage of nonsmokers aged 3 years and older<sup>1</sup> exposed to secondhand smoke<sup>2</sup> by race/ethnicity, 1988-2018

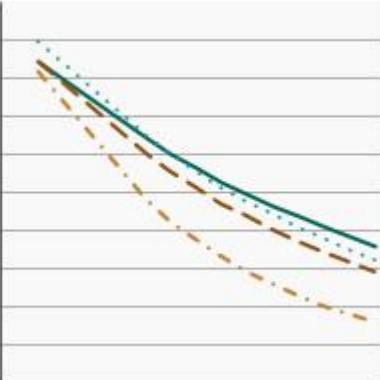
<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of nonsmokers</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	25.8	22.8 - 28.7
	<u>Non-Hispanic White</u>	24.5	20.9 - 28.2
	<u>Non-Hispanic Black</u>	47.8	41.5 - 54.0
	<u>Hispanic</u>	18.7	15.4 - 21.9

<sup>1</sup>The 1988-1994 estimate starts at age 4 instead of age 3.

<sup>2</sup>As measured by a serum cotinine level of greater than 0.05 ng/ml and less than or equal to 10 ng/ml.

## By Age

Percentage of nonsmokers aged 3 years and older<sup>1</sup> exposed to secondhand smoke<sup>2</sup> by age, 1988-2018

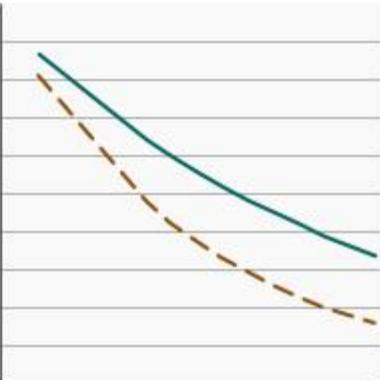
<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	Most Recent Estimates (2017 to 2018)	
		Percent of nonsmokers	95% Confidence Interval
	<u>Ages 3-11</u>	38.2	34.4 - 42.0
	<u>Ages 12-17</u>	32.9	26.9 - 38.9
	<u>Ages 18-29</u>	33.9	28.1 - 39.8
	<u>Ages 30+</u>	19.6	16.5 - 22.8

<sup>1</sup>The 1988-1994 estimate starts at age 4 instead of age 3.

<sup>2</sup>As measured by a serum cotinine level of greater than 0.05 ng/ml and less than or equal to 10 ng/ml.

## By Poverty Income Level

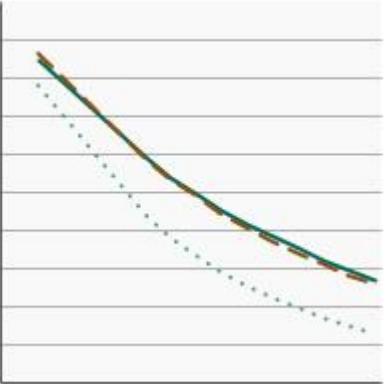
Percentage of nonsmokers aged 3 years and older<sup>1</sup> exposed to secondhand smoke<sup>2</sup> by poverty income level, 1988-2018

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	Most Recent Estimates (2017 to 2018)	
		Percent of nonsmokers	95% Confidence Interval
	<u>&lt;200% of federal poverty level</u>	37.5	33.4 - 41.6
	<u>≥200% of federal poverty level</u>	19.0	15.7 - 22.3

<sup>1</sup>As measured by a serum cotinine level of greater than 0.05 ng/ml and less than or equal to 10 ng/ml.

## By Education Level

Percentage of nonsmokers aged 25 years and older exposed to secondhand smoke<sup>1</sup> by highest level of education obtained, 1988-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of nonsmokers</b>	<b>95% Confidence Interval</b>
	<u>Less than High School</u>	25.3	20.4 - 30.1
	<u>High School</u>	27.5	22.4 - 32.5
	<u>Greater than High School</u>	17.9	14.6 - 21.2

<sup>1</sup>As measured by a serum cotinine level of greater than 0.05 ng/ml and less than or equal to 10 ng/ml.

## Cancers Related to Secondhand Smoke

Statistical summaries from NCI's SEER Cancer Stat Fact Sheets:

- Lung and Bronchus

## Additional Information on Secondhand Smoke Exposure

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## **Smokefree Home Rules**

### **Data Up to Date as of:**

April 2022

### **Background**

Secondhand smoke (SHS) is a mixture of the sidestream smoke released by a smoldering cigarette, pipe, hookah or waterpipe, or cigar, and the mainstream smoke exhaled by a smoker. SHS is a complex mixture containing thousands of chemicals, including formaldehyde, cyanide, carbon monoxide, ammonia, and nicotine. More than 250 of the chemicals in SHS are known to be harmful, and at least 69 are known to cause cancer. Many individuals and families, including both smokers and non-smokers, have voluntarily adopted smokefree rules for their homes, reflecting a change in community social norms. For children, smoking in the home is the main source of exposure to SHS. Studies have found that adoption of smokefree home rules is a significant predictor of smoking cessation success. To protect non-smokers living within public housing, the U.S. Department of Housing and Urban Development adopted a rule making all public housing smokefree. This rule was implemented in July 2018.

Conclusive scientific evidence documents that SHS causes premature death and disease in children and adults who do not smoke. Among adults, exposure to SHS has immediate adverse effects on the cardiovascular system, and long-term exposure to SHS causes coronary heart disease and lung cancer. Children exposed to SHS are at increased risk for sudden infant death syndrome, acute respiratory infections, middle ear disease, more severe asthma, respiratory symptoms, and slowed lung growth.

There is no risk-free level of exposure to SHS, and only eliminating smoking in indoor spaces fully protects nonsmokers from exposure to SHS. Due to shared ventilation ducts and other related airborne conduits, SHS exposure may occur within multi-unit housing by smoke drifting into the homes of non-smokers.

### **Measure**

The percentage of respondents reporting a smokefree home rule (i.e., that smoking was not allowed anywhere in their home).

### **Healthy People 2030 Target**

- Increase the proportion of smokefree homes to 92.9 percent.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

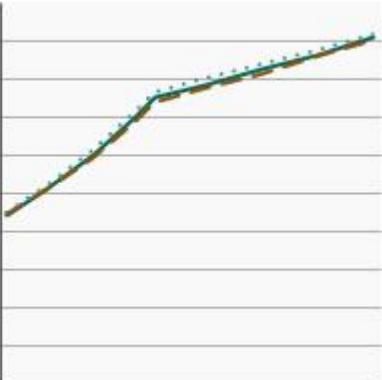
### **Data Source**

National Cancer Institute. Tobacco Use Supplement to the Current Population Survey for “home smokefree policies” measures.

## Trends and Most Recent Estimates

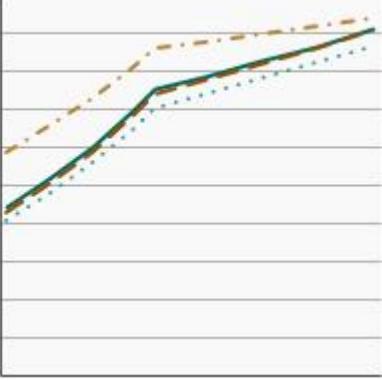
### By Sex

Percentage of adults aged 18 years and older reporting a smokefree home rule by sex, 1992-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2018 to 2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	90.2	90.0 - 90.5
	<u>Male</u>	89.5	89.2 - 89.8
	<u>Female</u>	90.9	90.6 - 91.2

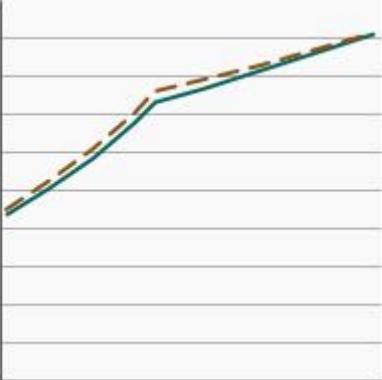
### By Race/Ethnicity

Percentage of adults aged 18 years and older reporting a smokefree home rule by race/ethnicity, 1992-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2018 to 2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	90.2	90.0 - 90.5
	<u>Non-Hispanic White</u>	89.9	89.6 - 90.2
	<u>Non-Hispanic Black</u>	86.0	85.1 - 86.8
	<u>Hispanic</u>	93.7	93.2 - 94.1

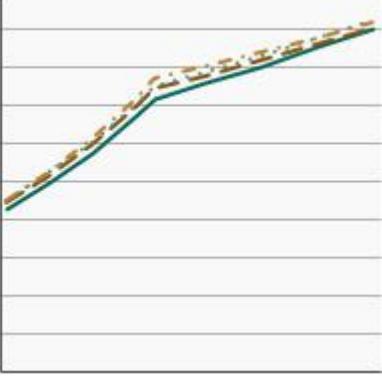
## By Age

Percentage of adults aged 18 years and older reporting a smokefree home rule by age, 1992-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2018 to 2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Ages 18-24</u>	90.5	89.6 - 91.3
	<u>Ages 25+</u>	90.2	90.0 - 90.4

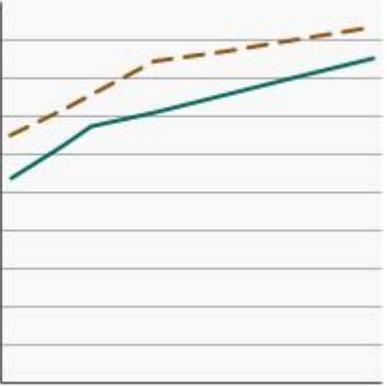
## By Sex and Age

Percentage of adults aged 18 years and older reporting a smokefree home rule by sex and age, 1992-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2018 to 2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Males, ages 18-24</u>	90.0	88.8 - 91.1
	<u>Males, ages 25+</u>	89.4	89.1 - 89.7
	<u>Females, ages 18-24</u>	90.9	89.7 - 92.0
	<u>Females, ages 25+</u>	90.9	90.7 - 91.2

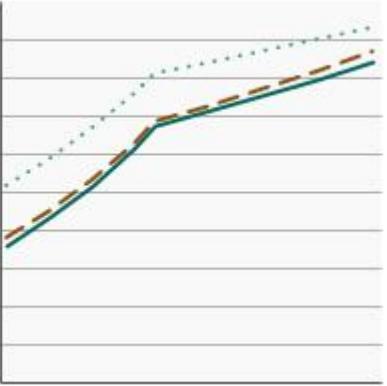
## By Poverty Income Level

Percentage of adults aged 18 years and older reporting a smokefree home rule by poverty income level, 1998-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2018 to 2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>&lt; 200% of the federal poverty level</u>	85.0	84.5 - 85.6
	<u>&gt;= 200% of the federal poverty level</u>	92.5	92.3 - 92.8

## By Education Level

Percentage of adults aged 25 years and older reporting a smokefree home rule by highest level of education obtained, 1992-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2018 to 2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Less than High School</u>	83.5	82.4 - 84.5
	<u>High School</u>	85.7	85.2 - 86.3
	<u>Greater than High School</u>	92.7	92.5 - 93.0

## Cancers Related to Smokefree Home Rules

Statistical summaries from NCI's SEER Cancer Stat Fact Sheets:

- Lung and Bronchus

## Additional Information on Smokefree Home Rules

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Smokefree Workplace Rules and Laws

Data Up to Date as of:

April 2022

### Background

Thirty-six states, along with the District of Columbia, American Samoa, Guam, the Northern Mariana Islands, Puerto Rico, and the U.S. Virgin Islands, have laws in effect that require one or more of the following venues to be 100% smokefree: non-hospitality workplaces, restaurants, bars and state-run gambling establishments. A total of 1,150 cities and counties have a 100% smokefree provision in effect in one or more of the following venues: non-hospitality workplaces, restaurants, and bars. In 2021, the Navajo Nation became the first tribe to pass legislation to create a commercial tobacco free environment for all public places (including the four Navajo casinos, pow wows, annual festivals, and sports and rodeos). This will protect nonsmokers living within and visitors to the Navajo Nation.

E-cigarettes (also known as vapes or Electronic Nicotine Delivery Systems) are battery-powered devices that convert a liquid ("e-liquid") into an aerosol. E-liquids typically contain nicotine, flavorings, vegetable glycerin, propylene glycol and other chemicals. In addition to nicotine, e-cigarette aerosol may contain heavy metals, volatile organic compounds, and fine and ultrafine particles that can be inhaled deeply into the lungs by both users and by-standers. States and localities are increasingly incorporating prohibition of e-cigarette use into comprehensive smokefree air laws. As of February 5, 2022, 25 states, the territories of Guam, and Puerto Rico, and 992 municipalities have prohibited the use of e-cigarettes in 100% smokefree locations.

Secondhand smoke (SHS) is a mixture of the side stream smoke released by a smoldering cigarette, pipe, hookah/waterpipe, or cigar, and the mainstream smoke exhaled by a smoker. SHS is a complex mixture containing thousands of chemicals, including formaldehyde, cyanide, carbon monoxide, ammonia, and nicotine. More than 250 of the chemicals in SHS are known to be harmful, and at least 69 are known to cause cancer. Conclusive scientific evidence documents that SHS causes premature death and disease in children and adults who do not smoke. Among adults, exposure to SHS has immediate adverse effects on the cardiovascular system, and long-term exposure to SHS causes coronary heart disease and lung cancer. Children exposed to SHS are at increased risk for sudden infant death syndrome, acute respiratory infections, middle ear disease, more severe asthma, respiratory symptoms, and slowed lung growth.

There is no risk-free level of exposure to SHS, and only eliminating smoking in indoor spaces fully protects nonsmokers from exposure to SHS. Today, comprehensive smokefree laws, covering public places and workplaces, including restaurants and bars are increasingly the norm. Additionally, smokefree policies may now extend to private spaces, including cars and multi-unit housing.

### Measure

The percentage of indoor workers reporting a smokefree worksite rule (i.e., no smoking allowed in any indoor public/common or work areas).

The percentage of the population protected by local and state smokefree indoor air laws covering workplaces, restaurants, and bars. This measure draws on data collected and analyzed by the Americans for Nonsmokers' Rights Foundation. Use of this information allows the National Cancer Institute (NCI) to include both local and state laws in its assessments.

### Healthy People 2030 Target

- Increase the proportion of worksites that are covered by indoor worksite policies that prohibit smoking (Developmental Objective)
- Increase the number of states, territories, and DC that prohibit smoking in worksites, restaurants, and bars to 58.

While the Healthy People 2030 (HP2030) developmental objective focuses on the proportion of worksites covered by indoor worksite policies that prohibit smoking, data presented in the Cancer Trends Progress Report focus on

the proportion of indoor workers reporting that smoking is prohibited in all indoor public/common or work areas. Therefore, the data presented in this report cannot be directly compared to the HP2030 developmental objective. Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

### **Data Source**

National Cancer Institute. Tobacco Use Supplement to the Current Population Survey for “work place smokefree policies” measures.

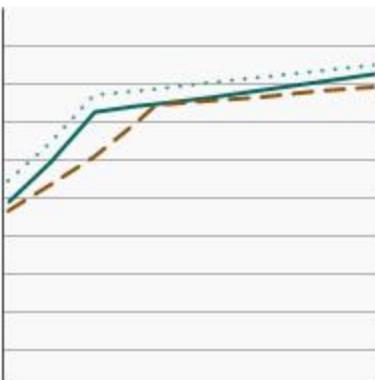
Americans for Nonsmokers Right Foundation. “Percentage of the population covered by local and/or state 100% smokefree air laws”.

## Trends and Most Recent Estimates

### Smokefree Workplace Rules

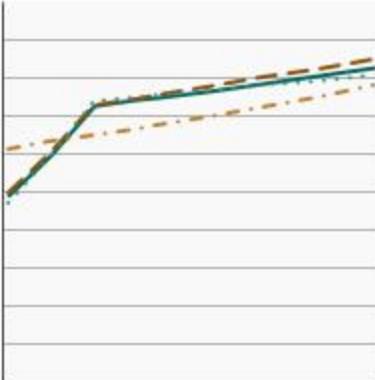
#### By Sex

Percentage of workers aged 18 years and older reporting a smokefree worksite rule by sex, 1992-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2018 to 2019)</b>	
		<b>Percent of workers</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	80.4	79.9 - 80.8
	<u>Male</u>	77.9	77.2 - 78.6
	<u>Female</u>	82.7	82.1 - 83.2

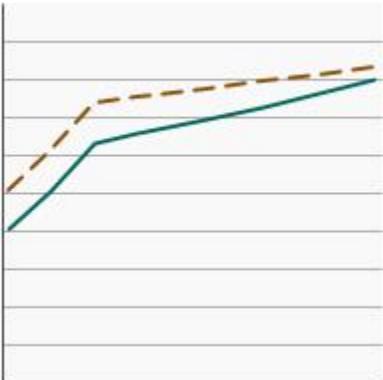
#### By Race/Ethnicity

Percentage of workers aged 18 years and older reporting a smokefree worksite rule by race/ethnicity, 1992-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2018 to 2019)</b>	
		<b>Percent of workers</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	80.4	79.9 - 80.8
	<u>Non-Hispanic White</u>	82.4	81.9 - 82.9
	<u>Non-Hispanic Black</u>	79.0	77.6 - 80.5
	<u>Hispanic</u>	73.8	72.2 - 75.4

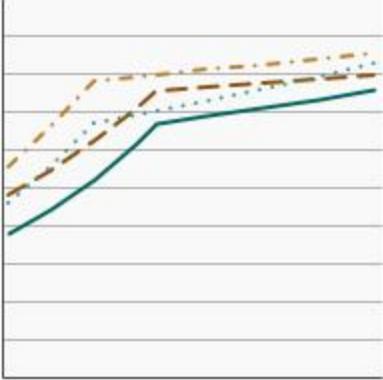
## By Age

Percentage of workers aged 18 years and older reporting a smokefree worksite rule by age, 1992-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2018 to 2019)</b>	
		<b>Percent of workers</b>	<b>95% Confidence Interval</b>
	<u>Ages 18-24</u>	76.2	74.5 - 77.8
	<u>Ages 25+</u>	81.0	80.6 - 81.5

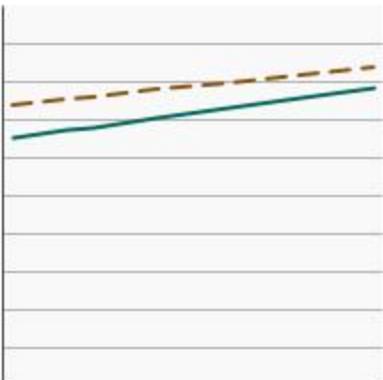
## By Sex and Age

Percentage of workers aged 18 years and older reporting a smokefree worksite rule by sex and age, 1992-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2018 to 2019)</b>	
		<b>Percent of workers</b>	<b>95% Confidence Interval</b>
	<u>Males, ages 18-24</u>	73.7	71.1 - 76.2
	<u>Males, ages 25+</u>	78.6	77.9 - 79.3
	<u>Females, ages 18-24</u>	78.4	76.1 - 80.6
	<u>Females, ages 25+</u>	83.3	82.7 - 83.9

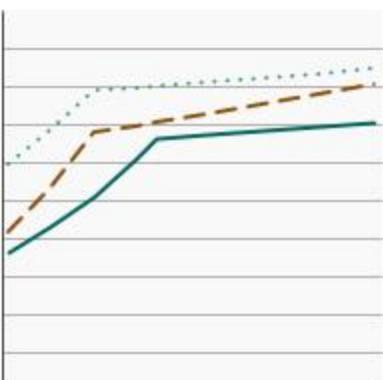
## By Poverty Income Level

Percentage of workers aged 18 years and older reporting a smokefree worksite rule by poverty income level, 1998-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2018 to 2019)</b>		
		<b>Percent of workers</b>	<b>95% Confidence Interval</b>	
	<u>&lt; 200% of the federal poverty level</u>	74.9	73.7 - 76.1	
	<u><math>\geq 200\%</math> of the federal poverty level</u>	81.4	80.9 - 81.9	

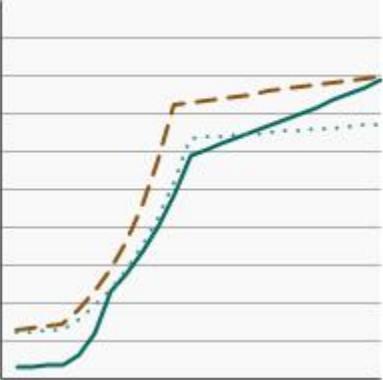
## By Education Level

Percentage of workers aged 25 years and older reporting a smokefree worksite rule by highest level of education obtained, 1992-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2018 to 2019)</b>		
		<b>Percent of workers</b>	<b>95% Confidence Interval</b>	
	<u>Less than High School</u>	67.9	64.9 - 70.7	
	<u>High School</u>	77.2	76.1 - 78.2	
	<u>Greater than High School</u>	82.9	82.4 - 83.4	

## Indoor Air Laws

Percentage of population protected by local and state 100% smokefree indoor air laws, 1998-2021

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2021)</b>	
		<b>Percent of population</b>	<b>95% Confidence Interval</b>
	<u>Workplaces</u>	77.2	Not available
	<u>Restaurants</u>	77.8	Not available
	<u>Bars</u>	66.5	Not available

## Cancers Related to Smokefree Workplace Rules and Laws

Statistical summaries from NCI's SEER Cancer Stat Fact Sheets:

- Lung and Bronchus

## Additional Information on Smokefree Workplace Rules and Laws

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures

### **Chemical and Environmental Exposures**

Exposure to carcinogens that exist as chemical pollutants or radioactive gas in our air, food, water, and soil, also influence the incidence of cancer. Most exposure to toxic chemical substances and hazardous wastes results from human activities, particularly through agricultural and industrial production. Chemicals were selected for inclusion in this report based on the following set of criteria: (1) likely or probable carcinogen as classified by the International Agency for Research on Cancer (IARC) classification (Group 1 or 2A), (2) available biomarker data from the National Health and Nutrition Examination Survey (NHANES) since 2004, and (3) ubiquitous (i.e. >50% with detectable levels) in the U.S. general population (based on NHANES data). Most exposures to radioactive gases result from the naturally occurring breakdown of certain elements in rocks, soil, and water. The most common of these is radon, which is the second leading cause of lung cancer and has been included in this report.

- [Arsenic](#)
- [Benzene](#)
- [Cadmium](#)
- [Nitrate](#)
- [Radon](#)

### **Methodology for Chemical Exposures**

This report includes the R function “svyquantile” from the R Package “survey” to estimate the percentiles and their confidence limits. Based on the [Confidence Intervals for Medians and Other Position Measures](#) article, published in the *Journal of the American Statistical Association*, and the [Confidence Intervals for Proportions with Small Expected Number of Positive Counts Estimates from Survey Data](#) article, published in the journal *Survey Methodology*, the researchers chose the “betaWald” interval option. To test whether there is statistically significant difference between the estimated percentiles obtained from different survey years, they used the “svyranktest” R function from the same package. For more details on the applicable R functions, see the [Analysis of Complex Survey Samples](#) by Thomas Lumley.

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Arsenic

### Data Up to Date as of:

April 2022

### Background

Arsenic is a tasteless, odorless element in the environment that can be found naturally in rocks and soil, water, air, and in plants and animals. It can also be released into the environment from some agricultural and industrial sources.

Arsenic is usually part of chemical compounds, including inorganic compounds (combined with oxygen, iron, chlorine, and sulfur), and organic compounds (combined with carbon and other atoms).

Inorganic arsenic compounds are found in industry, in building products (in some “pressure-treated” woods), and in arsenic-contaminated water. Soil and water contamination also can occur as a result of mining and smelting activities. Past use of arsenic-containing herbicides has resulted in soil contamination and some food crops grown in these soils take up the arsenic. Inorganic arsenic compounds are more toxic than organic arsenic compounds, and inorganic arsenic has been strongly linked to cancer of the bladder, lungs, and skin. Additionally, inorganic arsenic has been linked to some types of kidney cancers, as well as liver and intrahepatic bile duct and prostate cancers.

We typically take in small amounts of inorganic arsenic in the food we eat (in particular, rice and fish), the water we drink, and the air we breathe. Arsenic also is present in tobacco smoke. People may be exposed to higher levels of arsenic at work in certain industries, but such exposures are now rare in the United States. People may also be exposed to greater amounts of arsenic if they live near current or former industrial or agricultural sources of arsenic, live in areas where arsenic is naturally high in drinking water, or eat a lot of seafood (although the organic form predominantly found in seafood is likely to be much less harmful). Major dietary sources of inorganic arsenic include rice and rice products.

Both short- and long-term exposure to arsenic can cause health problems. Breathing in high levels of arsenic may cause a sore throat and irritated lungs. Swallowing high levels of arsenic can be fatal. Exposure to lower levels of arsenic over longer periods of time can result in liver and kidney damage. Moreover, arsenic and cigarette smoking exposure act synergistically to increase the incidence of lung cancer.

### Measure

We present exposure data on the 95th percentile of the population, representing people with the greatest exposure. The 95th percentile level means that 95% of the population has concentrations below that level. Public health officials use such reference values to determine whether groups of people are experiencing an exposure that is unusual compared with an exposure experienced by the rest of the population. [\[Citation\]](#)

To calculate whether the differences between 95th percentiles for two different time points is statistically significant, we used a different statistical methodology than that used by the National Center for Environmental Health, which publishes the National Report on Human Exposure to Environmental Chemicals, from which our data are derived. Our estimates may differ slightly from those in the original report due to differences in statistical procedures used. [\[Methodology\]](#)

Because arsenic is measured from urine, the concentration of arsenic may be affected by urine diluteness. Analyte concentrations within urine also may vary with time, due to changes in the water concentration within urine. We use creatinine as a reference analyte to adjust for urine concentration and obtain measures of arsenic that are comparable, whether they are from concentrated or dilute urine samples.

### Healthy People 2030 Target

There are no Healthy People 2030 targets regarding urinary concentration of arsenic.

[Healthy People 2030](#) is a set of goals set forth by the Department of Health and Human Services.

### Data Source

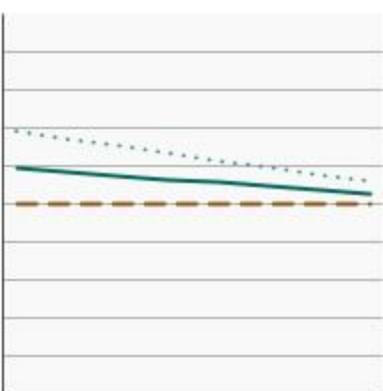
Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey.

## Trends and Most Recent Estimates

### Total Arsenic Exposure

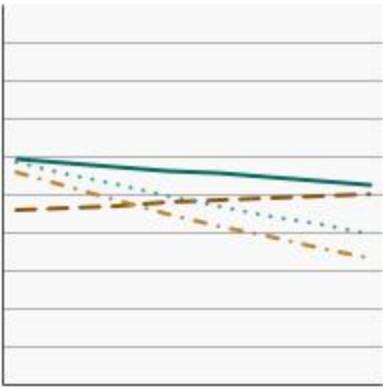
#### By Sex

95th percentile for urinary (creatinine corrected) concentrations (µg/g of creatinine) of total arsenic among persons aged 6 years and older by sex, 2003-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Dependent Variable</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	52.2	40.3 - 71.9
	<u>Male</u>	47.9	34.2 - 72.6
	<u>Female</u>	58.7	39.0 - 75.5

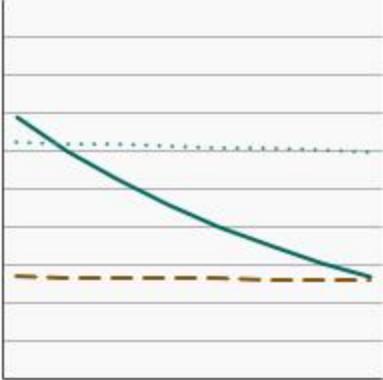
#### By Race/Ethnicity

95th percentile for urinary (creatinine corrected) concentrations (µg/g of creatinine) of total arsenic among persons aged 6 years and older by race/ethnicity, 2003-2018

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Dependent Variable</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	52.2	40.3 - 71.9
	<u>Non-Hispanic White</u>	47.5	34.6 - 65.1
	<u>Non-Hispanic Black</u>	40.5	28.3 - 61.2
	<u>Hispanic</u>	42.5	30.7 - 97.5

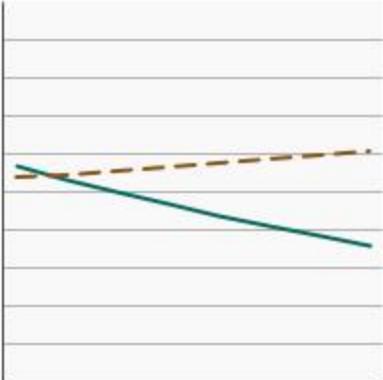
## By Age

95th percentile for urinary (creatinine corrected) concentrations (µg/g of creatinine) of total arsenic among persons aged 6 years and older by age, 2003-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Dependent Variable</b>	<b>95% Confidence Interval</b>
	<u>Ages 6-11</u>	25.8	20.4 - 39.8
	<u>Ages 12-19</u>	33.0	13.7 - 48.3
	<u>Ages 20+</u>	59.4	43.2 - 75.0

## By Poverty Income Level

95th percentile for urinary (creatinine corrected) concentrations (µg/g of creatinine) of total arsenic among persons aged 6 years and older by poverty income level, 2003-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Dependent Variable</b>	<b>95% Confidence Interval</b>
	<u>&lt; 200% of the federal poverty level</u>	35.2	27.0 - 50.8
	<u>&gt;= 200% of the federal poverty level</u>	67.9	40.5 - 83.6

## By Education Level

95th percentile for urinary (creatinine corrected) concentrations (µg/g of creatinine) of total arsenic among adults aged 20 years and older by highest level of education obtained, 2003-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Dependent Variable</b>	<b>95% Confidence Interval</b>
	<u>Less than High School</u>	52.7	36.5 - 126.1
	<u>High School</u>	39.8	24.6 - 68.5
	<u>Greater than High School</u>	70.1	46.2 - 85.4

## By Smoking Status

95th percentile for urinary (creatinine corrected) concentrations (µg/g of creatinine) of total arsenic among adults aged 20 years and older by smoking status, 2003-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Dependent Variable</b>	<b>95% Confidence Interval</b>
	<u>Non-Smoker</u>	64.7	46.6 - 82.7
	<u>Smoker</u>	24.3	19.0 - 41.1

## Inorganic Arsenic Exposure

### By Sex

95th percentile for urinary (creatinine corrected) concentrations (µg/g of creatinine) of inorganic-related arsenic species among persons aged 6 years and older by sex, 2003-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Dependent Variable</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	14.7	13.3 - 18.4
	<u>Male</u>	12.9	10.2 - 15.1
	<u>Female</u>	17.0	14.2 - 22.5

### By Race/Ethnicity

95th percentile for urinary (creatinine corrected) concentrations (µg/g of creatinine) of inorganic-related arsenic species among persons aged 6 years and older by race/ethnicity, 2003-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Dependent Variable</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	14.7	13.3 - 18.4
	<u>Non-Hispanic White</u>	13.3	12.6 - 14.2
	<u>Non-Hispanic Black</u>	11.1	9.5 - 15.3
	<u>Hispanic</u>	16.4	12.8 - 21.2

## **Additional Information on Arsenic**

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Benzene

### Data Up to Date as of:

April 2022

## Background

Benzene is an organic chemical that is colorless and has a sweet odor. It is highly flammable, and evaporates quickly when exposed to air. Benzene is formed through natural processes, such as volcanoes and forest fires, and is present in crude oil, gasoline, and cigarette smoke. Most exposure to benzene results from human activities. Benzene use in materials and to adjust fuel octane levels has been minimized, resulting in reduced benzene exposure among non-smokers. Cigarette smoking has been shown to be the primary exposure source of benzene blood levels in the U.S., with some benzene exposure in non-smokers attributable to secondhand smoke exposure. The chemical also is widely used as a component of plastics, rubber, resins, and synthetic fabrics, as well as an additive in motor fuels and as a solvent in printing, paints, and dry cleaning, and for other purposes. Benzene is also used in the manufacture of detergents, explosives, pharmaceuticals, and dyestuffs. Benzene has been identified as a cause of acute non-lymphocytic leukemia, including acute myeloid leukemia (AML) in adults. The [Carcinogenicity of Benzene](#) article, published in the journal *The Lancet Oncology*, provides evidence that benzene might be related to other myeloid and certain lymphoid malignancies.

The main way people are exposed is by breathing in air containing benzene—in emissions from burning coal and oil, motor vehicle exhaust, and evaporation from gasoline tanks and service stations and in industrial solvents. It is estimated that about half of the exposure to benzene in the United States results from smoking tobacco or from exposure to tobacco smoke. It can also be absorbed through the skin during contact with a source such as gasoline, but because liquid benzene evaporates quickly, this is less common.

## Measure

We present exposure data on the 95th percentile of the population, representing people with the greatest exposure. The 95th percentile level means that 95% of the population has concentrations below that level. Public health officials use such reference values to determine whether groups of people are experiencing an exposure that is unusual compared with an exposure experienced by the rest of the population. For more information, see the [Fourth National Report on Human Exposure to Environmental Chemicals](#), published by the Centers for Disease Control and Prevention.

To calculate whether the differences between 95th percentiles for two different time points is statistically significant, we used a different [statistical methodology](#) than that used by the National Center for Environmental Health, who publishes the National Report on Human Exposure to Environmental Chemicals from where our data are derived. Our estimates may differ slightly from those in the original report due to differences in statistical procedures used.

## Healthy People 2030 Target

There are no Healthy People 2030 targets regarding benzene.

[Healthy People 2030](#) is a set of goals set forth by the Department of Health and Human Services.

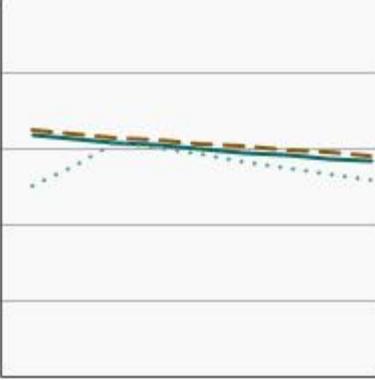
## Data Source

Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey.

## Trends and Most Recent Estimates

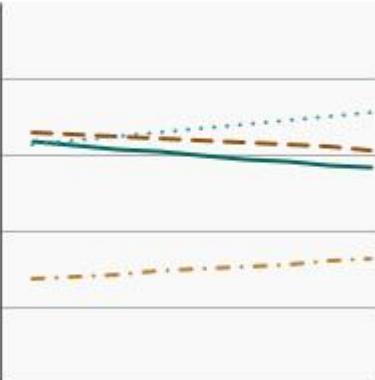
### By Sex

95th percentile for blood concentrations (ng/mL) of benzene among adults aged 20 years and older by sex, 2001-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Dependent Variable</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	0.3	0.2 - 0.4
	<u>Male</u>	0.3	0.2 - 0.4
	<u>Female</u>	0.3	0.2 - 0.4

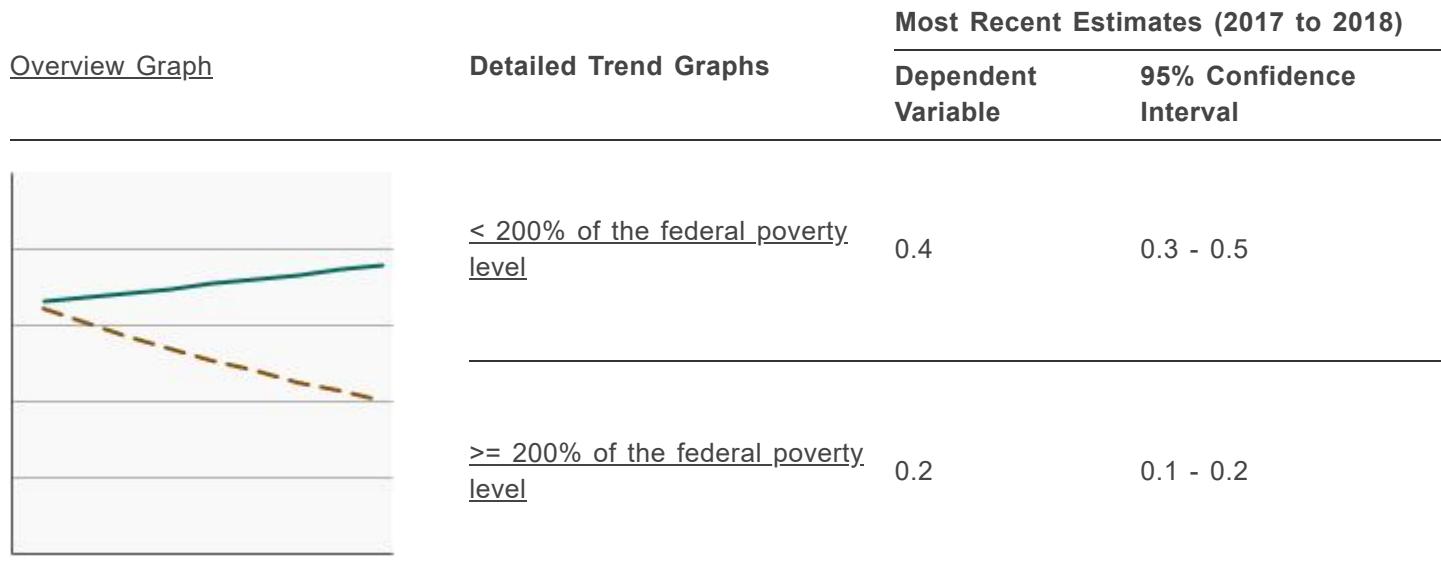
### By Race/Ethnicity

95th percentile for blood concentrations (ng/mL) of benzene among adults aged 20 years and older by race/ethnicity, 2001-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Dependent Variable</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	0.3	0.2 - 0.4
	<u>Non-Hispanic White</u>	0.3	0.2 - 0.4
	<u>Non-Hispanic Black</u>	0.4	0.3 - 0.4
	<u>Hispanic</u>	0.1	0.1 - 0.2

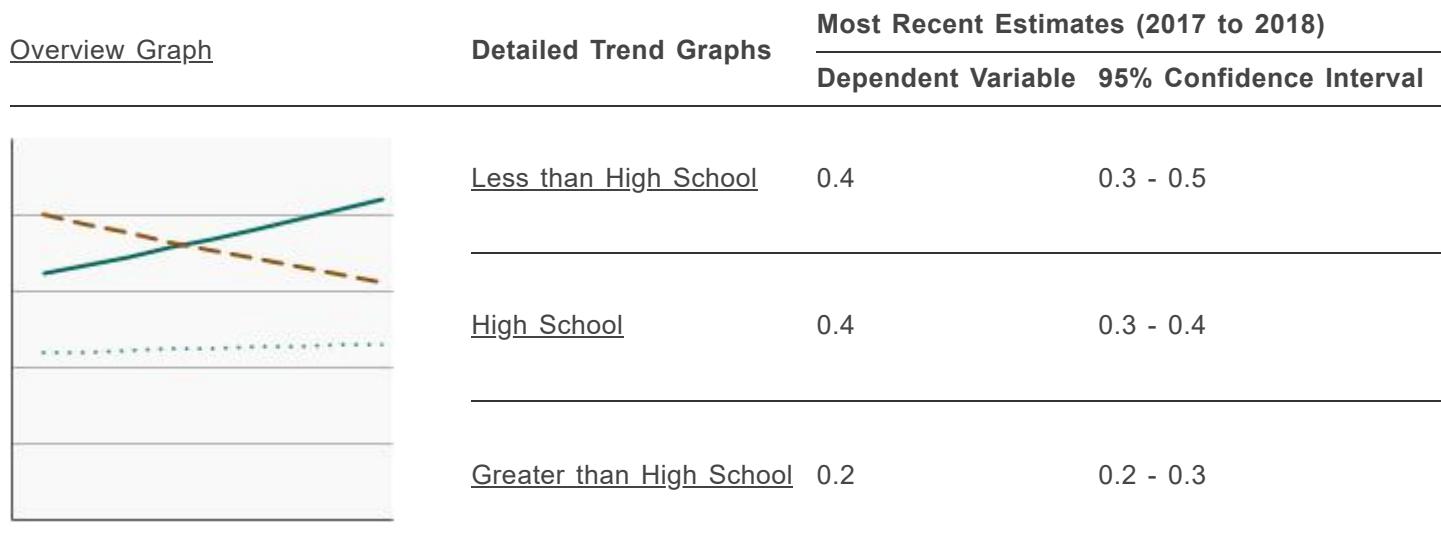
## By Poverty Income Level

95th percentile for blood concentrations (ng/mL) of benzene among adults aged 20 years and older by poverty income level, 2001-2018



## By Education Level

95th percentile for blood concentrations (ng/mL) of benzene among adults aged 20 years and older by highest level of education obtained, 2001-2018



## By Smoking Status

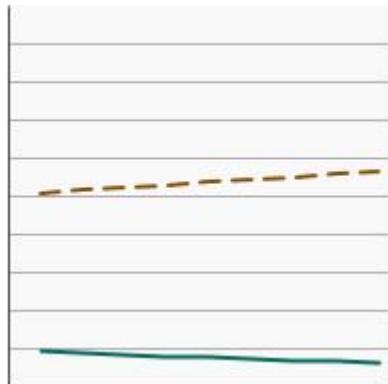
95th percentile for blood concentrations (ng/mL) of benzene among adults aged 20 years and older by smoking status, 2001-2018

[Overview Graph](#)

[Detailed Trend Graphs](#)

**Most Recent Estimates (2017 to 2018)**

**Dependent Variable 95% Confidence Interval**



Non-Smoker

0.1

0.1 - 0.1

Smoker

0.6

0.5 - 0.7

## Additional Information on Benzene

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Cadmium

### Data Up to Date as of:

April 2022

### Background

Cadmium is an element found in low concentrations in the earth's crust. It is usually found as a mineral combined with other elements such as oxygen (cadmium oxide), chlorine (cadmium chloride), or sulfur (cadmium sulfate, cadmium sulfide).

All soils and rocks, including coal and mineral fertilizers, contain some cadmium. Most cadmium used in the United States is extracted during the production of other metals like zinc, lead, and copper. Cadmium has many uses, including in the production of batteries, pigments, metal coatings, and plastics.

Cadmium and its compounds are highly toxic and exposure is known to cause cancer. It is primarily associated with human lung, prostate, and kidney cancers, and recently pancreatic cancer. It has also been associated with cancers of the breast and urinary bladder.

The general population may be exposed to small amounts of cadmium daily through food, tobacco smoke (as active or secondhand smoke), drinking water, and air. Cadmium is introduced to the food chain through agricultural soils, which may naturally contain cadmium, or from anthropogenic (human) sources, from cadmium-based pigments, and stabilizers used in certain plastics. While dietary sources can be sporadic, intake from tobacco occurs with each cigarette smoked and can proceed for decades resulting in accumulation of metals like cadmium in the body. Cadmium levels are expected to be low in drinking water and ambient air except in the vicinity of cadmium-emitting industries or incinerators.

Occupational exposure to cadmium primarily occurs in operations involving heating cadmium-containing products. Occupations with the highest potential for exposure include alloy production, battery production, pigment production and use, plastics production, and smelting and refining. Although levels vary widely among the different industries, occupational exposures generally have decreased since the 1970s.

### Measure

We present exposure data on the 95th percentile of the population, representing people with the greatest exposure. The 95th percentile level means that 95% of the population has concentrations below that level. Public health officials use such reference values to determine whether groups of people are experiencing an exposure that is unusual compared with an exposure experienced by the rest of the population. [\[Citation\]](#)

To calculate whether the differences between 95th percentiles for two different time points is statistically significant, we used a different statistical methodology than that used by the National Center for Environmental Health, who publishes the National Report on Human Exposure to Environmental Chemicals from where our data are derived. Our estimates may differ slightly from those in the original report due to differences in statistical procedures used. [\[Methodology\]](#)

### Healthy People 2030 Target

There are no Healthy People 2030 targets regarding blood levels of cadmium.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

### Data Source

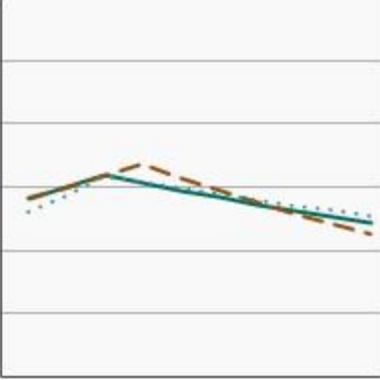
Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey.

## ?

## Trends and Most Recent Estimates

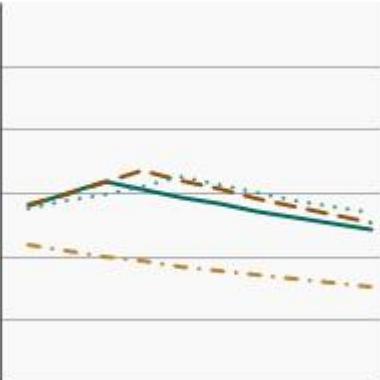
### By Sex

95th percentile for blood concentrations ( $\mu\text{g}/\text{L}$ ) of cadmium among persons aged 1 year and older by sex, 1999-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Dependent Variable</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	1.3	1.1 - 1.5
	<u>Male</u>	1.1	1.0 - 1.3
	<u>Female</u>	1.5	1.1 - 1.8

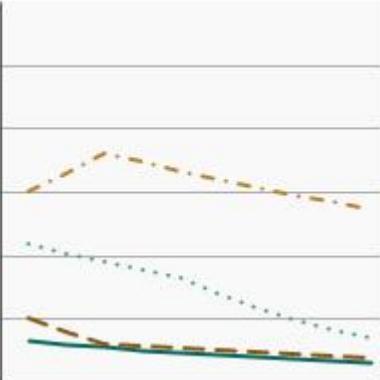
### By Race/Ethnicity

95th percentile for blood concentrations ( $\mu\text{g}/\text{L}$ ) of cadmium among persons aged 1 year and older by race/ethnicity, 1999-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Dependent Variable</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	1.3	1.1 - 1.5
	<u>Non-Hispanic White</u>	1.3	1.1 - 1.6
	<u>Non-Hispanic Black</u>	1.3	1.2 - 1.7
	<u>Hispanic</u>	0.8	0.7 - 0.9

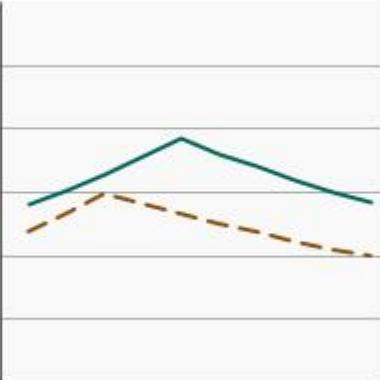
## By Age

95th percentile for blood concentrations ( $\mu\text{g}/\text{L}$ ) of cadmium among persons aged 1 year and older by age, 1999-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Dependent Variable</b>	<b>95% Confidence Interval</b>
	<u>Ages 1-5</u>	0.2	0.2 - 0.2
	<u>Ages 6-11</u>	0.2	0.2 - 0.3
	<u>Ages 12-19</u>	0.4	0.3 - 0.4
	<u>Ages 20+</u>	1.4	1.2 - 1.7

## By Poverty Income Level

95th percentile for blood concentrations ( $\mu\text{g}/\text{L}$ ) of cadmium among persons aged 1 year and older by poverty income level, 1999-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Dependent Variable</b>	<b>95% Confidence Interval</b>
	<u>&lt; 200% of the federal poverty level</u>	1.6	1.4 - 1.7
	<u><math>\geq 200\%</math> of the federal poverty level</u>	1.0	0.9 - 1.2

## By Education Level

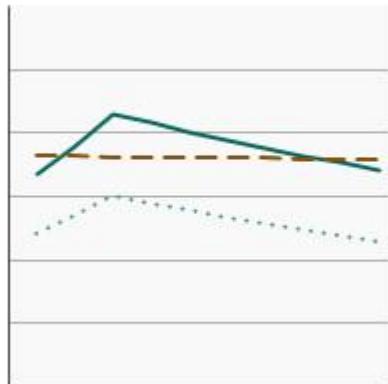
95th percentile for blood concentrations ( $\mu\text{g}/\text{L}$ ) of cadmium among persons aged 20 years and older by highest level of education obtained, 1999-2018

[Overview Graph](#)

[Detailed Trend Graphs](#)

**Most Recent Estimates (2017 to 2018)**

**Dependent Variable 95% Confidence Interval**



Less than High School 1.8

1.4 - 2.3

High School 1.8

1.6 - 2.1

Greater than High School 1.1

1.0 - 1.3

## By Smoking Status

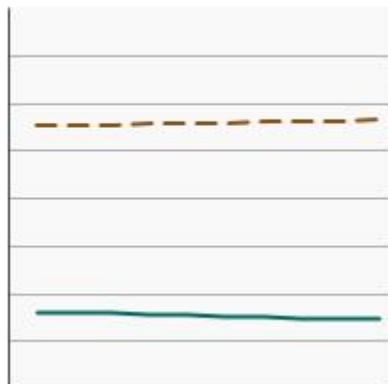
95th percentile for blood concentrations ( $\mu\text{g}/\text{L}$ ) of cadmium among persons aged 20 years and older by smoking status, 1999-2018

[Overview Graph](#)

[Detailed Trend Graphs](#)

**Most Recent Estimates (2017 to 2018)**

**Dependent Variable 95% Confidence Interval**



Non-Smoker 0.7

0.7 - 0.8

Smoker 2.9

2.5 - 3.2

## Additional Information on Cadmium

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Nitrate

### Data Up to Date as of:

April 2022

## Background

Nitrates and nitrites are nitrogen-oxygen chemical units that naturally occur in soil, water, and some foods. When taken into the body by drinking water and through other dietary sources, nitrate and nitrite can react with amines and amides to form N-nitroso compounds (NOC), which are known to cause cancer in animals and may cause cancer in humans. Excessive nitrate or nitrite exposure can also result in acute acquired methemoglobinemia, a blood abnormality that causes blood to lose its ability to carry oxygen to tissues (anoxia). This is especially dangerous in infants younger than 4 months of age.

The biggest source of nitrate exposure is dietary consumption of certain types of vegetables which are naturally high in nitrate. However, these vegetables also contain compounds that prevent the formation of NOCs. Studies assessing connections between nitrate and cancer in humans have focused on excess exposure from drinking water or food grown in areas where use of nitrogen-based fertilizers is common. Some of the highest levels of nitrate have been measured in shallow wells and surface water supplies that are subject to runoff from nitrogen fertilizers and confined animal feedlot operations and resulting excrement and contamination from leaking septic tanks and sewage. In addition, workers who manufacture these fertilizers can have high exposures to dusts that contain nitrate. Oral tobacco also may contribute to nitrate intake, but is minor compared to diet or contaminated drinking water.

Studies have shown increased risks of colon, kidney, and stomach cancer among people with higher ingestion of water nitrate and higher meat intake compared with low intakes of both, a dietary pattern that results in increased NOC formation. Other studies have shown modest evidence that higher nitrate intake can increase the risk of thyroid cancer and ovarian cancer among women.

## Measure

We present exposure data on the 95th percentile of the population, representing people with the greatest exposure. The 95th percentile level means that 95% of the population has concentrations below that level. Public health officials use such reference values to determine whether groups of people are experiencing an exposure that is unusual compared with an exposure experienced by the rest of the population. [\[Citation\]](#)

To calculate whether the differences between 95th percentiles for two different time points is statistically significant, we used a different statistical methodology than that used by the National Center for Environmental Health, who publishes the National Report on Human Exposure to Environmental Chemicals from where our data are derived. Our estimates may differ slightly from those in the original report due to differences in statistical procedures used. [\[Methodology\]](#)

As nitrate is measured from urine, the concentration of nitrate may be affected by urine diluteness. Analyte concentrations within urine also may vary with time due to changes in the water concentration within urine. We use creatinine as a reference analyte to adjust for urine concentration and obtain measures of nitrate that are comparable whether they are from concentrated or dilute urine samples.

## Healthy People 2030 Target

There are no Healthy People 2030 targets regarding nitrate.

[Healthy People 2030](#) is a set of goals set forth by the Department of Health and Human Services.

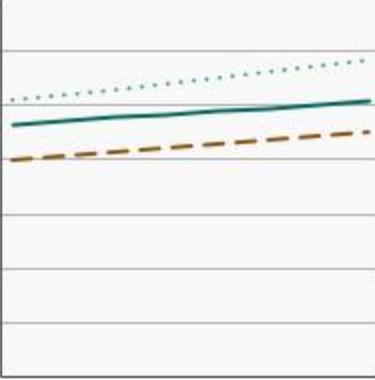
## Data Source

Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey.

## Trends and Most Recent Estimates

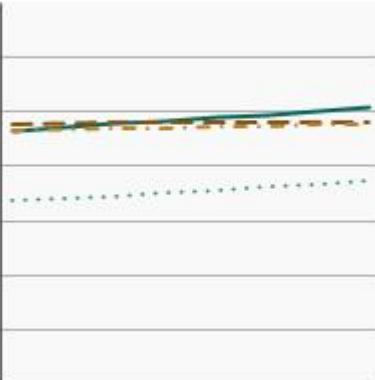
### By Sex

95th percentile for urinary (creatinine corrected) concentrations (mg/g of creatinine) of nitrate among persons aged 6 years and older by sex, 2001-2016

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2015 to 2016)</b>	
		<b>Dependent Variable</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	137.6	119.1 - 158.1
	<u>Male</u>	122.1	107.4 - 154.9
	<u>Female</u>	147.1	121.4 - 176.9

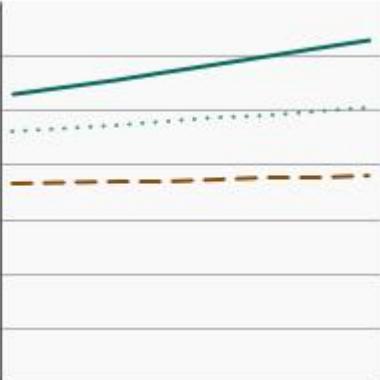
### By Race/Ethnicity

95th percentile for urinary (creatinine corrected) concentrations (mg/g of creatinine) of nitrate among persons aged 6 years and older by race/ethnicity, 2001-2016

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2015 to 2016)</b>	
		<b>Dependent Variable</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	137.6	119.1 - 158.1
	<u>Non-Hispanic White</u>	142.3	112.8 - 164.2
	<u>Non-Hispanic Black</u>	98.6	87.7 - 104.5
	<u>Hispanic</u>	120.7	107.1 - 139.9

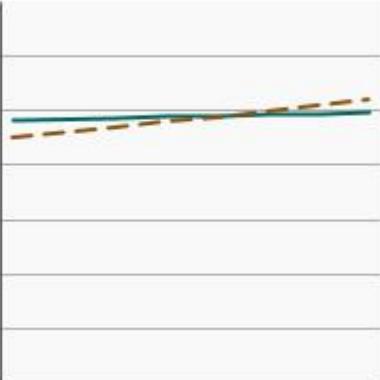
## By Age

95th percentile for urinary (creatinine corrected) concentrations (mg/g of creatinine) of nitrate among persons aged 6 years and older by age, 2001-2016

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2015 to 2016)</b>	
		<b>Dependent Variable</b>	<b>95% Confidence Interval</b>
	<u>Ages 6-11</u>	175.4	133.2 - 220.3
	<u>Ages 12-19</u>	103.0	83.5 - 117.7
	<u>Ages 20+</u>	125.7	108.0 - 151.6

## By Poverty Income Level

95th percentile for urinary (creatinine corrected) concentrations (mg/g of creatinine) of nitrate among persons aged 6 years and older by poverty income level, 2001-2016

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2015 to 2016)</b>	
		<b>Dependent Variable</b>	<b>95% Confidence Interval</b>
	<u>&lt; 200% of the federal poverty level</u>	129.5	115.4 - 146.8
	<u>≥ 200% of the federal poverty level</u>	143.4	117.5 - 164.3

## By Education Level

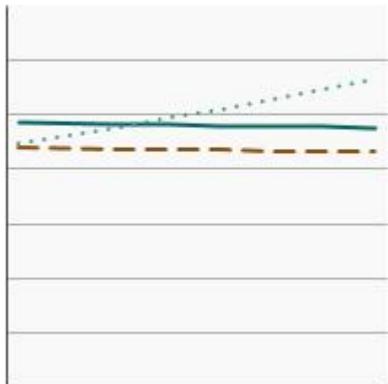
95th percentile for urinary (creatinine corrected) concentrations (mg/g of creatinine) of nitrate among persons aged 20 years and older by highest level of education obtained, 2001-2016

[Overview Graph](#)

[Detailed Trend Graphs](#)

**Most Recent Estimates (2015 to 2016)**

**Dependent Variable 95% Confidence Interval**



Less than High School 119.4

102.0 - 161.2

High School 90.4

81.2 - 152.2

Greater than High School 135.9

113.1 - 162.4

## Additional Information on Nitrate

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Radon

### Data Up to Date as of:

April 2022

### Background

Radon is a radioactive gas that comes from the natural breakdown of uranium in soil, rock and water. Radon has no smell or taste and cannot be seen. It can be found all over the United States, in every state. Radon can get into any type of building where there is naturally occurring radon in the ground. When buildings have high levels of radon in the air, people can breathe air containing radon, which can cause lung cancer. Radon is the second leading cause of lung cancer after smoking tobacco and the leading cause of lung cancer in non-smokers.

Most people are exposed to radon primarily in their homes, since that is where people spend most of their time. Homes can be tested for radon; if high levels of radon are detected, there are ways to lower radon levels in a home. New homes can be built with radon-resistant features that can reduce radon entry and make it easier and less expensive to lower radon levels if necessary.

### Measure

The exposure data presented here is the proportion of homes with an operating radon mitigation system for persons living in homes at risk for radon exposure. This measure is expressed as a percentage. It is calculated for each year by dividing the cumulative number of single family dwellings (SFD) with an operating mitigation system by the number of SFDs estimated to have a radon level  $\geq 4\text{pCi/L}$ , which is EPA's action level. The number of SFDs with an operating mitigation system is calculated based on the gross number of radon vent fans sold for a given year, adjusted for longevity by subtracting the fans installed 11 years before, assuming the useful life of a fan is 10 years, and assuming one fan per SFD. The number of fans sold is based on radon vent fan sales data from three major fan manufacturers that represent over 90 percent of the market. More information is available on the Healthy People 2020 [website](#).

### Healthy People 2030 Target

- There are no Healthy People 2030 targets for radon exposure.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

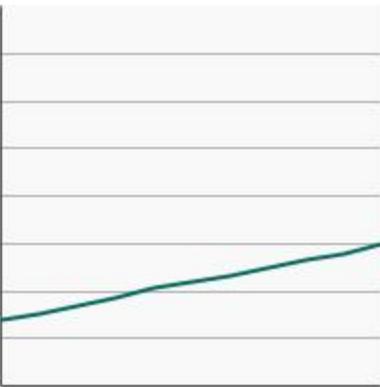
### Data Source

Radon Vent Fan Manufacturers' Sales Data (<https://www.healthypeople.gov/2020/data-source/homes-with-radon-mitigation-systems>)

## Trends and Most Recent Estimates

### **Homes with an Operating Radon Mitigation System**

The proportion of homes with an operating radon mitigation system for persons living in homes at risk for radon exposure, 2003-2013

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2013)</b>	
		<b>Percent of homes</b>	<b>95% Confidence Interval</b>
	<u>Homes with an Operating Radon Mitigation System</u>	15.0	Not available

### **Additional Information on Radon**

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures

### **Early Detection**

The use of screening tests to detect cancers earlier provides potential opportunities for patients to obtain more effective treatment with fewer side effects. Patients whose cancers are found at an earlier stage and treated in a timely manner are less likely to die from these cancers than are those whose cancers are not found until they are more widespread.

While there are clear benefits to screening, screening tests also carry harms. Not all screening tests are helpful and most have harms. It is important to know the harms associated with the test and whether it has been shown to decrease one's chances of dying from cancer.

This section describes trends in the use of breast, cervical, colorectal, and lung screening tests, which have been found to detect cancers accurately for specified age groups and can reduce the risk of death from that cancer.

- [Breast Cancer Screening](#)
- [Cervical Cancer Screening](#)
- [Colorectal Cancer Screening](#)
- [Lung Cancer Screening](#)

This section also describes trends in prostate screening tests; however, the highest grade assigned to prostate cancer screening by the U.S. Preventive Services Task Force (USPSTF) is a grade C, meaning that, for men aged 55 to 69 years, the decision to undergo periodic prostate-specific antigen (PSA)-based screening for prostate cancer should be an individual one, and that before deciding whether to be screened, men should have an opportunity to discuss the potential benefits and harms of screening with their clinician.

- [Prostate Cancer Screening](#)

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Breast Cancer Screening

### Data Up to Date as of:

April 2022

### Background

Mammography screening uses an x-ray of the breast to look for tumors in women who don't have symptoms. This screening method allows for the earlier detection of breast cancer, which, when followed by timely treatment, can help reduce deaths due to the disease. In part because age is the most important risk factor for breast cancer, women aged 60 to 69 years are likely to derive the greatest absolute benefit from screening. The U.S. Preventive Services Task Force recommends that women aged 50 to 74 years receive a mammogram every 2 years, and that women aged 40 to 49 years make an individual decision regarding screening.

### Measure

The percentage of women aged 50 to 74 years who reported having had a mammogram within the past 2 years, by race/ethnicity, income, and education level.

### Measurement challenges

We track breast cancer screening rates in U.S. women using a large, national, in-person survey in which people are asked about their health behaviors and the medical care they receive (see Data Source, below). There are important limitations to this method that impact what information we can accurately collect and how confident we can be in the findings. Studies have found that certain types of healthcare survey questions can be difficult for people to clearly understand and answer, and it is easy for some questions to be misinterpreted.

In the case of breast cancer screening, it can be challenging to determine by self-report alone if a woman received a mammogram for the purposes of looking for asymptomatic, previously undetected cancer (i.e., for screening purposes), or to follow up on symptoms or suspicious findings from a prior test (i.e., for diagnostic purposes). From an individual's point of view both tests appear similar to the patient experiencing them.

Additionally, looking for new or recurrent asymptomatic cancer in a person previously diagnosed and treated for that cancer type represents a third type of testing known as surveillance testing. People may also not always accurately recall the specific time they received a particular test. As people do not always accurately recall what medical tests they have received, the purpose of that testing, or its exact timing, our measure captures any type of mammogram received by a woman, and the population may include those with a prior diagnosis of breast cancer. Our measure captures general receipt of a mammogram (yes/no) more accurately than its underlying purpose. This serves as a reasonable approximation, although an overestimate, of the true U.S. breast cancer screening rate, i.e., the measure is not perfectly comparing the actual frequency of women's use of mammograms to national recommendations.

Even though the National Health Interview Survey breast cancer screening measures have limitations, it is the best nationally representative data we have available to assess breast cancer screening rates. It is frequently used by governmental and other organizations to track screening use over time in the US.

### Healthy People 2030 Target

- Increase to 77.1 percent the proportion of women aged 50 to 74 years who have received a breast cancer screening based on the most recent guidelines.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

### Data Source

Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 1987–2019.

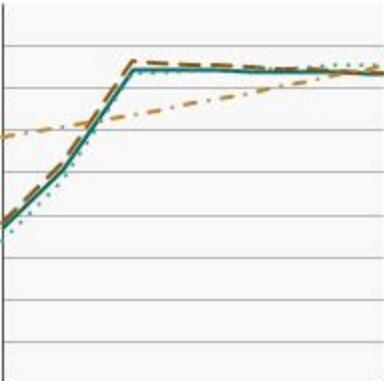
In 2019 the NHIS questionnaire was redesigned to increase relevance, enhance data quality, and minimize respondent burden. In addition, the COVID-19 pandemic created challenges conducting in-person interviews for the 2020 NHIS, requiring changes to field procedures to conduct most surveys by telephone, which impacted

survey response rates. For details related to the potential impacts of these issues, please refer to [Potential Impact of NHIS Redesign and COVID-19 on the Cancer Trends Progress Report](#).

## Trends and Most Recent Estimates

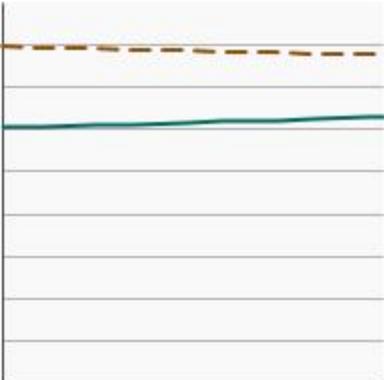
### By Race/Ethnicity

Percent of females aged 50-74 years who had mammography within the past 2 years by race/ethnicity, 1987-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of women</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	76.4	75.1 - 77.6
	<u>Non-Hispanic White</u>	76.0	74.5 - 77.5
	<u>Non-Hispanic Black</u>	79.1	75.1 - 82.6
	<u>Hispanic</u>	78.5	74.6 - 82.0

### By Poverty Income Level

Percent of females aged 50-74 years who had mammography within the past 2 years by poverty income level, 1998-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of women</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of federal poverty level</u>	68.3	65.6 - 70.8
	<u>&gt;=200% of federal poverty level</u>	79.6	78.1 - 80.9

## By Education Level

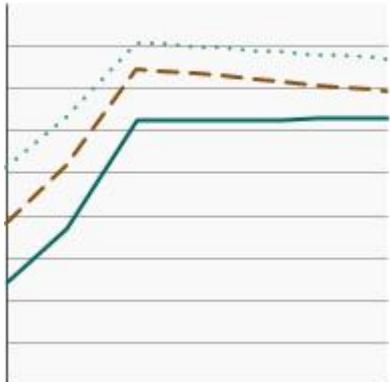
Percent of females aged 50-74 years who had mammography within the past 2 years by highest level of education obtained, 1987-2019

[Overview Graph](#)

[Detailed Trend Graphs](#)

### Most Recent Estimates (2019)

Percent of women 95% Confidence Interval



Less than High School 69.4

64.4 - 74.0

High School 73.2

70.7 - 75.6

Greater than High School 79.0

77.6 - 80.4

## Additional Information on Breast Cancer Screening

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Cervical Cancer Screening

**Data Up to Date as of:**

April 2022

### Background

Screening methods used to find cervical changes that may lead to cervical cancer include the Pap test (cytology-based screening, where a sample of cervical cells are collected and examined under a microscope) and human papillomavirus (HPV) testing (which tests cervical cells for the presence of high-risk types of HPV, a viral infection causing nearly all cervical cancer). Such screening tests may find cancers earlier, when they are more easily treated. Women who have never been screened face the greatest risk of developing invasive cervical cancer.

The U.S. Preventive Services Task Force (USPSTF) recommends screening for cervical cancer with the Pap test alone every 3 years in women aged 21 to 29 years. In women aged 30 to 65 years, the USPSTF recommends the Pap test alone every 3 years or HPV testing, with or without Pap co-testing, every 5 years.

### Measure

The percentage of women aged 21 to 65 years who were up-to-date with cervical cancer screening, by race/ethnicity, income, and education level. For 2013 and before, up-to-date was defined as having a Pap test within the past 3 years. For 2014-2018, up-to date is defined as having a Pap test within the past 3 years for all women aged 21 to 65 years, or having a Pap test, with or without an HPV test, in the past 5 years for women aged 30 to 65 years.

Starting in 2018, up-to-date on cervical screening was additionally defined as having an HPV test alone in the past 5 years for women aged 30 to 65 years.

### Measurement challenges

We track cervical cancer screening rates in U.S. women using a large, national, in-person survey in which people are asked about their health behaviors and the medical care they receive (see Data Source, below). There are important limitations to this method that impact what information we can accurately collect and how confident we can be in the findings. Studies have found that certain types of healthcare survey questions can be difficult for people to clearly understand and answer, and it is easy for some questions to be misinterpreted. Guidelines for cervical cancer screening have increased in complexity over time, which results in a greater likelihood for missing or incomplete self-reported information about the screening tests women received. Different approaches by researchers for handling this missing information can result in somewhat varied estimates presented for up-to-date cervical cancer screening status, depending on publication.

In the case of cervical cancer screening, it can be challenging to determine by self-report alone which type of test a woman received (i.e., a Pap smear, HPV test, or both). Both tests appear identical to the woman experiencing them; a person may only be aware which test she received if informed by her healthcare provider. Additionally, cancer screening is looking for cancer before a person has symptoms, when they are not known to have had that specific cancer type before. Looking for new or recurrent asymptomatic cancer in a person previously diagnosed and treated for that cancer type represents a different type of testing known as surveillance testing. Finally, people may not always accurately recall the specific time they received a particular test. As people do not always accurately recall what medical tests they have received, the purpose of that testing, or its exact timing, our measure captures any type of cervical cancer screening received by a woman, and the population may include those with a prior diagnosis of cervical cancer. Our measure is a reasonable approximation of the true U.S. cervical cancer screening rate, but it is not perfectly comparing the actual frequency of women's use of specific cervical cancer screening tests to national recommendations.

Even though the National Health Interview Survey cervical cancer screening measures have limitations, it is the best nationally representative data we have available to assess cervical cancer screening rates. It is frequently used by governmental and other organizations to track screening use over time in the US.

### Healthy People 2030 Target

- Increase to 84.3 percent the proportion of women aged 21 to 65 years who received cervical cancer screening based on the most recent guidelines.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

## **Data Source**

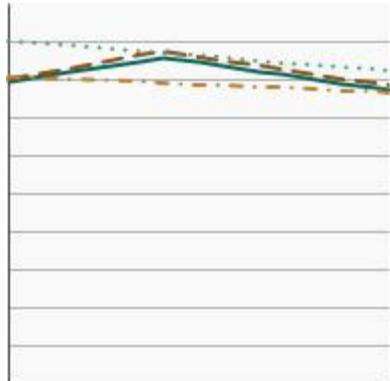
Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 1987–2019.

In 2019 the NHIS questionnaire was redesigned to increase relevance, enhance data quality, and minimize respondent burden. In addition, the COVID-19 pandemic created challenges conducting in-person interviews for the 2020 NHIS, requiring changes to field procedures to conduct most surveys by telephone, which impacted survey response rates. For details related to the potential impacts of these issues, please refer to Potential Impact of NHIS Redesign and COVID-19 on the Cancer Trends Progress Report.

## Trends and Most Recent Estimates

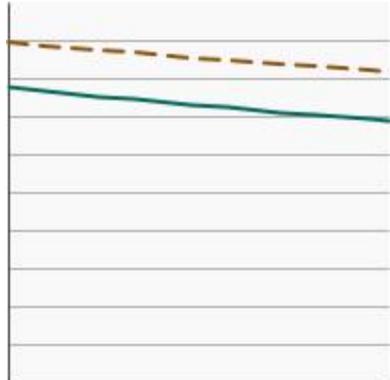
### By Race/Ethnicity

Percentage of females aged 21-65 years who were up-to-date with cervical cancer screening by race/ethnicity, 1987-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of women</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	73.5	72.4 - 74.6
	<u>Non-Hispanic White</u>	75.4	74.0 - 76.7
	<u>Non-Hispanic Black</u>	74.8	71.9 - 77.5
	<u>Hispanic</u>	70.3	67.6 - 72.8

### By Poverty Income Level

Percentage of females aged 21-65 years who were up-to-date with cervical cancer screening by poverty income level, 1998-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of women</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of federal poverty level</u>	64.2	62.1 - 66.2
	<u>&gt;=200% of federal poverty level</u>	77.8	76.5 - 79.0

## By Education Level

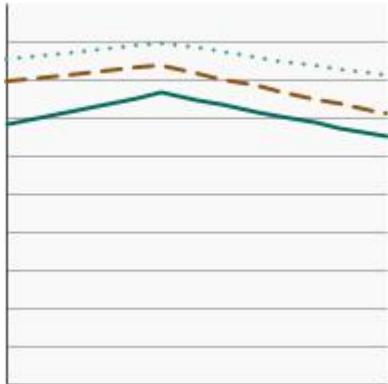
Percentage of females aged 21-65 years who were up-to-date with cervical cancer screening by highest level of education obtained, 1987-2019

Overview Graph

Detailed Trend Graphs

**Most Recent Estimates (2019)**

**Percent of women 95% Confidence Interval**



Less than High School 59.1 54.6 - 63.4

High School 67.1 64.6 - 69.4

Greater than High School 78.1 76.9 - 79.3

## Additional Information on Cervical Cancer Screening

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Colorectal Cancer Screening

### Data Up to Date as of:

April 2022

### Background

In 2016, the U.S. Preventive Services Task Force (USPSTF) recommended screening for colorectal cancer for adults aged 50 to 75 years, and that adults aged 76 to 85 years should make an individual decision about screening. In May 2021, the USPSTF updated their guidance to lower the recommended screening start age to 45 years. This was based on evidence indicating a trend for increasing risk of colorectal cancer in adult birth cohorts younger than 50 years and statistical modeling suggesting that starting at age 45 years may increase life years gained compared to 50 years.

Regular colorectal cancer screening is important for preventing new colorectal cancers from developing as well as for identifying existing colorectal cancers early - which can reduce the risk of death. A variety of screening tests can be used to detect colorectal cancer and/or precancerous polyps.

•

### Measure

**Colonoscopy** - A procedure where a doctor looks into the rectum and the entire colon using a flexible narrow tube to identify colorectal cancer or precancerous polyps. Used not only as a screening test, colonoscopies are also used as a diagnostic procedure to follow up after positive results from a fecal occult blood test (FOBT) or fecal immunochemical test (FIT), fecal DNA test, sigmoidoscopy, or CT colonography. The USPSTF suggests a screening colonoscopy once every 10 years.

**Computed tomography (CT) colonography** (otherwise known as a virtual colonoscopy) - Produces a three-dimensional image of the colon which your doctor examines for colorectal cancer and precancerous polyps. The USPSTF suggests CT colonography once every 5 years.

**Fecal occult blood test (FOBT) and fecal immunochemical test (FIT)** - These tests identify hidden blood in the stool, which can be a sign of cancer. The USPSTF suggests FOBT or FIT annually, using a home-based kit.

**Fecal DNA test** – In addition to checking for hidden blood in the stool like a FIT, this test also looks for abnormal genetic material that may be a sign of colorectal cancer. The USPSTF suggests fecal DNA testing at least every 3 years.

**Sigmoidoscopy** - A procedure where a doctor looks into the rectum and part of the colon using a flexible narrow tube to identify colorectal cancer or precancerous polyps. The USPSTF suggests sigmoidoscopy once every 5 years, or once every 10 years when conducted along with FIT every year.

### Healthy People 2030 Target

- Increase to 74.4 percent the proportion of adults aged 50 to 75 years who have received a colorectal screening test based on the most recent guidelines.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

### Data Source

Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 1987–2019.

Please note that these data were collected while the 2016 USPSTF recommendations were in place. Therefore, the estimates include adults aged 50 to 75 years.

In 2019 the NHIS questionnaire was redesigned to increase relevance, enhance data quality, and minimize respondent burden. In addition, the COVID-19 pandemic created challenges conducting in-person interviews for the 2020 NHIS, requiring changes to field procedures to conduct most surveys by telephone, which impacted

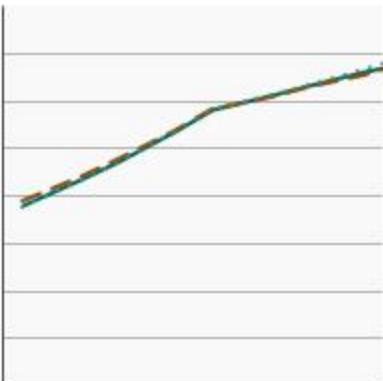
survey response rates. For details related to the potential impacts of these issues, please refer to [Potential Impact of NHIS Redesign and COVID-19 on the Cancer Trends Progress Report](#).

## Trends and Most Recent Estimates

### Guideline Screening

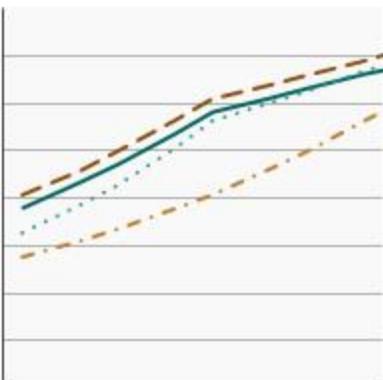
#### By Sex

Percentage of adults aged 50-75 years who were up-to-date<sup>1</sup> with colorectal cancer screening by sex, 2000-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	67.1	66.1 - 68.1
	<u>Male</u>	65.7	64.3 - 67.2
	<u>Female</u>	68.4	67.1 - 69.7

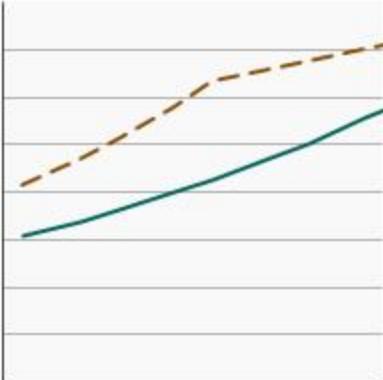
#### By Race/Ethnicity

Percentage of adults aged 50-75 years who were up-to-date<sup>1</sup> with colorectal cancer screening by race/ethnicity, 2000-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	67.1	66.1 - 68.1
	<u>Non-Hispanic White</u>	70.1	69.0 - 71.2
	<u>Non-Hispanic Black</u>	68.5	65.8 - 71.1
	<u>Hispanic</u>	54.7	51.3 - 58.0

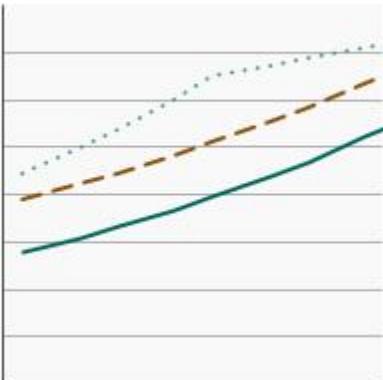
## By Poverty Income Level

Percentage of adults aged 50-75 years who were up-to-date<sup>1</sup> with colorectal cancer screening by poverty income level, 2000-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of federal poverty level</u>	55.4	53.3 - 57.5
	<u>&gt;=200% of federal poverty level</u>	71.3	70.2 - 72.3

## By Education Level

Percentage of adults aged 50-75 years who were up-to-date<sup>1</sup> with colorectal cancer screening by highest level of education obtained, 2000-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Less than High School</u>	50.7	47.2 - 54.3
	<u>High School</u>	63.7	61.9 - 65.4
	<u>Greater than High School</u>	72.3	71.1 - 73.4

## By Contributing Test Type

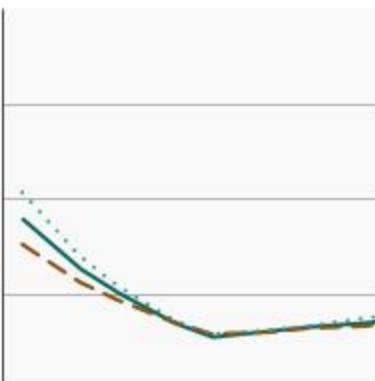
Breakdown of colorectal screening tests received by adults aged 50-75 years by type of screening test received, 2000-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Home FOBT</u>	3.3	3.0 - 3.7
	<u>Sigmoidoscopy or Colonoscopy</u>	63.1	62.1 - 64.2
	<u>CT Colonography</u>	1.2	1.0 - 1.5
	<u>Cologuard</u>	2.4	2.1 - 2.8

## Home FOBT or FIT

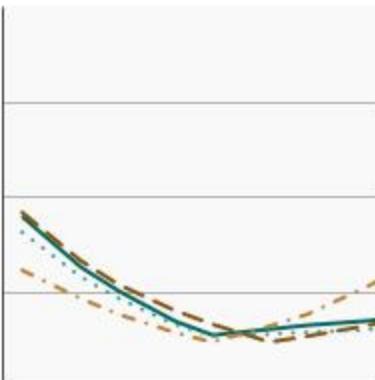
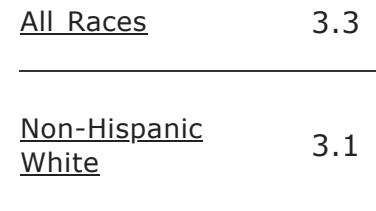
### By Sex

Percentage of adults aged 50-75 years who had a home fecal occult blood test (FOBT) or fecal immunochemical test (FIT) within the past year by sex, 2000-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	3.3	3.0 - 3.7
	<u>Male</u>	2.9	2.4 - 3.4
	<u>Female</u>	3.8	3.2 - 4.4

### By Race/Ethnicity

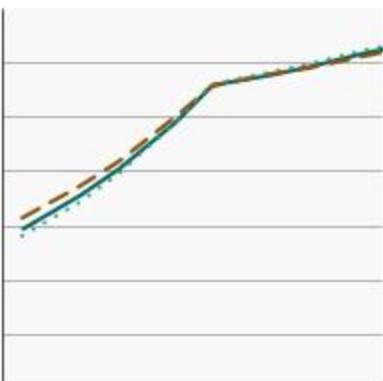
Percentage of adults aged 50-75 years who had a home fecal occult blood test (FOBT) or fecal immunochemical test (FIT) within the past year by race/ethnicity, 2000-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	3.3	3.0 - 3.7
	<u>Non-Hispanic White</u>	3.1	2.7 - 3.5
	<u>Non-Hispanic Black</u>	2.5	1.7 - 3.7
	<u>Hispanic</u>	5.1	3.9 - 6.6

## Sigmoidoscopy or Colonoscopy

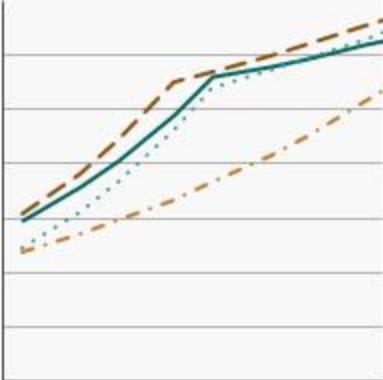
### By Sex

Percentage of adults aged 50-75 years who had a sigmoidoscopy in the past 5 years or had a colonoscopy in the past 10 years by sex, 2000-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	63.1	62.1 - 64.2
	<u>Male</u>	62.1	60.6 - 63.6
	<u>Female</u>	64.1	62.7 - 65.5

### By Race/Ethnicity

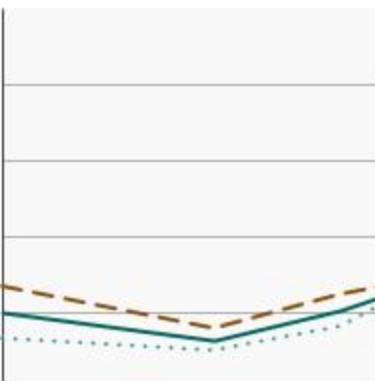
Percentage of adults aged 50-75 years who had a sigmoidoscopy in the past 5 years or had a colonoscopy in the past 10 years by race/ethnicity, 2000-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	63.1	62.1 - 64.2
	<u>Non-Hispanic White</u>	66.4	65.2 - 67.6
	<u>Non-Hispanic Black</u>	65.3	62.5 - 68.0
	<u>Hispanic</u>	48.8	45.6 - 52.0

## CT Colonography

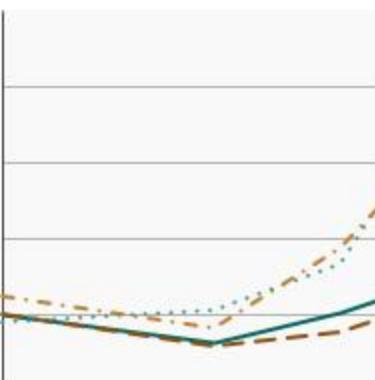
### By Sex

Percentage of adults aged 50-75 years who had a CT colonography in the past 5 years by sex, 2010-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	1.2	1.0 - 1.5
	<u>Male</u>	1.3	1.0 - 1.7
	<u>Female</u>	1.1	0.8 - 1.5

### By Race/Ethnicity

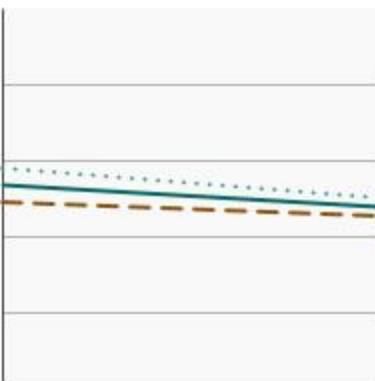
Percentage of adults aged 50-75 years who had a CT colonography in the past 5 years by race/ethnicity, 2010-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	1.2	1.0 - 1.5
	<u>Non-Hispanic White</u>	0.9	0.8 - 1.2
	<u>Non-Hispanic Black</u>	2.5	1.7 - 3.6
	<u>Hispanic</u>	2.4	1.5 - 3.9

## Fecal DNA Test

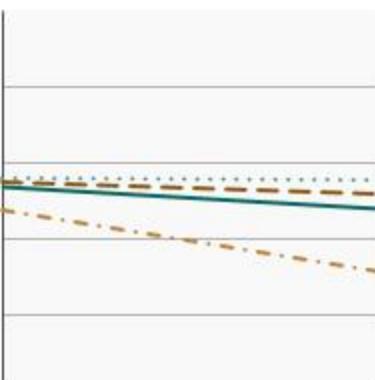
### By Sex

Percentage of adults aged 50-75 years who had a home fecal DNA test in the past 3 years by sex, 2018-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	2.4	2.1 - 2.8
	<u>Male</u>	2.3	1.9 - 2.8
	<u>Female</u>	2.5	2.1 - 3.0

### By Race/Ethnicity

Percentage of adults aged 50-75 years who had a home fecal DNA test in the past 3 years by race/ethnicity, 2018-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	2.4	2.1 - 2.8
	<u>Non-Hispanic White</u>	2.6	2.2 - 3.1
	<u>Non-Hispanic Black</u>	2.8	1.8 - 4.3
	<u>Hispanic</u>	1.6	0.9 - 2.6

## **Additional Information on Colorectal Cancer Screening**

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures

### Lung Cancer Screening

#### Data Up to Date as of:

April 2022

#### Background

Lung cancer screening uses a type of chest computed tomography (CT), known as low radiation dose CT (LDCT), using reduced doses of radiation (as compared to usual chest CT) to create very detailed three-dimensional pictures of the lungs. Doctors use lung cancer screening for early detection of disease in former and current smokers who do not have symptoms. Another name for LDCT is low-dose helical CT.

The U.S. Preventive Services Task Force's (USPSTF) first lung cancer screening recommendations, issued in 2013, recommended annual LDCT screening for lung cancer in adults aged 55 to 80 years who had a 30 pack-year smoking history or more and who currently smoked or had quit within the past 15 years. The recommendation was based on findings of the National Lung Screening Trial (NLST), a large randomized controlled trial. NLST demonstrated that lung cancer screening with LDCT reduced the risk of dying from lung cancer by 20 percent in people of that age and with that smoking history. In March 2021, the USPSTF published revised guidelines and now recommends annual LDCT screening for lung cancer in adults aged 50 to 80 years who have a 20 pack-year smoking history or more and who currently smoke or have quit within the past 15 years. The revision was based on the NLST results as well as results of other, more recently published, studies, as well as statistical modeling.

Quitting smoking is the best way to reduce the risk of dying from lung cancer. Lung cancer screening is not a substitute for smoking cessation. Smoking cessation interventions paired with lung cancer screening would result in considerable lung cancer deaths averted and life-years gained.

#### Measure

Percentage of adults at risk for lung cancer due to smoking, aged 55-80 years, who had a CT scan to check for lung cancer within the past year, by sex, race/ethnicity, income, education level, age, and smoking pack years.

#### Measurement challenges

We track lung cancer screening rates in U.S. adults using the *National Health Interview survey*, a large, national, in-person survey in which people are asked about their health behaviors and the medical care they receive (see Data Source, below). There are important limitations to this method that impact what information we can accurately collect and how confident we can be in the findings. Studies have found that certain types of healthcare survey questions can be difficult for people to clearly understand and answer, and it is easy for some questions to be misinterpreted.

National guidelines state that only individuals with extensive cigarette smoking experience be screened for lung cancer, and this report strives to only include eligible individuals in our measures. One challenge we face is calculation of an accurate measure of lifetime smoking, which is needed to determine whether someone is eligible for screening. Cigarette smoking behaviors can vary from day to day and year to year, yet our survey does not capture such time-specific information; instead, we collect information about average lifetime smoking. In addition, it can be difficult for an individual to accurately recall how many cigarettes he or she smoked a day in years past. Furthermore, an individual may underreport amount smoked given the stigma associated with the activity.

In the case of lung cancer screening, it can be challenging to determine by self-report alone if an individual received an LDCT for the purposes of looking for asymptomatic, previously undetected cancer or precancers (i.e., for screening purposes), or to follow up on symptoms or suspicious findings from a prior test (i.e., for diagnostic purposes). Patients may not know the difference between a screening LDCT and a diagnostic LDCT. Therefore, we ask individuals whether they received an exam to check for lung cancer, and our measures include both screening and diagnostic LDCTs. Though people may have reported LDCT exams that occurred for surveillance following lung cancer diagnosis and treatment, as of 2021 we exclude individuals previously diagnosed with lung cancer from our measurement of lung cancer screening rates, thus minimizing inclusion of surveillance exams. We also exclude individuals who report having an exam to check for lung cancer but then report that they had no exams in the last three years.

The challenges noted above can lead to the overreporting and underreporting of smoking and lung cancer screening; therefore, it is difficult to know whether our measures of lung cancer screening in eligible individuals are overestimates or underestimates. We do not believe that errors are extensive, and as such, we feel that our measures provide good estimates of the true magnitude of lung cancer screening. Furthermore, these data are widely considered to be the best national data on lung cancer screening and are used frequently to track lung cancer screening rates in the U.S.

In addition to the challenges noted above, lung cancer screening is somewhat unique among cancer screening modalities because it does not apply to everyone in a specified age range, but rather only to current or former heavy smokers in the age range. This means that the denominator of eligible individuals is considerably smaller than that for other screening modalities. Thus the resultant estimates from NHIS of those screened among the eligible population will have considerably larger standard errors (especially relative to the size of the estimates) than for other cancer sites, and should be interpreted with caution.

### **Healthy People 2030 Target**

Increase to 7.5 percent the proportion of adults aged 55 to 80 years who receive lung cancer screening based on the 2013 USPSTF recommendations. Recommendations are restricted to individuals who have never had lung cancer, have smoked at least 30 pack-years, and if former smokers, have quit no more than 15 years ago.

*Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.*

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

### **Data Source**

Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2010–2015.

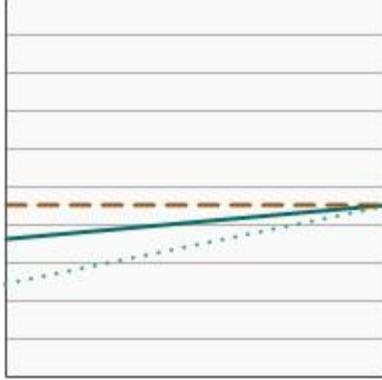
Please note that these data were collected while the 2013 USPSTF recommendations were in place. Therefore, the estimates include adults aged 55 to 80 who had a 30 pack-year smoking history or more and who currently smoked or had quit within the past 15 years.

In 2019 the NHIS questionnaire was redesigned to increase relevance, enhance data quality, and minimize respondent burden. In addition, the COVID-19 pandemic created challenges conducting in-person interviews for the 2020 NHIS, requiring changes to field procedures to conduct most surveys by telephone, which impacted survey response rates. For details related to the potential impacts of these issues, please refer to Potential Impact of NHIS Redesign and COVID-19 on the Cancer Trends Progress Report.

## Trends and Most Recent Estimates

### By Sex

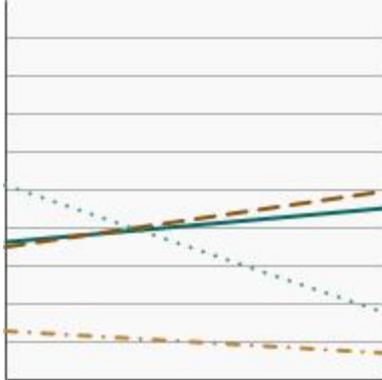
Percentage of adults at risk for lung cancer due to smoking<sup>1</sup>, aged 55-80 years, who had a CT scan to check for lung cancer within the past year by sex, 2010-2015

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2015)</b>	
		Percent of adults	95% Confidence Interval
	<u>Both Sexes</u>	4.5	2.8 - 7.2
	<u>Male</u>	4.5	2.7 - 7.4
	<u>Female</u>	4.5	1.8 - 10.5

<sup>1</sup> Includes adults who have smoked for 30+ pack-years and who currently smoke or have quit within the past 15 years. Excludes adults who reported a previous diagnosis of lung cancer.

### By Race/Ethnicity

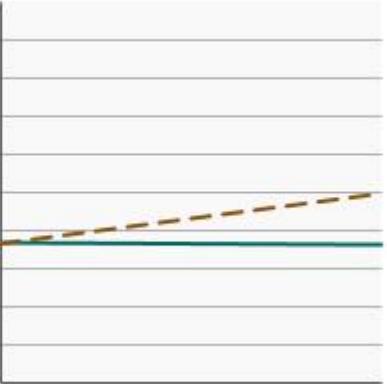
Percentage of adults at risk for lung cancer due to smoking<sup>1</sup>, aged 55-80 years, who had a CT scan to check for lung cancer within the past year by race/ethnicity, 2010-2015

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2015)</b>	
		Percent of adults	95% Confidence Interval
	<u>All Races</u>	4.5	2.8 - 7.2
	<u>Non-Hispanic White</u>	4.9	3.0 - 8.0
	<u>Non-Hispanic Black</u>	1.7	0.6 - 5.0
	<u>Hispanic</u>	0.7	0.1 - 4.6

<sup>1</sup> Includes adults who have smoked for 30+ pack-years and who currently smoke or have quit within the past 15 years. Excludes adults who reported a previous diagnosis of lung cancer.

## By Poverty Income Level

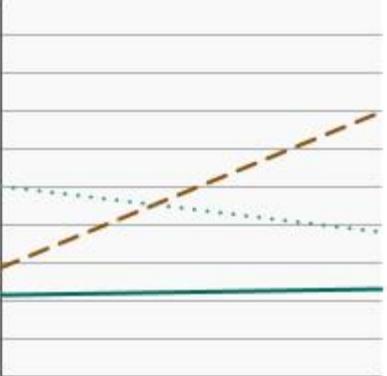
Percentage of adults at risk for lung cancer due to smoking<sup>1</sup>, aged 55-80 years, who had a CT scan to check for lung cancer within the past year by poverty income level, 2010-2015

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2015)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of federal poverty level</u>	3.6	2.0 - 6.5
	<u>&gt;=200% of federal poverty level</u>	5.0	2.7 - 9.1

<sup>1</sup> Includes adults who have smoked for 30+ pack-years and who currently smoke or have quit within the past 15 years. Excludes adults who reported a previous diagnosis of lung cancer.

## By Education Level

Percentage of adults at risk for lung cancer due to smoking<sup>1</sup>, aged 55-80 years, who had a CT scan to check for lung cancer within the past year by highest level of education obtained, 2010-2015

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2015)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>Less than High School</u>	2.3	1.1 - 4.7
	<u>High School</u>	7.0	4.0 - 11.8
	<u>Greater than High School</u>	3.8	1.4 - 9.6

<sup>1</sup> Includes adults who have smoked for 30+ pack-years and who currently smoke or have quit within the past 15 years. Excludes adults who reported a previous diagnosis of lung cancer.

## By Age

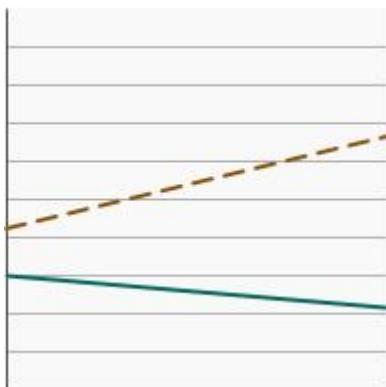
Percentage of adults at risk for lung cancer due to smoking<sup>1</sup>, aged 55-80 years, who had a CT scan to check for lung cancer within the past year by age, 2010-2015

[Overview Graph](#)

[Detailed Trend Graphs](#)

### Most Recent Estimates (2015)

Percent of adults	95% Confidence Interval
-------------------	-------------------------



Ages 55-64

2.2

1.2 - 3.8

Ages 65-80

6.6

3.7 - 11.7

<sup>1</sup> Includes adults who have smoked for 30+ pack-years and who currently smoke or have quit within the past 15 years. Excludes adults who reported a previous diagnosis of lung cancer.

## By Smoking Pack Years

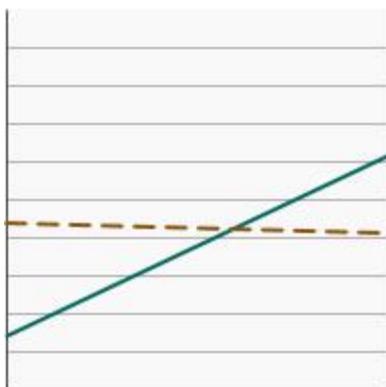
Percentage of adults at risk for lung cancer due to smoking<sup>1</sup>, aged 55-80 years, who had a CT scan to check for lung cancer within the past year by smoking pack years, 2010-2015

[Overview Graph](#)

[Detailed Trend Graphs](#)

### Most Recent Estimates (2015)

Percent of adults	95% Confidence Interval
-------------------	-------------------------



30-39 Years

6.2

2.5 - 14.6

40+ Years

4.1

2.3 - 7.2

<sup>1</sup> Includes adults who have smoked for 30+ pack-years and who currently smoke or have quit within the past 15 years. Excludes adults who reported a previous diagnosis of lung cancer.

## Additional Information on Lung Cancer Screening

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures

### Prostate Cancer Screening

#### Data Up to Date as of:

April 2022

#### Background

Prostate-specific antigen, or PSA, is a protein produced by normal, as well as malignant, cells of the prostate gland. The PSA test measures the level of PSA in a man's blood. For this test, a blood sample is sent to a laboratory for analysis. The results are usually reported as nanograms of PSA per milliliter (ng/mL) of blood. Sometimes a PSA test can find a cancer that, if not detected through screening, would never have caused any symptoms in the person's lifetime because it was growing so slowly that the person died of something else before any symptoms occurred. This is called overdiagnosis. Although no one ever knows if they are overdiagnosed, the harm is detecting and treating a cancer that otherwise never would have caused the person any problems in their lifetime.

In 2012 the U.S. Preventive Services Task Force (USPSTF) recommended against prostate cancer screening. In May 2018, the USPSTF published a [final recommendation statement](#) to update PSA screening guidelines for two subsets of the population:

1. for men age 70 years and older, the USPSTF recommends against PSA-based screening for prostate cancer, and
2. for men ages 55 to 69 years, the USPSTF recommends that clinicians inform them about the potential benefits and harms of PSA-based screening for prostate cancer, stating that the decision about whether to be screened for prostate cancer should be an individual one.

#### Measure

The percentage of men aged 55 to 69 years who reported having had a PSA test within the past year, by race/ethnicity, income, education level, and age. This provides information about the use of PSA testing in the population.

#### Measurement challenges

We track prostate cancer screening rates in U.S. using a large, national, in-person survey in which male respondents were asked several questions about prostate cancer and PSA testing, including whether they had ever had a PSA test and, if so, the time of their most recent test and the main reason for undergoing it (see Data Source, below). There are some limitations to this self-reported data that may impact what information we can accurately measure. Studies have shown that self-reported health care information is prone to biases because people may not know the specific purpose for receiving a test, or not remember the timing of the test. In the case of PSA screening, it may be challenging to determine by self-report alone if a PSA test was received for screening purposes, i.e., to look for asymptomatic, previously undetected cancer, or for diagnostic purposes as a follow up on symptoms or suspicious findings from a prior test. In some cases, because PSA testing is a blood test it may be bundled by a doctor with many other tests, and a man may be unaware he even had the test. Even though the use of PSA testing measure may include tests for reasons other than screening or may miss tests, this data is the best national data on PSA screening and has been used to track PSA screening rates in the US.

#### Healthy People 2030 Target

There is no Healthy People 2030 target related to being screened for prostate cancer. There is a target goal to increase the proportion of men who have discussed the advantages and disadvantages of the PSA test to screen for prostate cancer with their health care provider.

[Healthy People 2030](#) is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

#### Data Source

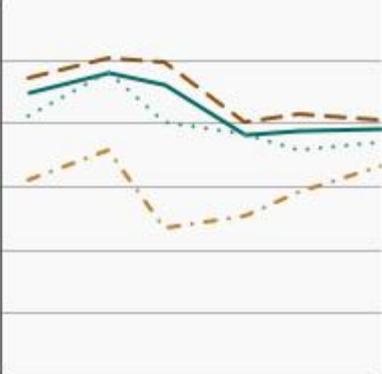
Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2005-2018.

In 2019 the NHIS questionnaire was redesigned to increase relevance, enhance data quality, and minimize respondent burden. In addition, the COVID-19 pandemic created challenges conducting in-person interviews for the 2020 NHIS, requiring changes to field procedures to conduct most surveys by telephone, which impacted survey response rates. For details related to the potential impacts of these issues, please refer to [Potential Impact of NHIS Redesign and COVID-19 on the Cancer Trends Progress Report](#).

## Trends and Most Recent Estimates

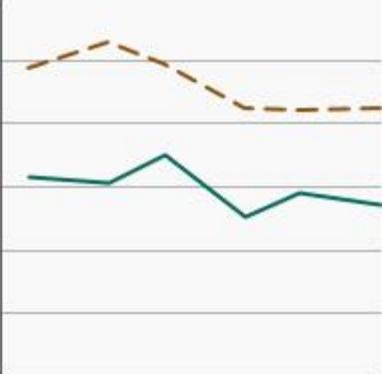
### By Race/Ethnicity

Percent of men aged 55-69 years who had a prostate-specific antigen (PSA) test within the past year by race/ethnicity, 2005-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2018)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	39.0	37.0 - 41.1
	<u>Non-Hispanic White</u>	40.4	38.0 - 42.8
	<u>Non-Hispanic Black</u>	37.0	31.3 - 43.1
	<u>Hispanic</u>	33.2	25.9 - 41.3

### By Poverty Income Level

Percent of men aged 55-69 years who had a prostate-specific antigen (PSA) test within the past year by poverty income level, 2005-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2018)</b>	
		<b>Percent of adults</b>	<b>95% Confidence Interval</b>
	<u>&lt;200% of federal poverty level</u>	27.1	23.4 - 31.3
	<u>&gt;=200% of federal poverty level</u>	42.2	39.9 - 44.6

## By Education Level

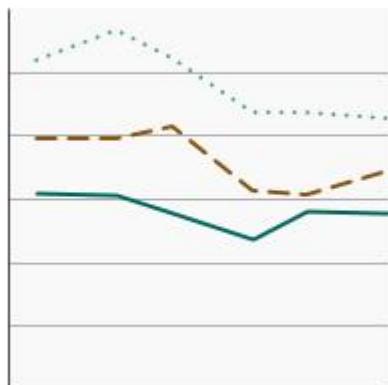
Percent of men aged 55-69 years who had a prostate-specific antigen (PSA) test within the past year by highest level of education obtained, 2005-2018

[Overview Graph](#)

[Detailed Trend Graphs](#)

### Most Recent Estimates (2018)

Percent of adults 95% Confidence Interval



[Less than High School](#)

27.8

21.7 - 34.8

[High School](#)

34.5

30.6 - 38.5

[Greater than High School](#) 42.7

40.2 - 45.2

## By Age

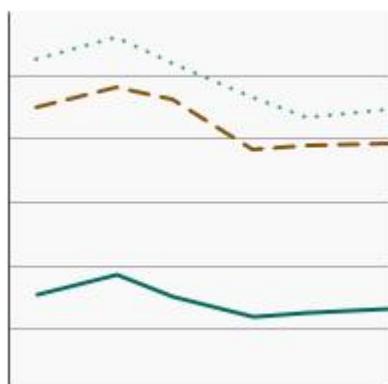
Percent of men aged 40 years and older who had a prostate-specific antigen (PSA) test within the past year by age at time of screening, 2005-2018

[Overview Graph](#)

[Detailed Trend Graphs](#)

### Most Recent Estimates (2018)

Percent of adults 95% Confidence Interval



[Ages 40-54](#)

13.4

11.9 - 15.0

[Ages 55-69](#)

39.0

37.0 - 41.1

[Ages 70+](#)

44.6

41.8 - 47.5

## Additional Information on Prostate Cancer Screening

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures

### Diagnosis

The rate of newly diagnosed cancer cases (incidence) is one way to measure progress against cancer. A lower rate of new cases suggests greater progress is being made.

Another important measure is the proportion of cancers diagnosed at a later stage of development. The stage of a cancer shows how far the disease has progressed and spread within the body. The earlier the stage at diagnosis, the better the chances are for a cure. Downward trends in the proportion of late cancer diagnoses are a sign that screening is working for cancers for which early detection methods are available.

This section describes trends in the rates of new cancers by cancer site and by racial and ethnic group. It also includes data on the proportion of cancers diagnosed at a late stage for six of the major cancer sites (female breast, lung, colon, rectum, cervix, and prostate) where cancer screening has been shown to make a difference in outcomes and is recommended or is being widely used (with the exception of prostate cancer screening, for which the highest grade assigned by the U.S. Preventive Services Task Force [USPSTF] is a grade C, meaning that, for men aged 55 to 69 years, the decision to undergo periodic prostate-specific antigen [PSA]-based screening for prostate cancer should be an individual one, and that before deciding whether to be screened, men should have an opportunity to discuss the potential benefits and harms of screening with their clinician). In this report, late stage colon, rectum, cervix, and prostate cancer cases are distant stage cases only. Late stage female breast and lung cancer cases include both regional and distant stage cases.

- [Incidence](#)
- [Stage at Diagnosis](#)

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Incidence

### Data Up to Date as of:

October 2022

## Background

Cancer incidence is typically measured as the number of new cases each year for every 100,000 people (for sex-specific cancers, people of the same sex serve as the denominator) and age-adjusted to a standard population to allow comparisons over time.

In 2022, nearly half of all new cancer cases are expected to be cancers of the prostate, breast, lung, and colon and rectum. According to American Cancer Society projections, about 1,918,030 new cases of cancer are expected to be diagnosed in 2022, including 268,490 cases of prostate cancer, 290,560 cases of breast cancer, 236,740 cases of lung and bronchus cancer, and 151,030 cases of colorectal cancer.

## Measure

Incidence rate: the observed number of new cancer cases per 100,000 people per year, adjusted for age and cancer case reporting delays and based on data from approximately 10 percent of the U.S. population.

Delay adjustment: a method of estimating delayed reporting of incident cases and then adjusting rates to account for this delay.

## Healthy People 2030 Target

There are no Healthy People 2030 targets for cancer incidence.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

## Data Source

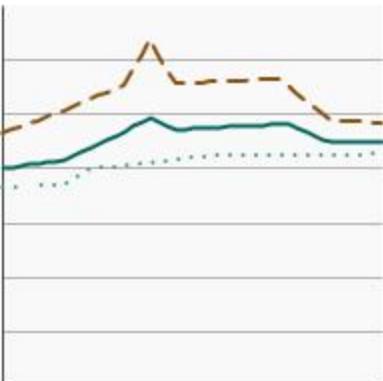
SEER Program, National Cancer Institute, 1975–2019.

## ② Trends and Most Recent Estimates

### All Cancer Sites Combined

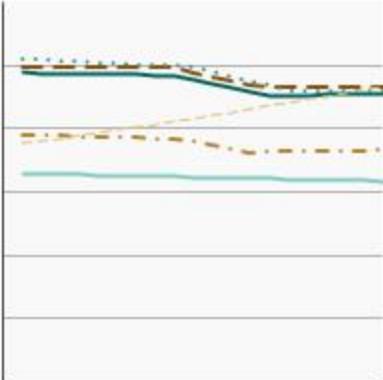
#### By Sex

Rates of new cases of all cancer, delay-adjusted cancer incidence by sex, 1975-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Rate per 100,000</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	451.2	448.7 - 453.6
	<u>Male</u>	484.8	481.1 - 488.4
	<u>Female</u>	429.8	426.6 - 433.1

#### By Race/Ethnicity

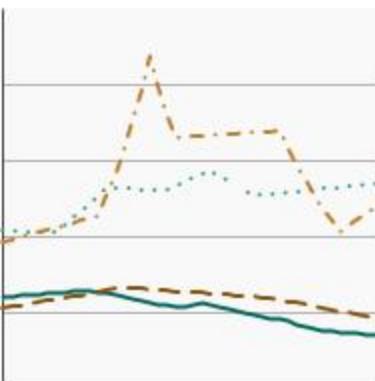
Rates of new cases of all cancer, delay-adjusted cancer incidence by race/ethnicity, 2000-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Rate per 100,000</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	456.1	455.1 - 457.1
	<u>Non-Hispanic White</u>	466.7	465.5 - 467.8
	<u>Non-Hispanic Black</u>	462.0	458.9 - 465.1
	<u>Hispanic</u>	367.6	365.3 - 369.9
	<u>Non-Hispanic Asian/Pacific Islander</u>	323.2	320.3 - 326.1
	<u>Non-Hispanic American Indian/Alaska Native</u>	468.3	449.1 - 488.1

## Top 4 Cancer Sites

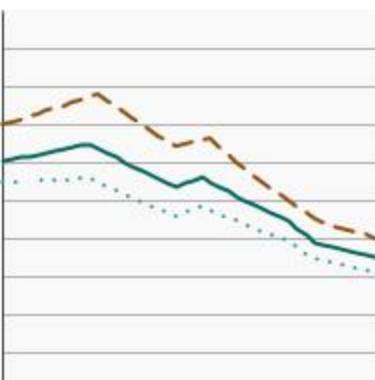
### Comparison of Top Cancer Sites

Rates of new cases of the most common cancers, delay-adjusted cancer incidence, 1975-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Rate per 100,000</b>	<b>95% Confidence Interval</b>
	<u>Colon and Rectum</u>	34.6	34.0 - 35.3
	<u>Lung and Bronchus</u>	45.9	45.2 - 46.7
	<u>Female Breast</u>	137.3	135.5 - 139.2
	<u>Prostate</u>	122.6	120.8 - 124.4

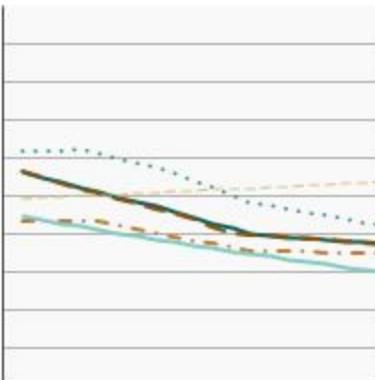
### Colon and Rectum Cancer by Sex

Rates of new cases of colon and rectum cancer, delay-adjusted cancer incidence by sex, 1975-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Rate per 100,000</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	34.6	34.0 - 35.3
	<u>Male</u>	39.9	38.9 - 41.0
	<u>Female</u>	30.0	29.1 - 30.8

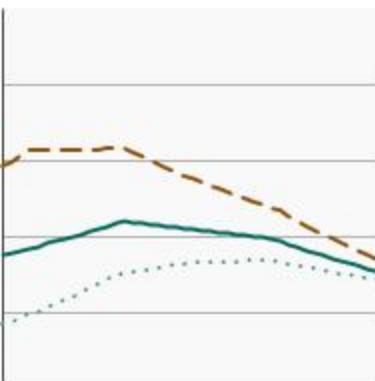
## Colon and Rectum Cancer by Race/Ethnicity

Rates of new cases of colon and rectum cancer, delay-adjusted cancer incidence by race/ethnicity, 2000-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Rate per 100,000</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	37.4	37.2 - 37.7
	<u>Non-Hispanic White</u>	37.2	36.9 - 37.6
	<u>Non-Hispanic Black</u>	42.8	41.8 - 43.7
	<u>Hispanic</u>	34.1	33.4 - 34.8
	<u>Non-Hispanic Asian/Pacific Islander</u>	30.8	29.9 - 31.7
	<u>Non-Hispanic American Indian/Alaska Native</u>	49.3	43.2 - 55.9

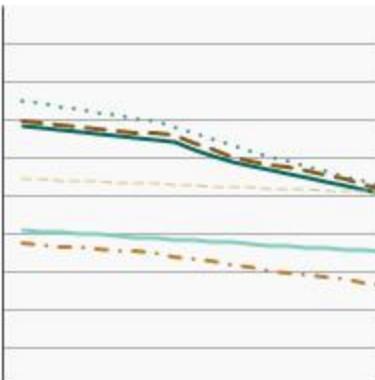
## Lung and Bronchus Cancer by Sex

Rates of new cases of lung and bronchus cancer, delay-adjusted cancer incidence by sex, 1975-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Rate per 100,000</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	45.9	45.2 - 46.7
	<u>Male</u>	49.3	48.1 - 50.4
	<u>Female</u>	43.6	42.6 - 44.6

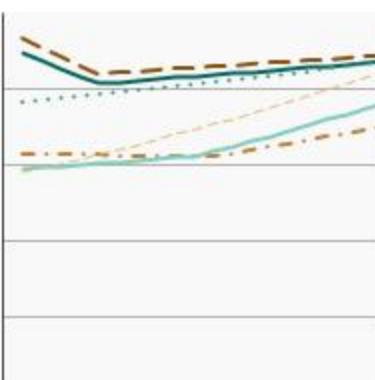
## Lung and Bronchus Cancer by Race/Ethnicity

Rates of new cases of lung and bronchus cancer, delay-adjusted cancer incidence by race/ethnicity, 2000-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Rate per 100,000</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	50.2	49.9 - 50.5
	<u>Non-Hispanic White</u>	51.6	51.2 - 51.9
	<u>Non-Hispanic Black</u>	52.4	51.4 - 53.5
	<u>Hispanic</u>	26.8	26.1 - 27.4
	<u>Non-Hispanic Asian/Pacific Islander</u>	35.6	34.7 - 36.6
	<u>Non-Hispanic American Indian/Alaska Native</u>	49.7	43.6 - 56.4

## Female Breast Cancer by Race/Ethnicity

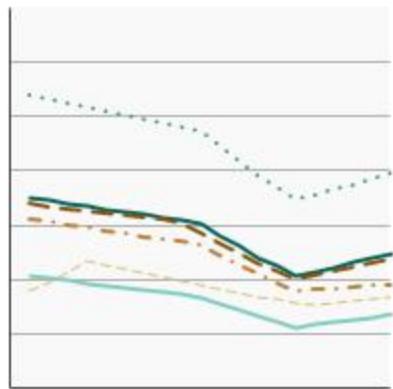
Rates of new cases of female breast cancer, delay-adjusted cancer incidence by race/ethnicity, 2000-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Rate per 100,000</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	133.9	133.1 - 134.7
	<u>Non-Hispanic White</u>	135.7	134.8 - 136.6
	<u>Non-Hispanic Black</u>	133.6	131.4 - 135.8
	<u>Hispanic</u>	106.8	105.2 - 108.4
	<u>Non-Hispanic Asian/Pacific Islander</u>	115.2	112.9 - 117.6
	<u>Non-Hispanic American Indian/Alaska Native</u>	138.5	124.7 - 153.4

## Prostate Cancer by Race/Ethnicity

Rates of new cases of prostate cancer, delay-adjusted cancer incidence by race/ethnicity, 2000-2019

### Overview Graph



### **Detailed Trend Graphs**

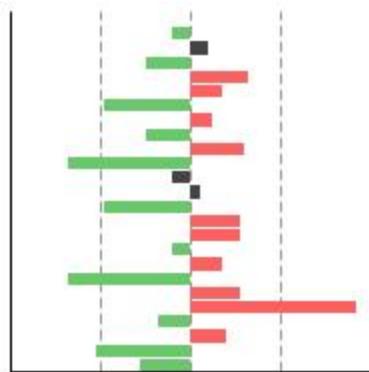
#### **Most Recent Estimates (2019)**

	<b>Rate per 100,000</b>	<b>95% Confidence Interval</b>
<u>All Races</u>	123.1	122.3 - 123.9
<u>Non-Hispanic White</u>	117.4	116.6 - 118.3
<u>Non-Hispanic Black</u>	197.0	193.9 - 200.2
<u>Hispanic</u>	94.2	92.4 - 96.0
<u>Non-Hispanic Asian/Pacific Islander</u>	67.3	65.3 - 69.3
<u>Non-Hispanic American Indian/Alaska Native</u>	88.3	75.8 - 102.0

## Recent Trends for Common Cancer Sites

2015-2019 trends (Average Annual Percent Change) in delay-adjusted cancer incidence rates for common cancer sites

### Overview graph



Cancer Site	Average Annual Percent Change
All Sites	0.0
Brain and ONS	-0.4*
Cervix Uteri	0.4
Colon and Rectum	-1.0*
Corpus Uteri and NOS	1.3*
Esophageal Adenocarcinoma	0.7*
Esophageal Squamous Cell	-1.9*
Female Breast	0.5*
Hodgkin Lymphoma	-1.0*
Kidney and Renal Pelvis	1.2*
Larynx	-2.7*
Leukemia	-0.4
Liver and IBD	0.2
Lung and Bronchus	-1.9*
Melanoma of the Skin	1.1*
Myeloma	1.1*
Non-Hodgkin Lymphoma	-0.4*
Oral Cavity and Pharynx	0.7*
Ovary	-2.7*
Pancreas	1.1*
Prostate	3.7*
Stomach	-0.7*
Testis	0.8*
Thyroid	-2.1*
Urinary Bladder	-1.1*

\* The Average Annual Percent Change (AAPC) is statistically significant.

## Additional Information on Incidence

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Stage at Diagnosis

**Data Up to Date as of:**

October 2022

### Background

Cancers can be diagnosed at different stages in their development. Stage of cancer diagnosis may be expressed as numbers (for example, I, II, III, or IV) or by terms such as “localized,” “regional,” and “distant.” The lower the number or the more localized the cancer, the better a person’s chances of benefiting from treatment.

Tracking the rates of late-stage (distant) cancers is a good way to monitor the impact of cancer screening. When more cancers are detected in early stages, fewer should be detected in late stages.

Both rates of late stage disease and stage proportions are provided below since each has a somewhat different interpretation. For example, rates could be declining among all stages of disease, but the proportion of late stage disease among diagnosed cases could be relatively constant.

### Measure

**Late-stage diagnosis rate:** The number of new cancer cases diagnosed at a distant stage per 100,000 people per year for cancers of the prostate, lung and bronchus, colon, rectum, and cervix uteri. Late stage is defined as regional and distant stage diagnoses, per 100,000 women per year for cancer of the female breast. Late stage is defined as the stages which screening tends to reduce and differs by cancer site (i.e. when screening is initiated the proportion diagnosed with late stage disease goes down).

**Stage Distribution:** The proportion of new cancer cases among all cases diagnosed in a specific year. The full distribution of all stages (local, regional, distant and unstaged/unknown) is shown.

### Healthy People 2030 Target

- There are no Healthy People Target for breast, colon, rectum, cervix uteri, lung and bronchus or prostate cancer by stage at diagnosis.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

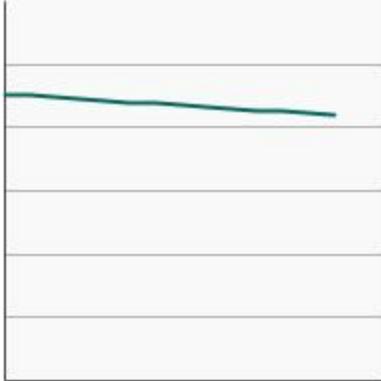
### Data Source

SEER Program, National Cancer Institute, 2004–2019.

## Trends and Most Recent Estimates

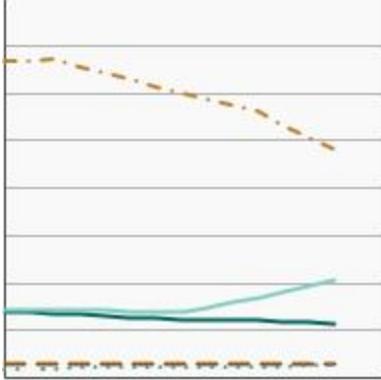
### Late Stage Female Breast Cancer Rates

Rates of new cases of late stage female breast cancer, delay-adjusted incidence, 2004-2019

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2019)</b>	
		<b>Delay Rate per 100,000</b>	<b>95% Confidence Interval</b>
	<a href="#">Late Stage Breast Cancer</a>	43.2	42.7 - 43.6

### Distant Stage Cancer Rates

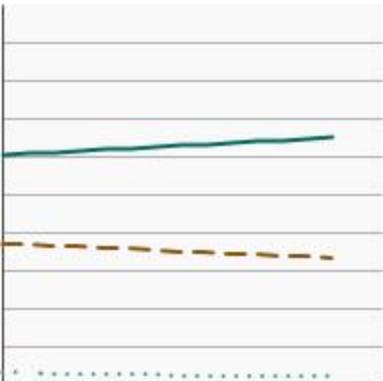
Rates of new cancers of distant stage diseases, delay-adjusted incidence, 2004-2019

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2019)</b>	
		<b>Delay Rate per 100,000</b>	<b>95% Confidence Interval</b>
	<a href="#">Colon</a>	5.9	5.7 - 6.0
	<a href="#">Rectum</a>	1.7	1.6 - 1.7
	<a href="#">Cervix Uteri</a>	1.1	1.0 - 1.1
	<a href="#">Lung and Bronchus</a>	22.8	22.5 - 23.0
	<a href="#">Prostate</a>	10.9	10.7 - 11.2

### Stage Distribution

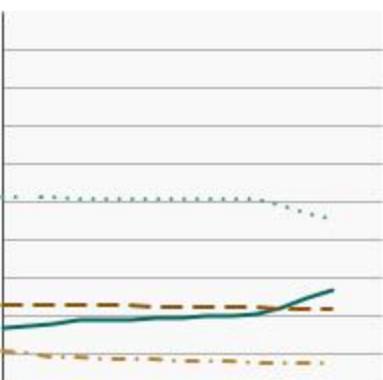
## Female Breast Cancer

Distribution of female breast cancer diagnoses by stage at diagnosis, 2004-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of diagnoses</b>	<b>95% Confidence Interval</b>
	<u>Localized</u>	65.2	57.0 - 73.3
	<u>Regional/Distant</u>	32.1	24.2 - 40.1
	<u>Unstaged/Unknown</u>	3.0	0.1 - 5.9

## Lung Cancer

Distribution of lung cancer diagnoses by stage at diagnosis, 2004-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of diagnoses</b>	<b>95% Confidence Interval</b>
	<u>Localized</u>	27.7	15.2 - 40.2
	<u>Regional</u>	20.3	9.1 - 31.6
	<u>Distant</u>	45.5	31.6 - 59.4
	<u>Unstaged/Unknown</u>	7.1	0.0 - 14.3

## Colon Cancer

Distribution of colon cancer diagnoses by stage at diagnosis, 2004-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of diagnoses</b>	<b>95% Confidence Interval</b>
	<u>Localized</u>	34.8	16.4 - 53.2
	<u>Regional</u>	36.2	17.6 - 54.7
	<u>Distant</u>	22.8	6.6 - 39.0
	<u>Unstaged/Unknown</u>	7.2	0.0 - 17.1

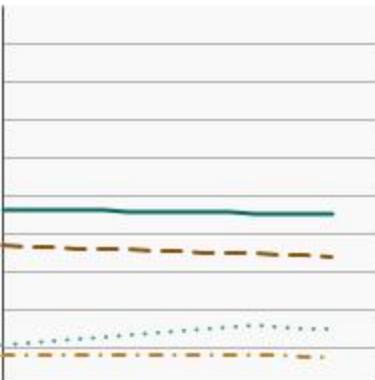
## Rectum Cancer

Distribution of rectum cancer diagnoses by stage at diagnosis, 2004-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of diagnoses</b>	<b>95% Confidence Interval</b>
	<u>Localized</u>	37.2	5.5 - 68.9
	<u>Regional</u>	35.6	4.2 - 67.0
	<u>Distant</u>	18.9	0.0 - 44.5
	<u>Unstaged/Unknown</u>	9.8	0.0 - 29.4

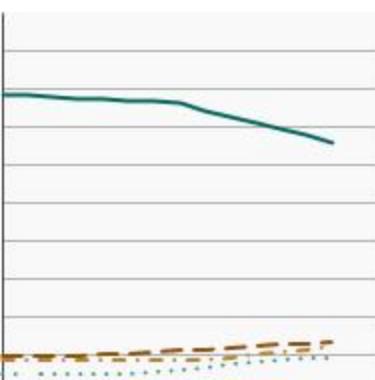
## Cervix Uteri Cancer

Distribution of cervix uteri cancer diagnoses by stage at diagnosis, 2004-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of diagnoses</b>	<b>95% Confidence Interval</b>
	<u>Localized</u>	43.6	8.8 - 78.3
	<u>Regional</u>	37.4	3.5 - 71.3
	<u>Distant</u>	14.0	0.0 - 38.4
	<u>Unstaged/Unknown</u>	7.2	0.0 - 25.4

## Prostate Cancer

Distribution of prostate cancer diagnoses by stage at diagnosis, 2004-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of diagnoses</b>	<b>95% Confidence Interval</b>
	<u>Localized</u>	67.5	59.0 - 76.0
	<u>Regional</u>	13.3	7.1 - 19.4
	<u>Distant</u>	8.7	3.6 - 13.9
	<u>Unstaged/Unknown</u>	11.0	5.4 - 16.7

## **Additional Information on Stage at Diagnosis**

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures

### Treatment

Cancer treatment is improving, saving lives and extending survival for many people. Depending on various factors, treatment options may include surgery, radiation, immunotherapy, chemotherapy, hormone therapy, targeted therapy, or local therapy, among others. These treatments might be used alone or in combination. Clinical trials evaluate the benefits of new therapies and broaden the options available to patients. This section includes treatment trends for cancer sites for which there are available data trends and definitive treatment guidelines based on rigorous evidence of benefit to patients, including bladder, breast, colorectal, kidney, lung, ovarian, and prostate cancers, and melanoma of the skin.

- [Bladder Cancer Treatment](#)
- [Breast Cancer Treatment](#)
- [Colorectal Cancer Treatment](#)
- [Kidney Cancer Treatment](#)
- [Lung Cancer Treatment](#)
- [Melanoma of the Skin Treatment](#)
- [Ovarian Cancer Treatment](#)
- [Prostate Cancer Treatment](#)

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Bladder Cancer Treatment

### Data Up to Date as of:

April 2022

### Background

Bladder cancer is a disease in which malignant (cancer) cells form in the tissues of the bladder. The first targeted therapy for bladder cancer was approved by the FDA in 2019. Treatment options depend on the stage of bladder cancer. Four types of standard treatment are used: surgery, radiation therapy, chemotherapy, and immunotherapy. Intravesical (within the bladder) therapy, one type of immunotherapy, involves the instillation of an agent or biologic into the bladder. The use of intravesical therapy has been associated with improved survival for individuals with non-muscle invasive bladder cancer. There has been a significant increase in the use of intravesical therapy for patients diagnosed with non-muscle invasive Ta G1-2 bladder cancer. The Ta G1-2 means non-invasive papillary carcinoma (Ta) that is Grade 1 (well differentiated) or Grade 2 (moderately differentiated).

### Measure

Percentage of individuals receiving intravesical therapy in non-muscle invasive bladder cancer.

### Healthy People 2030 Target

- There are no Healthy People 2030 targets for cancer treatment, including bladder cancer treatment.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

### Data Source

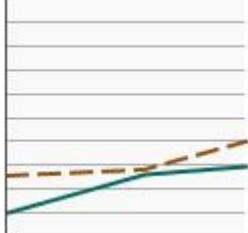
SEER Patterns of Care/Quality of Care Studies, National Cancer Institute, 1995-2009.

## ?

## Trends and Most Recent Estimates

### Intravesical Therapy

Percent of patients receiving intravesical therapy for non-muscle invasive disease Ta G1-2 and all other non-muscle invasive disease, 1995-2009

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2009)</b>	
		<b>Percent of patients</b>	<b>95% Confidence Interval</b>
	<u>Ta G1-2</u>	29.7	(22.3 - 37.1)
	<u>Other non-muscle invasive disease</u>	39.9	(31.2 - 48.6)

### Additional Information on Bladder Cancer Treatment

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Breast Cancer Treatment

### Data Up to Date as of:

October 2022

### Background

Breast cancer is the most common type of cancer among women in the United States (other than skin cancer). Women with breast cancer have many treatment options, including surgery, radiation therapy, hormone therapy, chemotherapy, immunotherapy, and targeted therapy. Treatment options for a woman diagnosed with breast cancer may include more than one type of treatment (ex. Surgery and radiation) or more than one agent (multi-agent chemotherapy).

The proportion of women with node-positive disease (cancer in the lymph nodes near the tumor) receiving guideline-concordant treatment is high. Clinical trials have demonstrated that women with early stage breast cancer who receive breast-conserving surgery (BCS) with radiation therapy have a survival rate similar to those of women who undergo a mastectomy. Among women for whom chemotherapy is indicated, older women are less likely to receive chemotherapy than younger women, but there are no major differences in treatment among major racial and ethnic groups.

Breast cancer also develops in men, but it is rare and is not included in the data presented on this page.

### Measure

Percentage of women aged 20 and older, diagnosed with early stage breast cancer (stage I or II), receiving breast-conserving surgery and radiation treatment.

Percentage of women aged 20 and older, diagnosed with node-positive, stage I–IIIA breast cancer, receiving multi-agent chemotherapy.

*Note:* This measure includes women with both hormone receptor positive and negative breast cancer.

### Healthy People 2030 Target

- There are no Healthy People 2030 targets for cancer treatment, including breast cancer treatment and multi-agent chemotherapy.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

### Data Source

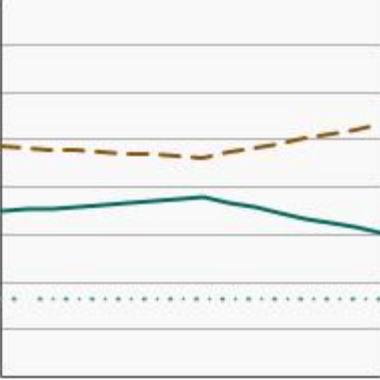
Breast-conserving surgery and radiation treatment estimates: SEER 17 Registries, National Cancer Institute, 2004–2019.

Multi-agent chemotherapy estimates: SEER Patterns of Care/Quality of Care Studies, National Cancer Institute, 1987–2015.

## Trends and Most Recent Estimates

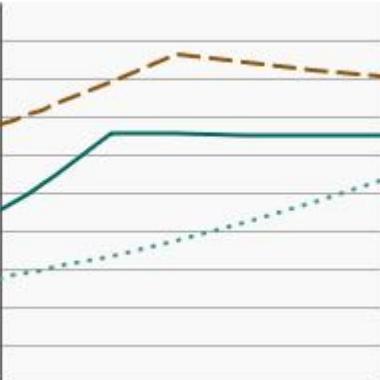
### Treatment Distribution

Treatment distribution for invasive stage I or II female breast cancer patients aged 20 years and older, 2004-2019

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2019)</b>	
		Percent of patients	95% Confidence Interval
	<u>Mastectomy</u>	31.0	30.8 - 31.2
	<u>BCS with radiation</u>	51.9	51.7 - 52.1
	<u>BCS without radiation</u>	17.1	17.0 - 17.2

### Chemotherapy

Percentage of node positive female breast cancer patients receiving multiagent chemotherapy treatment by age at diagnosis, 1987-2015

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2015)</b>	
		Percent of patients	95% Confidence Interval
	<u>Ages 20+</u>	64.2	57.6 - 70.2
	<u>Ages 20-64</u>	82.4	74.6 - 88.2
	<u>Ages 65+</u>	40.7	29.9 - 52.5

### Additional Information on Breast Cancer Treatment

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Colorectal Cancer Treatment

**Data Up to Date as of:**

April 2022

### Background

Colon cancer forms in the tissues of the colon, which is the longest part of the large intestine. Rectal cancer forms in the tissues of the rectum, which is the last several inches of the large intestine closest to the anus. The main types of treatment for colon and rectal cancer are surgery, radiation therapy, chemotherapy, immunotherapy, and targeted therapy. Depending on the stage of the cancer, two or more of these types of treatment may be combined at the same time or used one after another.

Surgery is the most common treatment for all stages of colorectal cancer. Adjuvant chemotherapy is used after surgery to minimize chances of recurrence and has been shown to help people with stage III colon and rectal cancer live longer. Radiation therapy uses high energy rays or particles to destroy cancer cells. Chemotherapy can make radiation therapy more effective against some colon and rectal cancers. The proportion of patients receiving guideline-concordant adjuvant therapy increased steadily between 1987 and 2005. Potential disparities remain for some groups of patients.

### Measure

Percent of individuals, aged 20 years and older, diagnosed with stage III colon cancer who received adjuvant chemotherapy or diagnosed with stage II or stage III rectal cancer who received chemotherapy with or without radiation therapy.

### Healthy People 2030 Target

- There are no Healthy People 2030 targets for cancer treatment, including colorectal cancer treatment.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

### Data Source

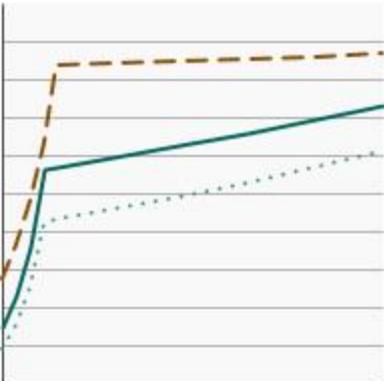
SEER Patterns of Care/Quality of Care Studies, National Cancer Institute, 1987-2015.

## ?

## Trends and Most Recent Estimates

### Guideline-concordant Chemotherapy Treatment

Percent of colon stage III and rectal stages II & III cancer patients who received guideline-concordant chemotherapy treatment by age at diagnosis, 1987-2015

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2015)</b>	
		<b>Percent of patients</b>	<b>95% Confidence Interval</b>
	<u>All Ages</u>	70.3	66.4 - 74.0
	<u>Ages &lt;65</u>	86.9	82.2 - 90.6
	<u>Ages 65+</u>	57.1	51.1 - 62.9

### Additional Information on Colorectal Cancer Treatment

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Kidney Cancer Treatment

### Data Up to Date as of:

October 2022

### Background

Kidney cancer, also called renal cell cancer, is one of the ten most common cancers in both men and women. Treatment options may include surgery (open or laparoscopic), local therapies such as ablation and embolization, active surveillance, radiation therapy, targeted therapy, immunotherapy, and chemotherapy. These treatments might be used alone or in combination, depending on various factors.

Surgery is the main treatment for most types of kidney cancer. Since 2000, the use of complete nephrectomy (removal of the whole kidney) in patients with localized kidney cancer or cancer in the immediate surrounding tissue (regional kidney cancer) has decreased, while the rate of partial nephrectomy (removal of only the affected part of the kidney) has increased. Partial nephrectomy is now the preferred treatment for patients with early stage kidney cancer, but there are patients with early stage disease for whom partial nephrectomy may not be possible. Studies have shown the long-term results of partial nephrectomy and complete nephrectomy are about the same. Also, partial nephrectomy may prevent serious side effects like chronic kidney disease.

### Measure

Partial nephrectomy or complete nephrectomy in patients with localized/regional kidney cancer.

### Healthy People 2030 Target

- There are no Healthy People 2030 targets for cancer treatment, including kidney cancer treatment.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

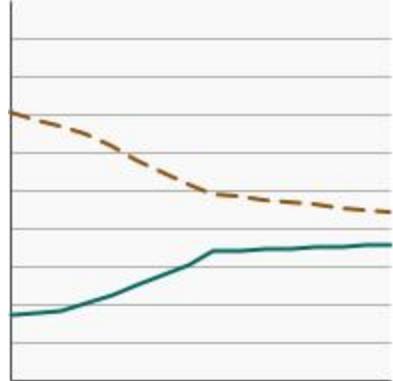
### Data Source

SEER 17 Registries, National Cancer Institute, 2004–2019.

## Trends and Most Recent Estimates

### All Races, Ages 20+

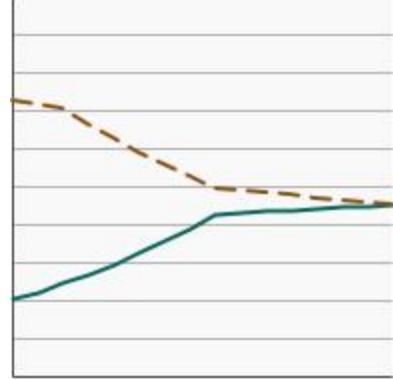
Percent of patients aged 20 years and older diagnosed with localized/regional kidney cancer receiving partial nephrectomy or complete nephrectomy, 2004-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of patients</b>	<b>95% Confidence Interval</b>
	<u>Partial nephrectomy</u>	36.2	35.7 - 36.6
	<u>Complete nephrectomy</u>	44.0	43.5 - 44.4

### By Age

#### **Ages 20-64**

Percent of patients aged 20 - 64 years diagnosed with localized/regional kidney cancer receiving partial nephrectomy or complete nephrectomy, 2004-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of patients</b>	<b>95% Confidence Interval</b>
	<u>Partial nephrectomy</u>	45.0	44.3 - 45.7
	<u>Complete nephrectomy</u>	45.7	45.1 - 46.4

## Ages 65 and Older

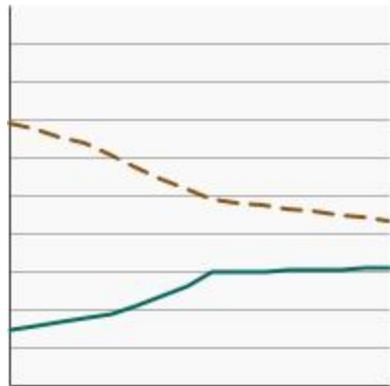
Percent of patients aged 65 years and older diagnosed with localized/regional kidney cancer receiving partial nephrectomy or complete nephrectomy, 2004-2019

[Overview Graph](#)

[\*\*Detailed Trend  
Graphs\*\*](#)

**Most Recent Estimates (2019)**

<b>Percent of patients</b>	<b>95% Confidence Interval</b>
--------------------------------	------------------------------------



Partial  
nephrectomy

31.7

31.4 - 32.0

Complete  
nephrectomy

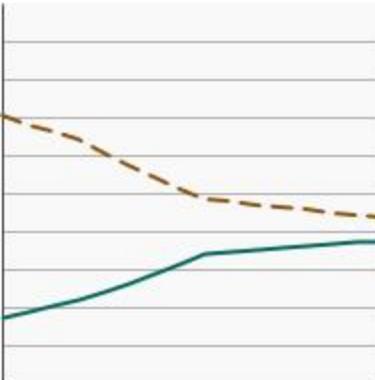
43.1

42.7 - 43.4

## By Race/Ethnicity

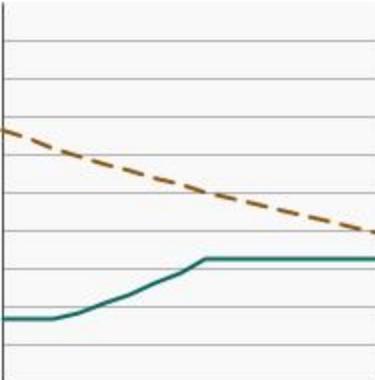
### Non-Hispanic White

Percent of Non-Hispanic White patients aged 20 years and older diagnosed with localized/regional kidney cancer receiving partial nephrectomy or complete nephrectomy, 2004-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of patients</b>	<b>95% Confidence Interval</b>
	<u>Partial nephrectomy</u>	38.0	37.6 - 38.3
	<u>Complete nephrectomy</u>	43.0	42.7 - 43.4

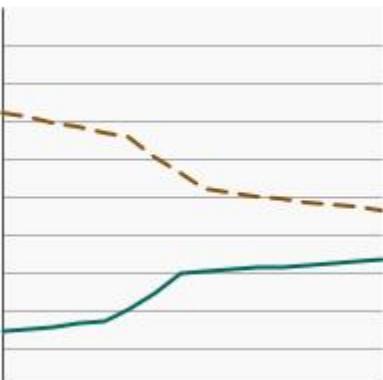
### Non-Hispanic Black

Percent of Non-Hispanic Black patients aged 20 years and older diagnosed with localized/regional kidney cancer receiving partial nephrectomy or complete nephrectomy, 2004-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of patients</b>	<b>95% Confidence Interval</b>
	<u>Partial nephrectomy</u>	33.8	33.6 - 33.9
	<u>Complete nephrectomy</u>	42.1	42.0 - 42.3

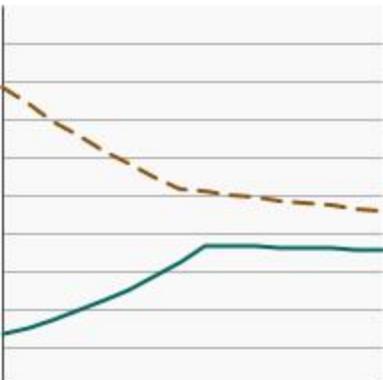
## Hispanic

Percent of Hispanic patients aged 20 years and older diagnosed with localized/regional kidney cancer receiving partial nephrectomy or complete nephrectomy, 2004-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of patients</b>	<b>95% Confidence Interval</b>
	<u>Partial nephrectomy</u>	31.5	31.3 - 31.7
	<u>Complete nephrectomy</u>	47.3	47.1 - 47.5

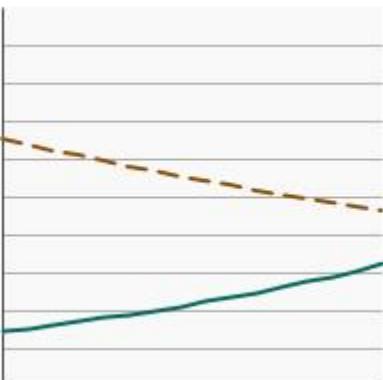
## Non-Hispanic Asian/Pacific Islander

Percent of Non-Hispanic Asian/Pacific Islander patients aged 20 years and older diagnosed with localized/regional kidney cancer receiving partial nephrectomy or complete nephrectomy, 2004-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of patients</b>	<b>95% Confidence Interval</b>
	<u>Partial nephrectomy</u>	36.6	36.5 - 36.7
	<u>Complete nephrectomy</u>	46.6	46.5 - 46.7

## Non-Hispanic American Indian/Alaska Native

Percent of Non-Hispanic American Indian/Alaska Native patients aged 20 years and older diagnosed with localized/regional kidney cancer receiving partial nephrectomy or complete nephrectomy, 2004-2019

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2019)</b>	
		<b>Percent of patients</b>	<b>95% Confidence Interval</b>
	<u>Partial nephrectomy</u>	29.7	29.7 - 29.8
	<u>Complete nephrectomy</u>	46.2	46.1 - 46.2

## **Additional Information on Kidney Cancer Treatment**

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Lung Cancer Treatment

### Data Up to Date as of:

April 2022

### Background

Lung cancer forms in tissues of the lung, usually in the cells that line air passages. The two main types of lung cancer are small cell lung cancer and non-small cell lung cancer (NSCLC), which is the most common. About 85 percent of lung cancers are NSCLCs.

Primary treatment options for people with NSCLC include surgery, radiation therapy, other local treatments, chemotherapy, immunotherapy, and targeted therapies. In many cases, more than one of these treatments is used.

Surgery to remove the tumor presents the greatest chance of curing NSCLC, and is commonly used to treat stages I and II and some stage III cancers but is rarely used to treat stage IV cancers. Postoperative chemotherapy may provide an additional benefit to patients who have undergone surgical removal of NSCLC. Radiation therapy combined with chemotherapy can effectively treat a small number of patients and can provide palliation in most patients.

### Measure

Chemotherapy following the diagnosis of non-small cell lung cancer stages IIIB or IV.

### Healthy People 2030 Target

- There are no Healthy People 2030 targets for cancer treatment, including lung cancer treatment.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

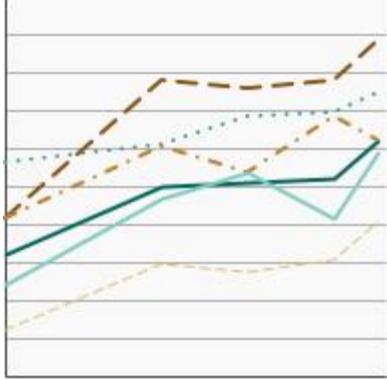
### Data Source

SEER Patterns of Care/Quality of Care Studies, National Cancer Institute, 1996-2018.

## Trends and Most Recent Estimates

### Chemotherapy

Distribution of patients aged 20 years and older diagnosed with stage IIIB or IV non-small cell lung cancer receiving any chemotherapy by age at diagnosis, 1996-2018

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2017 to 2018)</b>	
		<b>Percent of patients</b>	<b>95% Confidence Interval</b>
	<u>Ages 20 and older</u>	61.9	59.9 - 63.8
	<u>Ages 20-49</u>	88.6	83.4 - 93.8
	<u>Ages 50-59</u>	74.6	70.4 - 78.7
	<u>Ages 60-69</u>	62.1	58.7 - 65.4
	<u>Ages 70-79</u>	59.2	55.5 - 62.9
	<u>Ages 80 and older</u>	40.6	35.4 - 45.9

### Additional Information on Lung Cancer Treatment

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Melanoma of the Skin Treatment

### Data Up to Date as of:

April 2022

### Background

Melanoma is a type of skin cancer in which malignant cells form in melanocytes (cells that color the skin). While less common than other types of skin cancer, it is more likely to spread to other parts of the body and to be a cause of death. Melanoma may also occur in mucous membranes (thin tissue layers that cover surfaces such as the lips). Standard treatment for melanoma can include surgery, chemotherapy, radiation therapy, immunotherapy, or targeted therapy. Surgery to remove the tumor is the primary treatment for all stages of melanoma; this may include determining whether the melanoma has spread to neighboring lymph nodes. Systemic therapies and/or radiation therapy may be used following surgery. Newer treatments including vaccine therapy are being explored in clinical trials.

### Measure

Percentage of individuals with advanced (stage III or IV) melanoma of the skin receiving chemotherapy.

### Healthy People 2030 Target

- There are no Healthy People 2030 targets for cancer treatment, including melanoma of the skin treatment.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

### Data Source

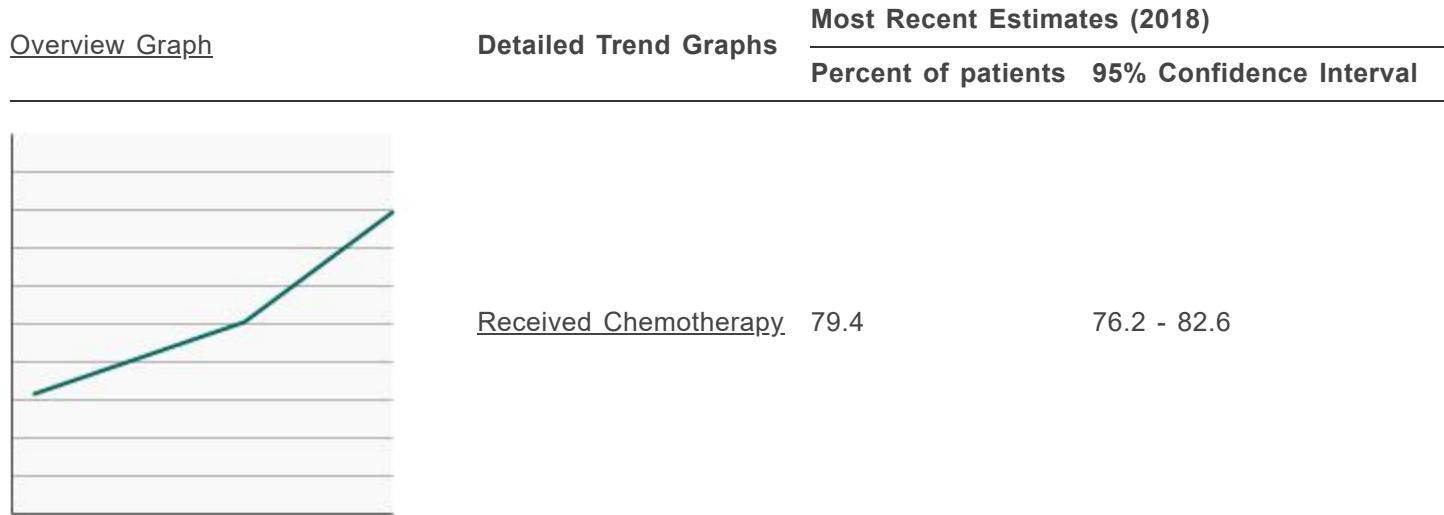
SEER Patterns of Care/Quality of Care Studies, National Cancer Institute, 2001-2018.

## ?

## Trends and Most Recent Estimates

### Chemotherapy

Distribution of patients aged 20 years and older diagnosed with stage III or IV melanoma of the skin receiving any chemotherapy , 2001-2018



### Additional Information on Melanoma Treatment

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Ovarian Cancer Treatment

**Data Up to Date as of:**

April 2022

### Background

Ovarian cancer forms in the tissues of the ovary (one of a pair of female reproductive glands in which the ova, or eggs, are formed). Most ovarian cancers are either ovarian epithelial carcinomas (cancer that begins in the cells on the surface of the ovary) or malignant germ cell tumors (cancer that begins in egg cells). Cancerous ovarian tumors can also begin in stromal cells, which release hormones and connect the different structures of the ovaries, though this is less common. Ovarian epithelial, fallopian tube, and primary peritoneal cancers form in the same tissue and are treated the same way.

Ovarian cancer treatment varies by the type of tumor. Often, two or more different treatments are used, though surgery is the main initial treatment for most ovarian cancers. Studies in early stage ovarian cancer have shown an increase in overall survival with the administration of chemotherapy, which is used in the majority of cases as a follow-up therapy to surgery. Epithelial ovarian cancer is treated with surgery, chemotherapy, and targeted therapy. Ovarian germ cell tumors are treated with surgery, chemotherapy, and radiation therapy. Ovarian stromal tumors are treated with surgery, chemotherapy, and hormone therapy.

Guidelines suggest intraperitoneal (IP) chemotherapy for later stage ovarian cancer. IP chemotherapy involves injecting a concentrated dose of drugs through a thin tube into the abdominal cavity where the cancer cells are located. In a study of women with advanced ovarian cancer, those receiving IP chemotherapy lived longer than those getting regular chemotherapy, but the side effects of IP chemotherapy were often more severe.

### Measure

Percentage of individuals diagnosed with ovarian cancer who received chemotherapy or hormonal therapy by stage of diagnosis.

### Healthy People 2030 Target

- There are no Healthy People 2030 targets for cancer treatment, including ovarian cancer treatment.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

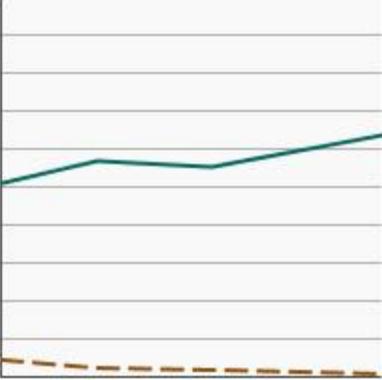
### Data Source

SEER Patterns of Care/Quality of Care Studies, National Cancer Institute, 1991-2011.

## Trends and Most Recent Estimates

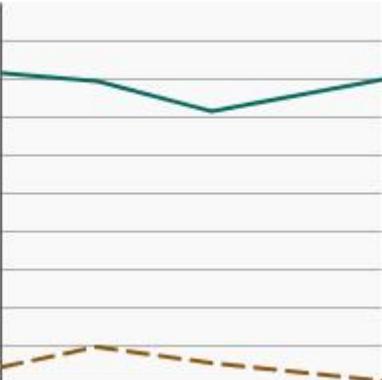
### Stage I and II Diagnoses

Percent of patients aged 20 years and older diagnosed with stage I or II ovarian cancer by type of treatment received, 1991-2011

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2011)</b>	
		<b>Percent of patients</b>	<b>95% Confidence Interval</b>
		<u>Chemotherapy</u>	63.5 (59.5 - 67.4)
		<u>Hormone therapy</u>	0.7 (0.1 - 1.2)

### Stage III and IV Diagnoses

Percent of patients aged 20 years and older diagnosed with stage III or IV ovarian cancer by type of treatment received, 1991-2011

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2011)</b>	
		<b>Percent of patients</b>	<b>95% Confidence Interval</b>
		<u>Chemotherapy</u>	79.9 (77.2 - 82.5)
		<u>Hormone therapy</u>	0.6 (0.2 - 1.0)

## Distribution of Chemotherapeutic Agents

Distribution of chemotherapeutic agents given to ovarian cancer patients aged 20 years and older by type of treatment received, 2011

<u>Overview graph</u>	<b>Chemotherapy agent received</b>	<b>Stage I and II</b>		<b>Stage III and IV</b>	
		<b>Percent of patients receiving agent</b>	<b>95% Confidence Interval</b>	<b>Percent of patients receiving agent</b>	<b>95% Confidence Interval</b>
	<b>Carboplatin/Cisplatin</b>	61.1	(56.9 - 65.1)	77.5	(74.5 - 80.2)
	<b>Cyclophosphamide (Cytoxan)</b>	0.1	(0.0 - 0.4)	0.6	(0.3 - 1.0)
	<b>Paclitaxol (Taxol)</b>	53.3	(49.1 - 57.5)	72.6	(69.5 - 75.4)
	<b>Other Chemo Agents</b>	15.7	(12.9 - 19.1)	30.7	(27.7 - 34.0)

## Additional Information on Ovarian Cancer Treatment

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Prostate Cancer Treatment

### Data Up to Date as of:

April 2022

### Background

Prostate cancer forms in tissues of the prostate (a gland in the male reproductive system found below the bladder and in front of the rectum). This disease, which usually occurs in older men and grows relatively slowly, is the most common cancer among men (after skin cancer), but can often be treated successfully.

Standard treatment options may include active surveillance, surgery, radiation therapy, hormonal therapy, chemotherapy, biologic therapy, and targeted therapy. These treatments are generally used one at a time, although in some cases they may be combined.

Hormonal therapy is also called *androgen deprivation therapy* or *androgen suppression therapy*. Its goal is to reduce levels of male hormones, called *androgens*, in the body, and to block them from affecting prostate cancer cells. This type of therapy can slow prostate cancer cell growth, which is stimulated by androgens.

The use of hormonal therapy for prostate cancer typically increases with the age of the patient, and it is currently also recommended for men with a high risk of recurrence. It may also be used for men who are not able to have surgery or radiation, and for men who can't be cured by these treatments because the cancer has already spread beyond the prostate gland. It is increasingly being used before, during, and after local treatment as well.

### Measure

Hormonal therapy following the diagnosis of prostate cancer.

### Healthy People 2030 Target

- There are no Healthy People 2030 targets for cancer treatment, including prostate cancer treatment.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

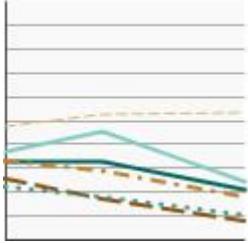
### Data Source

SEER Patterns of Care/Quality of Care Studies, National Cancer Institute, 1998-2008.

## Trends and Most Recent Estimates

### Hormonal Therapy

Percent of men aged 40 years and older with localized/regional prostate cancer and receiving hormonal therapy by age at diagnosis, 1998-2008

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2008)</b>	
		<b>Percent of patients</b>	<b>95% Confidence Interval</b>
	<u>Ages 40 and older</u>	21.1	(17.6 - 24.5)
	<u>Ages 40-49</u>	7.7	(3.4 - 12.1)
	<u>Ages 50-59</u>	10.4	(6.9 - 13.9)
	<u>Ages 60-69</u>	17.7	(10.9 - 24.5)
	<u>Ages 70-79</u>	24.7	(18.1 - 31.3)
	<u>Ages 80 and older</u>	53.0	(43.1 - 63.0)

### Additional Information on Prostate Cancer Treatment

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## **Life After Diagnosis**

More and more people are benefiting from the early detection of cancer and its successful treatment. These advances are improving both quality of life and length of survival among people diagnosed with cancer, permitting many survivors to lead full and productive lives at home and at work.

National data regarding life after cancer diagnosis track the financial burden of cancer care and survival rates, as well as the health behaviors of cancer survivors, including survivors' physical activity, weight management, and smoking status.

- [Financial Burden of Cancer Care](#)
- [Survival](#)
- [Cancer Survivors and Smoking](#)
- [Cancer Survivors and Physical Activity](#)
- [Cancer Survivors and Weight](#)

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures

### Financial Burden of Cancer Care

#### Data Up to Date as of:

April 2022

#### Background

The national cancer-attributed medical care costs in the United States are substantial and projected to increase due to population changes alone, according to the [Medical Care Costs Associated with Cancer Survivorship in the United States](#) article, published in the journal *Cancer Epidemiology, Biomarkers & Prevention* (1). National costs for cancer care were estimated to be \$190.2 billion in 2015. Assuming constant future costs, we project costs to be \$208.9 billion in 2020 (2020 U.S. dollars), an increase of 10 percent that is only due to the aging and growth of the U.S. population. These cost estimates include cancer-attributable costs for medical services and oral prescription drugs. National medical services costs were largest for those diagnosed with female breast, colorectal, lung, and prostate cancers and non-Hodgkin lymphomas. National oral prescription drug costs were highest for those diagnosed with female breast, leukemia, lung, and prostate cancers. The differences in national costs reflect prevalence of the disease, treatment patterns, and costs for different types of care for the different cancer sites.

If cancer diagnosis and treatment is divided into phases of care: initial (first year after diagnosis), end-of-life (year before cancer death) and continuing (the time in between), per-patient annualized average costs were highest in the last year of life, followed by the initial and continuing phases (medical services: \$109,727, \$43,516, and \$5,518, and oral prescription drugs: \$4,372, \$1,874, \$1,041, respectively). There was considerable variation in costs by cancer site. Annualized average oral drug costs were highest for chronic myeloid leukemia (CML) and myeloma in all phases of care. Annualized average costs also varied by stage in all phases of care [data is not shown here but is available in Mariotto, et al. (1)].

#### Measure

- The estimates in this report come from Mariotto, et al. (1) and are an extension and update of previous estimates (2). All cost estimates have been adjusted and are reported in 2020 U.S. dollars.
- Per-patient annualized average cancer-attributable costs were estimated, respectively, from 2007-2013 Medicare claims by subtracting costs between patients with cancer and their matched controls without cancer. Annualized average medical costs were estimated by phases of care: initial (first year after diagnosis), end-of-life (year before cancer death) and continuing (the time in between).
- Medical services care costs were estimated from Medicare Parts A and B claims and include both Medicare payments and patient responsibilities for all billed medical services, including hospitalizations, outpatient hospital services, physician/supplier services, infusion or injectable drugs, durable medical equipment, hospice care, and home health care.
- Oral prescription drug costs were estimated from Medicare Part D claims.
- National expenditures or national cancer-attributed costs were estimated by combining U.S. cancer prevalence estimates and projections from the [Anticipating the “Silver Tsunami”: Prevalence Trajectories and Comorbidity Burden among Older Cancer Survivors in the United States](#) article, published in the journal *Cancer Epidemiology, Biomarkers & Prevention* (3) with the annualized average cost estimates, using previously described methods (1).

#### Healthy People 2030 Target

- There is no Healthy People 2030 target for the financial burden of cancer care.

[Healthy People 2030](#) is a set of goals set forth by the Department of Health and Human Services.

#### Data Source

1. Mariotto AB, Enewold L, Zhao JX, Zeruto CA, Yabroff KR. Medical Care Costs Associated with Cancer Survivorship in the United States. *Cancer Epidemiol Biomarkers Prev*. 2020;29(7):1304-12.

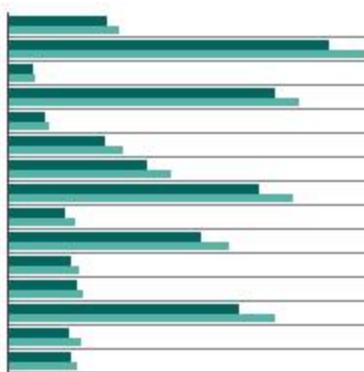
2. Mariotto AB, Yabroff KR, Shao Y, Feuer EJ, Brown ML. Projections of the cost of cancer care in the United States: 2010-2020. *J Natl Cancer Inst.* 2011;103(2):117-28.
3. Bluethmann SM, Mariotto AB, Rowland JH. Anticipating the "Silver Tsunami": Prevalence Trajectories and Comorbidity Burden among Older Cancer Survivors in the United States. *Cancer Epidemiol Biomarkers Prev.* 2016;25(7):1029-36.

## National Expenditures

### Total Cost

Estimates of national expenditures for cancer care (in billions of dollars) by cancer site and year

Overview graph



Cancer Site	2015	2020
<b>All sites</b>	\$190.2	\$208.9
<b>Bladder</b>	\$8.3	\$9.4
<b>Female Breast</b>	\$26.8	\$29.8
<b>Cervix Uteri</b>	\$2.2	\$2.3
<b>Colorectal</b>	\$22.3	\$24.3
<b>Hodgkin Lymphoma</b>	\$3.2	\$3.5
<b>Kidney</b>	\$8.2	\$9.7
<b>Leukemia</b>	\$11.7	\$13.6
<b>Lung</b>	\$21.1	\$23.8
<b>Melanoma</b>	\$4.9	\$5.7
<b>Non-Hodgkin Lymphoma</b>	\$16.2	\$18.6
<b>Oral Cavity</b>	\$5.4	\$6.0
<b>Ovary</b>	\$5.9	\$6.4
<b>Prostate</b>	\$19.4	\$22.3
<b>Thyroid</b>	\$5.2	\$6.1
<b>Uterus</b>	\$5.3	\$5.8

## Medical Services

Estimates of national expenditures for medical services related to cancer care (in billions of dollars) by cancer site and year

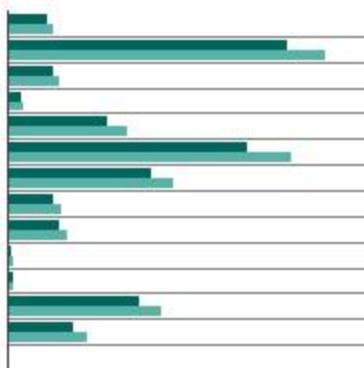
Overview\_graph

Cancer Site	2015	2020
<b>All sites</b>	\$171.6	\$188.1
<b>Bladder</b>	\$7.9	\$8.9
<b>Female Breast</b>	\$23.7	\$26.2
<b>Cervix Uteri</b>	\$2.2	\$2.3
<b>Colorectal</b>	\$21.8	\$23.7
<b>Hodgkin Lymphoma</b>	\$3.0	\$3.3
<b>Kidney</b>	\$7.1	\$8.4
<b>Leukemia</b>	\$9.1	\$10.5
<b>Lung</b>	\$19.4	\$21.9
<b>Melanoma</b>	\$4.4	\$5.1
<b>Non-Hodgkin Lymphoma</b>	\$15.6	\$17.9
<b>Oral Cavity</b>	\$5.3	\$5.9
<b>Ovary</b>	\$5.8	\$6.3
<b>Prostate</b>	\$17.9	\$20.6
<b>Thyroid</b>	\$4.5	\$5.3
<b>Uterus</b>	\$5.3	\$5.8

## Prescription Drugs

Estimates of national expenditures for prescription drugs related to cancer care (in billions of dollars) by cancer site and year

Overview graph



Cancer Site	2015	2020
<b>All sites</b>	\$18.6	\$20.9
<b>Bladder</b>	\$0.4	\$0.5
<b>Female Breast</b>	\$3.1	\$3.5
<b>Cervix Uteri</b>	-	-
<b>Colorectal</b>	\$0.5	\$0.6
<b>Hodgkin Lymphoma</b>	\$0.2	\$0.2
<b>Kidney</b>	\$1.1	\$1.3
<b>Leukemia</b>	\$2.7	\$3.2
<b>Lung</b>	\$1.6	\$1.8
<b>Melanoma</b>	\$0.5	\$0.6
<b>Non-Hodgkin Lymphoma</b>	\$0.6	\$0.7
<b>Oral Cavity</b>	\$0.1	\$0.1
<b>Ovary</b>	\$0.1	\$0.1
<b>Prostate</b>	\$1.5	\$1.7
<b>Thyroid</b>	\$0.7	\$0.9
<b>Uterus</b>	\$0.0	\$0.0

*- Cancer-attributable oral prescription drug costs for cancer of the cervix uteri are not available.*

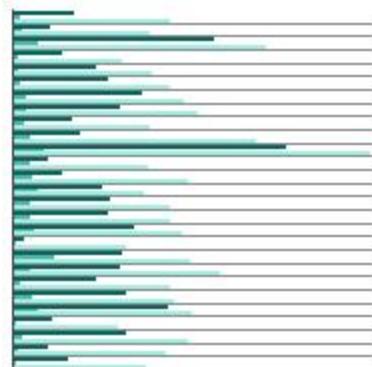
## Per Patient Cost

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## Medical Services

Average (per patient) annualized 2007-2013 cancer-attributable costs in 2020 US dollars for medical services related to cancer care by cancer site and phase of care

Overview graph



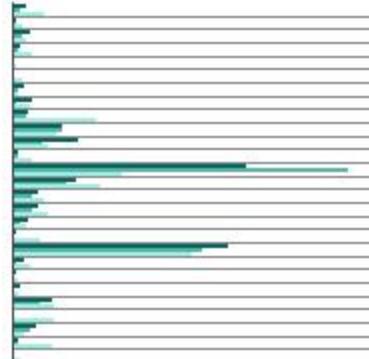
Cancer Site	Initial care	Continuing care	Last year of life
<b>All Sites</b>	\$43,516.1	\$5,517.6	\$109,727.3
<b>Bladder</b>	\$26,442.8	\$6,350.4	\$95,985.4
<b>Brain</b>	\$139,813.8	\$17,385.6	\$176,354.9
<b>Breast</b>	\$34,979.5	\$3,539.6	\$76,101.2
<b>Cervix Uteri</b>	\$58,715.6	\$3,956.0	\$97,026.4
<b>Colorectal</b>	\$66,523.5	\$6,246.3	\$110,143.7
<b>Esophagus</b>	\$89,947.2	\$9,785.9	\$120,033.8
<b>Hodgkin Lymphoma</b>	\$75,372.5	\$9,785.9	\$128,986.8
<b>Kidney</b>	\$41,121.7	\$8,536.7	\$95,985.4
<b>Leukemia</b>	\$47,263.9	\$12,700.9	\$169,588.0
<b>Acute Myeloid Leukemia</b>	\$190,305.0	\$21,758.1	\$249,124.7
<b>Chronic Lymphocytic Leukemia</b>	\$25,505.9	\$12,076.3	\$94,111.5
<b>Chronic Myeloid Leukemia</b>	\$34,875.4	\$13,950.2	\$122,428.2
<b>Liver</b>	\$62,775.7	\$18,218.5	\$92,133.5
<b>Lung</b>	\$68,293.3	\$12,388.6	\$110,247.8
<b>Lung: Non-small Cell Carcinoma</b>	\$67,148.1	\$12,284.5	\$109,102.7
<b>Lung: Small Cell Carcinoma</b>	\$85,366.6	\$14,783.0	\$118,055.8
<b>Melanoma</b>	\$8,536.7	\$2,706.8	\$78,912.0
<b>Myeloma</b>	\$77,038.1	\$28,524.9	\$123,365.1
<b>Non-Hodgkin Lymphoma</b>	\$75,164.2	\$12,805.0	\$144,706.8
<b>Oral Cavity</b>	\$58,715.6	\$5,934.0	\$110,039.6
<b>Ovary</b>	\$79,120.3	\$14,158.4	\$112,017.6
<b>Pancreas</b>	\$108,165.7	\$18,426.7	\$125,030.8
<b>Prostate</b>	\$28,108.5	\$2,602.6	\$74,227.3

<u>Overview_graph</u>	<b>Cancer Site</b>	<b>Initial care</b>	<b>Continuing care</b>	<b>Last year of life</b>
	<b>Stomach</b>	\$79,120.3	\$7,079.2	\$122,011.8
	<b>Thyroid</b>	\$24,881.2	\$4,060.1	\$107,437.0
	<b>Uterus</b>	\$39,039.6	\$3,019.1	\$93,590.9

## Oral Prescription Drugs

Average (per patient) annualized 2007-2013 cancer-attributable costs in 2020 US dollars for oral prescription drugs related to cancer care by cancer site and phase of care

Overview graph



Cancer Site	Initial care	Continuing care	Last year of life
All Sites	\$1,873.9	\$1,041.1	\$4,372.4
Bladder	\$624.6	\$520.5	\$1,353.4
Brain	\$2,394.4	\$1,353.4	\$1,873.9
Breast	\$1,145.2	\$832.8	\$2,706.8
Cervix Uteri	\$0.0	\$0.0	\$520.5
Colorectal	\$416.4	\$208.2	\$1,353.4
Esophagus	\$1,561.6	\$832.8	\$937.0
Hodgkin Lymphoma	\$2,810.9	\$520.5	\$2,602.6
Kidney	\$2,290.3	\$1,873.9	\$11,763.9
Leukemia	\$6,871.0	\$6,871.0	\$6,038.1
Acute Myeloid Leukemia	\$9,057.2	\$4,164.2	\$4,893.0
Chronic Lymphocytic Leukemia	\$728.7	\$728.7	\$2,915.0
Chronic Myeloid Leukemia	\$32,481.0	\$46,743.4	\$15,303.5
Liver	\$8,849.0	\$7,599.7	\$12,180.4
Lung and Bronchus	\$3,643.7	\$2,706.8	\$4,580.7
Lung: Non-small Cell Carcinoma	\$3,747.8	\$2,810.9	\$4,997.1
Lung: Small Cell Carcinoma	\$2,290.3	\$1,145.2	\$1,873.9
Melanoma	\$624.6	\$312.3	\$3,956.0
Myeloma	\$29,878.3	\$26,442.8	\$24,985.3
Non-Hodgkin Lymphoma	\$1,561.6	\$624.6	\$2,602.6
Oral Cavity	\$520.5	\$0.0	\$937.0
Ovary	\$1,041.1	\$104.1	\$937.0
Pancreas	\$5,517.6	\$3,851.9	\$5,829.9
Prostate	\$312.3	\$312.3	\$5,829.9

<u>Overview_graph</u>	<b>Cancer Site</b>	<b>Initial care</b>	<b>Continuing care</b>	<b>Last year of life</b>
	<b>Stomach</b>	\$3,435.5	\$2,498.5	\$1,769.8
	<b>Thyroid</b>	\$937.0	\$937.0	\$5,517.6
	<b>Uterus</b>	\$104.1	\$0.0	\$1,145.2

## **Additional Information on the Financial Burden of Cancer Care**

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Survival

### Data Up to Date as of:

October 2022

### Background

Advances in the ways that cancer is diagnosed and treated have increased the number of people who live for long periods of time after a cancer diagnosis. This report looks at trends in 5-year survival rates for cancer, a common timeframe used by statisticians to measure survival rates. It is important to note that while many people may live without evidence of cancer during and beyond this period, some people may live long-term with their cancer, or experience a recurrence or progression of their cancer.

### Measure

**Five-year relative cancer survival:** The proportion of patients surviving cancer 5 years after diagnosis calculated in the absence of other causes of death. The relative survival ratio is defined as the observed survival in the patient group divided by the expected survival of a comparable group from the general population. This ratio represents survivors that are expected if cancer were the only cause of death in the cohort.

### Healthy People 2030 Target

- The Healthy People 2030 Target for survival is pending revisions. This measure will be updated once the Healthy People 2030 target is finalized.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

### Data Source

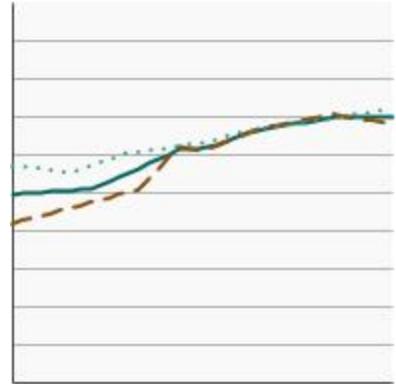
SEER Program, National Cancer Institute, 1975–2014 with follow-up through 2019.

## Trends and Most Recent Estimates

### All Cancer Sites Combined

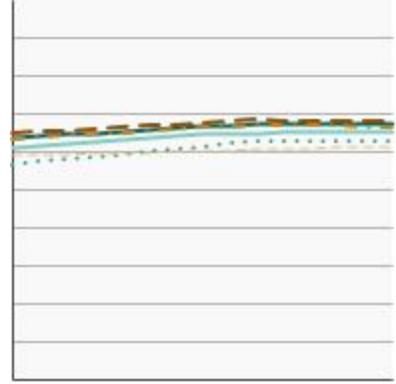
#### By Sex

5-year relative survival for all cancer sites combined by sex, 1975-2014

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2014)</b>	
		<b>Percent surviving</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	70.1	69.8 - 70.4
	<u>Male</u>	68.3	67.8 - 68.7
	<u>Female</u>	71.9	71.5 - 72.4

#### By Race/Ethnicity

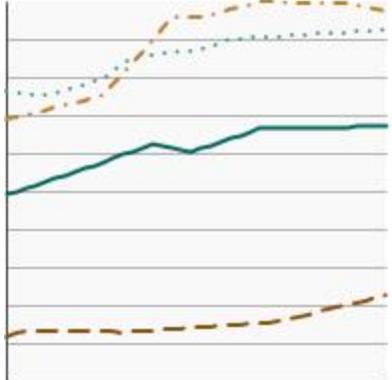
5-year relative survival for all cancer sites combined by race/ethnicity, 2000-2014

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2014)</b>	
		<b>Percent surviving</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	67.5	67.3 - 67.6
	<u>Non-Hispanic White</u>	68.1	67.8 - 68.3
	<u>Non-Hispanic Black</u>	62.8	62.2 - 63.4
	<u>Hispanic</u>	66.6	66.1 - 67.1
	<u>Non-Hispanic Asian/Pacific Islander</u>	65.0	64.3 - 65.7
	<u>Non-Hispanic American Indian/Alaska Native</u>	60.1	57.3 - 62.8

## Top 4 Cancer Sites

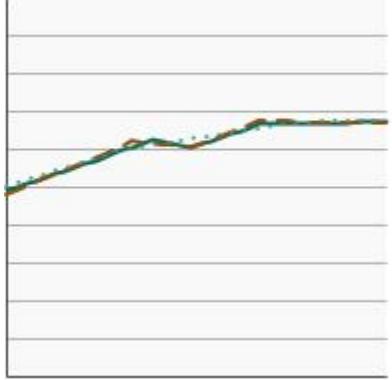
### Comparison of Top Cancer Sites

5-year relative survival for the most common cancers, 1975-2014

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2014)</b>	
		<b>Percent surviving</b>	<b>95% Confidence Interval</b>
	<u>Colon and Rectum</u>	67.6	66.4 - 68.8
	<u>Lung and Bronchus</u>	23.2	22.3 - 24.2
	<u>Female Breast</u>	92.1	91.4 - 92.6
	<u>Prostate</u>	97.1	96.3 - 97.7

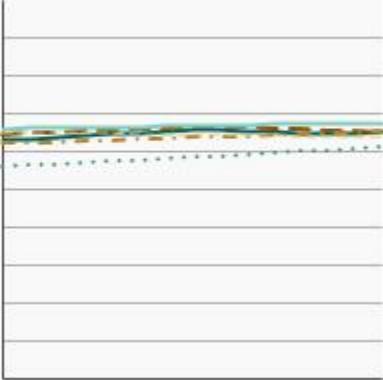
### Colon and Rectum Cancer by Sex

5-year relative survival for colon and rectum cancer by sex, 1975-2014

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2014)</b>	
		<b>Percent surviving</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	67.6	66.4 - 68.8
	<u>Male</u>	67.5	65.8 - 69.1
	<u>Female</u>	67.8	66.0 - 69.5

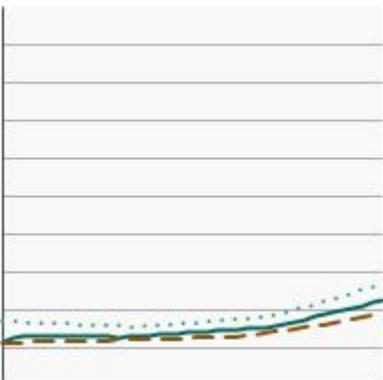
## Colon and Rectum Cancer by Race/Ethnicity

5-year relative survival for colon and rectum cancer by race/ethnicity, 2000-2014

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2014)</b>	
		<b>Percent surviving</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	65.1	64.5 - 65.8
	<u>Non-Hispanic White</u>	65.2	64.3 - 66.0
	<u>Non-Hispanic Black</u>	61.3	59.4 - 63.2
	<u>Hispanic</u>	65.5	63.7 - 67.2
	<u>Non-Hispanic Asian/Pacific Islander</u>	66.8	64.8 - 68.8
	<u>Non-Hispanic American Indian/Alaska Native</u>	61.3	53.2 - 68.4

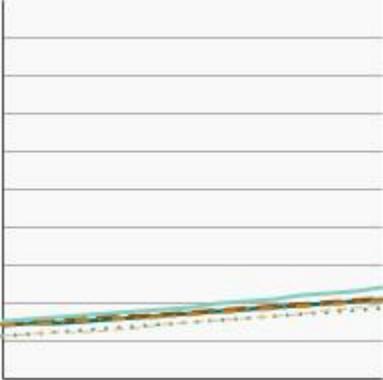
## Lung and Bronchus Cancer by Sex

5-year relative survival for lung and bronchus cancer by sex, 1975-2014

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2014)</b>	
		<b>Percent surviving</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	23.2	22.3 - 24.2
	<u>Male</u>	20.6	19.3 - 21.8
	<u>Female</u>	26.0	24.7 - 27.4

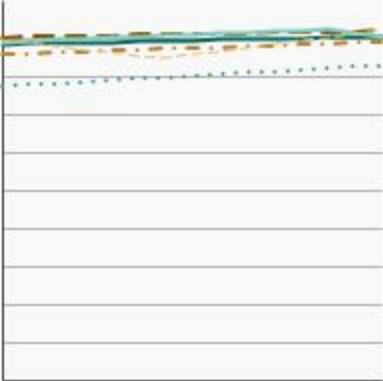
## Lung and Bronchus Cancer by Race/Ethnicity

5-year relative survival for lung and bronchus cancer by race/ethnicity, 2000-2014

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2014)</b>	
		<b>Percent surviving</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	21.6	21.2 - 22.1
	<u>Non-Hispanic White</u>	21.7	21.1 - 22.2
	<u>Non-Hispanic Black</u>	18.8	17.5 - 20.2
	<u>Hispanic</u>	22.2	20.4 - 24.1
	<u>Non-Hispanic Asian/Pacific Islander</u>	24.8	23.0 - 26.6
	<u>Non-Hispanic American Indian/Alaska Native</u>	15.8	10.0 - 22.8

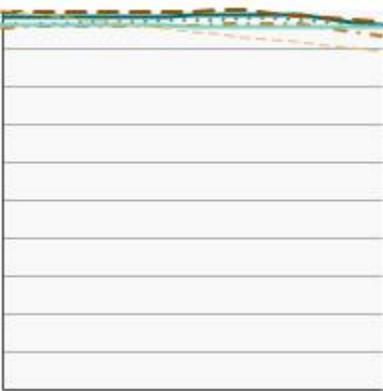
## Female Breast Cancer by Race/Ethnicity

5-year relative survival for female breast cancer by race/ethnicity, 2000-2014

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2014)</b>	
		<b>Percent surviving</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	90.4	90.0 - 90.8
	<u>Non-Hispanic White</u>	91.9	91.4 - 92.3
	<u>Non-Hispanic Black</u>	82.9	81.6 - 84.1
	<u>Hispanic</u>	87.8	86.8 - 88.8
	<u>Non-Hispanic Asian/Pacific Islander</u>	90.9	89.8 - 91.8
	<u>Non-Hispanic American Indian/Alaska Native</u>	93.2	87.0 - 96.6

## Prostate Cancer by Race/Ethnicity

5-year relative survival for prostate cancer by race/ethnicity, 2000-2014

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2014)</b>	
		<b>Percent surviving</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	96.4	96.0 - 96.8
	<u>Non-Hispanic White</u>	96.8	96.2 - 97.2
	<u>Non-Hispanic Black</u>	95.9	94.7 - 96.9
	<u>Hispanic</u>	92.9	91.6 - 94.0
	<u>Non-Hispanic Asian/Pacific Islander</u>	93.9	92.0 - 95.4
	<u>Non-Hispanic American Indian/Alaska Native</u>	91.8	76.7 - 97.3

## **Additional Information on Survival**

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Cancer Survivors and Smoking

**Data Up to Date as of:**

April 2022

### Background

As illustrated in the present section, many cancer survivors continue to smoke after their cancer diagnosis. This increases their risk for chronic health conditions, second primary cancers related to smoking, and premature death. To enhance the length and health-related quality of their lives, efforts are needed to identify these individuals and provide them with evidence-based interventions to help them quit smoking and remain tobacco free.

As the population of cancer survivors increases and their expected time of survival lengthens, the health behaviors of these individuals are becoming an important focus of attention. Behavioral risk factors, such as smoking, affect survival. Tracking these behaviors permits evaluation of how well cancer control efforts are working to reduce preventable disability and death among those with a history of cancer.

### Measure

Rates of smoking among cancer survivors are based on the self-reporting of individuals with a cancer history who are interviewed as part of the annual population-based National Health Interview Survey (NHIS). Participants who had smoked at least 100 cigarettes in their lifetime and who, at the time of the interview, reported smoking every day or some days were considered to be currently smoking.

### Healthy People 2030 Target

- There is no Healthy People 2030 target for smoking rates among cancer survivors, though Healthy People does include a national objective to increase the mental and physical health-related quality of life of cancer survivors; however, the goal for the general population is to decrease to 5 percent the proportion of people who currently smoke cigarettes.
- Healthy People 2030 Targets are developed and based on the general population and do not account for differences in the age distribution of cancer survivors compared to the general population. Cancer survivors are typically older than those in the general population who have not had cancer.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

### Data Source

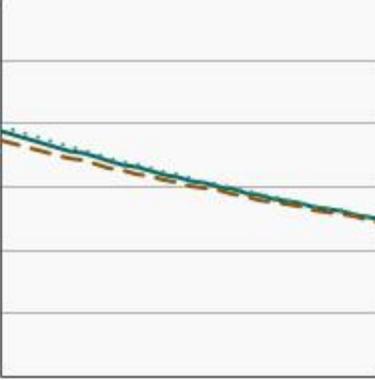
Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey, 1992–2020.

In 2019 the NHIS questionnaire was redesigned to increase relevance, enhance data quality, and minimize respondent burden. In addition, the COVID-19 pandemic created challenges conducting in-person interviews for the 2020 NHIS, requiring changes to field procedures to conduct most surveys by telephone, which impacted survey response rates. For details related to the potential impacts of these issues, please refer to Potential Impact of NHIS Redesign and COVID-19 on the Cancer Trends Progress Report.

## Trends and Most Recent Estimates

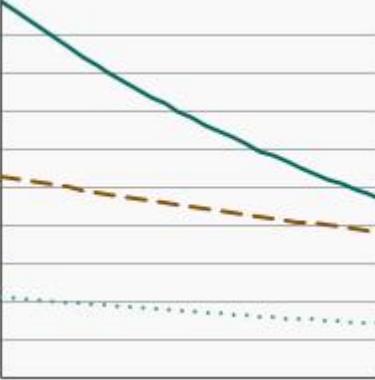
### By Sex

Percentage of cancer survivors aged 18 years and older who currently smoked cigarettes by sex, 1992-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of cancer survivors</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	12.2	10.7 - 13.9
	<u>Male</u>	11.5	9.4 - 14.1
	<u>Female</u>	12.4	10.5 - 14.6

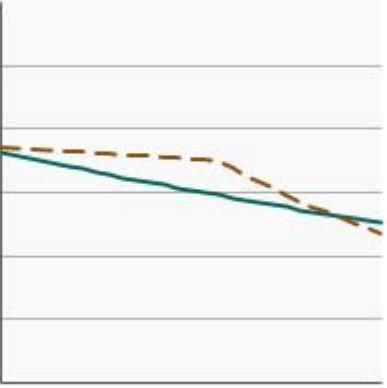
### By Age

Percentage of cancer survivors aged 18 years and older who currently smoked cigarettes by age, 1992-2020

<a href="#">Overview Graph</a>	<a href="#">Detailed Trend Graphs</a>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of cancer survivors</b>	<b>95% Confidence Interval</b>
	<u>Ages 18-44</u>	21.3	15.4 - 28.6
	<u>Ages 45-64</u>	18.0	14.8 - 21.7
	<u>Ages 65 and older</u>	7.4	6.1 - 8.9

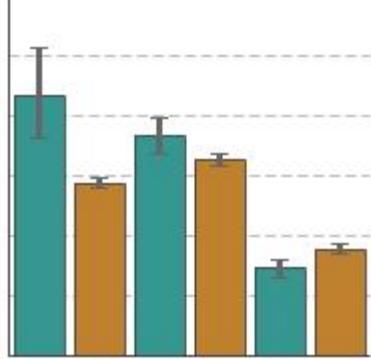
## By Time Since Cancer Diagnosis

Percentage of cancer survivors aged 18 years and older who currently smoked cigarettes by time since cancer diagnosis, 1992-2020

Most Recent Estimates (2020)			
<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	Percent of cancer survivors	95% Confidence Interval
	<u>5 years or less since diagnosis</u>	12.2	9.7 - 15.2
	<u>6+ years since diagnosis</u>	12.5	10.6 - 14.5

## Compared to Remaining U.S. Population

Comparison of cancer survivors and remaining U.S. population for percentage of adults aged 18 years and older who currently smoked cigarettes by age, 2016-2020

<u>Overview graph</u>	Age Group	Cancer Survivor		Remaining U.S. Population	
		Percent of population	Confidence Interval	Percent of population	Confidence Interval
	<b>Ages 18-44</b>	21.6	18.1 - 25.6	14.4	13.9 - 14.8
	<b>Ages 45-64</b>	18.3	16.8 - 19.8	16.4	15.8 - 16.9
	<b>Ages 65 and older</b>	7.3	6.6 - 8.0	8.8	8.4 - 9.3

## Additional Information on Cancer Survivors and Smoking

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Cancer Survivors and Physical Activity

Data Up to Date as of:

April 2022

### Background

As the number of cancer survivors grows and expected survival time increases, the health behaviors of these individuals are becoming an important focus of attention. Adoption or maintenance of healthy lifestyles after a cancer diagnosis has the potential to reduce both cancer- and non-cancer-related morbidity and mortality.

Tracking these behaviors permits evaluation of how well cancer control efforts are working to reduce unnecessary disability and death among those with a history of cancer.

To enhance the length and health-related quality of life of cancer survivors, efforts are needed to encourage adequate physical activity. Physical activity may improve treatment outcomes and reduce the risk of developing several types of cancer, including breast, colon, and endometrium (lining of the uterus). Being active may also help to prevent weight gain and obesity, reducing the risk of developing cancers that have been linked to excess body weight. In addition to cancer risk, physical activity may also lower a person's risk of other health problems such as heart disease, high blood pressure, diabetes mellitus, and osteoporosis.

### Measure

The percentage of cancer survivors reporting no physical activity are based on the self-reporting of individuals with a cancer history who are interviewed as part of the annual population-based National Health Interview Survey (NHIS). Participants were asked how often they perform light, moderate, or vigorous activity for at least 10 minutes.

### Healthy People 2030 Target

- There is no Healthy People 2030 target for physical activity among cancer survivors, though it does include a national objective to increase the mental and physical health-related quality of life of cancer survivors. However, it is reasonable to set goals determined for the general population, which are to reduce the proportion of adults who engage in no leisure time physical activity to 21.2 percent and increase the proportion of adults who meet the objectives for aerobic physical activity and for muscle-strengthening activity to 28.4 percent.
- Healthy People 2030 Targets are developed and based on the general population and do not account for differences in the age distribution of cancer survivors compared to the general population. Cancer survivors are typically older than those in the general population who have not had cancer.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

### Data Source

Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey, 1997–2020.

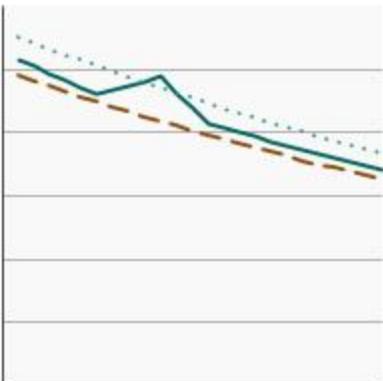
In 2019 the NHIS questionnaire was redesigned to increase relevance, enhance data quality, and minimize respondent burden. In addition, the COVID-19 pandemic created challenges conducting in-person interviews for the 2020 NHIS, requiring changes to field procedures to conduct most surveys by telephone, which impacted survey response rates. For details related to the potential impacts of these issues, please refer to Potential Impact of NHIS Redesign and COVID-19 on the Cancer Trends Progress Report.

## Trends and Most Recent Estimates

### No Leisure Time Physical Activity

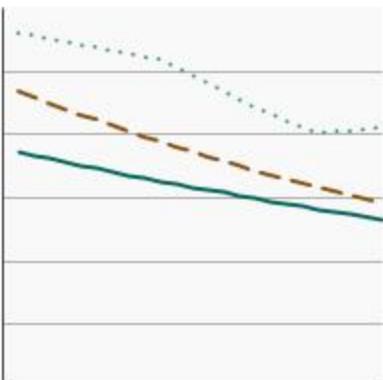
#### By Sex

Percentage of cancer survivors aged 18 years and older reporting no physical activity in their leisure time by sex, 1997-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of cancer survivors</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	35.5	33.4 - 37.7
	<u>Male</u>	33.2	29.8 - 36.7
	<u>Female</u>	37.7	35.0 - 40.4

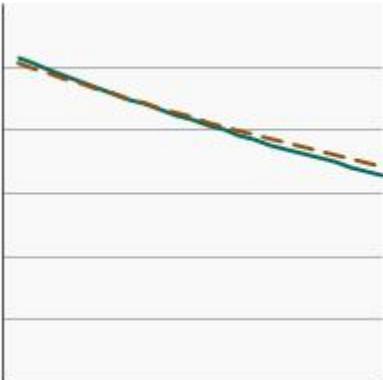
#### By Age

Percentage of cancer survivors aged 18 years and older reporting no physical activity in their leisure time by age, 1997-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of cancer survivors</b>	<b>95% Confidence Interval</b>
	<u>Ages 18-44</u>	24.4	17.8 - 32.5
	<u>Ages 45-64</u>	29.1	25.4 - 33.1
	<u>Ages 65 and older</u>	41.0	38.4 - 43.7

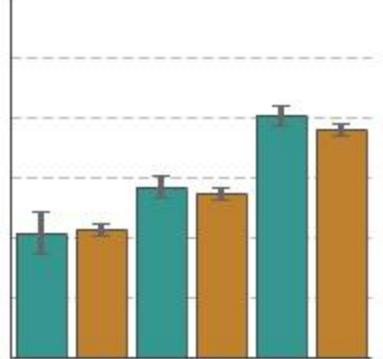
## By Time Since Cancer Diagnosis

Percentage of cancer survivors aged 18 years and older reporting no physical activity in their leisure time by time since cancer diagnosis, 1997-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of cancer survivors</b>	<b>95% Confidence Interval</b>
	<u>5 years or less since diagnosis</u>	33.9	30.6 - 37.4
	<u>6+ years since diagnosis</u>	35.4	32.7 - 38.2

## Compared to Remaining U.S. Population

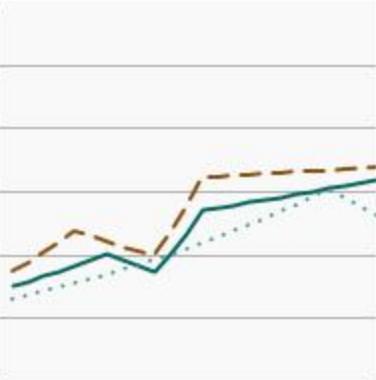
Comparison of cancer survivors and remaining U.S. population for percentage of adults aged 18 years and older reporting no physical activity in their leisure time by age, 2016-2020

<u>Overview graph</u>	<b>Age Group</b>	<b>Cancer Survivor</b>		<b>Remaining U.S. Population</b>	
		<b>Percent of population</b>	<b>Confidence Interval</b>	<b>Percent of population</b>	<b>Confidence Interval</b>
	<b>Ages 18-44</b>	20.6	17.2 - 24.4	21.3	20.4 - 22.2
	<b>Ages 45-64</b>	28.5	26.5 - 30.5	27.3	26.3 - 28.2
	<b>Ages 65 and older</b>	40.2	38.6 - 41.9	38.0	37.0 - 39.0

## Meet Federal Guidelines

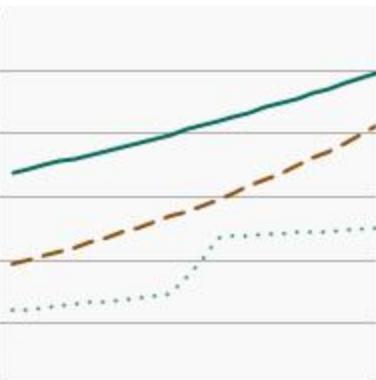
### By Sex

Percentage of cancer survivors aged 18 years and older who meet current Federal guidelines for aerobic and muscle-strengthening physical activity by sex, 1997-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of cancer survivors</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	14.8	13.3 - 16.5
	<u>Male</u>	16.5	14.1 - 19.3
	<u>Female</u>	13.0	11.2 - 15.0

### By Age

Percentage of cancer survivors aged 18 years and older who meet current Federal guidelines for aerobic and muscle-strengthening physical activity by age, 1997-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of cancer survivors</b>	<b>95% Confidence Interval</b>
	<u>Ages 18-44</u>	27.9	20.8 - 36.3
	<u>Ages 45-64</u>	17.3	14.6 - 20.5
	<u>Ages 65 and older</u>	11.3	9.8 - 13.0

## By Time Since Cancer Diagnosis

Percentage of cancer survivors aged 18 years and older who meet current Federal guidelines for aerobic and muscle-strengthening physical activity by time since cancer diagnosis, 1997-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of cancer survivors</b>	<b>95% Confidence Interval</b>
	<u>5 years or less since diagnosis</u>	14.3	12.0 - 17.0
	<u>6+ years since diagnosis</u>	15.8	13.8 - 18.1

## Compared to Remaining U.S. Population

Comparison of cancer survivors and remaining U.S. population for percentage of adults aged 18 years and older who meet current Federal guidelines for aerobic and muscle-strengthening physical activity by age, 2016-2020

<u>Overview graph</u>	<b>Age Group</b>	<b>Cancer Survivor</b>		<b>Remaining U.S. Population</b>	
		<b>Percent of population</b>	<b>Confidence Interval</b>	<b>Percent of population</b>	<b>Confidence Interval</b>
	<b>Ages 18-44</b>	28.8	24.2 - 34.0	29.7	29.0 - 30.4
	<b>Ages 45-64</b>	18.8	17.2 - 20.6	19.9	19.3 - 20.5
	<b>Ages 65 and older</b>	12.7	11.7 - 13.7	13.1	12.5 - 13.6

## **Additional Information on Cancer Survivors and Physical Activity**

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Cancer Survivors and Weight

### Data Up to Date as of:

April 2022

### Background

Adopting or maintaining a healthy lifestyle after a cancer diagnosis has the potential to reduce both cancer- and non-cancer-related morbidity. Preventing excess body weight and obesity can enhance the length and health-related quality of life of cancer survivors, and it can reduce the risk of developing cancers that have been linked to excess body weight, including colorectal, breast (among women who have gone through menopause), endometrial, esophageal, renal cell (kidney), and pancreatic cancer.

As the number of cancer survivors grows and expected survival time increases, the health behaviors of these individuals are becoming an important focus of attention.

### Measure

Rates of obesity among cancer survivors are based on the self-reporting of individuals with a cancer history, who are interviewed as part of the annual population-based National Health Interview Survey (NHIS). These weight groups are defined by a measurement called body mass index (BMI), which is calculated by dividing weight in kilograms by height in meters, squared. For most adults, experts consider a BMI of 30 and over to be obese.

### Healthy People 2030 Target

- There is no Healthy People 2030 target for obesity rates among cancer survivors, though Healthy People does include a national objective to increase the mental and physical health-related quality of life of cancer survivors; however, the goal for the general population is to reduce the proportion of adults with obesity to 36.0 percent.
- Healthy People 2030 Targets are developed and based on the general population and do not account for differences in the age distribution of cancer survivors compared to the general population. Cancer survivors are typically older than those in the general population who have not had cancer.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

### Data Source

Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey, 1992–2020.

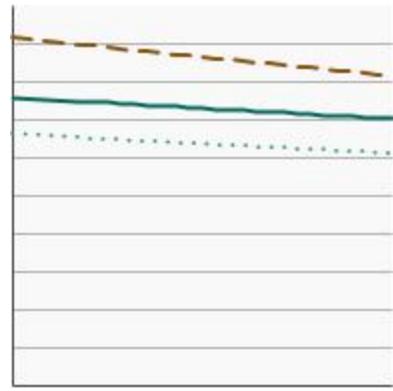
In 2019 the NHIS questionnaire was redesigned to increase relevance, enhance data quality, and minimize respondent burden. In addition, the COVID-19 pandemic created challenges conducting in-person interviews for the 2020 NHIS, requiring changes to field procedures to conduct most surveys by telephone, which impacted survey response rates. For details related to the potential impacts of these issues, please refer to Potential Impact of NHIS Redesign and COVID-19 on the Cancer Trends Progress Report.

## Trends and Most Recent Estimates

### Overweight

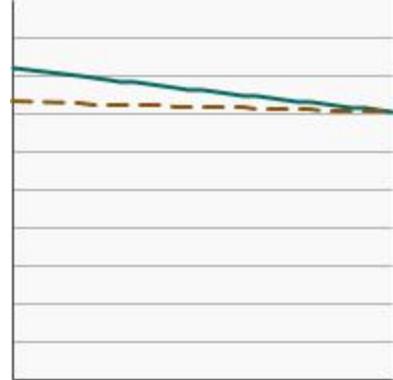
#### By Sex

Percentage of cancer survivors aged 20 years and older who were overweight by sex, 1992-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of cancer survivors</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	35.6	33.6 - 37.7
	<u>Male</u>	41.4	38.1 - 44.9
	<u>Female</u>	31.4	28.9 - 34.0

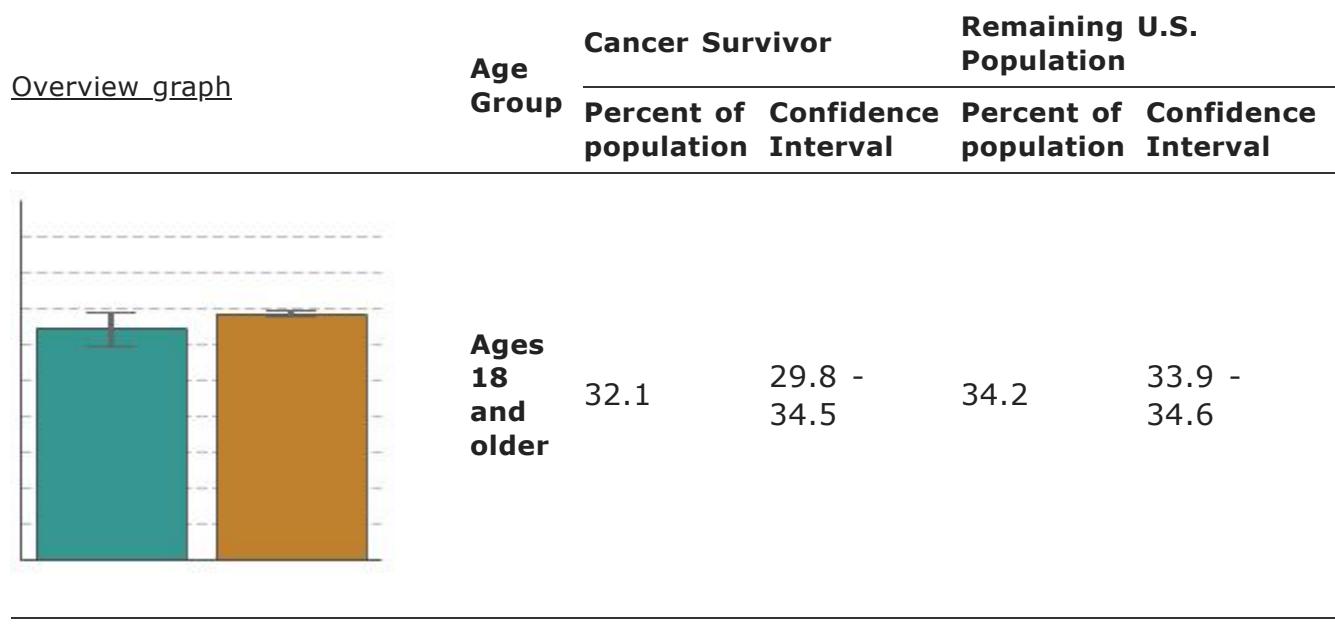
#### By Time Since Cancer Diagnosis

Percentage of cancer survivors aged 20 years and older who were overweight by time since cancer diagnosis, 1992-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of cancer survivors</b>	<b>95% Confidence Interval</b>
	<u>5 years or less since diagnosis</u>	34.4	30.9 - 38.2
	<u>6+ years since diagnosis</u>	36.2	33.7 - 38.8

## Compared to Remaining U.S. Population

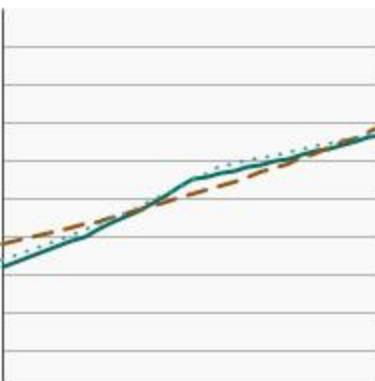
Comparison of cancer survivors and remaining U.S. population for percentage of adults aged 18 years and older who were overweight, 2016-2020



## Obese

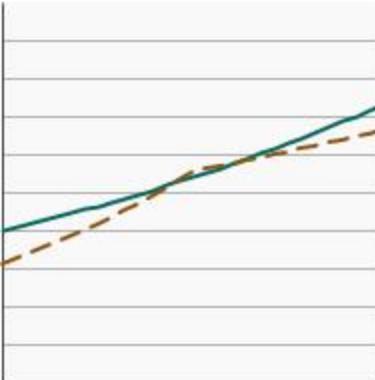
### By Sex

Percentage of cancer survivors aged 20 years and older who were obese by sex, 1992-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of cancer survivors</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	33.6	31.5 - 35.7
	<u>Male</u>	33.4	30.2 - 36.7
	<u>Female</u>	33.8	31.0 - 36.7

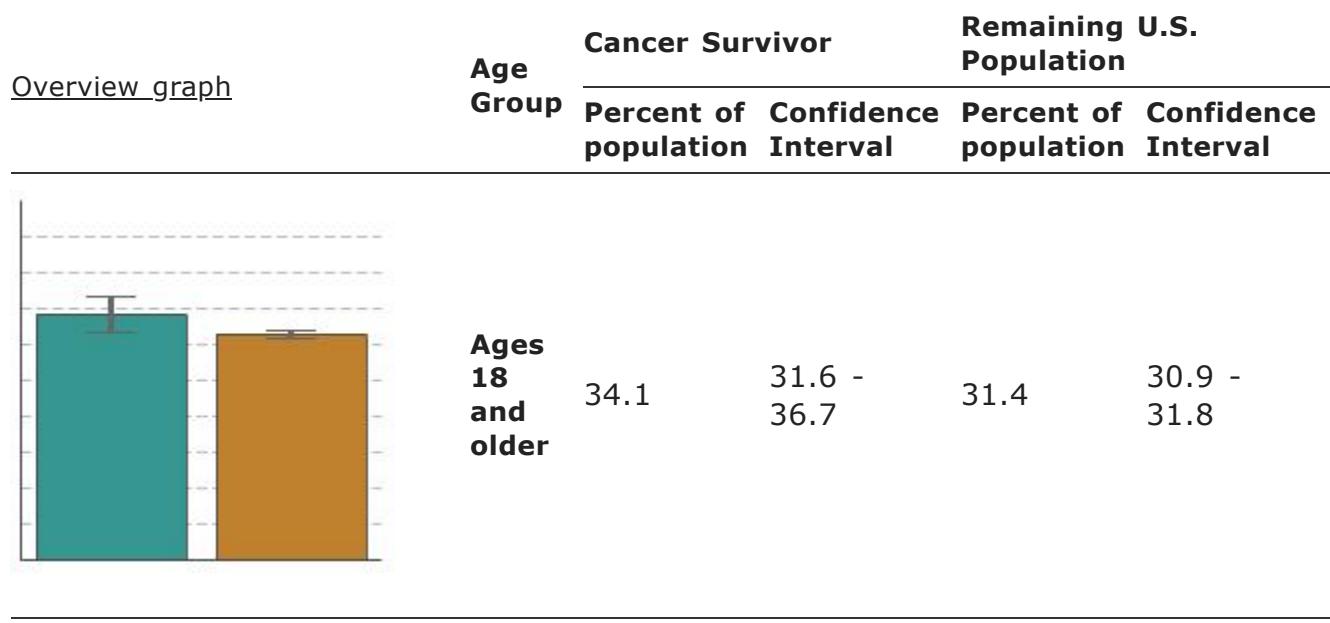
### By Time Since Cancer Diagnosis

Percentage of cancer survivors aged 20 years and older who were obese by time since cancer diagnosis, 1992-2020

<u>Overview Graph</u>	<u>Detailed Trend Graphs</u>	<b>Most Recent Estimates (2020)</b>	
		<b>Percent of cancer survivors</b>	<b>95% Confidence Interval</b>
	<u>5 years or less since diagnosis</u>	35.9	32.3 - 39.6
	<u>6+ years since diagnosis</u>	32.9	30.4 - 35.5

## Compared to Remaining U.S. Population

Comparison of cancer survivors and remaining U.S. population for percentage of adults aged 18 years and older who were obese, 2016-2020



## **Additional Information on Cancer Survivors and Weight**

# Cancer Trends Progress Report

## Online Summary of Trends in US Cancer Control Measures

### **End of Life**

The ultimate measure of our nation's success against cancer is how quickly and how far we can lower the death rate from this group of diseases. This report provides national data not only on cancer mortality by major sites, sex, and race/ethnicity, but also in terms of the years of life lost to cancer—a measure that emphasizes the tragedy of common cancers that strike people at a relatively young age.

The good news is that the rate of death from cancer in the United States continues to decline among both men and women, among all major racial and ethnic groups, and for the most common types of cancer. It is our job as a nation to maintain and accelerate this trend.

- [Mortality](#)
- [Years of Life Lost](#)

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Mortality

### Data Up to Date as of:

October 2022

## Background

The rate of death from cancer in the United States continues to decline among both men and women, among all major racial and ethnic groups, and for the most common types of cancer, including lung, colorectal, breast, and prostate cancers. The Annual Report to the Nation on the Status of Cancer shows that the death rate from all cancers combined is continuing the decline that began in the early 1990s.

Still, in 2020 cancers of the female breast, prostate, lung, colorectal, and pancreas accounted for over one-half (51 percent) of all cancer deaths in the United States. Lung cancer alone claimed 23 percent of lives lost to cancer.

## Measure

The number of cancer deaths per 100,000 people per year, age-adjusted to a U.S. 2000 standard population.

## Healthy People 2030 Target

- Reduce the overall cancer death rate to 122.7 cancer deaths per 100,000 people per year.

## Top 4 Cancer Sites

- Reduce the colorectal cancer death rate to 8.9 deaths per 100,000 people per year.
- Reduce the lung cancer death rate to 25.1 deaths per 100,000 people per year.
- Reduce the female breast cancer death rate to 15.3 deaths per 100,000 females per year.
- Reduce the prostate cancer death rate to 16.9 deaths per 100,000 males per year.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

**Note:** Goals are indicated as blue line on Detailed Trend Graphs.

## Data Source

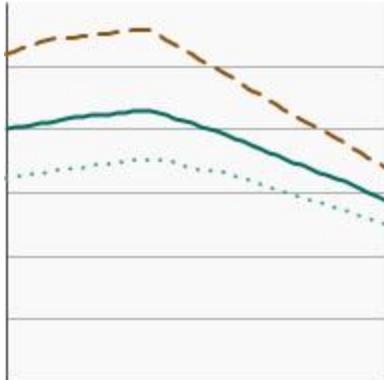
Centers for Disease Control and Prevention, National Center for Health Statistics, 1975–2020.

## Trends and Most Recent Estimates

### All Cancer Sites Combined

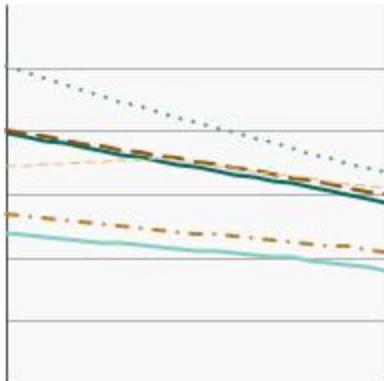
#### By Sex

U.S. death rates for all cancers by sex, 1975-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Rate per 100,000</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	144.1	143.7 - 144.5
	<u>Male</u>	170.3	169.7 - 170.9
	<u>Female</u>	124.5	124.1 - 125.0

#### By Race/Ethnicity

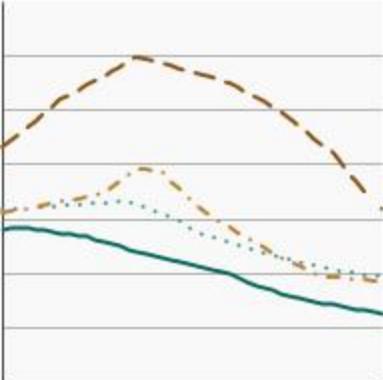
U.S. death rates for all cancers by race/ethnicity, 2000-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Rate per 100,000</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	144.1	143.7 - 144.5
	<u>Non-Hispanic White</u>	149.9	149.5 - 150.3
	<u>Non-Hispanic Black</u>	166.8	165.5 - 168.0
	<u>Hispanic</u>	103.5	102.5 - 104.5
	<u>Non-Hispanic Asian/Pacific Islander</u>	91.3	90.0 - 92.6
	<u>Non-Hispanic American Indian/Alaska Native</u>	153.8	147.7 - 160.2

## Top 4 Cancer Sites

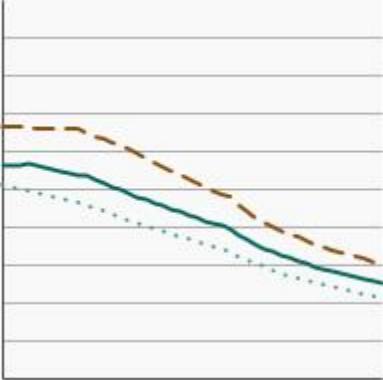
### Comparison of Top Cancer Sites

U.S. death rates for the most common cancers, 1975-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Rate per 100,000</b>	<b>95% Confidence Interval</b>
	<u>Colon and Rectum</u>	12.6	12.5 - 12.7
	<u>Lung and Bronchus</u>	31.8	31.7 - 32.0
	<u>Female Breast</u>	19.1	18.9 - 19.3
	<u>Prostate</u>	18.5	18.3 - 18.7

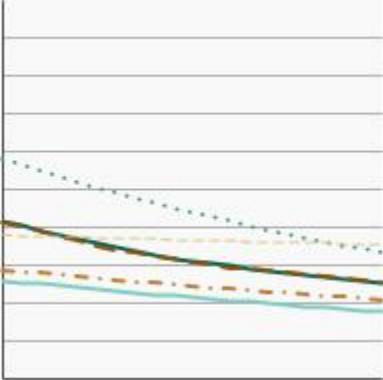
### Colon and Rectum Cancer by Sex

U.S. death rates for colon and rectum cancer by sex, 1975-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Rate per 100,000</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	12.6	12.5 - 12.7
	<u>Male</u>	15.1	15.0 - 15.3
	<u>Female</u>	10.5	10.3 - 10.6

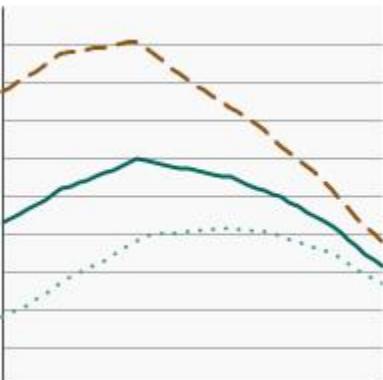
## Colon and Rectum Cancer by Race/Ethnicity

U.S. death rates for colon and rectum cancer by race/ethnicity, 2000-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Rate per 100,000</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	12.6	12.5 - 12.7
	<u>Non-Hispanic White</u>	12.6	12.5 - 12.8
	<u>Non-Hispanic Black</u>	16.7	16.3 - 17.1
	<u>Hispanic</u>	10.4	10.1 - 10.7
	<u>Non-Hispanic Asian/Pacific Islander</u>	8.9	8.5 - 9.3
	<u>Non-Hispanic American Indian/Alaska Native</u>	18.0	15.9 - 20.3

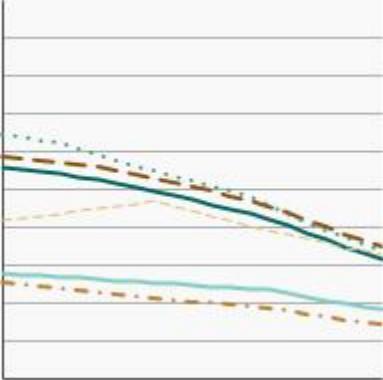
## Lung and Bronchus Cancer by Sex

U.S. death rates for lung and bronchus cancer by sex, 1975-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Rate per 100,000</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	31.8	31.7 - 32.0
	<u>Male</u>	38.1	37.8 - 38.3
	<u>Female</u>	26.9	26.7 - 27.2

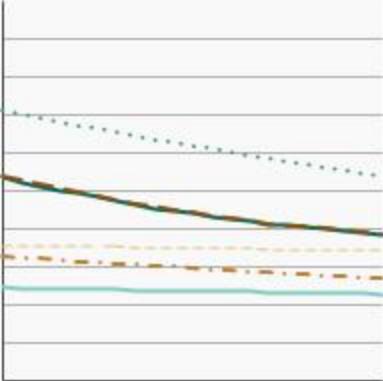
## Lung and Bronchus Cancer by Race/Ethnicity

U.S. death rates for lung and bronchus cancer by race/ethnicity, 2000-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Rate per 100,000</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	31.8	31.7 - 32.0
	<u>Non-Hispanic White</u>	35.0	34.7 - 35.2
	<u>Non-Hispanic Black</u>	33.4	32.8 - 33.9
	<u>Hispanic</u>	14.1	13.7 - 14.5
	<u>Non-Hispanic Asian/Pacific Islander</u>	18.5	17.9 - 19.1
	<u>Non-Hispanic American Indian/Alaska Native</u>	31.3	28.5 - 34.2

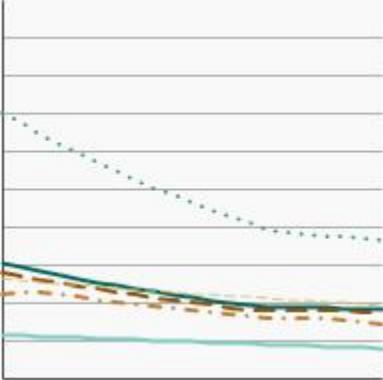
## Female Breast Cancer by Race/Ethnicity

U.S. death rates for female breast cancer by race/ethnicity, 2000-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Rate per 100,000</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	19.1	18.9 - 19.3
	<u>Non-Hispanic White</u>	19.4	19.1 - 19.6
	<u>Non-Hispanic Black</u>	26.4	25.7 - 27.0
	<u>Hispanic</u>	13.1	12.6 - 13.6
	<u>Non-Hispanic Asian/Pacific Islander</u>	11.4	10.8 - 12.1
	<u>Non-Hispanic American Indian/Alaska Native</u>	16.4	13.7 - 19.3

## Prostate Cancer by Race/Ethnicity

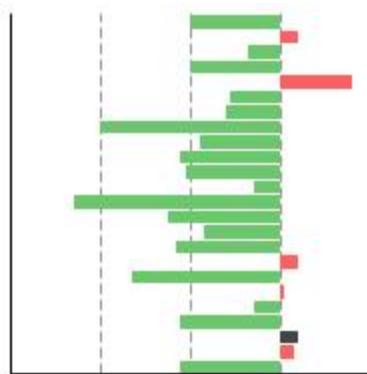
U.S. death rates for prostate cancer by race/ethnicity, 2000-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Rate per 100,000</b>	<b>95% Confidence Interval</b>
	<u>All Races</u>	18.5	18.3 - 18.7
	<u>Non-Hispanic White</u>	17.6	17.4 - 17.8
	<u>Non-Hispanic Black</u>	36.5	35.4 - 37.5
	<u>Hispanic</u>	14.2	13.6 - 14.9
	<u>Non-Hispanic Asian/Pacific Islander</u>	8.8	8.2 - 9.5
	<u>Non-Hispanic American Indian/Alaska Native</u>	16.6	13.3 - 20.4

## Recent Trends for Common Cancer Sites

2016-2020 trends (Average Annual Percent Change) in U.S. death rates for common cancer sites

Overview graph



Cancer Site	Average Annual Percent Change
All Sites	-2.0*
Brain and Other Nervous System	0.4*
Cervix Uteri	-0.7*
Colon and Rectum	-2.0*
Corpus Uteri and NOS	1.6*
Esophagus	1.0
Female Breast	-1.2*
Hodgkin Lymphoma	-4.0*
Kidney and Renal Pelvis	-1.8*
Larynx	-2.2*
Leukemia	-2.1*
Liver and IBD	-0.6*
Lung and Bronchus	-4.6*
Melanoma of the Skin	-2.5*
Myeloma	-1.7*
Non-Hodgkin Lymphoma	-2.3*
Oral Cavity and Pharynx	0.4*
Ovary	-3.3*
Pancreas	0.1*
Prostate	-0.6*
Stomach	-2.2*
Testis	0.4
Thyroid	0.3*
Urinary Bladder	-2.2*

\* The Average Annual Percent Change (AAPC) is statistically significant.

## Additional Information on Mortality

# Cancer Trends Progress Report

Online Summary of Trends in US Cancer Control Measures

## Years of Life Lost

### Data Up to Date as of:

October 2022

### Background

Death rates alone do not provide a complete picture of the burden that deaths impose on the population. Another useful measure that may add a different dimension is years of life lost (YLL)—the years of life lost because of early death from a particular cause or disease. YLL caused by cancer helps to describe the extent to which the lives of people with cancer are cut short.

### Measure

Years of Life Lost is measured as the difference between the actual age stemming from the disease/cause and the expected age of death due to a particular disease or cause. Specifically, this measure is estimated by linking life table data to each death of a person of a given age and sex. The life table permits a determination of the number of additional years an average person of that age, race, and sex would have been expected to live. Average Years of Life Lost represents Years of Life Lost divided by the number of people who lost their lives.

### Healthy People 2030 Target

There is no Healthy People 2030 target for this measure.

Healthy People 2030 is a set of goals set forth by the Department of Health and Human Services.

### Data Source

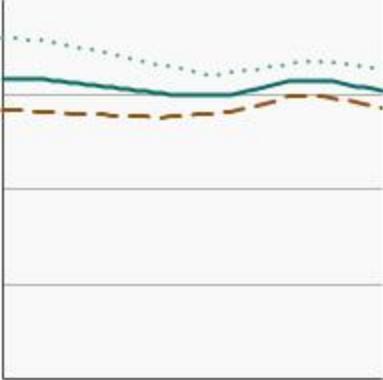
Centers for Disease Control and Prevention, National Center for Health Statistics, 1975-2020.

② Trends and Most Recent Estimates

## Average Years of Life Lost

### By Sex

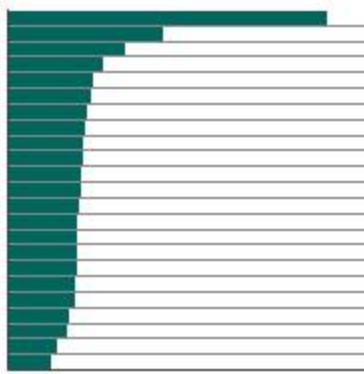
Average-years of life lost due to cancer by sex, 1975-2020

<u>Overview Graph</u>	<b>Detailed Trend Graphs</b>	<b>Most Recent Estimates (2020)</b>	
		<b>Average-years of life lost</b>	<b>95% Confidence Interval</b>
	<u>Both Sexes</u>	15.2	Not available
	<u>Male</u>	14.2	Not available
	<u>Female</u>	16.3	Not available

## Cancer, All Races, Both Sexes

Average-years of life lost in 2020 due to cancer, total U.S., all races, both sexes

### Overview graph



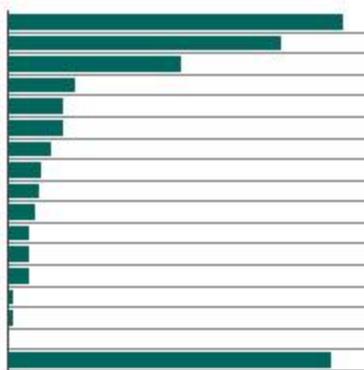
<b>Cause of death</b>	<b>Years of life lost</b>
<b>Childhood Ages (0-14)</b>	71.3
<b>Testis</b>	34.7
<b>Cervix Uteri</b>	26.2
<b>Brain &amp; ONS</b>	21.5
<b>Hodgkin Lymphoma</b>	19.1
<b>Breast (Female)</b>	18.8
<b>Ovary</b>	17.7
<b>Corpus &amp; Uterus, NOS</b>	17.5
<b>Oral Cavity &amp; Pharynx</b>	16.9
<b>Liver &amp; IBD</b>	16.8
<b>Melanoma of the Skin</b>	16.6
<b>Stomach</b>	16.5
<b>Esophagus</b>	16.0
<b>Colon &amp; Rectum</b>	15.7
<b>Leukemia</b>	15.6
<b>All Sites Combined</b>	15.6
<b>Kidney &amp; Renal Pelvis</b>	15.5
<b>Pancreas</b>	15.0
<b>Lung &amp; Bronchus</b>	15.0
<b>Non-Hodgkin Lymphoma</b>	13.7
<b>Myeloma</b>	13.5
<b>Urinary Bladder</b>	11.1
<b>Prostate</b>	9.9

## Person-years of Life Lost

### All Causes of Death, All Races, Both Sexes

Person-years of life lost in 2020 by cause of death, total U.S., all races, both sexes

Overview graph



<b>Cause of death</b>	<b>Years of life lost (in thousands)</b>
<b>Malignant Cancers</b>	9,319
<b>Heart Disease</b>	7,635
<b>Accidents</b>	4,809
<b>Chronic Lung Disease</b>	1,883
<b>Suicide &amp; Self-Inflicted Injury</b>	1,539
<b>Cerebrovascular</b>	1,539
<b>Diabetes Mellitus</b>	1,223
<b>Cirrhosis</b>	921
<b>Homicide</b>	864
<b>Alzheimers Disease</b>	751
<b>Pneumonia &amp; Influenza</b>	614
<b>Nephritis &amp; Nephrosis</b>	606
<b>Septicemia</b>	589
<b>HIV</b>	174
<b>Aortic Aneurysm &amp; Dissection</b>	140
<b>Atherosclerosis</b>	49
<b>All Other Causes</b>	9,020

## All Causes of Death, All Races, Males

Person-years of life lost in 2020 by cause of death, total U.S., all races, males

<u>Overview graph</u>	<b>Cause of death</b>	<b>Years of life lost (in thousands)</b>
	<b>Malignant Cancers</b>	4,607
	<b>Heart Disease</b>	4,454
	<b>Accidents</b>	3,240
	<b>Suicide &amp; Self-Inflicted Injury</b>	1,157
	<b>Chronic Lung Disease</b>	861
	<b>Cerebrovascular</b>	705
	<b>Homicide</b>	686
	<b>Diabetes Mellitus</b>	675
	<b>Cirrhosis</b>	570
	<b>Pneumonia &amp; Influenza</b>	305
	<b>Nephritis &amp; Nephrosis</b>	304
	<b>Septicemia</b>	283
	<b>Alzheimers Disease</b>	231
	<b>HIV</b>	122
	<b>Aortic Aneurysm &amp; Dissection</b>	89
	<b>Atherosclerosis</b>	24
	<b>All Other Causes</b>	4,524

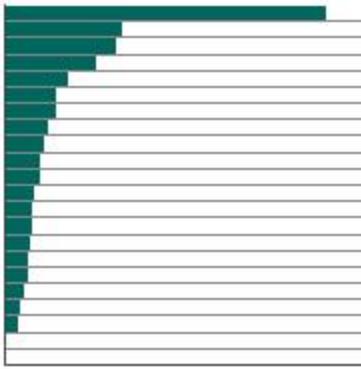
## All Causes of Death, All Races, Females

Person-years of life lost in 2020 by cause of death, total U.S., all races, females

<u>Overview graph</u>	<b>Cause of death</b>	<b>Years of life lost (in thousands)</b>
	<b>Malignant Cancers</b>	4,711
	<b>Heart Disease</b>	3,181
	<b>Accidents</b>	1,569
	<b>Chronic Lung Disease</b>	1,022
	<b>Cerebrovascular</b>	833
	<b>Diabetes Mellitus</b>	549
	<b>Alzheimers Disease</b>	519
	<b>Suicide &amp; Self-Inflicted Injury</b>	382
	<b>Cirrhosis</b>	351
	<b>Pneumonia &amp; Influenza</b>	309
	<b>Septicemia</b>	306
	<b>Nephritis &amp; Nephrosis</b>	302
	<b>Homicide</b>	178
	<b>HIV</b>	52
	<b>Aortic Aneurysm &amp; Dissection</b>	51
	<b>Atherosclerosis</b>	25
	<b>All Other Causes</b>	4,496

## Cancer, All Races, Both Sexes

Person-years of life lost in 2020 due to cancer, total U.S., all races, both sexes

<u>Overview graph</u>	<b>Cause of death</b>	<b>Years of life lost (in thousands)</b>
	<b>Lung &amp; Bronchus</b>	2,230
	<b>Colon &amp; Rectum</b>	820
	<b>Breast (Female)</b>	778
	<b>Pancreas</b>	643
	<b>Liver &amp; IBD</b>	447
	<b>Leukemia</b>	364
	<b>Brain &amp; ONS</b>	362
	<b>Prostate</b>	302
	<b>Non-Hodgkin Lymphoma</b>	278
	<b>Ovary</b>	252
	<b>Esophagus</b>	248
	<b>Kidney &amp; Renal Pelvis</b>	214
	<b>Stomach</b>	189
	<b>Corpus &amp; Uterus, NOS</b>	188
	<b>Urinary Bladder</b>	185
	<b>Oral Cavity &amp; Pharynx</b>	172
	<b>Myeloma</b>	165
	<b>Melanoma of the Skin</b>	136
	<b>Cervix Uteri</b>	110
	<b>Childhood Ages (0-14)</b>	94
	<b>Hodgkin Lymphoma</b>	19
	<b>Testis</b>	15

## **Cancer, All Races, Males**

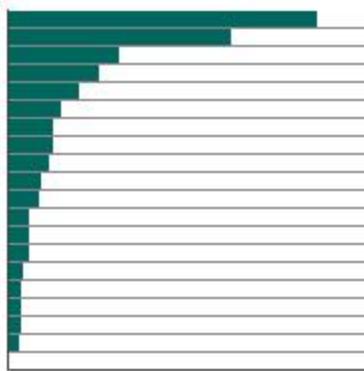
Person-years of life lost in 2020 due to cancer, total U.S., all races, males

<u>Overview graph</u>	<b>Cause of death</b>	<b>Years of life lost (in thousands)</b>
	<b>Lung &amp; Bronchus</b>	1,155
	<b>Colon &amp; Rectum</b>	433
	<b>Pancreas</b>	327
	<b>Liver &amp; IBD</b>	303
	<b>Prostate</b>	302
	<b>Leukemia</b>	202
	<b>Brain &amp; ONS</b>	199
	<b>Esophagus</b>	198
	<b>Non-Hodgkin Lymphoma</b>	158
	<b>Kidney &amp; Renal Pelvis</b>	140
	<b>Urinary Bladder</b>	130
	<b>Oral Cavity &amp; Pharynx</b>	122
	<b>Stomach</b>	110
	<b>Myeloma</b>	88
	<b>Melanoma of the Skin</b>	85
	<b>Childhood Ages (0-14)</b>	51
	<b>Testis</b>	15
	<b>Hodgkin Lymphoma</b>	11

## Cancer, All Races, Females

Person-years of life lost in 2020 due to cancer, total U.S., all races, females

### Overview graph



Cause of death	Years of life lost (in thousands)
Lung & Bronchus	1,075
Breast (Female)	778
Colon & Rectum	387
Pancreas	316
Ovary	252
Corpus & Uterus, NOS	188
Brain & ONS	163
Leukemia	161
Liver & IBD	144
Non-Hodgkin Lymphoma	120
Cervix Uteri	110
Stomach	79
Myeloma	77
Kidney & Renal Pelvis	74
Urinary Bladder	55
Melanoma of the Skin	50
Oral Cavity & Pharynx	50
Esophagus	50
Childhood Ages (0-14)	44
Hodgkin Lymphoma	8

## **Additional Information on Years of Life Lost**