



# State of Lung Cancer

## 2024 Report

## Introduction

About every two minutes, someone in the U.S. is diagnosed with lung cancer, and every day, lung cancer takes the lives of 361 of our friends, neighbors and loved ones. But now there's hope as more people in America than ever are surviving lung cancer. While the disease remains the leading cause of cancer deaths, over the past five years, the survival rate has increased by 26% nationally to 28.4%.

This year's report also examines the lifesaving potential of lung cancer screening, which can detect the disease at an earlier stage when it's more curable, the importance of advancements in lung cancer research, which holds the promise for better treatment options, and insurance coverage of comprehensive biomarker testing, which can help determine what treatment options would be best for individuals with lung cancer and other diseases.

In March of 2021, the United States Preventive Services Task Force expanded its recommendation for screening to include a larger age range and more current and former smokers. This dramatically increased the number of women and Black individuals who are considered at high risk for lung cancer. Unfortunately, in 2022, only 16.0% of all those eligible were screened.

For the fifth consecutive year, the "State of Lung Cancer" report explores the lung cancer burden among racial and ethnic groups at the national and state levels. In addition to lower survival rates, people of color who are diagnosed with lung cancer face worse outcomes compared to white individuals: they are less likely to be diagnosed early, less likely to receive surgical treatment, and more likely to not receive any treatment.

A strategic imperative of the American Lung Association is to defeat lung cancer, and to do so, we use a variety of tactics and work with diverse stakeholders to address the disease and its risk factors, including public policy efforts and public health protections, awareness of lung cancer screening and more.

The "State of Lung Cancer" report provides a state-specific understanding of the burden of lung cancer and opportunities to address this deadly disease.

The report also serves as both a guidepost and rallying call, providing policymakers, researchers, healthcare practitioners, as well as people diagnosed with lung cancer, caregivers and others committed to ending lung cancer by identifying where their state can best focus its resources to decrease the toll of lung cancer.



## The State-by-State Toll of Lung Cancer

While we have seen advances in personalized treatment thanks to biomarker testing, targeted therapy and immunotherapy, and saved more lives through the introduction of lung cancer screening, the burden of lung cancer is not the same everywhere. Treatment, exposure to risk factors, and use and coverage of screening vary from state to state. To save more lives, it's critical to prevent lung cancer when possible and diagnose the disease as early as possible. Additionally, everyone should have access to therapies that may extend or improve the quality of their life.

By better understanding the impact of lung cancer at the state level, we can encourage interventions to save and extend lives. This report considers the following measures of lung cancer burden by state: new cases, survival, early diagnosis, surgical treatment, lack of treatment, screening and prevention, racial disparities and coverage of comprehensive biomarker testing and identifies where each state ranks on each of these measures.

Policymakers must do more to improve access to lung cancer screening and treatment for all.



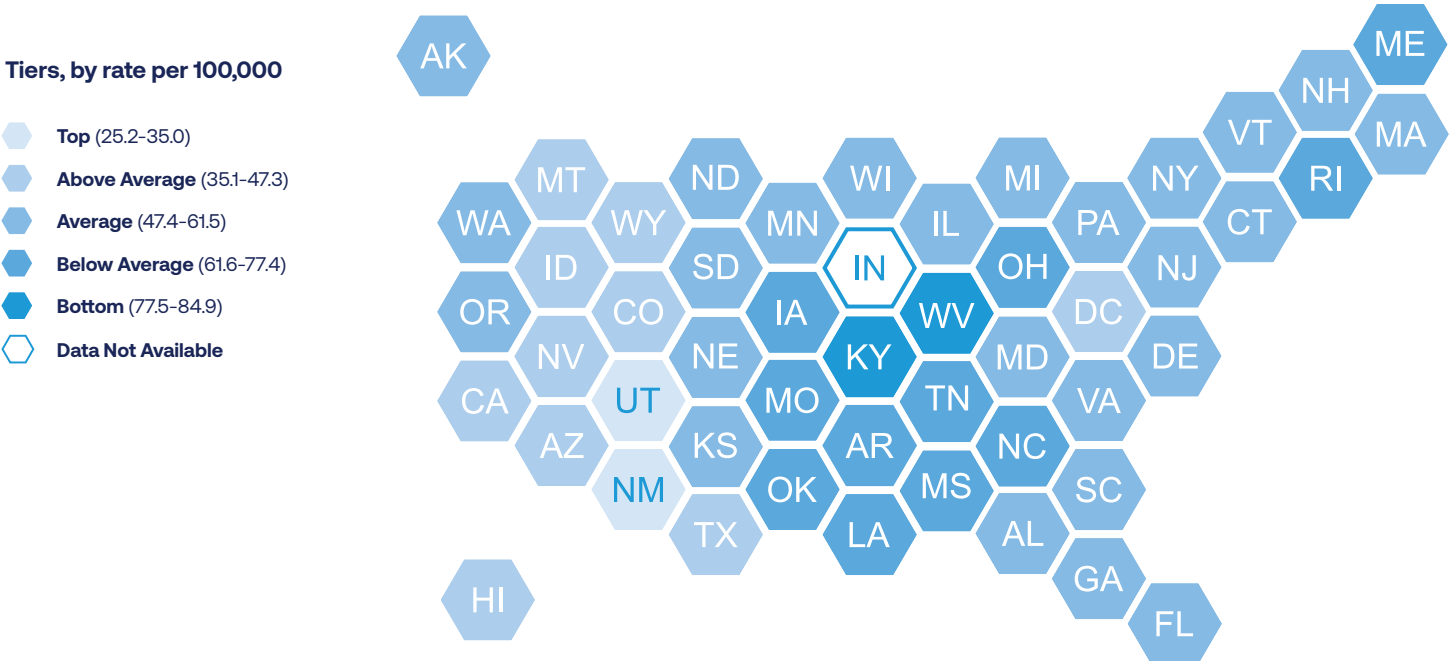


## New Cases

Close to **235,000** people will be diagnosed with lung cancer this year, with the rate of new cases varying by state. The report finds that Utah has the nation’s **best** lung cancer rate while Kentucky has the **worst** at almost **2.4** times the incidence rate of Utah. Over the last five years, the rate of new cases decreased **15%** nationally.

In 2021, the most recent year of data available for this report, the COVID-19 pandemic disrupted access to medical care, including delays and reductions in cancer diagnoses and screening. This led to a decline in 2021 incidence rates for most cancers, including lung cancer, and should not be interpreted as a reduction in the underlying cancer burden.

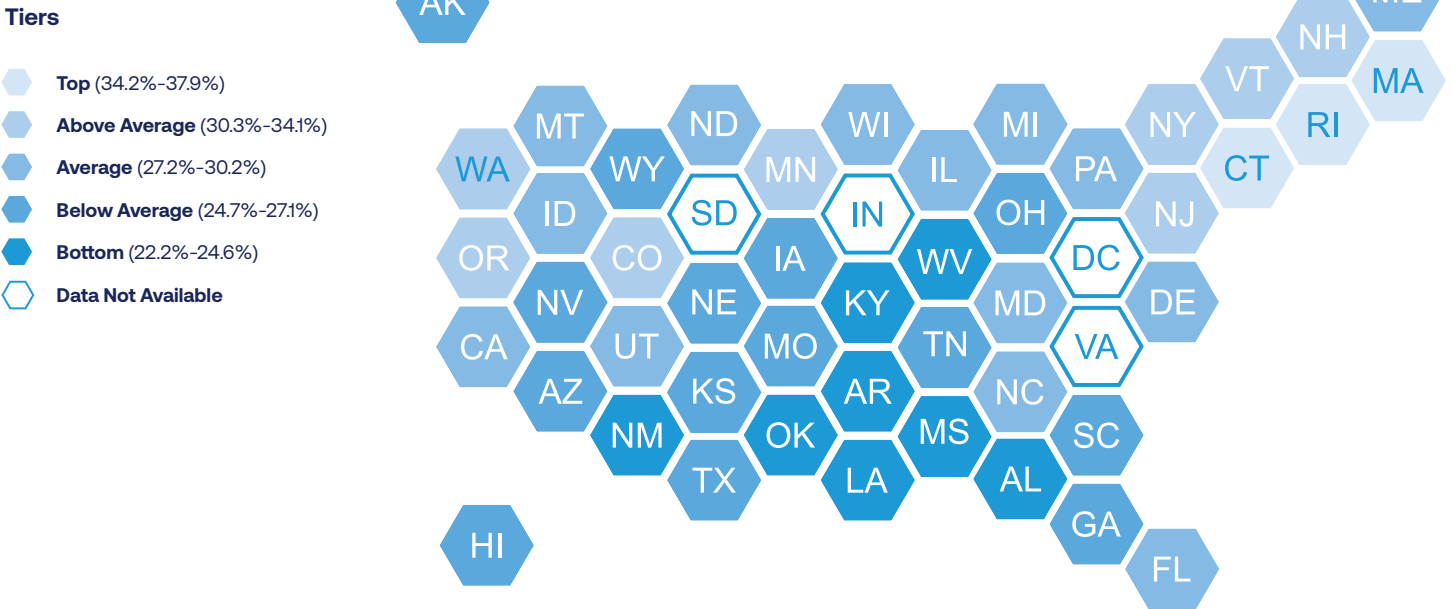
There are a variety of risk factors associated with lung cancer, including smoking, exposure to radon gas, air pollution and secondhand smoke. Radon testing and mitigation, healthy air protections, and reducing the smoking rate through tobacco tax increases, smokefree air laws and access to comprehensive quit smoking services are all ways to help prevent new lung cancer cases.





## Survival Rate

Lung cancer has one of the lowest five-year survival rates because cases are often diagnosed at later stages, when the disease is less likely to be curable. The national average of people alive five years after a lung cancer diagnosis is **28.4%**, which is a **26%** improvement over the last five years. Massachusetts ranked best at **37.9%**, while Oklahoma ranked worst at **22.2%**.





## Early Diagnosis

Nationally, **only 27%** of cases are diagnosed at an early stage when the five-year survival rate is much higher (**64%**). Unfortunately, **43%** of cases are not caught until a late stage when the survival rate is only **9%**. Early diagnosis rates increased **11%** over the last five years nationally and were best in Massachusetts (**34.7%**) and worst in Hawaii (**21.1%**).

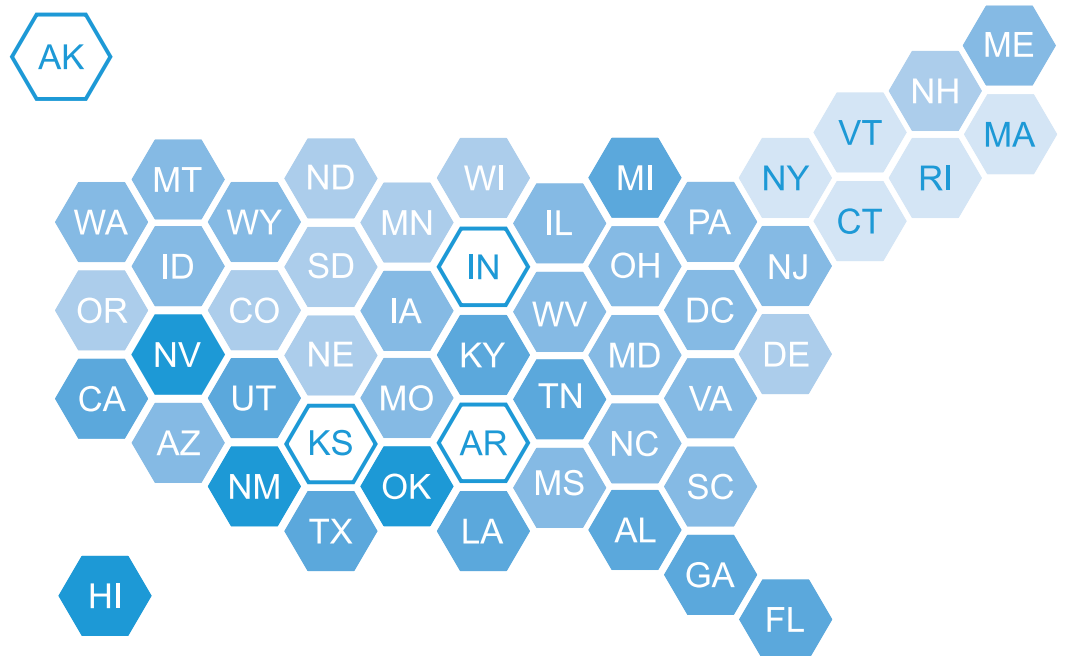
### Stage at Diagnosis and 5-Year Survival Rate



- Early (localized - confined to primary site)
- Regional (spread to regional lymph nodes)
- Distant (cancer has metastasized)
- Unstaged tumors

#### Tiers

- Top (31.8%-34.7%)
- Above Average (28.9%-31.7%)
- Average (26.1%-28.8%)
- Below Average (23.6%-26.0%)
- Bottom (21.1%-23.5%)
- Data Not Available



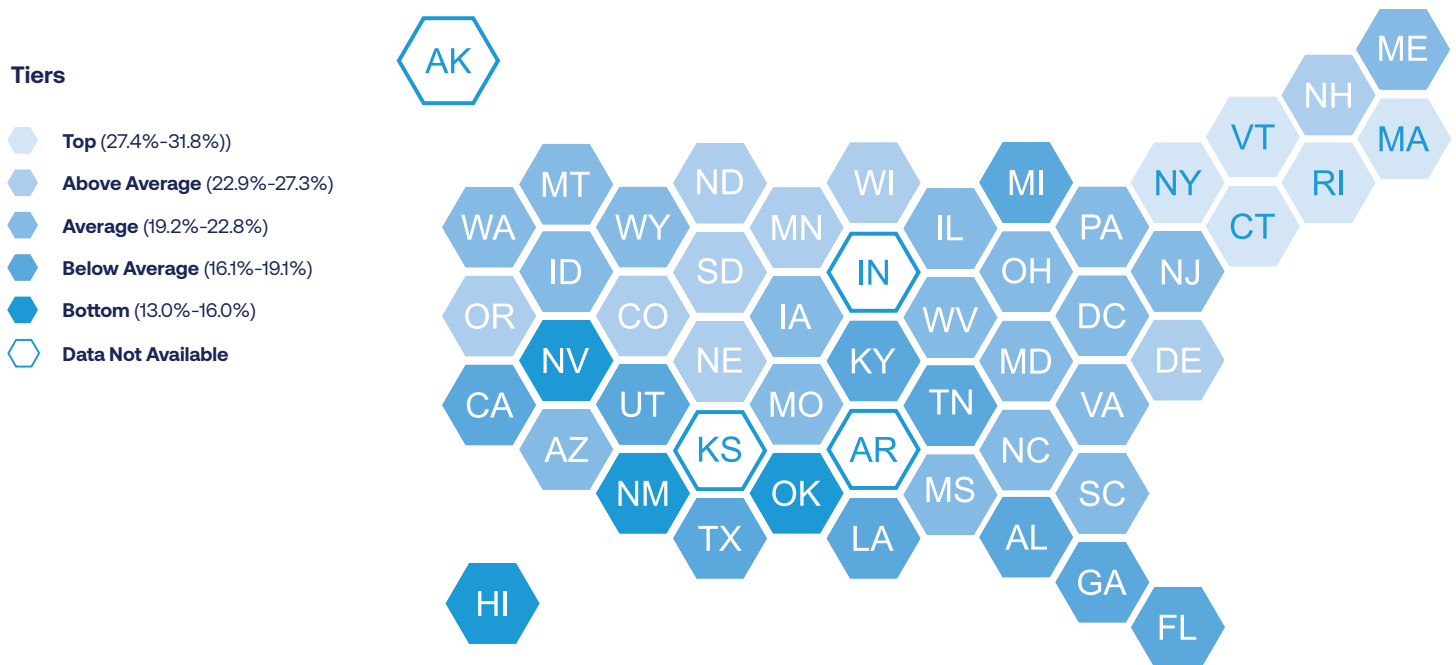


## Surgical Treatment

Lung cancer can often be treated with surgery if it is diagnosed at an early stage and has not spread. Nationally, **20.7%** of cases underwent surgery, ranging from best at **31.8%** in Massachusetts to worst at **13.0%** in New Mexico.

Surgical treatment rates decreased by 2% in 2021, likely due to the impact of the COVID-19 pandemic on access to medical care.

People diagnosed with lung cancer who are not healthy enough to undergo the procedure or whose cancer has spread may not be candidates for surgery. Other treatments may be recommended instead of or in addition to surgery, such as chemotherapy, radiation, targeted therapy or immunotherapy. This report focuses on surgical treatment because it is more likely to be curative.

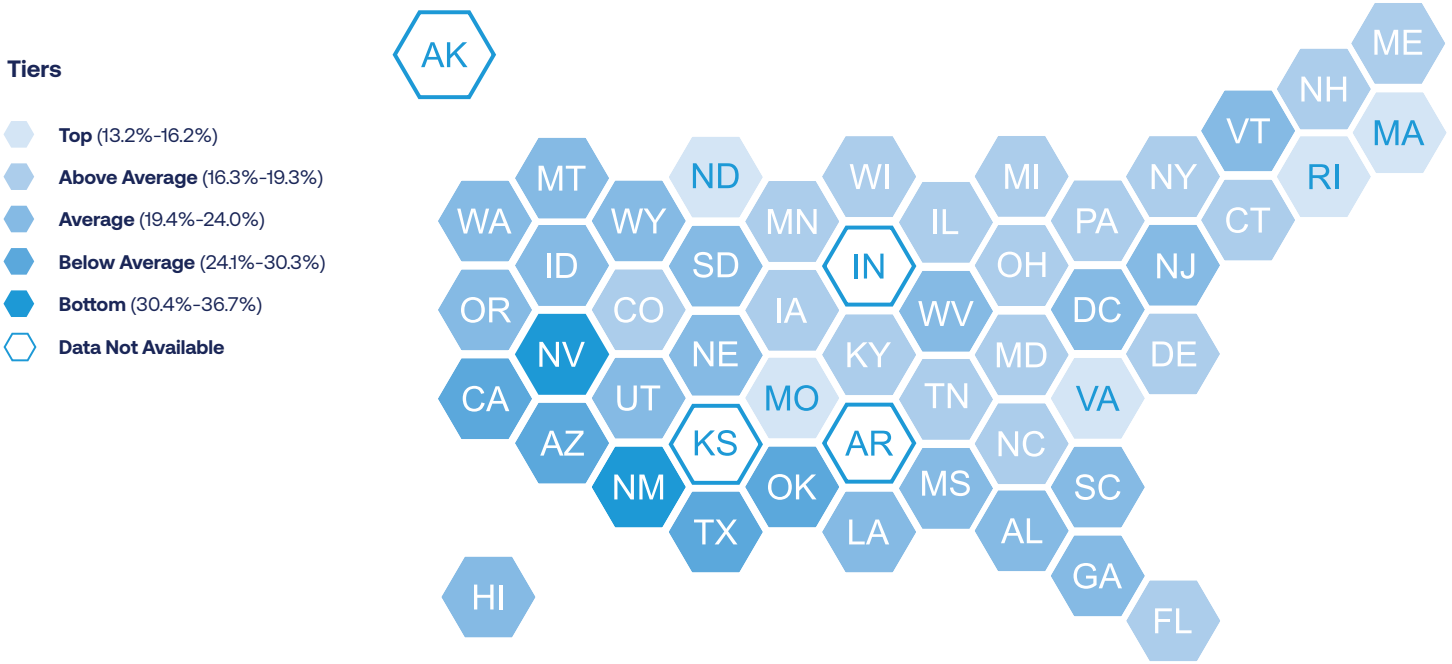




## Lack of Treatment

There are multiple reasons why people with lung cancer may not receive treatment after diagnosis. Some of these reasons may be unavoidable, but no one should go untreated because of lack of provider or patient knowledge, stigma associated with lung cancer, fatalism after diagnosis, or cost of treatment. Nationally, **20.9%** of cases did not receive any treatment. Lack of treatment rates were best in Massachusetts (**13.2%**) and worst in Nevada (**36.7%**).

Lack of treatment rates did not change over the last five years, likely due to the impact of the COVID-19 pandemic on access to medical care.





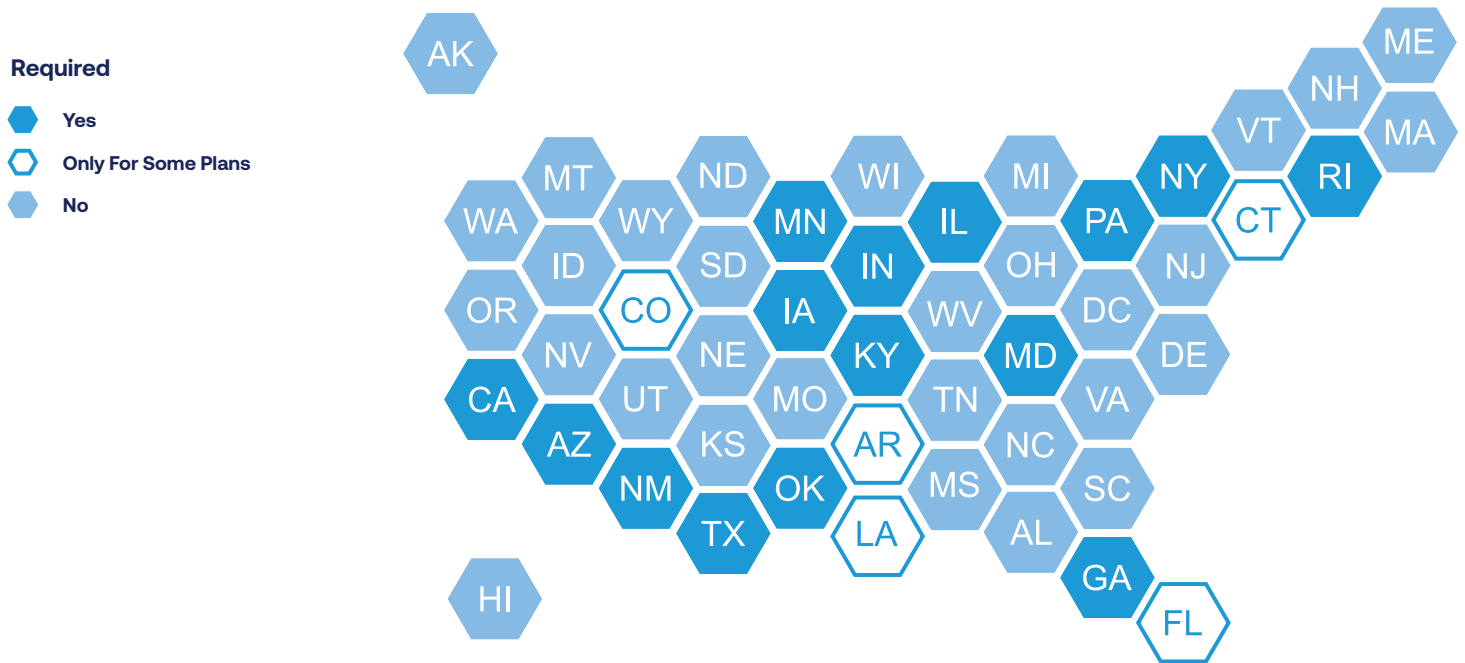


## Comprehensive Biomarker Testing Coverage

Biomarker testing and its results are an important way to find certain biomarkers that can help determine what treatment options would be best for individuals with lung cancer and other diseases.

Biomarkers are clues that physicians look for in tumor tissue and blood to help understand why lung cancer is growing and the best way to treat it. Lung cancer biomarkers can be errors in a cell's DNA or high levels of proteins that live on cells. Targeted treatments exist to address many biomarkers, which is why it is important for patients and their providers to know the results from biomarker testing before beginning treatment.

Insurance coverage of such testing is important for removing a cost barrier to people with lung cancer, but coverage for biomarker testing is only required in some states. As of August 2024, **15** states required insurance coverage of comprehensive biomarker testing, **5** states required some coverage, and **30** states and Washington, D.C. had no coverage requirements.





# Screening

Lung cancer screening gives us hope in the effort to defeat lung cancer and represents an opportunity to save more lives. Screening with annual low-dose CT scans can reduce the lung cancer death rate by up to 20%, by detecting tumors at early stages when the cancer is more likely to be curable. Lung cancer screening has saved 80,000 additional years of life leading to \$40 million in savings, which would increase to 500,000 additional years of life and \$500 million if all those eligible had been screened (Phillipson et al, 2023).

In March of 2021, the United States Preventive Services Task Force (USPSTF) expanded its recommendation for screening to include a larger age range and more current and former smokers. This dramatically increased the number of women and Black individuals who are considered at high risk for lung cancer. At the same time, the requirement for screening facilities to participate in the lung cancer screening registry in order to receive reimbursement from Medicare for screening scans was removed, which may have led to a decrease in reported scans, especially in some states.

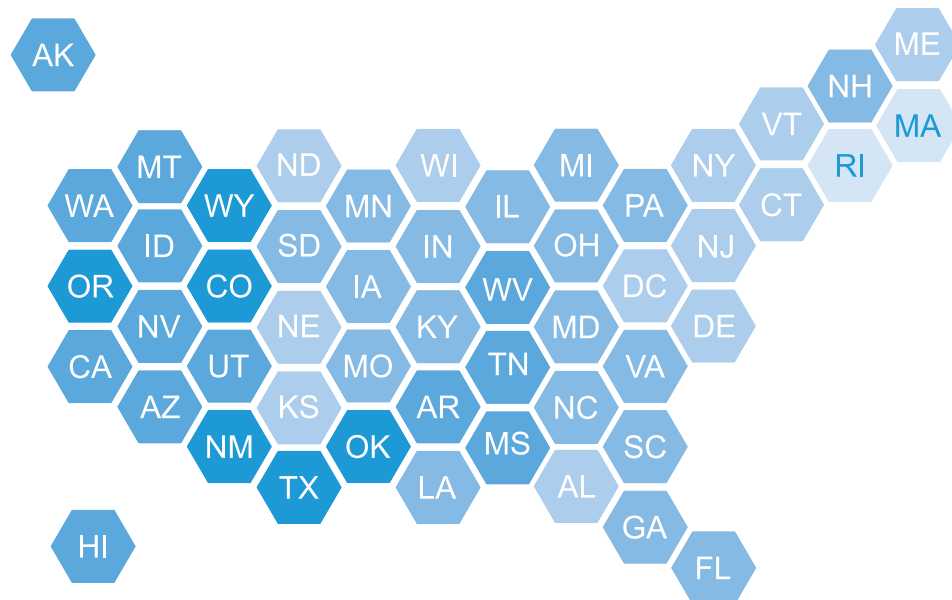
### High risk is defined as:

	USPSTF Guidelines 2013-2021	USPSTF Guidelines 2021
<b>Age</b>	55-80 years	50-80 years
<b>Smoking History</b>	30 or more pack years (this means 1 pack a day for 30 years, 2 packs a day for 15 years, etc.)	20 or more pack years (this means 1 pack a day for 20 years, 2 packs a day for 10 years, etc.)
<b>Smoking Status</b>	Current smoker or quit within the last 15 years	

For screening to be most effective, more of the high-risk population should be screened annually—currently screening rates remain low among those at high risk. Nationally, **only 16.0%** of those at high risk were screened. Rhode Island had the best screening rate at **28.6%**, while Wyoming had the worst at **8.6%**. This year’s report uses a new source for screening rates and should not be compared to previous reports.

### Tiers

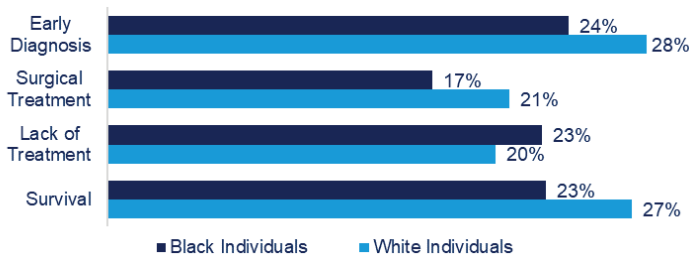
- Top** (23.6%-28.6%)
- Above Average** (18.5%-23.5%)
- Average** (14.5%-18.4%)
- Below Average** (11.6%-14.4%)
- Bottom** (8.6%-11.5%)





## Racial Disparities

**Black individuals** with lung cancer were 15% less likely to be diagnosed early, 19% less likely to receive surgical treatment, 12% more likely to not receive any treatment, and 16% less likely to survive five years compared to white individuals.



**Latino individuals** with lung cancer were 17% less likely to be diagnosed early and 30% more likely to not receive any treatment compared to white individuals. However, they were equally likely to receive surgical treatment and survive five years compared to white individuals.



**Asian or Pacific Islander individuals** with lung cancer were 17% less likely to be diagnosed early compared to white individuals. However, they were 17% more likely to receive surgical treatment, and equally likely to not receive any treatment and survive five years compared to white individuals.



**Indigenous Peoples (American Indians/Alaska Natives)** with lung cancer were 12% less likely to be diagnosed early, 24% less likely to receive surgical treatment, 20% more likely to not receive any treatment, and 15% less likely to survive five years compared to white individuals.





## Prevention

Keys to prevention include eliminating tobacco use and curbing exposures to radon, air pollution and secondhand smoke, all of which are known to cause lung cancer. However, it is not always possible to identify the cause of an individual person's lung cancer. If you have concerns about your risk, because of your exposures or your family history, it is important to discuss this with your doctor.

This report contains information and data on exposures to these risk factors on the state level:

- **Tobacco use** is the leading risk factor for lung cancer, accounting for 80 to 90% of cases. While we have seen historic decreases in the national smoking rate, not all people in America or regions of the country have benefited equally.
- **Secondhand smoke** has also been shown to cause lung cancer. There is no safe level of exposure to secondhand smoke. The "State of Lung Cancer" report highlights that making homes, workplaces and public spaces smokefree air zones, with no smoking allowed, can reduce the risk of exposure. The American Lung Association's "State of Tobacco Control," grades states for laws to protect the public from secondhand smoke.
- **Radon**, a naturally occurring radioactive gas, is the second leading cause of lung cancer and the leading cause among nonsmokers. Radon is a colorless and odorless gas that can seep into homes and buildings.

Some geographical areas have naturally higher average radon rates than others, but since any home can be at risk for elevated levels, the only way to know is to do a test. If testing shows interior radon levels at or above the U.S. EPA action level of 4 pCi/L (picoCuries per liter of air) or higher, it is recommended you take corrective measures to reduce your exposure to radon gas. Such measures should also be considered at levels at or above 2 pCi/L. The report highlights the percent of indoor radon tests at or above the EPA action level by state.

- **Exposure to year-round particle pollution** in the air has been shown to cause lung cancer. Each year the American Lung Association releases the "State of the Air" report. The 2024 "State of the Air" report found more than 131 million people are living in places with failing grades for unhealthy levels of air pollution.





## Discussion

- The lung cancer survival rate increased 26% over the last five years nationally to 28.4%.
- Lung cancer screening with low-dose CT scans has been recommended for those at high risk since 2013, but only 16.0% of those eligible were screened in 2022.
- People of color who are diagnosed with lung cancer face worse outcomes compared to white individuals, including: less likely to be diagnosed early, less likely to receive surgical treatment, more likely to receive no treatment, and less likely to survive five years.
- Nationally, only 27.4% of cases are diagnosed at an early stage when the five-year survival rate is much higher (64%).
- The analysis in the “State of Lung Cancer” serves as a baseline against which future data can be compared, which may be especially beneficial as progress is made on the implementation of lung cancer screening and insurance coverage of comprehensive biomarker testing.



## Conclusion

As the American Lung Association works toward defeating lung cancer, the goal of the “State of Lung Cancer” report is to empower the public to learn more about lung cancer in their state. Individuals can join the Lung Association’s efforts to end lung cancer by asking their governor to support insurance coverage of comprehensive biomarker testing at [Lung.org/SOLC](https://Lung.org/SOLC).

The report looks at key lung cancer measures to highlight the burden and examine opportunities to better address lung cancer at the state level. The report found that lung cancer rates for every measure vary significantly by state, and that every state can do more to defeat lung cancer, such as increasing the rate of screening among those at high risk, addressing racial disparities that impact lung cancer outcomes, decreasing exposure to radon and secondhand smoke, and eliminating tobacco use.

This report provides unique information for federal and state officials, researchers and those affected by lung cancer and emphasizes the need for resources and action to decrease the toll of lung cancer across the country.





## Methodology and Data Sources

The report includes state-specific measures of lung cancer incidence, adult smoking prevalence, estimated percent of radon tests at or above the U.S. EPA action level, five-year survival, early diagnosis, surgery as part of the first course of treatment, lack of treatment and screening among those at high risk.

Lung cancer incidence, staging, surgical treatment and lack of treatment data are for years 2017-2021 and includes malignant lung and bronchus tumors. This data is based on the North American Association of Central Cancer Registries (NAACCR) December 2023 data submission. In the U.S., registries also participate in the National Cancer Institute's (NCI) Surveillance, Epidemiology, and End Results (SEER) Program or the Centers for Disease Control and Prevention's (CDC) National Program of Cancer Registries (NPCR) or both. Support for cancer registries is provided by the state, province or territory in which the registry is located.

Incidence data for Alaska, Arkansas, and Kansas are for 2017-2021 from CDC's WONDER Online Database United States Cancer Statistics as data from this state were not included in the NAACCR data submission.

Cases diagnosed at an early stage correspond with local stage from SEER summary staging and are generally equivalent to stage I. Cases diagnosed at a late stage correspond with distant stage from SEER summary staging and are generally equivalent to stage IV.

State survival rates are the age-standardized percent of cases still alive five years after diagnosis for cases diagnosed in years 2014-2020. These data are from NAACCR's CiNA Explorer, an interactive, data visualization tool for quick access to key NAACCR CiNA cancer statistics. Survival data was not available for three states and the District of Columbia.

Lack of treatment is the percent of lung cancer diagnoses that did not receive any medical treatment generally associated with lung or other cancers, including the following: removal, biopsy or aspiration of regional lymph node; surgical removal of distant lymph nodes or other tissue(s)/organ(s) beyond the primary site; surgery for lung cancer; radiation; chemotherapy; systemic hormonal agents; immunotherapy; other, including experimental, double-blind, and unproven; and transplant or endocrine surgery or radiation.

Screening rates were determined by dividing the number of self-reported lung cancer screening exams meeting United States Preventive Task Force (USPSTF) criteria by the number of people at high risk for lung cancer and recommended for annual screening with low-dose computed tomography using data from the 2022 BRFSS. This is a different source from previous reports and screening rates should not be compared to prior estimates.

Additional years of life gained and economic benefit of screening comes from Philipson TJ, Durie T, Cong Z, Fendrick AM. The aggregate value of cancer screenings in the United States: full potential value and value considering adherence. BMC Health Services Research. 2023; doi.org/10.1186/s12913-023-09738-4.





## Methodology and Data Sources

To assess states' current requirements for insurance coverage of comprehensive biomarker testing, the Lung Association surveyed state legislation mandating coverage of testing. States with laws requiring coverage of comprehensive biomarker testing have ensured that individuals with lung cancer and other diseases have access to lifesaving testing when using both public or private health coverage. A smaller handful of states have thus far limited coverage of biomarker testing to only public or only private plans. Results are current as of September 2024.

Smoking rates include the percent of adults who have ever smoked 100 or more cigarettes and currently smoke on some days or all days using data from the 2022 BRFSS.

Radon estimates for each state are primarily based on the latest percent of county-level pre-mitigation radon tests from occupied interior spaces at or above the U.S. Environmental Protection Agency action level of 4 pCi/L (picoCuries per liter of air) from CDC's National Environmental Public Health Tracking for 2008-2017, weighted by U.S. Census Bureau 2019 estimates of county populations.

Additional methodological information is available in the online version of this report at [Lung.org/solc](https://Lung.org/solc).





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