

Lung Cancer Risk Factors and Disparities in New Jersey

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Lung and bronchus cancer (hereafter referred to as simply “lung cancer”) is the deadliest cancer in the United States (US) –regardless of sex, race and ethnicity. Recent mortality data from the Centers of Disease Control and Prevention (CDC) estimated that there were 32.3 deaths for every 100,000 individuals on average per year from 2018-2022 [1]. In New Jersey (NJ), this rate was 26.9 for every 100,000 people [1].

There are substantial geographic disparities in new diagnoses (incidence) of lung cancer as well as deaths between Northern and Southern counties in NJ. In the South, the rate of new cancers range from 54.9-71.7 for every 100,000 people, while in the North, these rates range from 36.1-62.5 for every 100,000 people (**Figure 1**) [2].

New Jersey Rate: 49.3 / per 100,000

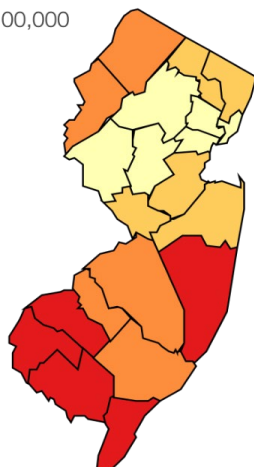
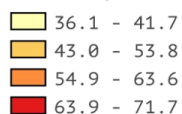


Figure 1. Age-Adjusted Rates of New Lung and Bronchus Cancers in New Jersey by County, 2017-2021 [2].

Smoking as a Risk Factor

The leading risk factor for lung cancer is tobacco use through smoking, which can explain this geographic disparity. Southern counties have the highest percentage of adults aged 18+ who reported either ever smoking 100 cigarettes, or being current smokers compared to the rest of the state, regardless of race, ethnicity or sex [1].

Figure 2 shows that Southern counties, including Cape May, Cumberland, Salem, Gloucester, Ocean, Atlantic, and Camden, have the highest rates of ever- and current-smokers. While Northern counties such as Passaic, Essex, Hudson, and Union, have lower reports of these behaviors, with the exception of Warren County.

Ever Smokers Current Smokers

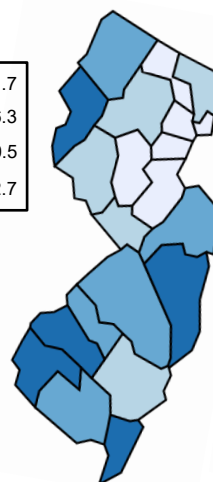
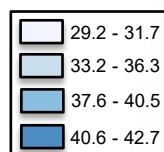


Figure 2. Age-Adjusted Prevalence (Percent) of Adults Aged 18+ Who Reported Ever Smoking 100 cigarettes (L) or Being a Current Smoker (R) [1].

The Role of Socioeconomic Status in Smoking

Socioeconomic status (SES) refers to an individual or group’s social standing; typically assessed by education level, income, occupation, and poverty [3]. It is universally understood that those with low SES typically have poorer health outcomes due to factors such as their increased stress levels as a result of their financial status, the obstacles they face in accessing healthy food options or proper healthcare.

In terms of lung cancer and tobacco smoking in particular, “uptake [of tobacco smoking behaviors] may be higher among those with low SES and quit attempts are less likely to be successful” [3]. In America, cancer mortality is 28% higher in poor counties than more financially well-off counties [3].

SES in New Jersey Counties

The National Institute on Minority Health and Health Disparities from the United States Department of Health and Human Services reported each counties’ poverty (persons below 150% of poverty) percentage from 2017-2021 [4]. In New Jersey, Southern counties including Cumberland, Atlantic, Salem, Camden, Ocean, and Cape May lie within the top ten counties with the highest poverty in the State.



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These six counties also fall within the ten lowest median family income in New Jersey, and four out of six of these counties—specifically Cumberland, Atlantic, Camden, and Salem—have the highest populations in the state with education levels less than high school. Because these Southern counties have high incidence and mortality rates of lung cancer, high current or ever-smokers, and low socioeconomic status, we must integrate strategies to address these social determinants as part of a comprehensive cancer prevention strategy.

Racial and Ethnic Differences

In New Jersey, the White population has the highest rate of new lung cancer diagnoses (55.6 for every 100,000 people from 2017-2021) [1]. This population also has the highest death rate due to lung cancer [1]. Additionally, according to the American Lung Association (ALA), “the five-year survival rate is 21.9% among Black individuals in New Jersey...significantly lower than the rate of 31.0% among white individuals in New Jersey” [5]. The rates of Black (21.6%), Latino (23.6%), and Asian & Pacific Islander (21%) individuals in New Jersey who are diagnosed at an early stage are also significantly lower than that of White individuals (28%) [5].

Lung Cancer in Never Smokers

According to Zhu and colleagues [6], who reported on geographic disparities in lung cancer incidence in a Southeastern Pennsylvania metropolitan area, “10%-20% of all lung cancer cases occur in never smokers”. While 10-20% may not seem concerning in the grand scheme of the lung cancer burden, it is nevertheless striking that even those who take preventative measures by avoiding tobacco use through smoking can be susceptible to the deadliest cancer in the US. According to the CDC, the Behavioral Risk Factor Surveillance System (BRFSS) reported that the prevalence of adult never smokers in New Jersey (i.e., those who reported never smoking 100 cigarettes) was 68.1% in 2022 [1]. Additionally, New Jersey has counties that are close in proximity to both Philadelphia, PA and New York City, NY which are major cities, well-known to have consistently high rates of air pollution and/or low air quality [6]. Long-term exposure to these conditions can cause lung cancer [6]. Thus, emphasizing the role of environmental factors in geographic disparities of lung cancer and the need to ensure that preventive measures are put in place to combat the potential development of life-threatening diseases such as lung cancer.

Recent Trends and Outlook

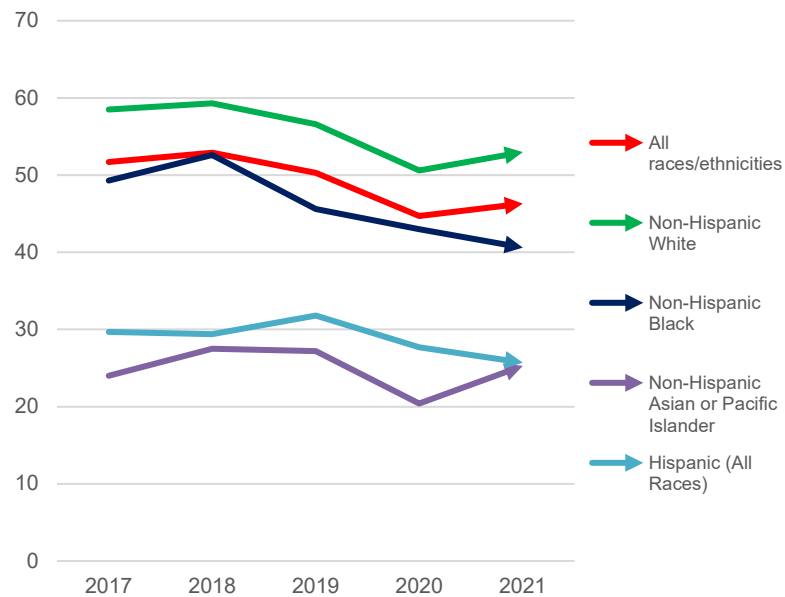


Figure 3. Age-Adjusted Incidence Rates in Lung and Bronchus Cancer in New Jersey, 2017-2021. Male and Female. Rates per 100,000
Source: Incidence – SEER Research Plus Data, 17 Registries, Nov 2023 Sub (2000-2021).

To continue to reduce the burden in New Jersey due to lung cancer, the most important preventive strategies are tobacco cessation programs. These programs have had significant impacts on the lung cancer burden since they were implemented. And, to this day they prove to be the most effective tool(s) in the battle against lung cancer [7].

Screening is also an important strategy in the early detection of lung cancer. Unfortunately, New Jersey’s lung cancer screening rate falls below the national average [5]. To help improve this rate, the state has “improved access to expanded screening by covering it through its fee-for-service Medicaid program” [5]. This makes it easier and more affordable for individuals to get screened, which is a step in the right direction. The state has also provided funding for ScreenNJ, a program that provides lung cancer screenings along with several other cancer screenings, education initiatives, and more. For more information, visit <https://screennj.org/lung-screening/>.

For more information about Rutgers Cancer Institute Cancer Health Equity Center of Excellence, [click here](#) or visit <https://www.cinj.org/outreach/cancer-health-equity-center-excellence>.

For more information regarding screening guidelines, recommendations, and other resources, refer to the following links:

[Cancer Screening Recommendations](#) from the United States Preventive Services Task Force (USPSTF).

[Cancer Screening Guidelines](#) from the American Cancer Society (ACS)

ScreenNJ for prevention, education, and detection information: <https://screennj.org/>.

The American Lung Association (ALA) State of Lung Cancer report for New Jersey can be found [here](#).

For information regarding Rutgers Cancer Institute clinical trials (what is open, at which sites, general clinical trials page, interest in diversity in clinical trials, etc.) [click here](#) or visit <https://www.cinj.org/clinical-trials/find-clinical-trial>.

Link to Fact Sheet References: https://go.rutgers.edu/cancerfacts_reference