United States Cancer Statistics

NOVEMBER 20, 2024

Types of lung cancer

WHAT TO KNOW

More lung cancers, including small cell carcinomas, adenocarcinomas, and squamous cell carcinomas, are being found at an early stage when they are more treatable. Screening can help find lung cancers of all types before they start spreading.

Common types of lung cancer

Lung cancer begins in the airways of the lungs. These include the bronchi (the tubes leading to the lungs), the bronchioles (tiny branches of air tubes in the lungs), and the alveoli (the tiny air sacs at the end of the bronchioles).

Types of lung cancer are named after the cells found in the cancer. Doctors use special tests to determine what type of cells led to cancer. Because the cells grow and spread differently, knowing the type helps doctors choose ways to treat the cancer. The most common lung cancer types are:

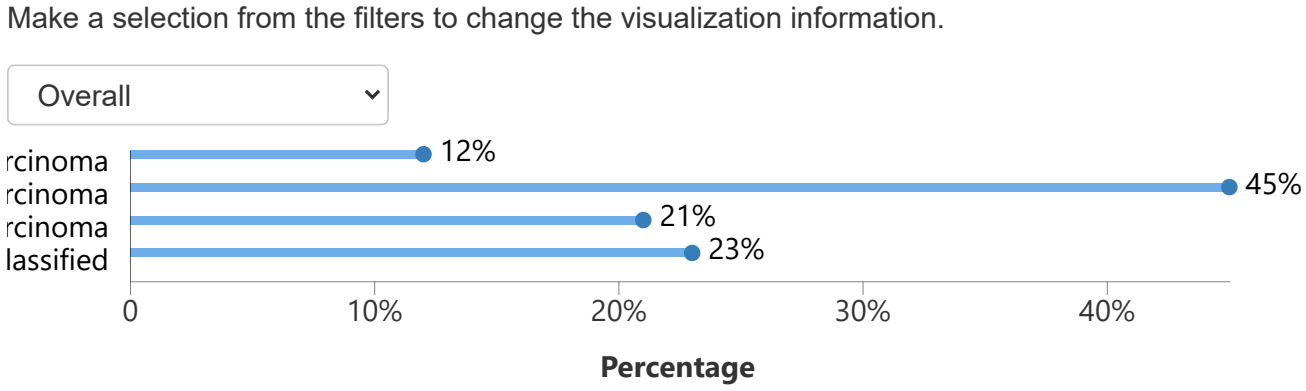
- Adenocarcinoma, which begins in cells that line the alveoli and make mucus.
- Squamous cell carcinoma, which begins in the thin, flat cells that line the inside of the lungs.
- Small cell carcinoma, which begins in neuroendocrine cells that line the inner airways of the lungs.

As targeted lung cancer treatment has improved over the years, tests are more frequently used to figure out the lung cancer type, and fewer cancers are of an unknown type.[1] Also, the use of filtered cigarettes, and changes in tobacco blends used in cigarettes, have affected which part of the lung and what type of cells the lung cancer commonly starts growing in.[2]

In 2021, adenocarcinoma was the most common cell type in the United States, accounting for 45% of all lung cancer cases. 21% of lung cancers were squamous cell carcinoma and 12% were small cell carcinoma. Adenocarcinoma was the most common cell type among both males and females and in each age group.

Figure 1. Percentage of new lung cancer cases by cell type[a], United States, 2021

Make a selection from the filters to change the visualization information.



Data Table

Lung Cancer Type	Percentage
Small cell carcinoma	12%
Adenocarcinoma	45%
Squamous cell carcinoma	21%
Other or unclassified	23%

Download Data (CSV)

Rates for common types of lung cancer

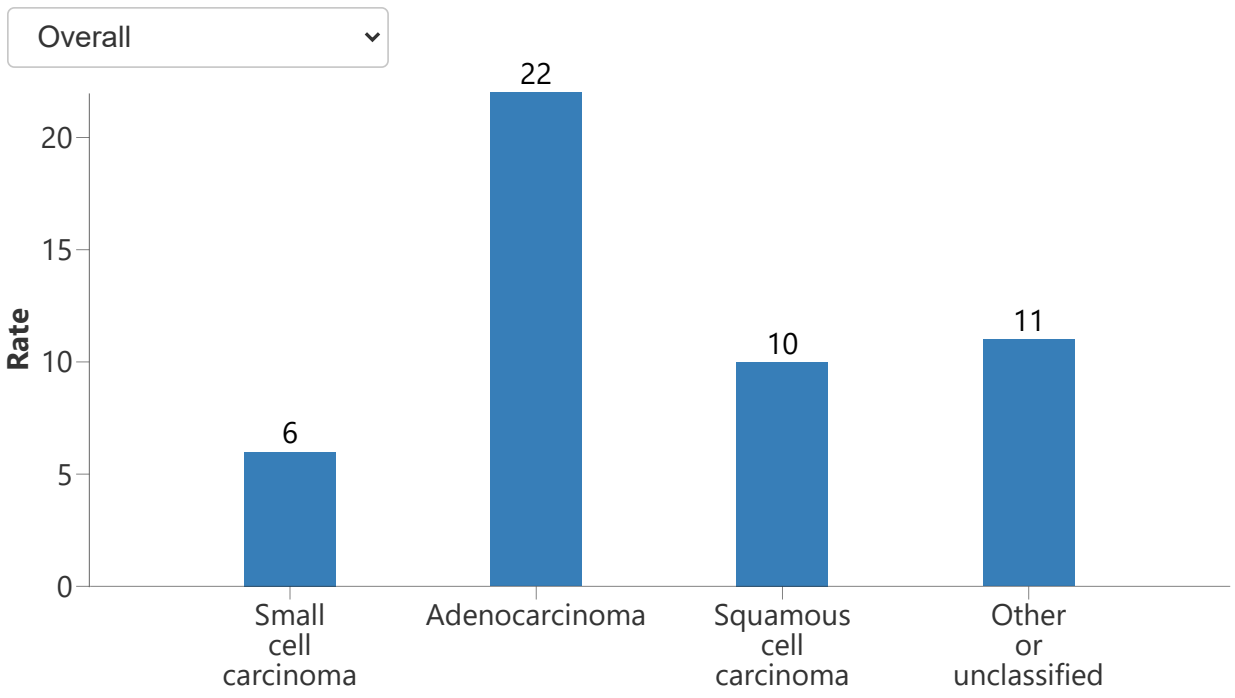
In 2021, males and females had similar rates of small cell carcinoma (6 cases per 100,000 standard population) and adenocarcinoma (22 cases per 100,000 standard population). However, rates were higher among males than females for squamous cell carcinoma (13 and 8 cases per

100,000 standard population, respectively) and other or unclassified cell types (13 and 10 cases per 100,000 standard population, respectively).

By age, rates were highest for small cell, adenocarcinoma, and squamous cell carcinoma among those ages 70 to 79 years, and for other or unclassified cell types among those ages 80 years or older.

Figure 2. Rate[b] of new lung cancer cases by cell type[a], United States, 2021

Make a selection from the filters to change the visualization information.



Data Table

Lung Cancer Type	Rate
Small cell carcinoma	6
Adenocarcinoma	22
Squamous cell carcinoma	10
Other or unclassified	11

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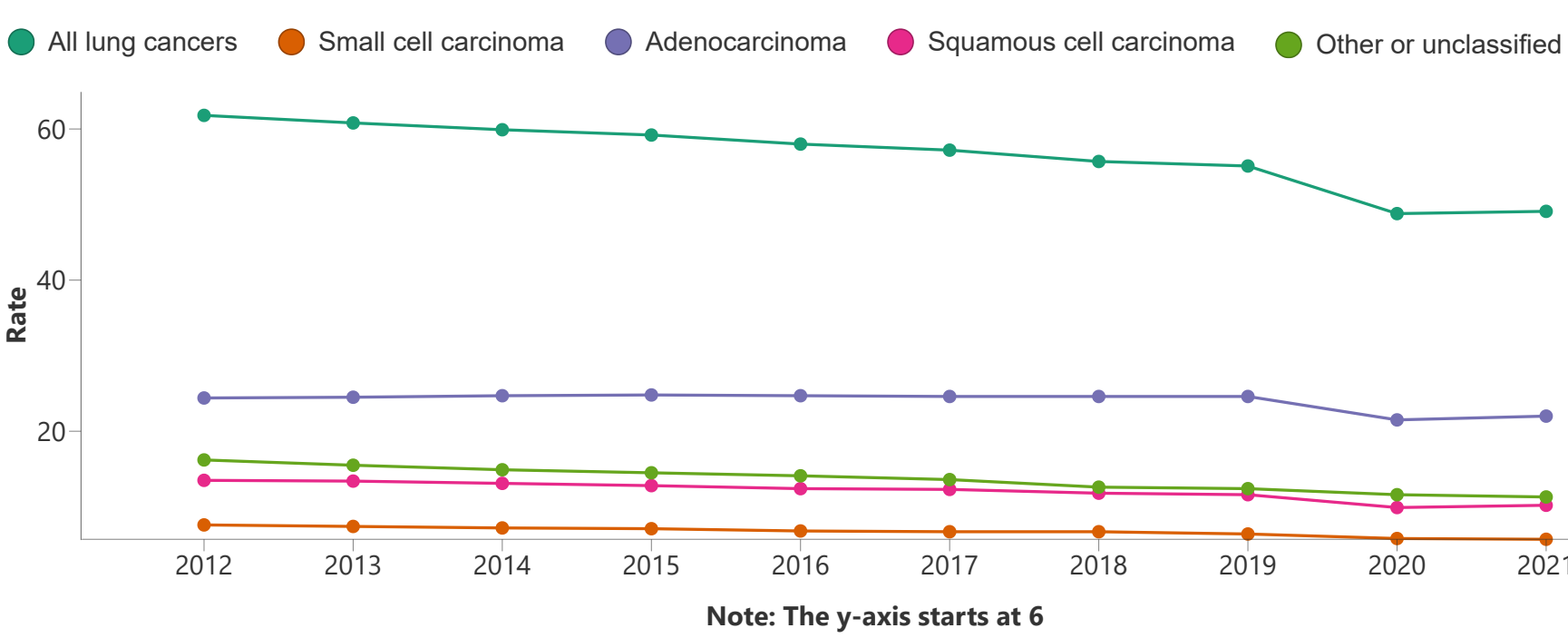
Declines in lung cancer from 2012 to 2021

Lung cancer rates steadily declined from 2012 to 2019, then dropped considerably in 2020. This drop was due to disruptions in cancer screening, diagnosis, and care caused by the COVID-19 pandemic. Rates in 2021 were higher than in 2020 but lower than expected based on past trends. Rates dropped more in 2020 and increased more in 2021 for adenocarcinoma and squamous cell carcinoma than for other cell types.

Figure 3. Rate[b] of new lung cancer cases by cell type[a] and year, United States, 2012 to 2021[c]



Data Table

Year of diagnosis	All lung cancers	Small cell carcinoma	Adenocarcinoma	Squamous cell carcinoma	Other or unclassified
2012	62	8	24	14	16

Year of diagnosis	All lung cancers	Small cell carcinoma	Adenocarcinoma	Squamous cell carcinoma	Other or unclassified
2013	61	7	25	13	16
2014	60	7	25	13	15
2015	59	7	25	13	15
2016	58	7	25	12	14
2017	57	7	25	12	14
2018	56	7	25	12	13
2019	55	6	25	12	12
2020	49	6	22	10	12
2021	49	6	22	10	11

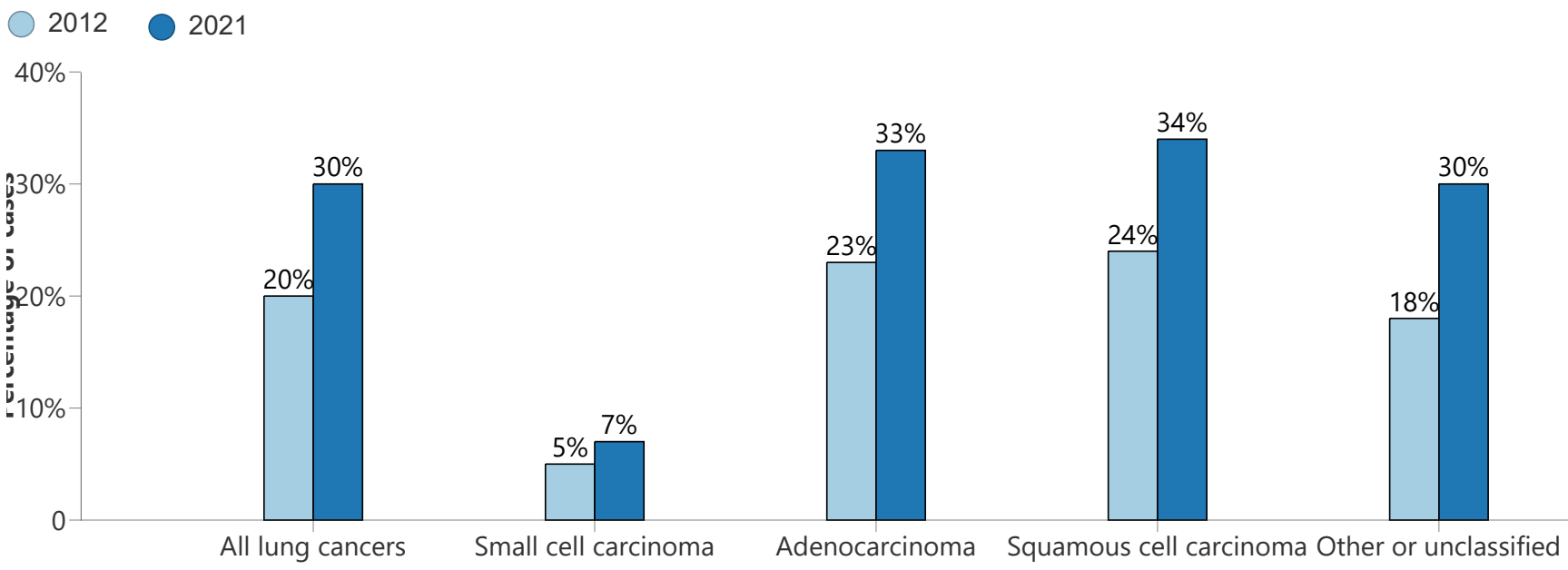
Download Data (CSV)

More lung cancers are being diagnosed at an early stage

Lung cancer can be found at a localized (early) stage, before cancer cells spread within and around the lung or to other parts of the body. When cancer is found early, treatment works better and there are more options to choose from. Lung cancer screening, first recommended by the U.S. Preventive Services Task Force in 2013, helps find lung cancers at an early stage, before they cause symptoms or spread.

In 2012, before the Task Force made this recommendation, 2 out of 10 lung cancers were diagnosed at early stage. Ten years later, in 2021, this increased to 3 out of 10. The percentage is slightly higher for people with adenocarcinoma (33%) and squamous cell carcinoma (34%), but lower for people with small cell carcinoma (7%). Small cell carcinoma tends to grow quickly and spread to other parts of the body before it causes symptoms, underscoring the importance of lung cancer screening.

Figure 4. Percentage of new lung cancer cases diagnosed at an early (localized) stage of disease by cell type[a] and year, United States, 2012 and 2021



Data Table

Types of Lung Cancer	2012	2021
All lung cancers	20%	30%
Small cell carcinoma	5%	7%
Adenocarcinoma	23%	33%
Squamous cell carcinoma	24%	34%
Other or unclassified	18%	30%

Download Data (CSV)

Footnotes

[a] Cell types were based on histology codes in the *International Classification of Diseases for Oncology, Third Edition* (ICD-O-3). Small cell carcinoma uses codes 8041–8045. Adenocarcinoma uses codes 8140–8239, 8250–8384, 8440–8490, 8550–8551, 8570–8574, and 8576.

Squamous cell carcinoma uses codes 8050–8084. Of all other histology, 40% use code 8000 (neoplasm, malignant), 18% use code 8010 (carcinoma, not otherwise specified), and 18% use code 8046 (non-small cell carcinoma, not otherwise specified).

[b] New cancer cases per 100,000 standard population. Rates were age-adjusted to the 2000 U.S. standard population.

[c] The 2023 data submission, released in June 2024, includes new cancer cases diagnosed in 2020 and 2021, the first and second years of the COVID-19 pandemic. The missed cancer diagnoses resulting from disruptions in health services caused by the pandemic may have contributed to an observed decline in incidence for most cancer sites in 2020. The numbers of new cases diagnosed in 2021 are still a little lower than expected for some cancer types but have returned to pre-pandemic counts for other cancer types. Caution must be taken when examining trends to avoid incorrect interpretations of the effect of cancer prevention and early detection efforts. Observed downward trends may be due largely to the lower observed incidence in 2020.

References

[1]Nicholson AG, Tsao MS, Beasley MB, et al. The 2021 WHO classification of lung tumors: impact of advances since 2015. *J Thorac Oncol.* 2022;17(3):362–387.

[2]Schabath MB, Cote ML. Cancer progress and priorities: lung cancer. *Cancer Epidemiol Biomarkers Prev.* 2019;28(10):1563–1579.

Data source

Data in this brief come from U.S. Cancer Statistics, the official federal cancer statistics. U.S. Cancer Statistics incidence data are from population-based registries that participate in CDC's National Program of Cancer Registries (NPCR) and the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) Program. Data submitted in 2023 that met publication standards for the 2012–2021 period covered 98% of the U.S. population (excluding data from Indiana).

SOURCES

CONTENT SOURCE:
National Center for Chronic Disease Prevention and Health Promotion; Division of Cancer Prevention and Control