

RSNA Statement on Lung Cancer Screening **Reviewed: 5/25/2022**

The Radiological Society of North America (RSNA) is committed to excellence in patient care through education and research.

- Lung cancer is the leading cause of cancer deaths in both men and women, killing more people than cancers of the breast, prostate and colon combined. The great majority of lung cancers are caused by cigarette smoke. The Radiological Society of North America (RSNA) advises cigarette smokers to quit and recommends that people who are at high risk for lung cancer, specifically older individuals with an extensive smoking history, consult their physicians to determine if lung cancer screening with low-dose computed tomography (CT) is appropriate for them.
- The goal of lung cancer screening is to find cancer before it has spread outside the lungs. Currently, only 15 percent of lung cancers are detected when localized to the lungs, with most lung cancers detected only after they have spread outside the lung and cause symptoms. The landmark National Lung Screening Trial (NLST) of 53,454 current and former heavy smokers has shown that early detection with CT reduces deaths from lung cancer by 20 percent. This was confirmed by The Dutch–Belgian lung-cancer screening trial (Nederlands–Leuvens Longkanker Screenings Onderzoek [NELSON]), which showed that lung-cancer mortality is significantly reduced in high-risk individuals who undergo CT screening as compared to those who do not.
- RSNA supports the new United States Preventive Services Task Force (USPSTF) [recommendation](#) (March 2021) for low-dose CT lung cancer screening of high-risk individuals, 50 to 80 years of age, who have a 20-pack-year or more history of smoking and are either current smokers or former smokers who have quit within the last 15 years. This recommendation, which expands the age range for screening and lowers the number of pack years from the previous USPSTF recommendation, has potential to mitigate racial and gender disparities in screening eligibility.
- The new guidelines expand relative screening eligibility by 87% overall, including 107% in non-Hispanic Black adults and 112% in Hispanic adults, according to the USPSTF statement. Additionally, the relative percentage of women eligible for screening would increase by 96%.
- RSNA is committed to improving patient care and increasing health equity. Expanding the lung cancer screening recommendation to include a broader, more diverse patient base is an important step to protect the health of vulnerable populations.
- Since the publication of the initial NLST results, lung cancer advocacy groups, particularly the Lung Cancer Alliance, have actively campaigned for recognition of the efficacy of lung cancer screening with CT. These efforts have contributed to the recognition of this life-saving tool by the USPSTF.
- Currently, there is not enough evidence to support lung cancer screening for people who are at low or moderate risk for lung cancer, including younger individuals, those with less smoking history or other risk factors such as a significant exposure to secondhand smoke or other cancer-causing substances. These individuals should consult with their physician to evaluate their individual risk and determine if there may be a role for CT screening.
- Before undergoing CT screening, individuals should engage in shared decision-making with their physician and be made aware of the relative benefits and risks of lung cancer screening with CT, including the likelihood of an abnormal screening examination and how abnormalities detected are likely to be managed. The relative benefit of lung cancer screening with CT outweighs the potential

increase in lifetime risk of cancer related to the radiation exposure from annual screening CT in older high-risk smokers for whom screening is recommended. However, appropriate precautions should always be taken to minimize radiation exposure through the use of the “As Low As Reasonably Achievable (ALARA)” principle.

- High-quality, cost-effective screening on a national basis requires standardized processes based on the data and outcomes from the NLST and other clinical trials. This includes appropriate identification of individuals for screening, the CT screening technique itself, expert interpretation of the screening examination, reporting of the CT results and the management of positive results, including incidental significant findings, and the inclusion of smoking cessation as part of any lung cancer screening program. Screening programs should also promote awareness of the benefits of lung cancer screening for the recommended population.

RSNA is a strong advocate for quality, safety, equity and strict adherence to appropriateness criteria in medical imaging and radiation oncology. Through its peer-reviewed journals, education programs and annual scientific assembly, RSNA continually informs radiologists, medical physicists, radiation oncologists and other radiology professionals of the latest technologies and research developments designed to optimize dose and improve patient safety.