

Early Detection for Lung Cancer



Recent federal guidelines recommend that long-term, pack-a-day smokers receive an annual screening for lung cancer using low-dose spiral computed tomography (CT) imaging. The guidelines are based on findings from the National Lung Screening Trial, which demonstrated that annual CT screening is more effective than regular chest X-rays in detecting early-stage, malignant lung tumors before they spread to other parts of the body.

“Spiral CT scans provide the high resolution needed to see spots on the lung that chest X-rays fail to detect,” explains UCLA radiologist Denise Aberle, MD, vice chair of research in radiological sciences and the national principal investigator for the study. “It allows you to view the chest in individual slices rather than the entire volume — like looking at individual slices of a loaf of bread.”

Annual screening with low-dose CT scans recommended for long-term smokers.

Specifically, the guidelines issued by the United States Preventive Services Task Force recommend the annual screenings for current smokers ages 55 and older who have smoked at least 30 “pack years” — a calculation that is based on the number of packs smoked in a day multiplied by the number of years as a smoker — or those 30-“pack-year” smokers who have quit less than 15 years. (The screening is not recommended for those who have been smoke-free for more than 15 years.) Radiation from the recommended CT method is on average one-fifth the dose of routine chest CT scans.

Although low-dose spiral CT scans are associated with a 20 percent reduced risk of dying from lung cancer compared to standard chest X-rays, they are also linked with some increased exposure to radiation and to false positives that may prompt additional imaging scans, laboratory workups, needle biopsies and surgeries, says Jay M. Lee, MD, chief of thoracic surgery and surgical director for the thoracic oncology program in UCLA’s Jonsson Comprehensive Cancer Center. “The major downside is that we may intervene unnecessarily,” Dr. Lee says. “A major benefit is that lung cancer may be detected at its earliest stages, when minimally invasive

surgeries are most effective. It’s really a different kind of operation when lung cancer remains localized and has not yet spread to lymph nodes.”

M. Iain Smith, MD, a UCLA pulmonary and critical-care specialist, emphasized “the most important advice we can give patients is that, despite new studies that demonstrate the benefits of low-dose spiral CT for detecting early-stage lung cancer in the right group of patients, the best way to reduce lung-cancer mortality is to quit smoking.”

Patients should discuss the benefits and harms of lung-cancer screening with their physicians, based on their overall health status and risk factors that include family history, personal health behaviors and occupational exposures. Low-dose spiral CT imaging is not currently covered by Medicare and other health plans. Patients interested in the screening procedure should consult with their insurance provider regarding coverage.

The UCLA physicians emphasize that screening is not a substitute for smoking cessation and that negative results do not mean patients will not develop lung cancer in the future. Long-term monitoring and follow-up from multidisciplinary experts is critical to managing lung-cancer risk.



Why Lung Cancer screening is important

Lung Cancer is the
No. 1
cancer killer
in the USA

More people die from lung cancer than from breast, colon, pancreas and prostate cancers combined

Early-stage survival rate is
53.5%

ONLY **15%** of lung-cancer cases are currently found in the early stage

Most cases are not diagnosed until
later stages, when
survival rate is ONLY
3.9%

The National Lung Screening Trial was the largest national lung-screening trial, with more than **50,000** people enrolled. It showed a **20%** reduction in lung-cancer deaths relative to chest X-rays.

Low-dose CT is recommended annually if you are:

- Age **55** or older
- Have smoked at least **30** “pack years”
- A 30-“pack-year” smoker who has quit within the past **15** years