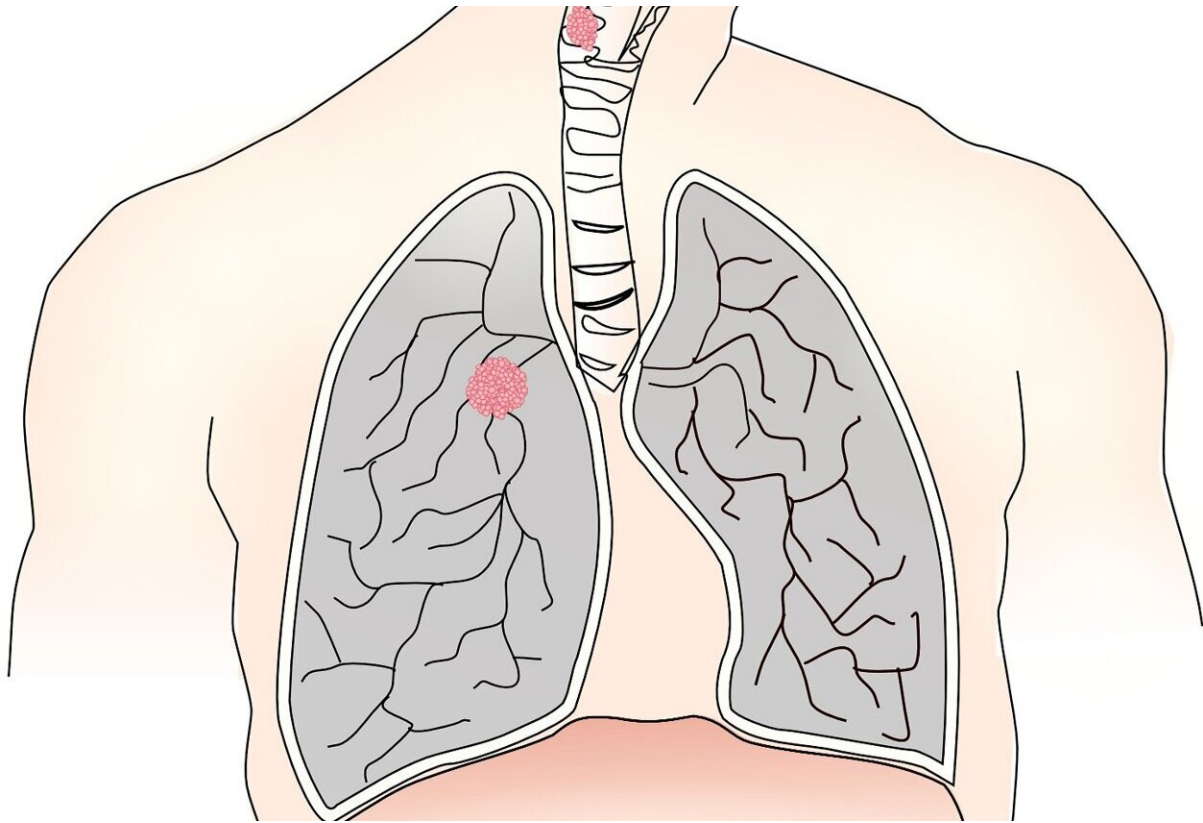


# New study sheds light on incidental findings in lung cancer screening

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When patients receive a low-dose computed tomography screen for lung cancer, doctors can see more than just the lungs. The screening test often picks up abnormalities or potentially "significant incidental findings"

(SIFS) not associated with lung cancer.

A new study led by Ilana Gareen, an associate professor of epidemiology at the Brown University School of Public Health, and published in *JAMA Internal Medicine*, highlights the need for proper reporting and management of these findings to reduce mortality, [health care costs](#) and unnecessary medical interventions.

"This study provides important insight into the types of significant incidental findings that can occur during low-dose computed tomography lung cancer [screening](#)," Gareen said. "By better understanding these findings, we can improve how we classify and report them, which promises to improve [patient care](#) and improve the cost-effectiveness of lung cancer screening."

The study examined data from the [National Lung Screening Trial](#), which involved over 53,000 participants aged between 55 and 74 years with a smoking history of 30 pack years—the equivalent of smoking one pack of cigarettes a day for 30 years—and who had smoked within the last 15 years.

Participants were randomly assigned to undergo either low-dose computed tomography, known as LDCT, or chest X-rays. They were scheduled for three screening examinations: a baseline screen and two follow-up screens each one year apart. The current study focused on participants who received LDCT, which is now the accepted approach for lung cancer screening.

The results of the study showed that 33.8% of all LDCT participants had a significant incidental finding reported over the course of the trial, with 89.1% of those of sufficient clinical interest to be reported to the referring provider.

"Lung cancer screening has been shown to reduce lung cancer mortality," said Gareen, "but to enhance the cost-effectiveness of this intervention, patients and their medical providers must be aware of the high likelihood of SIF detection, and these SIFs must be appropriately reported and managed."

Detecting SIFs has the potential to find extrapulmonary cancers early, which comprised 22.3% of certified deaths in the LDCT arm of the National Lung Screening Trial. Gareen and colleagues also found that more than 10% of all LDCT screens showed signs of emphysema and/or [chronic obstructive pulmonary disease](#), which can be addressed with early intervention, such as smoking cessation.

The study highlights the importance of finding a balance between detecting serious conditions and avoiding unnecessary tests and procedures for significant incidental findings that turn out to be benign or present low risk to the patient, Gareen said.

Still, despite the high rate of significant incidental findings detected in LDCT screening, studies have shown that it is cost-effective compared to no screening at all. The researchers suggest that improving the classification and reporting of SIFs could better manage these findings and minimize unnecessary costs and medical care.

LDCT screening has been shown to reduce [lung cancer](#) deaths by up to 24%, but the researchers note that not many people are getting screened. The American College of Radiology introduced guidelines in 2015 to make it easier to report and manage results from screening and deal with significant abnormalities.

**More information:** Ilana F. Gareen et al, Significant Incidental Findings in the National Lung Screening Trial, *JAMA Internal Medicine* (2023). [DOI: 10.1001/jamainternmed.2023.1116](https://doi.org/10.1001/jamainternmed.2023.1116)

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