

# Risk-based CT screening may reduce deaths from lung cancer

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Compared to National Lung Screening Trial criteria, targeting screening those at highest risk from lung cancer mortality using a risk prediction tool may improve efficiency in terms of greater reduction in mortality from lung cancer in the short term per person screened. However, such a targeted approach does not offer substantial gains in terms of life-years saved, quality-adjusted life-years (QALYs), and cost-effectiveness. The findings are published in *Annals of Internal Medicine*.

Most current lung cancers screening guidelines, including those from the U.S. Preventive Services Task Force (USPSTF), use screening criteria based on findings from the National Lung Screening Trial. Therefore, screening is recommended for persons between the ages of 55 and 74 years with a smoking history of at least 30 pack-years and former smokers who had no more than 15 years of smoking abstinence. However, targeting low-dose computed tomography (LDCT) for [lung cancer](#) screening to persons at highest risk for lung cancer mortality has been suggested as a way to improve screening efficiency.

Researchers from Tufts Medical Center compared the cost-effectiveness of a risk-targeted screening strategy to that of using National Lung Screening trial (NLST) criteria by estimating the quality-adjusted life-years (QALYs) gained relative to the cost of screening with each of these strategies. While high risk patients were more likely to have lung cancer detected, and targeted screening was more likely to avert lung cancer death over the seven years of the trial, those at higher risk were also older, had greater smoking exposure, and were more likely to have a

preexisting diagnosis of chronic obstructive pulmonary disease. These patients have a shorter life expectancy and a lower quality of life; this means that preventing a death in a higher-risk individual translates to fewer QALYs than preventing a death in someone at a lower risk. Moreover, LDCT screening high risk patients is also more costly because it leads to more invasive testing. Thus, applying such a risk model to target screening is unlikely to lead to substantial improvement in the cost-effectiveness of LDCT screening in terms of QALYs gained compared to the NLST criteria.

The authors of a related editorial from Memorial Sloan Kettering Cancer Center write that [lung](#) cancer is still one of the most deadly types of [cancer](#) in the U.S. and LDCT screening offers a potentially effective means to improve on that fact. Although risk-based identification of persons who should be offered [screening](#) is empirically superior to using the current cutoffs, the more pressing concern is why people, regardless of how their eligibility is defined, are not receiving the test.

**More information: Study:**

<http://annals.org/aim/article/doi/10.7326/M17-1401>

Editorial: <http://annals.org/aim/article/doi/10.7326/M17-3316>

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