New 2021 USPSTF Lung Cancer Screening Recommendation - What, Why and Next Steps

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Disclosures

• No financial disclosures
USPSTF Lung Cancer Screening Outline

• USPSTF Guideline history
• 2013 USPSTF Revision with LDCT screening
• 2021 USPSTF Revision update
• Next steps for implementation & reimbursement
## USPSTF LCS Guideline History

### V1 1996

<table>
<thead>
<tr>
<th>Population</th>
<th>Recommendation</th>
<th>Grade</th>
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<tbody>
<tr>
<td>Asymptomatic persons</td>
<td>Routine screening of asymptomatic persons for lung cancer with chest radiography or sputum cytology is not recommended.</td>
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### V2 2004

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<th>Population</th>
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<tr>
<td>Asymptomatic Adults</td>
<td>The U.S. Preventive Services Task Force (USPSTF) concludes that the evidence is insufficient to recommend for or against screening asymptomatic persons for lung cancer with either low dose computerized tomography (LDCT), chest x-ray (CXR), sputum cytology, or a combination of these tests.</td>
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## Recommendation Summary

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<thead>
<tr>
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<tbody>
<tr>
<td>Adults Aged 55-80, with a History of Smoking</td>
<td>The USPSTF recommends annual screening for lung cancer with low-dose computed tomography (LDCT) in adults aged 55 to 80 years who have a 30 pack-year smoking history and currently smoke or have quit within the past 15 years. Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.</td>
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Screening for Lung Cancer: U.S. Preventive Services Task Force Recommendation Statement

Virginia A. Moyer, MD, MPH, on behalf of the U.S. Preventive Services Task Force*

Description: Update of the 2004 U.S. Preventive Services Task Force (USPSTF) recommendation on screening for lung cancer.

Methods: The USPSTF reviewed the evidence on the efficacy of low-dose computed tomography, chest radiography, and sputum cytologic evaluation for lung cancer screening in asymptomatic persons who are at average or high risk for lung cancer (current or former smokers) and the benefits and harms of these screening tests and of surgical resection of early-stage non–small cell lung cancer. The USPSTF also commissioned modeling studies to provide information about the optimum age at which to begin and end screening, the optimum screening interval, and the relative benefits and harms of different screening strategies.

Population: This recommendation applies to asymptomatic adults aged 55 to 80 years who have a 30 pack-year smoking history and currently smoke or have quit within the past 15 years.

Recommendation: The USPSTF recommends annual screening for lung cancer with low-dose computed tomography in adults aged 55 to 80 years who have a 30 pack-year smoking history and currently smoke or have quit within the past 15 years. Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery. (B recommendation)


For author affiliation, see end of text.
* For a list of the members of the USPSTF, see the Appendix (available at www.annals.org).
This article was published online first at www.annals.org on 31 December 2013.
Implications of a USPSTF Grade B Recommendation

- Grade “B” grade indicates either:
  - high certainty that the net benefit is moderate or moderate certainty the net benefit is moderate to substantial, and that the particular service should be offered or provided

- Patient Protection and Affordable Health Care Act (PPACA) requires private insurers to cover without a co-pay, all medical exams or procedures that receive a grade “B” or higher from the USPSTF

- Does not specify that Medicare provides full national coverage

- Fall 2013 CMS received 2 requests for a national coverage decision; finalized NCD February 2015
Undercounts African American individuals - more likely to:

- Start smoking at a later age
- Smoke fewer cigarettes per day
- Have a longer duration of smoking
- Are less likely to quit - higher % are current smokers than whites
- Yet, tend to be diagnosed at an earlier age, and remain at higher risk of lung cancer compared with white smokers, even after accounting for individual-level socioeconomic status and other risk factors

- NLST included only 4% African American smokers
- Does not use an individual’s risk for lung cancer due to other risk factors such as occupational exposures, radon, family history, underlying lung diseases etc
- Does not address individuals who never smoked
Evaluation of USPSTF Lung Cancer Screening Guidelines Among African American Adult Smokers
Aldrich MC et al. JAMA Oncology 2019; 5(9):1318-1324

- Evaluated diagnostic accuracy of USPSTF criteria in a predominantly African American & low-income cohort (Southern Community Cohort Study, 48,364 ever smokers; 67% African American, observed for 12 years)

- Results:
  - Adjusting for age & smoking history, African American ever smokers at higher risk for lung cancer than White ever smokers
  - Smaller % of African Americans met USPSTF criteria than Whites (17% vs 31%)
  - Lowering pack-year criteria to 20-pack-years was associated with increased screening eligibility of African Americans, with equitable performance of sensitivity & specificity compared to whites across all ages; for a 55-year-old current African American smoker, sensitivity increased from 32.2% to 49.0% vs 56.5% for a 55-year-old white current smoker

- Conclusions: Current USPSTF guidelines may be too conservative for African Americans - race-specific adjustment of pack-year criteria would result in more equitable screening for African Americans at high risk for lung cancer
Objective: To determine if PLCOm2012 lung cancer risk prediction model more effectively selects African American ever-smokers for screening

- 883 ever smokers; 56.3% African American, 29.2% white, 7.8% Hispanic, 2.7% Asian
- Urban medical center serving racially & ethnically diverse population (2010-2019)
- Model incorporates 11 predictors: sociodemographics, medical history & smoking exposure variables

Results: PLCOm2012 model increased sensitivity for the African American cohort at lung cancer risk thresholds of 1.51%, 1.7%, and 2% per 6 years ($p < 0.0001$)

- @1.70% risk threshold, identified 71.3% African American cases vs USPSTF 50.3% ($p < 0.0001$); no difference in whites
- If PLCO 1.7% (+) & USPSTF(−), criteria missed by USPSTF were:
  - pack-years < 30 (67.7%)
  - quit time >15 years (22.5%)
  - age less than 55 years (13.0%)
Results:

- Of 64 African American ever smokers ineligible by USPSTF criteria because they were < 55 years of age, 23.4% would qualified with a risk threshold of 1.7%.
- Of 53 African American ever smokers ineligible by USPSTF criteria because they quit smoking >15 yrs ago, 49.1% would qualify.
- Of 193 African American ever smokers ineligible by USPSTF criteria because their smoking history was <30 pack-years, 40.4% would qualify.

Conclusion: PLCOm2012 model was preferable to the USPSTF criteria at identifying African American ever-smokers for lung cancer screening, & a broader use of this model in racially diverse populations may help overcome disparities in lung cancer screening and outcome.
References For Additional Information


223 publications. 7 randomized controlled trials (RCTs) (described in 26 articles; 86,486 participants) evaluated lung cancer screening with LDCT; the National Lung Screening Trial (NLST) and Nederlands Leuven Longkanker Screenings Onderzoek (NELSON) were the only adequately powered RCTs
Screening high-risk persons with LDCT can reduce lung cancer mortality and may reduce all-cause mortality but also causes false-positive results leading to unnecessary tests and invasive procedures, overdiagnosis, incidental findings, short-term increases in distress (from indeterminate results), and, rarely, radiation-induced cancers.

The evidence for benefits comes from two RCTs that enrolled participants who were more likely to benefit than the U.S. screening-eligible population and that were mainly conducted at large academic centers, potentially limiting applicability to community-based practice. (NNS to prevent 1 lung cancer death: NLST 323 over 6 yrs, NELSON 130 over 10 years)

Application of lung cancer screening with current nodule management protocols (e.g., Lung-RADS) might improve the balance of benefits and harms (Using Lung-RADS reduces false-positive results compared with the NLST criteria; using Lung-RADS would have prevented about 23 percent of all invasive procedures for false positives in the NLST)

Use of risk prediction models might improve the balance of benefits and harms, although there remains considerable uncertainty about how such approaches would perform in actual practice because current evidence does not include prospective clinical utility studies.
## Recommendation Summary

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**USPSTF Bulletin**

An independent, volunteer panel of national experts in prevention and evidence-based medicine

Effective now for clinical practice
Implications

- Doubles the number of people eligible for lung cancer screening
- Many more African American & female smokers will be eligible – data show that:
  - African Americans and women tend to smoke fewer cigarettes than white men
  - African Americans have a higher risk of lung cancer than white people

- “New evidence provides proof that there are real benefits to starting to screen at a younger age and among people with a lighter smoking history,” says USPSTF member Michael Barry MD “We can not only save more lives, we can also help people stay healthy longer.”

- “Some really good news from the changes to this recommendation is that it will mean more people are eligible for screening, including notably more African Americans and women,” says USPSTF member John Wong MD “Making screening for lung cancer available to people who have smoked less over time will help doctors support the health—and potentially save the lives—of more of their African American and female patients.”
Payor Implications for Extended Coverage

- With the linkage to the Affordable Care Act, private payors are required to cover lung cancer screening using the updated eligibility criteria up to one year from the start of the next plan year to update their coverage policies when USPSTF guidelines are changed, which will take through as early as March 2022 and as late as March 2023.

- A formal request to reopen the Medicare National Coverage Decision (NCD) has already been made in a joint letter from the American College of Radiology, the Society of Thoracic Surgeons and the Go2 Foundation for Lung Cancer.

- You can advocate now to your private payors to make the changes earlier.

- You can advocate now to your State agencies overseeing Medicaid services.
Urge Private Payors to Act Now

April 08, 2021

ACR Urges Top National Insurers to Update Lung Cancer Screening Coverage

The American College of Radiology® (ACR®) collaborated with the GO2 Foundation for Lung Cancer and the Society of Thoracic Surgeons to send a letter to the top five national private insurers (Aetna, Anthem, Cigna, Health Care Services Corporation, and UnitedHealthcare) requesting that the payers update their lung cancer screening (LCS) coverage policies in accordance with the updated United States Preventive Services Task Force (USPSTF) guidelines as soon as possible.

The April 1 letter urged the insurers to update their LCS coverage policies to reflect the USPSTF grade B recommendation that expands annual lung cancer screening with low-dose CT by lowering the start age to 50, and smoking pack-year eligibility criteria from 30 pack-year to 20-pack year. The previous recommendation included individuals age 55 to 80 with a 30-pack-year smoking history.

The Patient Protection and Affordable Care Act of 2010 requires insurers to cover preventive services with an “A” or “B” rating by the USPSTF at no cost to patients. However, payers are given up to one year from the start of the next plan year to update their coverage policies when USPSTF guidelines are changed. Given the impact the updated USPSTF recommendations could have on the population’s lung cancer diagnosis and death rate prevalence, the joint letter requests that the insurers update their LDCT lung cancer screening coverage policies immediately to save the largest number of lives possible.

Questions about private insurer coverage of LCS should be directed to Katie Keyser, ACR Senior Director of Economic Policy.

Here is a link to the letter if you are interested in the content to prepare your own letter for use with local/regional payors
Clinical Preventive Service Recommendation

AAFP Updates Recommendation on Lung Cancer Screening

Lung Cancer Screening, Adult

Grade: B recommendation

The AAFP supports the United States Preventive Services Task Force (USPSTF) recommendation for annual screening for lung cancer with low-dose computed tomography (LDCT) in adults aged 50 to 80 years who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years. Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.

The AAFP has reviewed the evidence and has determined there is sufficient evidence to support a B recommendation for lung cancer screening in adults at increased risk. However, the AAFP acknowledges that the harms from annual screening with LDCT are not well documented at this time and that there are considerable barriers to screening for lung cancer in the community setting. Future research is needed to determine the harms of annual screening with LDCT including overdiagnosis, unnecessary procedures due to incidental findings, and barriers to care among communities of color. (2021)
Thank you for helping to create lung cancer survivors, to lower the impact of lung cancer through prevention, early detection & assurance of optimal therapy, and to do so in a patient-centered, evidence-based manner that’s inclusive, diverse, proactive & visionary

Together we can create lung cancer survivors
Thank You

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