

## Screening of Lung Cancer: An Update

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Lung cancer is the leading cause of cancer-related death worldwide. Presently, most lung cancer is diagnosed clinically when patients present with symptoms, such as pain, weight loss, and persistent cough; unfortunately, these patients frequently have advanced lung cancer. Combination with the success of breast, cervical, and colon cancer screening—these facts have been the inspiration for developing an effective lung cancer screening (LCS) test. LCS, ideally will contribute to earlier detection of lung cancer before patients have symptoms and when therapeutics are more likely to be effective. Several previous data support using low-dose computed tomography (LDCT) of the thorax to screen selected patients who are at high risk for lung cancer whereas chest radiography is not recommended for LCS.

The National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines in Oncology (NCCN Guidelines) for LCS were developed in 2011 and have been updated every year. The NCCN Guidelines 1) describe risk factors for lung cancer; 2) recommend criteria for selecting individuals with high-risk factors for screening; 3) provide recommendations for evaluation and follow-up of lung nodules identified during screening; 4) discuss the accuracy of thoracic LDCT screening; and 5) discuss the benefits and risk of LDCT screening. The “Summary of the Guidelines Updates” section in the algorithm that available at NCCN.org describes briefly the new changes for 2018. The risks of LCS are futile detection of small aggressive tumors or indolent disease, quality of life (anxiety of test findings), physical complications from diagnostic workup, false-positive results, false-negative results, unnecessary testing and procedures, radiation exposure, cost, and incidental lesions, whereas the benefits of LCS are decreased lung cancer mortality, quality of life (reduction in disease-related morbidity, reduction in treatment-related morbidity, improvement in healthy lifestyles, reduction in anxiety/psychosocial burden), discovery of other significant occult health risks (e.g. severe but silent coronary artery disease, early renal cancer in upper pole of kidney, breast cancer, aortic aneurysm, and thyroid nodule).

In conclusion, LCS is not recommended for patients who are not able or willing to undergo curative therapy due to health problems or other major concerns. Shared decision-making aids could help when determining if LCS should be recommended. Risk calculators could help with decision-making for group 2 in the NCCN Guidelines, such as individuals who are more than 50 years old with at least 20 pack-year smoking history.

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