## Summary of Lung Cancer Screening Guidelines

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<th>Who should NOT get screened</th>
<th>Recommendations for an Ideal Screening Program</th>
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| American Cancer Society (ACS)        | Feb 2012 | • Annual screening in adults between ages 55-74 who meet the eligibility criteria of the NLST Note: Follow NLST protocol for annual screening  
• Adults who choose to be screened should follow the NLST protocol of annual LDCT until they reach age 74 years. | • Adults who do not fit the NLST entry criteria should not be screened. If lung cancer screening is requested, patients should be informed that at this time there is too much uncertainty regarding the balance of benefits and harms for individuals at younger ages and/or with less lifetime exposure to tobacco smoke and/or with sufficient severe lung damage to require oxygen (or other health-related NLST exclusion criteria) and therefore screening is not recommended. | • Initiate discussion about lung cancer screening with NLST criteria patient population. This discussion should include the benefits, limitations, and harms of screening.  
• Individuals who choose to undergo screening preferably should enter an organized screening program at an institution with expertise in LDCT screening with access to a multidisciplinary team skilled in the evaluation, diagnosis, and treatment of abnormal lung lesions.  
• Current smokers should be informed of their continuing risk of lung cancer, and referred to smoking cessation programs. Screening should not be viewed as an alternative to smoking cessation.  
• Eligible patients should make the screening decision together with their health care provider to help individuals clarify their personal values and facilitate in effective decision-making.  
• CXR should not be used for cancer screening. |
| American Association of Thoracic Surgery (AATS) | May 2012 | • Annual screening with LDCT for patients ages 55-79 with a 30+ pack year history of tobacco use. Rationale: There is no scientific evidence to stop screening after 3 yrs, there is an annual increase in risk as individuals age, median age of lung cancer is 74yrs, average life expectancy in US is 78.6yrs, lung cancer incidence increases beyond age 74, screening should add 7 yrs of life expectancy  
• Long term lung cancer survivors should have annual LDCT to detect second primary lung cancers until the age of 79 Rationale: Surveillance for recurrence for 4 years with diagnostic CT scans, then with annual LDCT scans  
• Annual screening with LDCT beginning at age 50 with a 20+ pack year history if additional co-morbidities produce a cumulative 5% risk of developing lung cancer over the following 5 years. Known risks: FEV1 <70%, environmental/occupational exposure, prior cancer/radiation therapy, genetic/family history. Future refinements: biomarkers, genetic/exposure risks. Screening in women may be deferred until after menopause. | • Screening should not be offered if treatment is impractical due to co-morbidity or functional status regardless of age. | • Lung cancer screening and treatment of early stage lung cancers should be done by qualified subspecialty teams included board certified thoracic surgeons, thoracic radiologists, pulmonologists and oncologists.  
• Lung cancer screening programs should support smoking cessation.  
• Data collection to study outcomes that are important for the practice of evidence-based medicine. |

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-smilow cancer hospital at yale-new haven • developed by the yale lung screening and nodule program at yale cancer center

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<td>American Lung Association (ALA)</td>
<td>April 2012</td>
<td>• LDCT screening recommended for those individuals who meet the NLST criteria</td>
<td>• LDCT screening should not be offered to patients who do not fit the NLST criteria</td>
<td>• Provide a screening service with access to multidisciplinary teams that can deliver the needed follow-up for the evaluation of nodules.</td>
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<td>National Comprehensive Cancer Network (NCCN)</td>
<td>Jan 2012</td>
<td>• High risk individuals should be screened for lung cancer: Age 55-74 and ≥20 pack year history. Smoking cessation &lt;15 years OR Age ≥50 and ≥20 pack year history of smoking and one additional risk factor* other than second hand smoke. *Risk factors: family history of lung cancer, history of COPD or pulmonary fibrosis, documented high levels of radon exposure, occupational exposure to silica, cadmium, asbestos, arsenic, beryllium, chromium, diesel fumes, and nickel, personal history of lung, lymphoma, head and neck, or a tobacco related cancer</td>
<td>• Individuals who are at moderate or low risk for developing lung cancer should NOT be screened: Moderate Risk: Age ≥50 yrs and ≥20 pack year history of smoking or second hand smoke exposure, with no additional risk factors. Low Risk: age &lt;50 yrs and/or &lt;20 pack year history of smoking</td>
<td>• Lung cancer screening with CT should be part of a program of care and should not be performed in isolation as a free-standing test.</td>
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<td>American College of Chest Physicians (ACCP)/American Society of Clinical Oncology (ASCO)/ACS/NCCN</td>
<td>May 2012</td>
<td>• Annual LDCT screening for smokers or former smokers who are age 55-74 and have smoked for 30 pack years or who have quit within the last 15 years. Note: Most effective duration/frequency screening is unknown.</td>
<td>• Individuals who have accumulated ≤30 pack years and are either younger than age 55 or older than age 74, or who quit smoking more than 15 years ago, or those individuals who have severe comorbidities that would preclude curative treatment and/or limit life expectancy</td>
<td>• Screening should be conducted in a center similar to the NLST centers, with multidisciplinary coordinator care and a comprehensive process for screening.</td>
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<tr>
<td>American College of Chest Physicians (ACCP)</td>
<td>May 2013</td>
<td>• Annual screening with low dose CT (LDCT) should be offered to smokers and former smokers who are age 55 to 74 and who have smoked for 30 pack-years or more and either continue to smoke or have</td>
<td>• CT screening should not be performed in individuals who have accumulated fewer than 30 pack-years of smoking or are either younger than age 55 or older than 74, or individuals who quit</td>
<td>• Counseling of potential benefits and harms of screening. Individuals who get screened should be enrolled into a registry to capture follow up testing, radiation exposure, patient experience, and smoking behavior.</td>
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<th>U.S. Preventive Services Task Force</th>
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<td><strong>U.S. Preventive Services Task Force</strong></td>
<td><strong>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.</strong> The USPSTF found fair evidence that screening with LDCT, CXR, or sputum cytology can detect lung cancer at an earlier stage than lung cancer would be detected in an unscreened population; however, the USPSTF found poor evidence that any screening strategy for lung cancer decreases mortality. Because of the invasive nature of diagnostic testing and the possibility of a high number of false-positive tests in certain populations, there is potential for significant harms from screening. The USPSTF could not determine the balance between the benefits and harms of screening for lung cancer.</td>
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- Counseling should include a complete description of potential benefits and harms so that individuals can decide whether to undergo LDCT screening.
- A number of important questions about screening could be addressed if individuals who are screened for lung cancer are entered into a registry that captures data on follow-up testing, radiation exposures, patient experience, and smoking behavior.
- Quality metrics should be developed such as those in use for mammography screening, which could help enhance the benefits and minimize the harm for individuals who undergo screening.
- Screening for lung cancer is not a substitute for stopping smoking. The most important thing patients can do to prevent lung cancer is not smoke.
- The most effective duration or frequency of screening is not known.