Lung Cancer Screening

Disclaimer: This algorithm has been developed for MD Anderson using a multidisciplinary approach considering circumstances particular to MD Anderson’s specific patient population, services and structure, and clinical information. This is not intended to replace the independent medical or professional judgment of physicians or other health care providers in the context of individual clinical circumstances to determine a patient’s care. This algorithm should not be used to treat pregnant women.

Note: Screening is only intended for asymptomatic individuals1,2 and should take place in the context of appropriate shared decision making3. Individuals undergoing lung cancer screening should have a 10-year life expectancy and no co-morbidities that would limit the diagnostic evaluation or treatment of any identified problem. The screening technique should be performed with a consistent technique and process.

### PRESENTATION

#### Presence of lung cancer symptoms?

- Yes
  - Proceed to diagnostic evaluation
- No
  - Low Risk: 
    - Age less than 50 years old and/or 
    - Less than 20 pack-year tobacco smoking history
  - High Risk: 
    - Age 50-80 years old and 
    - Greater than or equal to 20 pack-year tobacco smoking history and 
    - Current tobacco smoker or former tobacco smoker who has quit within the last 15 years

### RISK

- Screening not recommended
- If patient is a current tobacco smoker or a recent tobacco smoker who has quit within the past year, provide tobacco smoking cessation counseling and refer to the Tobacco Cessation - Adult algorithm

### SCREENING

- Annual low-dose CT lung screening5,6
- If patient is a current tobacco smoker or a recent tobacco smoker who has quit within the past year, provide tobacco smoking cessation counseling and refer to the Tobacco Cessation - Adult algorithm

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1 Refer to Small Cell Lung Cancer (SCLC) algorithm or Non-Small Cell Lung Cancer algorithm
2 Lung cancer screening should be avoided in patients that are currently undergoing cancer treatment (lung cancer or other malignancies) or that are under post-treatment surveillance for recurrent or metastatic disease. These cases should be evaluated on a case-by-case basis.
3 Refer to Appendix A for the Benefits and Risks of Lung Cancer Screening
4 Lung cancer symptoms include: 
  - Cough 
  - Hoarseness 
  - Unexplained weight loss 
  - Hemoptysis
5 Multi-detector thin-slice low dose CT chest without IV contrast
6 High risk patients aged 50-54 years old and 78-80 years old, and those with 20-29 pack-year tobacco smoking history are eligible by United States Preventive Services Taskforce (USPSTF) but are currently not covered by Centers for Medicare and Medicaid Services (CMS). Private insurance plans vary according to plan.

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APPENDIX A: Benefits and Risks of Lung Cancer Screening

Benefits
- Increase survival from lung cancer
- Identification of previously unknown major health risks
- Improvement of quality of life
- Reduction in disease-related morbidity, treatment-related morbidity, and mental, emotional, social, and spiritual health implications

Risks
- Detection of non-aggressive tumors or indolent disease
- Detection of incidental lesions
- Potential side effects and/or complications from diagnostic workup
- Inaccurate results from testing (e.g., false-positive results or false-negative results)
- Unnecessary testing and procedures
- Exposure to radiation
- Anxiety and stress from test results
- Financial burden
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SUGGESTED READINGS


This screening algorithm is based on majority expert opinion of the Lung Cancer Screening work group at the University of Texas MD Anderson Cancer Center. It was developed using a multidisciplinary approach that included input from the following:

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