

## CT Lung Screen (Risk and Benefits)

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CT lung cancer screening is intended for patients who meet any of the following criteria:

**Age 55–74 and smoked a pack a day for 30 years**

(or smoked 2 packs a day for 15 years)

**A current smoker or a previous smoker who quit in the last 15 years**

**No current symptoms related to Lung Cancer**

(Spitting up blood, unintentional weight loss of 15 lbs. If this is happening, call your doctor immediately)

**OR**

**Age 50 or more with a smoking history of 20 packs per year and one of the following:**

- Family History of Lung Cancer
- COPD or Pulmonary Fibrosis
- Exposure to radon, silica, cadmium, asbestos, arsenic, beryllium, chromium, diesel fumes, nickel, coal smoke and soot.

Most lung cancer is diagnosed clinically when patients present with symptoms (such as cough, chest pain, coughing up blood, weight loss); unfortunately, patients with these symptoms usually have advanced lung cancer. Ideally, an effective screening program will lead to earlier detection of lung cancer before these symptoms occur and when treatment is more likely to be effective. Early detection of lung cancer is an important opportunity for decreasing mortality. As with most screening programs, the benefits of screening should be weighed against the risks for each patient.

### BENEFITS

Decreased lung cancer related deaths- in general, when lung cancer is detected early (small tumor size), the 5 year survival rate is improved. Recently published results from the National Lung Cancer Screening Trial showed that LDCT decreased the relative risk of death from lung cancer by 20% compared to radiography alone.

Quality of Life

- Decrease in disease-related morbidity-conditions unrelated to lung cancer (COPD, other cancers, etc) may be addressed/treated earlier.
- Decrease in treatment-related morbidity- patients with early stage lung cancer may be eligible for treatment that would not otherwise be available for those with advanced disease (surgical removal and chemotherapy vs combination of chemotherapy and radiation or chemotherapy alone.
- Improvement in healthy lifestyles-smoking cessation.
- Reduction in anxiety/psychosocial burden-decreased anxiety after negative baseline screening examination.

### RISKS

Futile detection of small aggressive or indolent disease- some small tumors are very aggressive and may have already metastasized (spread to other areas of the body) despite early detection. Although lung cancer specialists generally have a strong opinion of the uniform fatality of untreated lung cancer, recent studies of some low-grade lung cancer show a potential for prolonged survival in some patients even without therapy. Some indolent tumors may not cause symptoms or cancer mortality;

therefore, patients do not benefit from screening and subsequent workup and treatment.

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#### Quality of life

- Anxiety of test findings- discomfort while waiting for test result, indeterminate results may result in mental anguish and additional testing.

Physical complications from diagnostic work-up- complications may arise from other procedures such as lung biopsies and surgery.

False positives- approximately 10%-43% of screening CT exams may reveal findings that indeterminate. About 7% of these patients will undergo an invasive procedure such bronchoscopy, biopsy, or surgery. Each with there own risks and potential harms. False negatives- overlapping blood vessels, lung fibrosis/scar tissue, or subtle lesions may result in obscuration or lack of detection of some lung cancers.

Unnecessary testing- discovery of incidental findings may result in further tests.

Radiation exposure- Screening lung cancer CT uses low doses of radiation which is about 4-5 times lower than a routine chest CT. However, the radiation dose from screening CT is about 10 times that of a regular chest X-ray.

Cost- cost of baseline screening CT, follow-up CTs, and possible additional testing.

#### Incidental lesions



## Contact Info


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