



Lung Cancer Screening



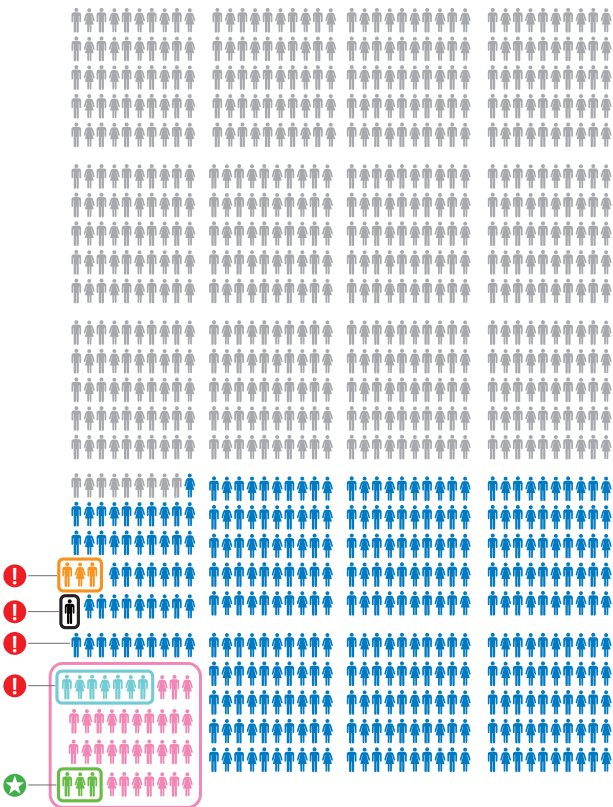
We recommend screening for lung cancer using low-dose computed tomography (low-dose CT) in adults who

- are aged 55–74
- are current smokers or former smokers who quit within the last 15 years
- have smoked one pack a day for at least 30 years (or two packs a day for 15 years or equivalent; i.e., 30 “pack-years”)

If you think you meet all of these criteria, you should talk to your primary care provider about being screened once a year for up to three years in a row.

We do not recommend being screened for lung cancer with a chest x-ray.

Screening 1000 eligible people with low-dose CT (annually for 3 years)



	609	will have a negative low-dose CT scan result	
	40	will be diagnosed with lung cancer	
	351	will have a positive scan result and find out after further testing that they do not have cancer (false positive)	
	7	of the 40 diagnosed lung cancers would not have caused illness or death (overdiagnosis)	Harm
	3	will have major complications from invasive follow-up tests	
	1	will die from invasive follow-up testing	
	3	fewer people will die from lung cancer (vs. when screening with chest x-ray)	Benefit

1. What is low-dose CT and why should I be screened with it?

- Low-dose CT is a very detailed scan of your lungs and it can pick up much more than a chest x-ray can.
- By being screened with low-dose CT, you are more likely to detect lung cancer when the disease is at an early stage, which can make treatment more successful.

2. Why should I not be screened with chest x-ray?

- There is no demonstrated benefit of screening for lung cancer with chest x-ray (e.g., better survival after treatment), an abnormal chest x-ray test result could lead to harms from an invasive follow-up test.

3. Why should I be screened only once a year for 3 years?

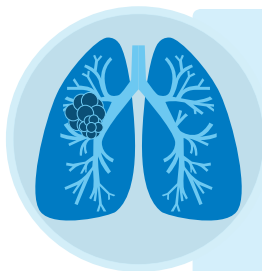
- Currently, we have evidence only on the benefits and harms of annual screening for three years in a row.

4. What happens if I receive a positive low-dose CT scan result?

- Most people who receive a positive low-dose CT scan result do not really have lung cancer (these are called false positives).
- If you receive a positive scan result, you may go through additional testing to confirm whether or not you have lung cancer. Some of these follow-up tests can be invasive, and there is a risk of major complications or, possibly, death.

Being screened is an individual preference. Because of the small chance of benefit, and the risk of possible harms, you should discuss your decision with your primary care provider.

Lung Cancer Screening

**Recommendations**

1. For adults aged 55–74 years with at least a 30 pack-year smoking history who currently smoke or quit less than 15 years ago, we recommend annual screening with low-dose computed tomography (LDCT) up to three consecutive times. *Weak recommendation*
2. For adults aged 18–54 and 75+, regardless of smoking history or other risk factors, we recommend not screening for lung cancer with LDCT. *Strong recommendation*
3. For adults aged 18 years and older, we recommend not screening for lung cancer with chest x-ray with or without sputum cytology. *Strong recommendation*

These recommendations apply to asymptomatic persons who meet the screening criteria; they **do not apply** to persons who have a history of lung cancer or are suspected of having lung cancer.

1. How should I implement a weak recommendation to screen with LDCT?

- A weak recommendation implies that you should have a discussion with your patients about the benefits and harms of screening for lung cancer with LDCT (including false positives, side effects of invasive follow-up testing, and overdiagnosis).
- Help them make a screening decision that is consistent with their values and preferences.

2. Why should I not screen with LDCT in patients who do not meet the age or smoking history criteria specified above?

- There is no evidence showing that there are benefits of screening those who do not meet the recommended age range and smoking history criteria.

3. Why should I not screen using chest x-ray?

- There is no evidence showing that screening for lung cancer with chest x-ray (with or without sputum cytology) improves patient-important outcomes, but there are known harms, including false positives, side effects of invasive follow-up testing (e.g., bronchoscopy, needle biopsy, thoracotomy, and thoracoscopy) and overdiagnosis.

Because of the potential for screening-related harms, LDCT and subsequent management **should ONLY be carried out in health care settings with expertise** in early diagnosis and treatment of lung cancer.

4. Why screen annually for three years in a row?

- It is possible that longer or more intensive screening might yield additional benefits, but there is not strong evidence (from an RCT) to support such a recommendation.

5. What should I do if LDCT is not available in my area?

- Refer to a centre where LDCT scans and expertise in early diagnosis and treatment are available.
- In all cases and at any age, smoking cessation is a recommended course of action.

Screening 1000 eligible people with LDCT vs. chest x-ray

- 231 more people receive a positive test result
- 4–5 fewer late-stage lung cancers are found
- 8–9 more early-stage lung cancers are found
- 3 more people are diagnosed with lung cancer
- 3 fewer people die from lung cancer