

Preventive Medicine: Lung Cancer

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Lung cancer is the pre-eminent cause of death in the US. Most cases are diagnosed after 65 years of age. Smoking remains the most common risk factor. In order to diagnose lung cancer at an early stage, the U.S. Preventive Services Task Force has given recommendations for screening in certain age groups and individuals. Low-dose CT (LDCT) scan of the chest is used for screening purpose. Screening begins at the age of 55 and continues until the person is 81 years old.



Introduction

Lung cancer is considered the most common cancer in the world, and tobacco smoking is a recognized major modifiable risk factor leading to the disease. Cessation of tobacco smoking reduces the incidence and mortality by about 90%.

Epidemiology

Considering gender-based statistics, breast cancer in women, and prostate cancer in men, are more common. Almost 14% of all the new cases are of lung cancer. In 2017, the American Cancer Society estimated lung cancer incidence in US populations.

- About 116,990 new cases of lung cancer in men and 105,510 new cases in women
- About 84,590 deaths from lung cancer in men and 71,280 in women

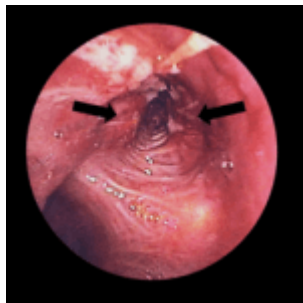


Image: "Lung cancer in the left bronchus, as seen with a bronchoscope" by JHeuser.
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Lung cancer is the leading cause of death in America. More people die of lung cancer each year than of prostate, breast, and colon cancers combined. The individuals diagnosed with lung cancer are usually ≥ 65 years. Only about 2% of the diagnosed cases are in people younger than 45 years.

The chances of developing lung cancer for smokers and non-smokers during their lifetime are as follows:

- 1 in 14 (for men)
- 1 in 17 (for women)

Smokers, however, have a greater risk than non-smokers.

Screening

Lung cancers are usually at an advanced stage by the time they are diagnosed, so they are difficult to treat. However, screening tests have made it easier to diagnose cancer earlier in high-risk patients. Early diagnosis can improve the mortality rate.

A low-dose CT (LDCT) scan of the chest is used to screen for lung cancer. LDCT uses less radiation, and in contrast to standard CT scan, it does not require intravenous contrast dye.

National Lung Screening Trial (NLST)	USPSTF
NNS 312 to prevent one lung cancer death in five years with three studies	Annual low-dose CT between the ages of 55 to 80 years if: <ul style="list-style-type: none"> • At least a 30 pack-year smoking history • Current smoker or quit smoking in the past 15 years

Screening criteria

Who Should Be Screened?

According to the [U.S. Preventive Services Task Force](https://www.uspreventiveservicestaskforce.org/) recommendations, the following people should undergo yearly lung cancer screening with LDCT:

- Individuals with a history of heavy (≥ 30 pack-years) smoking

- Individuals who are smokers or have quit smoking within the past 15 years
- Individuals between 55 and 80 years old

Pack years: Smoking one pack of cigarettes each day for one year is equal to 1 pack year.

When to stop screening

The U.S. Preventive Services Task Force recommends that the following groups of people should no longer receive yearly lung cancer screening with LDCT:

- People \geq 81 years of age
- A person who has not smoked for the past 15 years
- An individual who develops a certain health condition that limits life expectancy or the ability to undergo surgery in case of a lung cancer diagnosis

References

National Comprehensive Cancer Network Clinical Practice Guidelines in Oncology. Lung cancer screening. Version 2. 2016.

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