

After conducting a comprehensive review of the medical evidence, including the results of a recent large clinical trial, on December 31, 2013, the U.S. Preventive Services Task Force (USPSTF or Task Force) issued a final recommendation statement on screening for lung cancer. This fact sheet will help you implement a lung cancer screening program and discuss lung cancer screening with your patients.

## The Task Force Recommendation on Lung Cancer Screening With Low-Dose Computed Tomography

The USPSTF recommends annual screening for lung cancer with low-dose computed tomography (LDCT) in persons age 55 through 80 years with a 30 pack year history of smoking who are currently smoking or have quit within the past 15 years. Screening should be discontinued once the individual has not smoked for 15 years or develops a health problem significantly limiting either life expectancy or ability or willingness to undergo curative lung surgery.

### Population

This recommendation applies to people age 55 through 80 years with no signs or symptoms of lung cancer who are current smokers or have quit within the past 15 years. Within this population, the magnitude of the benefit for each individual depends on that person's risk for lung cancer; people who are at the highest risk for lung cancer are most likely to benefit from screening.

### Evidence Base for Screening

This recommendation is based largely on the National Lung Screening Trial (NLST), the largest randomized controlled trial to date with more than 50,000 patients. The Task Force used modeling based on the NLST data to assess the benefits and harms of screening programs for varying populations. Based on the trial data and the model, the Task Force concluded that a reasonable balance of benefits and harms is achieved by screening people from age 55 through 80 years old who are current smokers or have quit within the past 15 years.

### Expected Benefits of Screening

Evidence suggests that this screening program would detect approximately one half of lung cancer cases at an early stage, at which surgery with curative intent is an option. Right now, approximately 160,000 people die from lung cancer each year. If the Task Force's recommendation were to be fully implemented, it could save about 20,000 lives each year.

### Potential Harms of Screening

Lung cancer screening has significant harms, most notably the risks of false-positive tests and incidental findings that lead to a cascade of testing and treatment that may result in significant harms, including having unnecessary invasive procedures. Evidence shows that if 1 million people were screened, approximately 250,000 people would experience a false positive result. Although most of the false positive results can be resolved with further imaging, results from the NLST suggest that about 8,000 people will need an invasive procedure to prove that the finding on the screening test is not cancer. Overdiagnosis and radiation exposure are also potential harms.

## Maximizing the Benefits of a Lung Cancer Screening Program

We recognize that the body of evidence on the effectiveness of screening for lung cancer will continue to evolve, which may help the Task Force further clarify its recommendation in the future. What we know now, is that lung cancer screening can save lives and prevent deaths from lung cancer, and that the benefits of screening can be maximized if health care professionals consider the following:

- 1. Limiting screening to people who are at high risk.** Based on current evidence, the Task Force recommends that screening be limited to people between 55 and 80 years old, who have a 30-pack-year history of smoking and are current smokers or quit less than 15 years ago. While future research will likely help the USPSTF refine the criteria for screening, possibly removing some people now considered at increased risk and including others who are not currently included, at this time health care professionals should limit screening to those currently defined as being at high risk. Additionally, most trials, including the NLST, only enrolled people who were generally healthy. The benefit of screening may be significantly less in people with serious medical problems and there is no benefit in screening someone for whom treatment is not an option.
- 2. Accurately interpreting the images produced from the LDCT.** The evidence on the benefits of lung cancer screening comes from research conducted in large academic medical centers with expertise in diagnosing and managing lung cancer. Those benefits are most likely to be duplicated in clinical settings that have high rates of diagnostic accuracy using LDCT.
- 3. Resolving most false-positive results without invasive procedures.** False-positive results occur in a substantial proportion of people screened; 95 percent of all positive screens do not lead to a diagnosis of cancer. To help reduce the harms associated with false-positive test results, health care professionals could consider resolving false-positives with further imaging and watching lesions over time rather than with invasive procedures.

Most importantly, the Task Force recommends that everyone enrolled in a lung cancer screening program receive interventions to help them stop smoking. Most lung cancer deaths cannot be prevented by screening, and smoking cessation remains a critical way to help reduce lung cancer diagnoses and deaths.

## Talking With Your Patients About Lung Cancer Screening

Explain the facts about lung cancer and who the evidence shows will receive most benefit from screening. Use this fact sheet or the information sources below. Discuss the benefits and harms of not only LDCT screening itself, but of potential subsequent diagnostic testing and treatment. Help your patient understand if he or she is at high risk for lung cancer and should consider getting screened.

Lung cancer screening is most beneficial for those at high risk. Use the scenarios below to help explain to a given patient why he or she may or may not benefit from screening.

Patient Scenarios		Discussion Points
<b>Patient Scenario #1</b>	Current smokers between age 55 and 80 years who have smoked 30 pack-years and request lung cancer screening.	<p>Discuss the importance of smoking cessation, and that quitting smoking is the most effective way not only to reduce the risk for lung cancer, but also for a whole range of serious medical conditions, and recommend that they quit.</p> <p>Explain that the screening test can prevent some, but not all lung cancer deaths, and screening is not a substitute for quitting smoking. The CT scan may find things that require further testing, and 95 percent of what is found is not lung cancer; thus screening is likely to result in additional testing and possible overdiagnosis.</p> <p>Emphasize that there's a significant risk for these patients to develop lung cancer and that most people who are diagnosed with lung cancer die from the disease. This screening program can provide some hope for preventing death from lung cancer by detecting some of these lesions at a point when they are most treatable.</p>

Patient Scenarios		Discussion Points
<p><b>Patient Scenario #2</b></p> <p>Patients who are just outside of the screening criteria (too old, too young, don't have long enough smoking history, or quit smoking more than 15 years ago) and ask about screening.</p>	<p>Emphasize that they do not currently fit the screening criteria, and not all people who may be at risk for lung cancer will benefit from screening because there are potential harms, including false-positives and exposure to radiation.</p> <p><b>For patients who are still smokers:</b> State that the most important thing they can do to prevent lung cancer is to quit smoking, which is more effective than screening. For every year they don't smoke, their risk for lung cancer (and for a variety of other diseases, as well) goes down.</p> <p><b>For patients who have already quit:</b> Let them know that quitting is the most important thing he or she can do to prevent lung cancer and their risk for developing lung cancer goes down every year since they quit smoking. Explain that ordering the screening test will likely do more harm than good because they are not considered high risk.</p> <p>Explain that there is not enough evidence to recommend screening in people at lower risk for lung cancer and explain the potential harms of screening.</p>	
<p><b>Patient Scenario #3</b></p> <p>Patients who fit all screening criteria (age, current or recent former smoker, smoking history) but have a significant co-morbid condition.</p>	<p>Explain that while lung cancer screening has been demonstrated to be effective in some people, there are risks associated with false positive tests and treatment, such as invasive procedures and surgeries. Because of their co-morbid condition, they may be at greater risk for harms from any invasive procedures resulting from the screening tests.</p> <p>If they are current smokers, discuss the importance of smoking cessation, and that quitting smoking is the most effective way to reduce the risk for lung cancer (and for a variety of other diseases, as well), and recommend that they quit.</p>	

## The Bottom Line







Screening high-risk patients for lung cancer will save lives. In order to maintain a favorable balance of benefits versus harms, it must be limited to those at high risk and implemented carefully.

The most important way to prevent lung cancer (and for a variety of other diseases, as well) is to help smokers stop smoking and protect non-smokers from being exposed to tobacco smoke.

### Additional Information for Health Care Professionals

-  [Final recommendation](#)
-  [Final evidence report](#)
-  [Modeling Study](#)
-  [Patient and Physician Guide: National Lung Screening Trial \(NLST\) \(National Cancer Institute\)](#)

### Additional Information for Patients

-  [Task Force Consumer Fact Sheet](#)
-  [SmokeFree.gov \(U.S. Department of Health and Human Services\)](#)
-  [What You Need to Know About™ Lung Cancer \(National Cancer Institute\)](#)
-  [Lung Cancer \(MedlinePlus\)](#)
-  [Lung Cancer Screening \(National Cancer Institute\)](#)
-  [Patient and Physician Guide: National Lung Screening Trial \(National Cancer Institute\)](#)