**Lung cancer screening**

Use this Grid to help you and your healthcare professional talk about whether or not to screen for lung cancer.

<table>
<thead>
<tr>
<th>Frequently asked questions</th>
<th>Screening using low dose computed tomography (CT)</th>
<th>No screening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who is it offered to?</td>
<td>To high-risk smokers or ex-smokers, aged 55 to 80, who have smoked at least 1 pack a day for thirty years. It is not offered to those who have symptoms of lung cancer. Ex-smokers are offered screening if they have quit in the last 15 years.</td>
<td>Only those at high risk of lung cancer are offered low-dose CT for screening. People who are not at high risk of lung cancer are not offered screening because there is no proven benefit to them.</td>
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<td>How is lung cancer found?</td>
<td>It is often found using low-dose CT: an x-ray offered once a year. It takes a few minutes and needs no special preparation.</td>
<td>Without screening, lung cancer is usually found after symptoms are present or when other tests are done. In these cases, lung cancer is more likely to be found at a later stage.</td>
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<td>What are the benefits of screening?</td>
<td>Low-dose CT finds signs of possible lung cancer in roughly 1 in every 100 screened (1%), and at a time when treatment has a better chance of success. 65 in every 100 scans (65%) will not find any problems.</td>
<td>Does not apply.</td>
</tr>
<tr>
<td>What are the harms or risks?</td>
<td><strong>False alarms.</strong> Roughly 25 in 100 people (25%) have small nodules found in their lungs. To make sure these nodules are not cancer, more tests are done, for up to 2 years.  <strong>Unnecessary treatment.</strong> Some suspicious nodules might be treated even though they might never cause problems.  <strong>Finding more problems:</strong> Low-dose CT sometimes reveal findings in other parts of the body. These may lead to more tests and possible treatment.  <strong>Radiation:</strong> Consider the possible benefit of finding lung cancer early against the small radiation risk of many CTs.</td>
<td>If you know that you are at risk for lung cancer and do not get a low-dose CT, you might worry that you have missed a chance to find the cancer early. If cancer is found because of symptoms like unexplained weight loss and coughing up blood, then the cancer is probably more advanced, and treatment will be more difficult.</td>
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<tr>
<td>What are the possible results?</td>
<td>25 people in every 100 screened (25%) will be told they have nodules, but few of these will be cancer. More tests will probably be done. Roughly 10 in every 100 people screened (10%) will be told about other problems, such as infections or lung damage from smoking.</td>
<td>Does not apply.</td>
</tr>
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</table>
Testing for Lung Cancer in People at High Risk

Lung Cancer Facts
In the United States, lung cancer is the leading cause of death from cancer. It occurs more commonly after age 60 years.

Some people are at a higher risk of developing lung cancer because of their smoking history along with their older age.

Smokers can reduce their risk of developing and dying from lung cancer by quitting because the risk of lung cancer steadily increases as long as smoking continues.

If lung cancer is diagnosed at an earlier stage, while it is small and before it has spread, people have a better chance of living longer.

Lung Cancer Screening
Screening is the medical term for testing to find a disease before it causes any symptoms. Regular x-rays have been tried for lung cancer screening but did not help most people to live longer. The National Cancer Institute recently finished an important study on lung cancer screening called the National Lung Screening Trial (NLST). This study showed that screening in “high-risk” people using low-dose computed tomography, or low-dose CT scan (LDCT), saved lives compared with screening with a chest x-ray. People at high risk of lung cancer who have this test every year will reduce their risk of dying from lung cancer by 20% or more. About one lung cancer death was prevented for every 320 people in the NLST who received at least one LDCT examination.

People who meet certain conditions for lung cancer screening (Table 1) should talk with their doctor about being tested. These people should decide whether they want to be tested after a thorough discussion and understanding of the benefits, potential harms, and limitations of screening. Lung cancer screening should only be done in a facility that has experience in lung cancer screening and the management of abnormal findings.

Screening Recommendations From the American Cancer Society
The American Cancer Society thoroughly reviewed the subject of lung cancer screening and issued the following recommendation.

Your doctor or nurse should ask you whether you smoke or used to smoke. If you are between 55 years and 74 years of age and are in fairly good health and have at least a 30-pack-year smoking history and either still smoke or quit within the past 15 years, then your doctor or nurse should talk to you about lung cancer screening. Before you have this discussion, your doctor or nurse should know that high-quality facilities are available to do the screening and follow-up and provide treatment if needed.

During this discussion, your doctor or nurse should talk to you about the benefits, limitations, and potential harms of screening.

Benefit. Screening with LDCT has been shown to reduce the risk of dying from lung cancer.

Limitations. LDCT will not find all lung cancers or all lung cancers early, and not all patients who have a lung cancer diagnosed by LDCT will avoid death from lung cancer.

Harms. There is a chance of a false-positive result. This means that LDCT might show something wrong when there really is nothing wrong. A false-positive test will require more testing, and an invasive procedure (like removing a sample of lung tissue) might need to be done. Fewer than one in 1000 patients with a false-positive test have a major complication when they have had further testing or procedures. Some deaths from complications of follow-up testing have been reported, but this is rare and most often occurs in patients who do have lung cancer. If you are a current smoker, you should receive smoking cessation counseling. You should be told about your continuing risk of lung cancer and referred to a smoking cessation program. Screening is not an alternative to stopping smoking.

Making Your Decision About Lung Cancer Screening
If you are eligible for screening (based on your age and smoking history), you should talk through your thoughts and feelings about screening with your doctor or nurse. They may be able to help you decide what is best for you.

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<table>
<thead>
<tr>
<th>CHARACTERISTIC</th>
<th>CRITERIA</th>
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<tbody>
<tr>
<td>Age</td>
<td>55-74 years, with no signs or symptoms of lung cancer.</td>
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</tbody>
</table>
| Smoking history | Current or former smoker with 30-pack-year history.
  (The pack-year history is the number of years you smoked multiplied by your usual number of packs
  of cigarettes per day. For example, someone who smoked about 2 packs per day for 15 years has 30
  pack-years of smoking. A person who smoked one pack per day for 30 years also has 30 pack-years
  of smoking.) |
| Active smokers | Current smokers should also be strongly urged to enter a smoking cessation program. |
| Former smokers | Former smokers must have quit within the past 15 years. |
| General health | You should not be screened if you have any metallic implants or devices in your chest or back (as these
  will interfere with the CT scan), if you require oxygen at home, or if you are in poor health. |

People who are more likely to decide to be tested with LDCT every year are those who:

- Value the opportunity to reduce their risk of dying from lung cancer.
- Are willing to accept the risks and costs of having an LDCT and the likelihood of having more tests.
- Are willing to accept that, although rare, there might be complications and death from the testing.

People who are less likely to decide to be tested with LDCT every year are those who:

- Place greater value on avoiding testing that carries a high risk of false-positive results and a small risk of complications.
- Understand and accept that they are at a higher risk of death from lung cancer than they are from screening complications.

If you do not meet the above criteria for screening (as shown in Table 1), then you should not be screened.

If you choose to be screened, you should go to a facility that has experience in LDCT screening and has a team of health professionals skilled in the diagnosis and treatment of abnormal lung lesions. If an experienced facility is not available, ask your doctor or nurse about a referral to a center that has the experience. If an experienced facility is not available and you cannot travel to one, then you should not be screened. The risks of screening at a facility that does not meet these conditions may be higher for you.

At this time, government and private insurance programs are not likely to provide coverage for an LDCT done for lung cancer screening.

Your doctor or nurse should help you determine if your insurance will provide coverage and, if not, help you know how much you will have to pay.

There is firm evidence that screening people who are considered “high risk” reduces death rates from lung cancer.