



Lung cancer screening

Screening is about testing people who may be at risk for early stages of an illness before they have any symptoms, and giving them access to a proven treatment. To make it worthwhile, screening:

- must be reliable at picking up the illness at an early stage
- must be simple and available to the population
- must do more good than harm overall to people taking part

Why screen for lung cancer?

By far the best outcomes in treating lung cancer are from finding the disease as early as possible. The early stages of lung cancer can show few symptoms, so screening is a practical way of finding lung cancer as early as possible. Most people who are screened will not be found to have lung cancer.

How is lung cancer screening done?

Current practice uses low dose computerised tomography (also called a low dose CT scan or LDCT). These are special X-ray machines that only need a low dose of radiation to take a series of pictures of the inside of the body, building a three-dimensional image that can be used for accurate diagnosis.

The newest LDCT scanners allow these pictures to be taken very quickly (in one breath hold). The combined pictures are clear enough to be able to identify even very small tumours.

Does screening work?

The first major evidence came from the National Lung Cancer Screening Trial (NLST) in the USA, published in 2013. It showed that LDCT could save one person's life for every five people who currently die from lung cancer.

If lung cancer is found by screening, it is most often at an early stage, (called stage I disease), and those people will likely need only surgery and have a much better outcome.

Who gets screened?

Though guidelines may vary from country to country, screening is likely to focus on, for example, someone at high risk of getting lung cancer who is:

- generally in good health
- symptom free
- aged 55-74
- a current smoker or someone who has quit smoking in the past 15 years

Other factors may put people in the screening category, but this will depend on the approach to screening of the country in which you live and may include having a family history of lung cancer, previous respiratory disease or exposure to asbestos.

Speak to your doctor if you are worried that you may be in a high risk group.

Routine screening for lung cancer remains limited across the world, however, many experts now believe there is evidence to support screening as a way to save lives. Some countries like England, Croatia, and France have started programmes or pilots of their own, in advance of a mainstream medical provision.

If you are unsure whether lung cancer screening is taking place in your country, please check with your local lung cancer organisation.

If you have symptoms of lung cancer, talk to your doctor. Symptoms of lung cancer may include:

- a cough that won't go away
- blood in your spit
- feeling breathless for no reason
- chest or shoulder pains
- coughing up blood

Do not wait for an invite to a screening appointment.

What happens after the screening is done?

The screening process takes LDCT scans that are checked to see if a person's lungs are clear. Most often, this is the case. Sometimes a scan can pick up unusual spots or areas that may show that normally healthy, air-filled lung tissue has become solid. These are called nodules.

Importantly, finding a nodule doesn't necessarily mean there is cancer. For example, harmless nodules can remain after a simple chest infection. Nodules are relatively common – at least half of people will have them by the time they reach 50 years old. However, most (over 95%) are not cancer.

What if there are nodules?

If screening shows that you do have one or more nodules, your healthcare team will work with you to put together an appropriate monitoring and testing plan. Screening programmes have guidelines in place that direct what happens next.

Screening is not a one-time check. Regular screening is needed, yearly, for as long as your doctor recommends, so that any developing cancer will be found as early as possible.

What are the risks?

Cancer screening tests are not perfect. Some cancers can be missed (false negative), and some unusual spots may look like a cancer when they are not (false positive) meaning people may get further unnecessary tests.

LDCT scans expose people to very low levels of radiation. This level of radiation is more than an X-ray but much lower than a regular CT scan that you might have if you have symptoms of cancer.

You will receive about the same amount of radiation from six months in your natural environment. This is at a level similar to a mammogram for breast cancer screening.

What next for screening?

The evidence points to LDCT screening as being an important step in finding lung cancer early and increasing survival rates. As scans become more sensitive with lower radiation levels, treatments and outcomes can only get better.

Research into other screening approaches includes:

- better, more accurate scanners
- looking in saliva or a blood sample for microscopic evidence of small lung tumours before they are big enough to be seen on CT scans
- breath testing to find substances that change if there is lung cancer

What if my country doesn't have a screening programme?

If you think you are in a high risk group, speak to your doctor, hospital or local lung cancer organisation about your concerns. They will tell you about healthcare options in your country and help you find out what can be done.

Summary

Screening for lung cancer using CT scans is effective in finding lung cancer early in people at high-risk. This is great news and it means more and more people will get treatment for early-stage lung cancer and have better long term prospects.

While it may not be as widely available as people may like, there are pilot projects running in many countries across the world.

Check with your local lung cancer organisations to see if there are any such projects near you.



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