

Benefits and Harms of Lung Cancer Screening

For people who have smoked for many years, lung cancer is a common cause of death. **When lung cancer is detected early, it can often be cured** by treatments such as surgery or radiotherapy, which may save the person's life. Lung cancer screening uses low-dose computed tomography (CT) scans to find lung cancer before it causes symptoms.

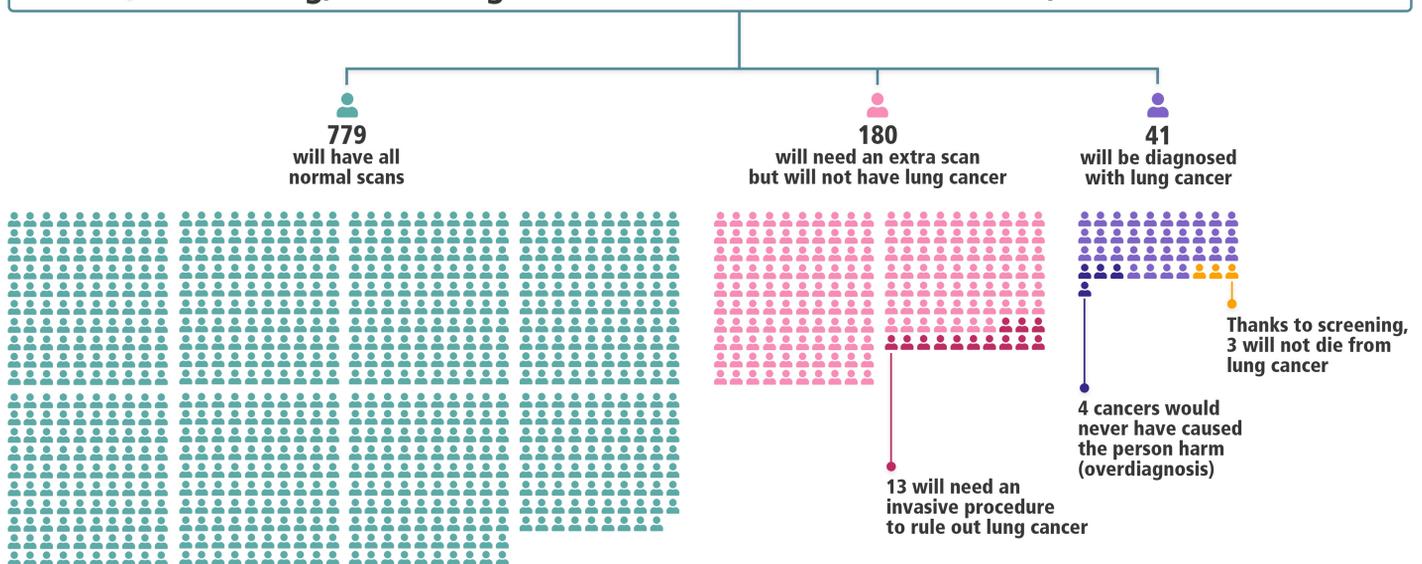
Lung screening is only considered for older people who have smoked for many years. For example, in the USA, lung screening is recommended once a year for people who:

- are aged 55–80 years,
- currently smoke or quit smoking within the past 15 years,
- have smoked 1 pack of cigarettes a day for 30 years or more, or a similar amount, and
- are willing and able to have surgery to cure lung cancer.

People taking part in lung screening are offered counselling about not smoking. Screening and counselling are offered as long as all criteria are met and the person is free of any health problem that limits their life expectancy. **Your health-care provider can advise on whether you meet these criteria and help you decide whether lung screening is right for you.**



Any screening programme has potential benefits and harms. For lung cancer screening, if 1000 eligible individuals are screened 3 times, it is estimated that:



Will screening prevent death from lung cancer?

Many people with lung cancer are diagnosed at a late stage, and most will die from the disease. Screening can find lung cancer early and is one of the best tools we have to lower the chance of dying from lung cancer. However, some people who take part in screening will still die from lung cancer.

What happens to people who need an extra scan?

Some people have an abnormal result that needs monitoring. They will need to come back in 3 or 6 months to have another low-dose computed tomography (CT) scan. Most of these people are found not to have lung cancer, and they will not need any more tests until their next screen. Low-dose CT scans can also show other health problems that need medical advice.

Why would an invasive procedure be needed?

When screening shows something that is strongly suspected to be lung cancer, it may need to be investigated, for example by inserting a needle into the chest or by surgery. These procedures are rare among people who do not have lung cancer. However, for people with lung cancer, most or all will need invasive procedures and treatments.

What does it mean that some lung cancers would never have caused the person harm?

Screening aims to find cancer before the person experiences any symptoms. This means that some cancers found by screening would not have caused the person any harm (symptoms) before they died for another reason. This is called overdiagnosis.

This information comes from the 2002–2009 United States National Lung Screening Trial, where participants were offered screening once a year for 3 years and then followed up for 4 additional years without screening. The outcomes represent what happens when the current Lung-RADS protocol (version 1.0) is used to interpret the scans. When people are screened more than 3 times, more lives may be saved. Rarely, someone without lung cancer will have a major complication from a procedure (about 1 in 2500), or will die of any cause within 60 days of their procedure (about 1 in 5000).