

CT scans lower lung cancer deaths, according to study

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A lung CT scan shows a tumor in its early stages. Credit: Dr. Bradley Pua

In response to a recent national study showing that CT scans in a select high-risk population lower lung cancer deaths, New York-Presbyterian/Weill Cornell Medical Center has launched a lung cancer screening program for those at risk for developing the disease. The program uses low-dose CT scans to detect cancer in its earliest stages, giving patients a significantly better chance to survive the disease. Lung cancer is the leading cause of cancer death for men and women in the United States and current data shows that most lung cancers are diagnosed at an advanced stage.

For many years, doctors relied on chest X-rays to identify tumors, but

their limited sensitivity and clarity made diagnosis difficult as symptoms of [lung cancer](#) usually do not appear until the disease is already in an advanced stage. In 2011, the National Cancer Institute's National Lung Screening Trial—the first national multicenter study on the efficacy of low-dose CT scans—established low-dose helical CT as the first validated [screening](#) test that can reduce mortality due to lung cancer. The nearly decade-long study found a 20 percent lower lung cancer death rate among current or former heavy smokers who were screened with low-dose helical CT compared to those screened by chest X-ray. Low-dose CT scans detected twice as many Stage 1A cancers as chest X-rays. In addition, advances in CT technology have led to new equipment that can deliver less than 20 percent of the radiation dose used in an average diagnostic chest CT exam, while still providing clear images.

As a result of the trial, the United States Preventative Services Task Force (USPSTF) updated its guidelines in 2013 to recommend annual screening for lung cancer with low-dose CT in adults age 55 to 80 who have a 30 pack-year smoking history (the equivalent of smoking one pack a day for 30 years) and currently smoke or have quit within the past 15 years.

In addition to those meeting the USPSTF criteria, screening may be appropriate for individuals who are otherwise at high risk for lung cancer. For example, individuals with a first-degree relative (parent, sibling or child) who was diagnosed with lung cancer at an early age may be at increased risk. The program can provide an individualized assessment of risk to help guide decision-making about whether to undergo a screening. Patients receive an exam and a specialized low-dose CT scan. The exam and scan take only a few minutes, and the results are reviewed and shared with the patient within 24 hours by a team of doctors including pulmonologists, oncologists and radiologists.

Led by Dr. Bradley Pua, an interventional radiologist at NewYork-

Presbyterian/Weill Cornell Medical Center and assistant professor of radiology at Weill Cornell Medical College, the program incorporates a variety of services aimed at preventing and treating cancer, including smoking cessation counseling, support groups for patients and families, and follow-up services for treatment. While low-dose CT scans are the most accurate way to screen for lung cancer, the technology is not perfect. Abnormal findings are common, but the vast majority do not represent cancer. Nearly one in five patients screened will test positive, but cancer is confirmed in only 3 percent of all screenings.

"As these CT scans will show things that do not necessarily represent cancer, joining a comprehensive center for screening where multidisciplinary teams of physicians can meet on a routine basis to discuss and continue to refine screening guidelines is imperative," said Dr. Pua. "Accessibility to this team of physicians with expertise in every aspect of diagnosis to treatment will allow for more coordinated care, minimizing any screening harms."

Provided by Cornell University

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