

# CT scans cut death rates among smokers with lung cancer

*By ACSH Staff — November 5, 2010*

Nearly 40 years ago, four randomized clinical trials demonstrated that although chest X-rays could be used to detect lung cancer in smokers before symptoms occurred, the screenings had no effect on overall death rates. Subsequently, several studies of spiral (helical) CT scan screenings have also [failed to clearly demonstrate a survival benefit](#) [1].

But a new \$250 million study conducted by the American College of Radiology Imaging Network and the National Cancer Institute (NCI) [found](#) [2] that an annual screening using low-dose spiral CT scanning — as compared to chest X-ray only — resulted in 20 percent fewer deaths among the 53,000 middle-aged and elderly enrolled participants who either once smoked or are currently heavy smokers. Of the approximate 91.5 million current and former smokers in the U.S., 196,000 are diagnosed with lung cancer annually and 159,000 will die from it.

The study, called the National Lung Screening Trial, began in 2002 and randomly assigned participants who smoked at least 30 “pack years” — a figure derived from multiplying the average number of cigarette packs smoked per day by the number of total years smoked — to receive either a spiral CT scan or standard chest X-ray at the start of the trial and once a year over the next two years. After participants were followed for up to five years, researchers noted a total of 354 deaths from lung cancer among subjects in the spiral CT scan group compared to 442 deaths among those who received a chest X-ray. After notifying the NCI of the results from this interim analysis, the study was halted due to the profound findings.

Referencing earlier studies that found some benefits in life expectancy using spiral CT scans in smokers and ex-smokers but did not find any actual survival benefits, ACSH’s Dr. Gilbert Ross believes this randomized controlled prospective study successfully shows mortality benefits, which “is very important. If we can reduce deaths by up to 20 percent, that’s a lot of people whose lives we can save — approximately 32,000 annually.”

ACSH’s Dr. Elizabeth Whelan was slightly taken aback after reading the study, however. “This is somewhat different from what I’ve read before about the benefit of spiral CT scans in smokers and ex-smokers, which was minimal at best.”

According to Dr. Ross, “The prior CT screening seemed to indicate a benefit, but more in-depth analyses revealed flaws in the design of the studies. [Errors involving epidemiological problems](#) [3] known as ‘lead-time bias,’ wherein tumors found earlier do not lead to actual lives saved, and over-diagnosis, when abnormalities on CT are investigated — often surgically — and found to not be cancers after all, accounted for the apparent benefits. This study avoids those problems. At the end of the study, 20 percent more patients who had been screened were alive, end of story.”

But asked as a physician if he would recommend a CT spiral scan to a smoker or ex-smoker, Dr. Ross replied: “If someone asked me that question yesterday, I would’ve said no. But today, I wouldn’t say don’t do it, but I also couldn’t confidently say yes since the data isn’t all there.”

Dr. Peter B. Bach, a pulmonologist at Memorial Sloan-Kettering Cancer Center, agrees with Dr. Ross and believes that more specific screening guidelines need to be established before spiral CT scans are routinely recommended. “Very soon we’ll have an answer about who should be screened and how frequently, but we don’t have that answer today.”

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[1] [http://www.nytimes.com/2007/03/07/health/07lung.html?\\_r=2&pagewanted=all](http://www.nytimes.com/2007/03/07/health/07lung.html?_r=2&pagewanted=all)

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[3] <http://online.wsj.com/article/SB117505385170051530-search.html?KEYWORDS=ross&COLLECTION=wsjie/6month>