
RSNA Press Release

Smokers' Lung Cancer Risk Identified in CT Screening Study

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CHICAGO - For the first time, researchers can predict the lung cancer risk for social smokers as well as habitual smokers.

Data presented today at the annual meeting of the Radiological Society of North America (RSNA) showed that a social smoker age 50 or older has a risk for developing lung cancer similar to that of a smoker under age 50 who smoked three packs a day for 20 years.

Claudia I. Henschke, Ph.D., M.D., is the principal investigator of the International Early Lung Cancer Action Project (I-ELCAP), the largest study ever undertaken on whether annual screening by computed tomography (CT) can prevent deaths from lung cancer. I-ELCAP numbers were derived from the screenings of 27,701 men and women, some starting in 1993 at 35 international institutions.

"Based on our data, we can now predict, by age, by how much has been smoked or when a smoker has quit, what is the likelihood of developing lung cancer," said Dr. Henschke, a professor of radiology and division chief of chest imaging at New York-Presbyterian Hospital/Weill Cornell Medical Center in New York City.

"Annual CT screening identifies a high percentage of Stage I diagnoses of lung cancer, the most curable form of lung cancer," Dr. Henschke said. "Our study found that deaths from Stage I lung cancer were surprisingly low after surgery, but only if treatment is pursued. Delaying treatment by more than six months resulted in increased tumor disease and often a higher stage of the disease."

Smokers should consult their doctors to determine at what age CT screening should begin, but this data provides the basis for such recommendations. With annual screening, there is a 76-78 percent chance of a smoker's lung cancer being cured, Dr. Henschke said. Without screening, the probability for cure falls to 5-10 percent.

At A Glance

- Age has as much impact on the likelihood of former and current smokers developing lung cancer as the number of cigarettes consumed.
- With annual CT screening, a smoker has a 76%–78% rate of being cured of lung cancer; without annual CT the cure rate is 5%–10%.
- Quitting smoking does not appreciably lower the risk for developing lung cancer until 20 years after kicking the habit.

I-ELCAP data also showed that, regardless of a smoker's age or how much has been smoked, the risk for developing lung cancer does not decline appreciably until 20 years after kicking the habit. "It starts decreasing slowly for the first 19 years after quitting, then drops to half by 20 years, although it always remains higher than in those who never smoked," Dr. Henschke said.

Lung cancer remains the major cause of cancer death in both men and women, killing more people than breast, prostate and colon cancers combined, according to the American Cancer Society.

The I-ELCAP study found that lung cancer develops in twice as many smokers age 50-74 (15 for every 1,000) than in smokers under 50 (6 per 1,000). The number of smokers developing lung cancer also increased by the total number of cigarettes smoked: 28 smokers per 1,000 were found to have lung cancer if they smoked three packs a day for 20 years or more, compared with 16 smokers per 1,000 who smoked three packs a day for 10-20 years.

Variances in lung cancer rates were marginal between smokers with a pack-a-day habit for 10 years (6 per 1,000) and smokers who consumed two packs a day for 10 to 15 years (7 per 1,000).

Co-authors of the I-ELCAP study are Shusuke Sone, M.D., Steven Markowitz, M.D., Karl Klingler, M.D., Melvyn Tockman, M.D., Dorith Shaham, M.D., Matthew Rifkin, M.D., Javier Zulueta Frances, M.D., Samuel Kopel, M.D., David Naidich, M.D., Donald L. Klippenstein, M.D., Kimball Whitehouse Rice, M.D., Leslie Kohman, M.D., Arfa Khan, M.D., John H. M. Austin, M.D., Michael Smith, M.D., Salvatore Giunta, M.D., David D. Mendelson, M.D., Thomas Bauer, M.D., Robert Heelan, M.D., Nathaniel Berlin, M.D., Heidi Roberts, M.D., Shari-Lynn Odzer, M.D., Peter H. Wiernik, M.D., Davood Vafai, M.D., Ray Daniel, M.D., Harvey Pass, M.D., David Mullen, M.D., Michael Kalafer, M.D., Fred W. Grannis, M.D., Xueguo Liu, M.D., Barry Sheppard, M.D., Barry Ellis Mantell, M.D., David Gordon, M.D., Anthony Reeves, Ph.D., and David Yankelevitz, M.D.

Abstract:

- [International Early Lung Cancer Action Project \(I-ELCAP\): Evaluation of Low-dose CT Screening](#)

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