

Lung cancer death rates among never smokers higher in men than women

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A new American Cancer Society study sheds light on the ten to fifteen percent of lung cancers that are caused by factors other than tobacco smoking. The study analyzed data on lung cancer occurrence among lifelong nonsmokers in North America, Europe, and Asia and found that lung cancer death rates among never-smokers are highest among men, African Americans, and Asians residing in Asia.

The review, the largest to date of lifelong nonsmokers, also suggests that the death rates among never-smokers have remained stable over the past several decades. It appears in the September issue of *PLoS Medicine*, a peer-reviewed, open-access journal published by the Public Library of Science.

While the great majority of lung cancers are related to smoking, approximately 16,000 to 24,000 lung cancer deaths each year are due to other factors. For comparison, if lung cancers not caused by smoking were considered a separate category, it would rank among the seven to nine most common fatal cancers in the U.S. The researchers say as the number of never-smokers in the U.S. and other developed countries is increasing, this is a subject of particular interest and importance.

To examine the issue, researchers led by Michael J. Thun, M.D. pooled data on lung cancer incidence and death rates among self-reported never-smokers from 13 large cohort studies based in North America, Europe, and Asia that spanned the time period from 1960 to 2004. The pooled data represented hundreds of thousands of individuals (over 630,000 for

the incidence data and 1.8 million for the mortality data). The researchers also abstracted data for women from 22 cancer registries in 10 countries in time periods and regions where the smoking prevalence among women was known to be low.

The researchers found that the incidence of lung cancer among lifelong nonsmokers was about equal to that of brain and other nervous system cancers. In terms of mortality, men who reported never smoking had a 1.1% risk of dying from lung cancer before age 85, with the corresponding estimate for women slightly lower at 0.8%. These mortality risks compare to estimates of 22.1% and 11.9% risk of dying from lung cancer for male and female current cigarette smokers, respectively.

While they lacked information on lung cancer death rates among Hispanic, Native American, and Asian never-smokers in North America, researchers did find evidence that lung cancer incidence and mortality are higher in African Americans and Asians residing in Asia than among those of European descent who have never smoked.

The report also found no indication that lung cancer rates have changed among lifelong nonsmokers in the U.S. since the 1930s, failing to support assertions by other researchers that lung cancer risk has increased substantially in the United States in lifelong nonsmokers. Still, they point out the importance of the disease among non-smokers. "Lung cancer is obviously a significant public health and medical problem, even beyond the overwhelming disease burden caused by tobacco smoking," the researchers conclude.

Citation: Thun MJ, Hannan LM, Adams-Campbell LL, Boffetta P, Buring JE, et al. (2008) Lung cancer occurrence in never-smokers. PLoS Med 5(9): e185. doi:10.1371/journal.pmed.0050185
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