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While smoking remains the predominant cause of lung cancer, a new study reveals that incidence rates of lung cancer among people who have never smoked (never smokers) are higher in women than in men. The study results were published in February 10 in the Journal of Clinical Oncology. This study is unlike previous studies that focused mainly on mortality rates and that found men had higher lung cancer mortality rates than women.

Dr. Heather A. Wakelee of the Stanford Comprehensive Cancer Center and colleagues calculated the incidence of lung cancer among never smokers, former smokers, and smokers aged 40 to 79 from six large cohort populations: the Nurses' Health Study, the Health Professionals Follow-Up Study, the California Teachers Study, the Multiethnic Cohort Study, the First National Health and Nutrition Examination Survey Epidemiologic Follow-Up Study, and the Swedish Lung Cancer Register in the Uppsala/Orebro region. Lung cancer incidence was calculated as new cases per person-year.

Lung cancer incidence rates among female never smokers aged 40 to 79 ranged from 14.4 to 20.8 per 100,000 person-years, while incidence rates among male never smokers aged 40 to 79 ranged from 4.8 to 13.7 per 100,000 person-years.

While researchers have not pinpointed the underlying cause of the greater incidence of lung cancer in female never smokers, they have identified the following as potential risk factors: secondhand smoke; occupational exposures such as asbestos, chromium, or arsenic; environmental exposures such as domestic radon; indoor pollutants; previous lung disease; dietary factors; family history; and genetic factors.

Dr. Adi F. Gazdar of the University of Texas Southwestern Medical Center in Dallas and Dr. Michael J. Thun of the American Cancer Society wrote in an accompanying editorial, "Clearly, lack of an understanding of the factors responsible for lung cancers in never smokers is a major deficiency that must be addressed before we can explore preventive strategies." Also, the differences the investigators found in the histological types of lung cancer, as well as the genetic differences between nonsmokers and smokers, could have implications for improving treatments and outcomes of lung cancer.