



Contacts:

Lisa Rivero
Vice President
lrivero@jpa.com | +1 617-657-1305

Becky Bunn, MSc
Public Relations Manager
Becky.Bunn@IASLC.org | +1 720-254-9509

Study Shows Outdoor Air Pollution Exposure Significantly Higher in Women Non-Smokers With Lung Cancer Than Women Smokers With Lung Cancer

Toronto, Canada – September 24, 2018 – Findings from a recent study demonstrate that female lung cancer patients who have never smoked have significantly greater exposure rates to outdoor air pollution than female lung cancer patients with a history of smoking. Renelle L. Myers, British Columbia Cancer Agency, Vancouver, presented these findings today at the International Association for the Study of Lung Cancer’s (IASLC’s) 19th World Conference on Lung Cancer (WCLC) in Toronto, Canada.

The study enrolled 681 patients with newly diagnosed lung cancer, including 439 “ever-smokers” and 242 “never-smokers.” A detailed residential history was conducted to estimate their air pollution exposure since 1996, when accurate high-resolution concentration estimates of ambient particulate matter (PM_{2.5}) derived from satellite observations and ground measurements became available. The average PM_{2.5} exposure was then quantified by combining residential histories with exposure data.

The results of the study showed median air pollution exposure of all cancer patients was 7.1 PM_{2.5} ug/m³ (IQR 6.8-7.3; Range 4.3-65.8). Of the ever-smokers, 6.1 percent had a PM_{2.5} > 10 ug/m³, whereas more than double - 15.1 percent - of the never-smokers had a PM_{2.5} > 10 ug/m³. Among never-smokers with lung cancer with high PM_{2.5} exposure >10 ug/m³, 74 percent were female, and 83 percent were of Asian descent. Using a logistic regression model, researchers demonstrated a significant association between air pollution exposure and never-smokers compared to ever-smokers in women, an association that was absent in males.

“The results of this study underscore the importance of factoring outdoor air pollution into lung cancer development among women, particularly those who have never smoked,” said Myers. “Although long-term exposure to ambient particulate matter has been associated with an increased risk of developing lung cancer and is estimated to be responsible for almost 25 percent of global lung cancer deaths, there is currently no lung cancer screening risk prediction model that includes air pollution as an individual risk factor in its calculation.”

About the WCLC

The World Conference on Lung Cancer (WCLC) is the world’s largest meeting dedicated solely to lung cancer and other thoracic malignancies, attracting over 7,000 researchers, physicians and specialists from more than 100 countries. The conference will cover a wide range of disciplines and unveil research studies and clinical trial results. For more information, visit <http://wclc2018.iaslc.org/>. Follow the conference on social media with: #WCLC2018.

About the IASLC



The International Association for the Study of Lung Cancer (IASLC) is the only global organization dedicated solely to the study of lung cancer and other thoracic malignancies. Founded in 1974, the association's membership includes more than 7,500 lung cancer specialists across all disciplines in over 100 countries, forming a global network working together to conquer lung and thoracic cancers worldwide. The association also publishes the *Journal of Thoracic Oncology*, the primary educational and informational publication for topics relevant to the prevention, detection, diagnosis and treatment of all thoracic malignancies. Visit www.iaslc.org for more information. You can also follow the IASLC on [Twitter](#), [Facebook](#), [LinkedIn](#) and [Instagram](#).

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