

# Possible link between air pollution and breast cancer

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A new study of over 3,400 Canadian women provides further evidence that exposure to air-pollution may increase the risk of developing breast cancer, especially among women who have not yet had their menopause.

Following a previous study in Montreal published in 2010, these researchers investigated air pollution in eight Canadian provinces, from 1975 to 1994, based on [satellite observations](#) and on-ground measurements of NO<sub>2</sub>.

Led by Perry Hystad (Oregon State University) and Paul J. Villeneuve

(Carleton University), the study shows an association between the risk of [breast cancer](#) and [nitrogen dioxide](#) (NO<sub>2</sub>), a marker of traffic-related air pollution. For post-menopausal women, the risk increased by 10% for each increase of 10 parts per billion (ppb) of NO<sub>2</sub>. Little was known about the risk for premenopausal women and air pollution and the investigators found it was even greater: the risk increased by 32% for every additional 10 ppb of NO<sub>2</sub>.

"Air pollution is a complex mixture comprising hundreds of chemicals, some of which are toxic or carcinogenic," says co-author Mark Goldberg, an environmental epidemiologist at McGill University. "NO<sub>2</sub> is not carcinogenic, in itself, but it is an excellent marker for traffic-related air pollution.

"This study estimates the association between [air pollution](#) and breast cancer, but causality is far from established," Goldberg cautions. "Many more studies would be needed in order for us to be able to make causal judgments."

**More information:** Perry Hystad, Paul J. Villeneuve, Mark S. Goldberg, Dan L. Crouse, Kenneth Johnson, "Exposure to traffic-related air pollution and the risk of developing breast cancer among women in eight Canadian provinces: A case-control study," *Environment International*, Volume 74, January 2015, Pages 240-248, ISSN 0160-4120, [dx.doi.org/10.1016/j.envint.2014.09.004](https://doi.org/10.1016/j.envint.2014.09.004)

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