# Poor air quality is linked to breast cancer

*Air Quality News from IQAir, the world leader in air purifiers.*

This year, more than 232,000 women in the United States will learn they have invasive breast cancer. Another 64,000 women will be diagnosed with non-invasive breast cancer, the earliest and most treatable form of the disease. Breast cancer is the second leading cause of cancer death in women, after lung cancer, according to the American Cancer Society. The disease will claim the lives of 40,000 American women this year alone.

Those staggering statistics place the United States among a handful of countries worldwide with the highest rates of breast cancer. The others include Canada, Belgium, Denmark, France, Uruguay, Israel, Australia and New Zealand. The incidence of breast cancer among women in North America is 86.3 per 100,000, the highest rate worldwide. In Central Africa, the incidence rate drops to 13.64 per 100,000, and in China, to 11.77 per 100,000 – the lowest rate in the world. These data are adjusted for differences in longevity.*

More than 90% of all cases of breast cancer are linked to environmental factors. Alcohol use, body weight, exposure to radiation and exposure to air pollution are among the leading environmental risks. New research has identified exposure to nitrogen oxides, particulates and chemicals in the air as the primary air pollution concerns.

## Air pollution and breast cancer

Air pollution contains at least 35 chemicals associated with increases in the development of tumors in animals, according to the Breast Cancer Fund (BCF). And these same chemicals surround us indoors and outdoors. “There is widespread exposure to many of these chemicals in the air we breathe outside,” reports BCF, “as well as in our offices, homes, restaurants and schools.”

Pollution associated with traffic is the primary concern. Researchers at Mercer University School of Medicine in Macon, Ga., last year established a statistically significant link between emissions of nitrogen oxides, carbon monoxide, sulfur dioxide and volatile organic compounds (VOCs) and an increase in the incidence of breast cancer. A study by many of the same researchers the previous year established a correlation between traffic-related pollution and the development of breast cancer.

## Nitrogen oxide, particle pollution

Meanwhile, researchers at McGill University in Montreal, Quebec, have identified an association between postmenopausal breast cancer and exposure to nitrogen dioxide – a common component of traffic-related pollution. The risk increased 25% for every increase in exposure of 5 ppb in ambient air.

Poor air quality doesn’t increase only the risk of developing cancer. It also plays a role in survival after treatment. Women who survive breast cancer face an elevated risk of dying from breast cancer as a result of exposure to air pollution. Researchers from the University of Florida, Gettysburg (Pa.) College and Fudan University in Shanghai, China, collaborated in a report that found an 86% increased risk of dying from breast cancer among breast cancer survivors living in areas with elevated levels of particulate pollution.

The month of October is National Breast Cancer Awareness Month, and health agencies emphasize the importance of screening and the early detection of breast cancer in improving breast cancer survival rates. But it’s also a good time to consider the positive steps a woman can takes to help control many of the environmental and lifestyle risks associated with the disease.

## Steps to help control breast cancer risk

The Mayo Clinic staff offers a short list of steps women can take to reduce their risk of developing breast cancer:

**1. Limit alcohol.** There is clear evidence that drinking alcohol increases the levels of estrogen and other hormones associated with breast cancer. And the risk goes up substantially for every drink per day consumed.

**2. Don't smoke.** The relationship between smoking and cancer is clear. And the American Cancer Society has found an increased risk of developing cancer among women who smoke, especially those who started smoking before having their first child.

**3. Control your weight.** Fat tissue is the major source of estrogen for postmenopausal women, and elevated estrogen levels are associated with breast cancer, says the American Cancer Society.

**4. Be physically active.** Studies show that even brisk walking for 75-150 minutes a week reduces breast cancer risk.

**5. Breast feed.** Breast-feeding protects against cancer, according to Susan G. Komen for the Cure.

**6. Limit doses and duration of hormone therapy.** Hormones prescribed as therapy for menopause symptoms may increase the risk of developing breast cancer.

**7. Avoid exposure to radiation and environmental pollution.** Medical imaging that involves high doses of radiation is linked to breast cancer risk. Likewise, studies such as those cited in this article provide evidence that breathing contaminated air is associated with developing breast cancer and even surviving breast cancer.

A high-performance air purifier such as the IQAir HealthPro Plus can help control contaminants in the air. The HealthPro Plus provides medical-grade air quality and is effective against a full spectrum of particles, chemicals and gases that are associated with breast cancer risk.

For more information on National Breast Cancer Awareness Month, click here.

* "Global cancer statistics," Parkin, Pisani and Ferlay, *http://onlinelibrary.wiley.com/doi/10.3322/canjclin.49.1.33/full*

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