

Does Air Pollution Cause Lung Cancer?

By ACSH Staff — March 12, 2002

Last week's *Journal of the American Medical Association* reported that air pollution, particularly pollution characterized by combustion-related fine particulate matter, causes lung cancer.

The authors note that the level of risk posed by air pollution was roughly comparable to the degree of risk faced by nonsmokers who live with smokers and are exposed to secondhand smoke. Allen Dearry, a scientist at the National Institute of Environmental Health Sciences, which funded the study, called it "the best epidemiological evidence that we have so far that this type of exposure is associated with lung cancer death."

To better evaluate this conclusion, you should keep in mind these points:

First, scientists have confirmed repeatedly for over fifty years that one risk factor cigarette smoking accounts for at least 90% of all cases of lung cancer annually.

There are approximately 160,000 lung cancer deaths in the U.S. each year leaving approximately 16,000 lung cancer cases that are not causally linked with smoking. Most (perhaps all) of those 16,000 are genetically pre-determined. Simple mathematics, therefore, leads us to conclude there may be few actual lung cancer deaths that can be attributed to air pollution.

Second, when likening the risk of pollution-induced lung cancer to that posed by second-hand smoke, it is critical to put the latter risk in perspective. True, some adverse health effects for nonsmokers exposed to environmental tobacco smoke (ETS) have been established: irritation of the eyes, nose, and respiratory tract is the most common and firmly established adverse effect. Exposed infants and children, in particular, are at increased risk of respiratory infections, middle-ear effusion (fluid inside the eardrum) and the exacerbation of asthma and other respiratory symptoms. Exposed adults are at increased risk for respiratory ailments. (For more on second-hand smoke, see ASCH's booklet.)

But at most, the epidemiological evidence indicates that ETS exposure is only a weak risk factor for lung cancer in nonsmokers. Thus, the JAMA study suggests that air pollution, too, is a weak risk factor for lung cancer, although with headlines along the lines of "Bad Air Kills," you would never know it.

Third, while there is irrefutable evidence that severe cases of air pollution particularly inversions that prevent winds from dispersing pollutants can cause acute and even deadly effects on vulnerable individuals, the claim that air pollution is a cause of lung cancer is still only speculative.

Preliminary data such as that presented in JAMA linking air pollution and lung cancer ought not distract us from keeping the spotlight on the number one cause of lung cancer, cigarette smoking.

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