

GRAVE EFFECTS OF AIR POLLUTION

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It is well recognized that air pollution may cause poor health and even death. Air pollution is caused by both natural and man-made sources. Major man-made sources of air pollution include industries, automobiles, and power generation. Indoor pollution results from tobacco smoke, the combustion of solid fuels for cooking and heating. In addition, construction material, furniture, carpeting, air conditioning, home cleaning agents and insecticides can also be significant sources of chemical and biological indoor pollutants.

Outdoor air pollution results from pouring hundreds of millions of tons of gases and particulates into atmosphere each year. One of the most common forms of outdoor air pollution is smog. Most air pollution results from combustion (burning) processes. Fuel combustion is the primary source of a large number of health-damaging air pollutants, including carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen oxides (NO_x), volatile organic compounds (VOCs), ozone (O₃), and atmospheric lead. Some of these pollutants are direct by-products of fuel combustion, but others (such as O₃) are formed in the air through chemical reactions with other agents in the atmosphere.

Air pollution has both acute and chronic effects on human health. Health effects range anywhere from minor irritation of eyes and the upper respiratory system to chronic respiratory disease, heart disease, lung cancer, and death. Air pollution has been shown to cause acute respiratory infections in children and chronic bronchitis in adults. It has also been shown to worsen the condition of people with preexisting heart or lung disease.

Air pollution is associated with cardiovascular disease in human population. The time-series approach investigates whether air pollution is accompanied by short term changes in the incidence of cardiovascular events such as heart attacks. This method generally uses available data on daily counts of deaths or hospital admissions and relates these to ambient concentrations of air pollution on the same or previous days, measured by monitors situated in the study area – usually a city. Evidence from a large number of time-series studies show very clearly that, with few exceptions, all of the commonly measured pollutants are positively associated with increased mortality and hospital admissions for cardiovascular disease. These associations are likely to be explained by air pollution making existing disease worse or by precipitating an acute event such as a heart attack in one who is already vulnerable to this possibility.

Health impact of air pollution depends on the pollutant type, its concentration in the air, length of exposure, other pollutants in the air, and individual susceptibility. Different people are affected by air pollution in different ways. Poor people, undernourished people, very young and very old, and people with preexisting respiratory diseases are more at risk. In cities, for instance, the poor tend to live and work in the most heavily polluted areas, and in rural areas the poor are more likely to cook with the fuels of poor quality.

Air pollutants can also indirectly affect human health through acid rains, polluting drinking water and entering the food chain, and through global warming and associated climate changes.

As a result of several decades of tighter emission standards and closer monitoring, levels of certain types of air pollutants have declined in many developed countries. Although, even at much reduced levels, air pollution continues to threaten public health all over the world.