

The Effects of Air Pollution on Human Health, as Well as Effective Prevention Strategies

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INTRODUCTION

Air pollution has become a major issue in recent decades, with serious toxicological consequences for both human health and the ecosystem. The sources of pollution range from single cigarettes to natural sources such as volcanic eruptions, as well as massive volumes of emissions from automotive engines and industrial processes. The long-term consequences of air pollution on the beginning of diseases like respiratory infections and inflammations, cardiovascular dysfunctions, and cancer are generally acknowledged; hence, air pollution is connected to millions of deaths worldwide each year. According to a new study, there is a link between male infertility and air pollution [1].

Air pollution, along with climate change, is one of the most serious environmental dangers to human health, according to the World Health Organization. It proposes new air quality standards to protect people's health by lowering levels of important air pollutants/particulate matter with diameters of 10 and 2.5 microns (m) (PM 10 and PM 2.5, respectively). PM 2.5 can reach the circulation, producing cardiovascular and respiratory effects, in addition to affecting the lung.

Air pollution is also linked to 30% of lower-respiratory infections and 20% of neonatal mortality. Air pollution is a major cause of disease in low- and middle-income nations, accounting for about 90% of premature deaths. Air pollution is a concern to human health all throughout the world, from smog to smoke within the home. Premature deaths are caused by the cumulative effects of outdoor and indoor air pollution, which include stroke, heart disease, chronic obstructive pulmonary disease, lung cancer, and acute respiratory infections [2].

As a result of industrial activity, air pollution has now emerged in emerging countries, as does the number of emission sources such as improper automobiles. The majority of these people live in Asia, where household air pollution kills 4.3 million people and ambient air pollution kills 3.7 million. Since the onset of industrialisation in the 1970s, the level of air pollutants in Iran has gradually increased, but it has reached dangerous levels in some megacities such as Tehran, Mashhad, Tabriz, Isfahan, Ahvaz, Arak, and Karaj over the last two decades. Iran is the world's third most

polluted country, resulting in an annual loss of 16 billion dollars. Iran is host to four of the top 10 most polluted cities in the world. With micro particles blowing in from neighbouring nations and particulate levels three times that of Beijing and nearly 13 times that of London, Ahvaz is the world's most polluted city. Only in Tehran, air pollution claimed the lives of nearly 4460 people in 2013, despite the fact that the real number is far higher and becoming worse every year. As a result, describing the problem, particularly its hazardous effects on human health, and providing recommendations as a foundation for environmental guidelines and standard protocols in the field of air pollution in Iran is critical [3].

Coronavirus susceptibility is also increased by poor air quality, which affects the body's immune system, making an individual more susceptible to respiratory and other illnesses. Children will be particularly vulnerable, as they have already been harmed by a lack of proper physical activity and social interaction as a result of COVID-19's longer stay at home. An increase in antioxidant-rich foods, such as fruits and vegetables, can help them strengthen their immune system.

Chemicals Released by Industrial Facilities have a Negative Impact on Human Health.

People who live in locations with high levels of industrial air pollution may have an increased lifetime risk of developing cancer. When you breathe in toxic air pollution, it might infiltrate your body. If the dangerous air pollution is a proven carcinogen, it can increase your risk of getting [4].

Certain cancers by altering cell production and changing DNA in your body. Cancerous cells might then crowd out healthy cells, resulting in a chain reaction. Other health effects of this hazardous air can include everything from headaches to heart problems.

Pollutants can also enter your body through other routes. Toxic contamination has the potential to permeate into neighbouring soil and water systems. Touching surfaces with toxics on them can expose your skin, albeit this is likely to result in lower levels of exposure. You can also get sick from drinking contaminated water or eating food cultivated in poisonous soil [5].

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