

Letter to the Editor

# To breathe or not to breathe: implications of hazardous air quality

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## Extract

Climate change has affected all living beings and has become a global issue. Over the years, environmental pollution has increased drastically. Air pollution is one of the leading causes of many health issues, specifically respiratory problems. The disease spectrum, from allergies to cancers, is the cause of the economic burden that impacts the countries' welfare. Unhealthy living and ineffective pollution control policies need to be addressed. The role of the government and public health sector is to change their approach to ensure a healthy, clean environment and reduce carbon and other pollutants, thus improving the air quality for better living.

## Keywords

Air pollution; Environment; Health; Public health; Policy

## Dear Editor,

We live in an era of great climatic changes, impacting our overall health and well-being, which has become a global issue [1]. One of the most adverse consequences of climate change is the continuously degrading air quality in cities and villages [2]. Air pollution is primarily caused by burning fossil fuels for commercial and domestic purposes. It alone accounts for millions of deaths annually, making it one of the top contributors to human death worldwide [3]. Air pollution not only imparts a significant burden on the health of living beings but also affects the climate on a large scale [4]. The air quality index (AQI) of cities has reached unsustainable levels [5]. Smog, microplastics, and other hazardous nanoparticles contribute to health conditions and increase overall health expenditure.

Pollutants suspended as particulate matter in humid air are called smog and consist of dust particles, heavy metals, nonmetal oxides, organic compounds, and hazardous substances [6]. Smog not only affects physical health but also has implications for mental health. A Chinese study found that smog adversely affects mental health [7]. Several factors moderate smog's effects on physical health, including age, underlying health conditions, and socioeconomic status. It has also been ranked as the fifth highest risk factor for human mortality [8, 9]. Air pollution has an undeniable negative impact on the respiratory system, as it is the first-line target for different particles suspended in the inspiratory air [10]. Gases in the air contributing to health risk, such as nitrogen dioxide, occupy second place, followed by ozone, leading to 21,00 deaths in the European Union (EU) annually [11].

According to an estimate, human beings inhale and ingest more than 100,000 micro-particles per year [12], and exposure to air-suspended particulate matter  $\leq 2.5 \mu\text{m}$  in aerodynamic diameter causes multiple respiratory problems, such as chronic obstructive

pulmonary disease (COPD), asthma, bronchiolitis, and coronary heart diseases, and increases the risk of premature mortality [13]. Furthermore, every year, exposure to fine particulate matter suspended in the air accounted for 300,000 deaths due to lung cancers globally; the mortality score increased due to air-suspended sulfur dioxide exposure [14].

It is necessary to implement measures to reduce air pollution, control carbon emissions and reduce smog, ensure pollution-free residences, and educate the population on the hazardous effects of smog [15]. To be able to breathe fresh air again, the responsibility to provide a safe environment lies on every individual shoulder.

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