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Rapid Communication

To Protect Human Health, New Who Global Air Quality Guidelines Recommend New Air Quality Standards

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INTRODUCTION

The new WHO Global Air Quality Guidelines (AQGs) demonstrate the harmful effects of air pollution on human health at significantly lower concentrations than previously thought. The guidelines propose new air quality standards to protect people's health by lowering levels of major air contaminants, some of which are also linked to climate change [1].

Air pollution is projected to cause 7 million premature deaths per year, as well as the loss of millions of healthy years of life. Reduced lung growth and function, respiratory infections, and asthma flare-ups are all possibilities in youngsters. The most prevalent causes of early death in adults due to outdoor air pollution are ischemic heart disease and stroke, but evidence of other consequences such as diabetes and neurodegenerative disorders is now developing. This puts the illness burden associated with air pollution on line with other significant global health concerns like poor diet and cigarette use.

Along with climate change, air pollution is one of the most serious environmental hazards to human health. Improving air quality can help with climate change mitigation, and lowering emissions will help with air quality. Countries will preserve public health as well as mitigate global climate change by attempting to achieve these guideline levels. The WHO's new guidelines recommend air quality standards for six contaminants for which the data on health impacts from exposure has progressed the most. When actions are performed to reduce particulate matter (PM), ozone (O_3), nitrogen dioxide (NO_2), sulphur dioxide (SO_2), and carbon monoxide (CO), they have an impact on other harmful pollutants [2].

The health concerns linked with particulate matter having a diameter of 10 or less than 2.5 microns (m) are of significant public health concern. PM 2.5 and PM10 can both penetrate deeply into the lungs, but PM 2.5 can also reach the circulation, causing cardiovascular and respiratory effects as well as affecting other organs. Fuel combustion in various sectors, such as transportation, energy, households, industry, and agriculture, is the primary source of PM. The WHO's International Agency for Research on Cancer categorised outdoor air pollution and particle matter as carcinogenic in 2013 (IARC) [3].

An Imbalanced Health Burden

Air pollution exposure disparities are widening over the world, particularly in low- and middle-income nations, as a result of large-scale urbanisation and economic development that has mostly relied on the combustion of fossil fuels. Global estimates of ambient air pollution show that hundreds of millions of healthy life years have been lost, with low and middle-income countries bearing the brunt of the illness burden. Individuals with chronic diseases (such as asthma, chronic obstructive pulmonary disease, and heart disease), as well as elderly adults, children, and pregnant women, are more affected by pollution the more exposed [4].

The Path to Meeting the Recommended Air Quality Guidelines

The guideline's purpose is for all countries to meet specified air quality standards. Recognizing that this will be a challenging undertaking for many countries and regions suffering from high levels of air pollution, WHO has suggested interim targets to allow for modest but considerable improvements in air quality and hence health benefits for the population [5].

According to a fast scenario analysis conducted by WHO, about 80% of fatalities linked to PM 2.5 might be averted globally if current air pollution levels were decreased to those indicated in the new guideline.

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