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**Embargo 6.30pm IST**

## NEW WORLD HEALTH ORGANIZATION GLOBAL AIR QUALITY GUIDELINES

TO BE ISSUED ON 22<sup>ND</sup> September, 2021

The World Health Organization (WHO) is issuing new, updated WHO Global Air Quality Guidelines (AQGs) to set goals that identify the level of air quality to protect public health worldwide. The AQGs also serve as a reference for assessing if, and how much, the exposure of a population exceeds levels which cause health concerns.

The WHO **Guideline Development Group** (GDG), composed of leading experts and end-users, is responsible for determining the scope of the guidelines and the formulation of AQG levels, the interim targets and good practice statements. **Professor. Kalpana Balakrishnan**, Dean (Research) and Director of the WHO Collaborating Center at Sri Ramachandra Institute for Higher Education and Research (SRIHER) served as a **member of the Global Guideline Development Group**.

We are sharing information on the new guidelines provided to us by WHO as well as a brief note prepared by SRIHER on the implications of the guideline in India and the role of the WHO Collaborating Center at SRIHER in guideline development and dissemination. **Please note that the information is under a strict embargo until 300 pm CEST (630 pm IST) on 22<sup>nd</sup> September, 2021.**

We will be grateful for your kind coverage of this important public health guideline and the contributions of SRIHER in your esteemed newspaper.

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## **Information from WHO on the new WHO Global Air Quality Guidelines**

On Wednesday, 22 September WHO will launch the WHO Global Air Quality Guidelines at a virtual press conference. The new guidelines aim to save millions of lives from air pollution exposures.

The new guidelines recommend air quality levels for 6 pollutants – particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>), ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>) and carbon monoxide (CO) – and provide clear evidence of the damage air pollution inflicts on human health and recommend new air quality levels to protect the health of populations by reducing levels of key air pollutants, some of which also contribute to climate change.

Since the last 2005 global update, there has been a marked increase of quality and quantity of evidence that shows how air pollution affects different aspects of health. New epidemiologic studies have documented the health effects of exposure to high levels of air pollution in low- and middle-income countries, and studies in relatively clean high-income countries have reported adverse effects on health at much lower levels of air pollution than before. **For the last reason, and after a systematic review of the accumulated evidence, several of the updated AQG levels are now lower than 15 years ago.**

Compared to previous WHO guidelines, the new AQGs:

- use new methods for evidence synthesis and guideline development;
- reinforce evidence on health effects;
- provide higher certainty in the evidence of health effects occurring at lower levels than previously understood;
- offer additional AQG levels, such as for peak season O<sub>3</sub> and 24-hour NO<sub>2</sub> and CO, as well as some new interim targets;
- offer new good practice statements on the management of certain types of PM (i.e. black carbon/elemental carbon, ultrafine particles, and particles originating from sand and dust storms).

The Official Press Release can be found at

[https://worldhealthorg-my.sharepoint.com/:f/g/person/creswickj\\_who\\_int/EsBrvZAS4vBLpAqDtHKdBjUBNfU\\_k7Ja8q4RwNY1-531vg?e=Po2Dre](https://worldhealthorg-my.sharepoint.com/:f/g/person/creswickj_who_int/EsBrvZAS4vBLpAqDtHKdBjUBNfU_k7Ja8q4RwNY1-531vg?e=Po2Dre)

## **Role of SRIHER in the WHO AQG development**

1. SRIHER has been serving as a WHO Collaborating Center for Research and Training in Occupational and Environmental Health since 2007 with Professor. Kalpana Balakrishnan serving as the Director. She served as a member of the Guideline Development Group for the most recent WHO Air Quality Guidelines (2021) as well as the previous update issued in 2005.
2. The research team led by Dr. Balakrishnan has conducted numerous epidemiological (cohort) studies among rural and urban populations across multiple states in India to document health effects of air pollution in India that have served to strengthen the evidence base among low and middle income countries for the recent update of the WHO AQGs.
3. The WHO-CC at SRIHER has also been involved in national and regional capacity building efforts regarding the guidelines for wide base of academic and policy level stakeholders.

### **Implications of Guidelines for India (observations from SRIHER)**

#### **1. Why are the guidelines lower? What does this mean for India?**

There are more studies now available at very low levels of exposure (in North America and Europe) not previously studied that support health effects below the previous guideline values especially for particulate matter. This resulted in the tightening of the guideline value. Effects continue to be observed at levels below the current guideline values.

Also there is an increasing pool of studies from low and middle income countries including India that show consistency of effects at the higher end of the spectrum and provide the basis for retaining the Interim Target Guideline values. This should strengthen confidence in the evidence base that was previously lacking such studies and causing uncertainties regarding this relationships at high doses that populations in India receive. It also argues for greater stringency in the implementation of the Clean Air Programme.

#### **2. Do we need to revise our national standards**

The guidelines are lower than before but the interim target guidelines have remained the same. Currently the Indian National Standards closely match the WHO Interim Target 1 Guideline levels.

The annual average population-weighted mean PM<sub>2.5</sub> concentration (as a measure of ambient particulate matter exposure) was 91.7 µg/m<sup>3</sup> (95% uncertainty interval [UI] 69.6–113.9) in India in 2019. India thus has a long way to go to be able to meet the guideline values (of 5 µg/m<sup>3</sup> for PM<sub>2.5</sub>). Nearly a million deaths were attributable to ambient air pollution in 2019.

It is estimated that even meeting the WHO Interim Target 1 guideline levels would reduce the health burden by up to 20%.

Given the complexities of revising the standards, it would be more efficient to implement available standards and attain wide spread compliance to the existing standards. We also have scientific evidence on what sources to prioritise to be able achieve such compliance.

This will allow a more phased and pragmatic track to achieve public health benefits in the near-term.

**UNDER EMBARGO: DO NOT PUBLISH, PRINT OR REPRODUCE UNTIL 09:00 EST (NEW YORK TIME) on 22 September / 15:00 CEST (GENEVA TIME) ON 22 September 2021.**

## News release

Copenhagen and Geneva, 22 September 2021

### **New WHO Global Air Quality Guidelines aim to save millions of lives from air pollution**

*Air pollution is one of the biggest environmental threats to human health, alongside climate change.*

New World Health Organization (WHO) Global Air Quality Guidelines (AQGs) provide clear evidence of the damage air pollution inflicts on human health, at even lower concentrations than previously understood. The guidelines recommend new air quality levels to protect the health of populations, by reducing levels of key air pollutants, some of which also contribute to climate change.

Since WHO's last 2005 global update, there has been a marked increase of evidence that shows how air pollution affects different aspects of health. For that reason, and after a systematic review of the accumulated evidence, WHO has adjusted almost all the AQGs levels downwards, warning that exceeding the new air quality guideline levels is associated with significant risks to health. At the same time, however, adhering to them could save millions of lives.

Every year, exposure to air pollution is estimated to cause 7 million premature deaths and result in the loss of millions more healthy years of life. In children, this could include reduced lung growth and function, respiratory infections and aggravated asthma. In adults, ischaemic heart disease and stroke are the most common causes of premature death attributable to outdoor air pollution, and evidence is also emerging of other effects such as diabetes and neurodegenerative conditions. This puts the burden of disease attributable to air pollution on a par with other major global health risks such as unhealthy diet and tobacco smoking.

Air pollution is one of the biggest environmental threats to human health, alongside climate change. Improving air quality can enhance climate change mitigation efforts, while reducing emissions will in turn improve air quality. By striving to achieve these guideline levels, countries will be both protecting health as well as mitigating global climate change.

WHO's new guidelines recommend air quality levels for 6 pollutants, where evidence has advanced the most on health effects from exposure. When action is taken on these so-called classical pollutants – particulate matter (PM), ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>) sulfur dioxide (SO<sub>2</sub>) and carbon monoxide (CO), it also has an impact on other damaging pollutants.

The health risks associated with particulate matter equal or smaller than 10 and 2.5 microns (µm) in diameter (PM<sub>10</sub> and PM<sub>2.5</sub>, respectively) are of particular public health relevance. Both PM<sub>2.5</sub> and PM<sub>10</sub> are capable of penetrating deep into the lungs but PM<sub>2.5</sub> can even enter the bloodstream, primarily resulting in cardiovascular and respiratory impacts, and also affecting other organs. PM is primarily generated by fuel combustion in different sectors, including transport, energy, households, industry, and from agriculture. In 2013, outdoor air pollution and particulate matter were classified as carcinogenic by WHO's International Agency for Research on Cancer (IARC).

The guidelines also highlight good practices for the management of certain types of particulate matter (for example, black carbon/elemental carbon, ultrafine particles, particles originating from sand and dust storms) for which there is currently insufficient quantitative evidence to set air quality guideline levels. They are applicable to both outdoor and indoor environments globally, and cover all settings.

“Air pollution is a threat to health in all countries, but it hits people in low- and middle-income countries the hardest,” said WHO Director-General, Dr Tedros Adhanom Ghebreyesus. “WHO’s new Air Quality Guidelines are an evidence-based and practical tool for improving the quality of the air on which all life depends. I urge all countries and all those fighting to protect our environment to put them to use to reduce suffering and save lives.”

### **An unequal burden of disease**

Disparities in air pollution exposure are increasing worldwide, particularly as low- and middle-income countries are experiencing growing levels of air pollution because of large-scale urbanization and economic development that has largely relied on the burning of fossil fuels.

“Annually, WHO estimates that millions of deaths are caused by the effects of air pollution, mainly from noncommunicable diseases. Clean air should be a fundamental human right and a necessary condition for healthy and productive societies. However, despite some improvements in air quality over the past three decades, millions of people continue to die prematurely, often affecting the most vulnerable and marginalized populations,” said WHO Regional Director for Europe, Dr Hans Henri P. Kluge. “We know the magnitude of the problem and we know how to solve it. These updated guidelines give policy-makers solid evidence and the necessary tool to tackle this long-term health burden.”

Global assessments of ambient air pollution alone suggest hundreds of millions of healthy life years of life lost, with the greatest attributable disease burden seen in low and middle-income countries. The more exposed to air pollution they are, the greater the health impact, particularly on individuals with chronic conditions (such as asthma, chronic obstructive pulmonary disease, and heart disease), as well as older people, children and pregnant women.

In 2019, more than 90% of the global population lived in areas where concentrations exceeded the 2005 WHO air quality guideline for long term exposure to PM<sub>2.5</sub>. Countries with strong policy-driven improvements in air quality have often seen marked reduction in air pollution, whereas declines over the past 30 years were less noticeable in regions with already good air quality.

### **The road to achieving recommended air quality guideline levels**

The goal of the guideline is for all countries to achieve recommended air quality levels. Conscious that this will be a difficult task for many countries and regions struggling with high air pollution levels, WHO has proposed interim targets to facilitate stepwise improvement in air quality and thus gradual, but meaningful, health benefits for the population.

Almost 80% of deaths related to PM<sub>2.5</sub> could be avoided in the world if the current air pollution levels were reduced to those proposed in the updated guideline, according to a rapid scenario analysis performed by WHO. At the same time, the achievement of interim targets would result in reducing the burden of disease, of which the greatest benefit would be observed in countries with high concentrations of fine particulates (PM<sub>2.5</sub>) and large populations.

### **Note to editors**

Whilst not legally-binding, like all WHO guidelines, AQGs are an evidence-informed tool for policy-makers to guide legislation and policies, in order to reduce levels of air pollutants and decrease the burden of disease that results from exposure to air pollution worldwide. Their development has adhered to a rigorously defined methodology, implemented by a guideline development group. It was based on evidence obtained from six systematic reviews that considered more than 500 papers. The development of these global AQGs was overseen by a steering group led by the WHO European Centre for Environment and Health.

**END**

This press release is subject to a strict media embargo until 22 September 2021.

### **Related links**

The WHO Global Air Quality Guidelines and related press materials are available at the following links:

[add URLs to AQG and press materials]

Air pollution

<https://www.who.int/health-topics/air-pollution>

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