



Air Quality Database 2022: WHO

For Prelims: World Health Organisation, WHO's New Air Quality Guidelines, Particulate Matter.

For Mains: Effects of Air pollution, Environmental Pollution & Degradation.

Why in News?

Ahead of the [World Health Day \(7th April\)](#), the [World Health Organisation \(WHO\)](#) has released **Air Quality Database 2022**, which shows that Almost the entire global population (99 %) breathes air **that exceeds WHO's air quality limits**.

- The WHO for the first time has taken **ground measurements of annual mean concentrations** of nitrogen dioxide (NO₂). It also **includes measurements of [Particulate Matter](#)** with diameters equal or smaller than 10 µm (PM10) or 2.5 µm (PM2.5).
- The findings have prompted **WHO to highlight the importance of curbing fossil fuel use and taking other tangible steps** to reduce air pollution levels.
- Earlier, in the [2021 World Air Quality Report](#) released by IQAir (a Swiss group), India was home to 11 of the 15 most polluted cities in Central and South Asia in 2021.

What are the Findings?

- **Unhealthy Air:** More than 6,000 cities in 117 countries are now monitoring air quality but their residents are still breathing unhealthy levels of fine particulate matter and nitrogen dioxide, while people in low and middle-income countries suffer the highest exposure.
- **Increased Collection of Data:** As many as 2,000 more cities and human settlements are now recording ground monitoring data for particulate matter, PM10 and/or PM2.5, than in the last update (2018).
 - This marks an almost sixfold rise in reporting since the database was first made in 2011.
- **Impact of Air Pollution:** Meanwhile, evidence base for the damage air pollution does to the human body has been growing rapidly and points to significant harm caused by even low levels of many air pollutants.
 - Particulate matter, especially **PM 2.5, is capable of penetrating deep into the lungs and entering the bloodstream**, causing [Cardiovascular](#), Cerebrovascular (stroke) and [Respiratory Impacts](#).
 - NO₂ is associated with respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing or difficulty breathing), hospital admissions and visits to emergency rooms.
- **Compliance with WHO Air Quality Guidelines:** In the 117 countries monitoring air quality, the air in 17% of cities in high-income countries falls below WHO's air quality guidelines for PM 2.5 or PM 10.
 - In low and middle-income countries, air quality in less than 1% of the cities complies with WHO recommended thresholds.

What are the WHO's New Air Quality Guidelines?

- The 2021 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.
- By striving to achieve these guideline levels, **countries will be both protecting health as well as mitigating global climate change.**
- WHO move **sets the stage for eventual shifts in policy in the government towards evolving newer stricter standards.**
- WHO's **new guidelines recommend air quality levels for 6 pollutants**, where evidence has advanced the most on health effects from exposure.
 - 6 classical pollutants include particulate matter (PM 2.5 and 10), ozone (O₃), nitrogen dioxide (NO₂) sulfur dioxide (SO₂) and carbon monoxide (CO).

New WHO Global Air Quality Guidelines

Pollutant	Time	2005 levels	New 2021 levels
PM _{2.5} Particulate matter < 2,5 microns	Annual	10	5
	24-hour	25	15
PM ₁₀ Particulate matter < 10 microns	Annual	20	15
	24-hour	50	45
O ₃ Ozone	Peak season	-	60
	8-hour	100	100
NO ₂ Nitrogen dioxide	Annual	40	10
	24-hour	-	25
SO ₂ Sulfur dioxide	24-hour	20	40
CO Carbon monoxide	24-hour	-	4

What are the Suggestions to Improve Air Quality and Health?

- Adopt or revise and implement **national air quality standards according to the latest WHO Air Quality Guidelines.**
- **Monitor air quality** and **identify sources** of air pollution.
- **Support the transition to exclusive use of clean household energy** for cooking, heating and lighting.
- **Build safe and affordable public transport systems** and pedestrian- and cycle-friendly networks
- **Implement stricter vehicle emissions and efficiency standards**, and enforce mandatory inspection and maintenance for vehicles.
- **Invest in energy-efficient housing** and power generation
- **Improve industry and municipal waste** management
- **Reduce agricultural waste incineration**, forest fires and certain agro-forestry activities (e.g. charcoal production)

- **Include air pollution in curricula for health professionals** and providing tools for the health sector to engage.

Source: IE

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