



# India

Air pollution was the leading risk factor for premature death in India in 2019, accounting for nearly 18% of all deaths (more than 1.67 million). Considered separately, ambient particulate matter (PM<sub>2.5</sub>) ranked as the 4th leading risk factor, and household air pollution (HAP) ranked 6th. Ozone was not in the top 20 risk factors.

## Key Statistics at a Glance

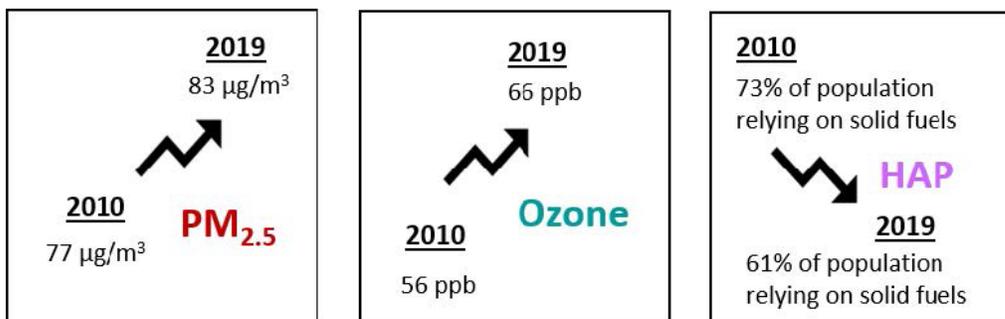
<p><b>1.67 million deaths</b> due to air pollution in 2019.</p> <p><b>Nearly 21% of infant deaths</b> attributable to air pollution.</p>	 <p><b>83 µg/m<sup>3</sup></b> population-weighted annual average PM<sub>2.5</sub> concentration.*</p> <p><b>Nearly 1 million deaths</b> attributable to exposure to outdoor PM<sub>2.5</sub>.</p>	 <p><b>61% of the population</b> used solid fuels for cooking in 2019.</p> <p><b>More than 600,000 deaths</b> attributable to exposure to household air pollution.</p>
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## Key Exposure Facts

**100% of India's population** lives in areas where PM<sub>2.5</sub> levels are above the WHO guideline for healthy air (10 µg/m<sup>3</sup>). \*\*

- Between 2010 and 2019, exposures to PM<sub>2.5</sub> and household air pollution declined, but exposures to ozone increased.
- There are more than 200 stations reporting PM<sub>2.5</sub> concentrations in India.
- Among the 6 countries in the South Asia region, India ranks 1st in PM<sub>2.5</sub> exposure.

## How Have Pollutant Exposures Changed Between 2010 and 2019?



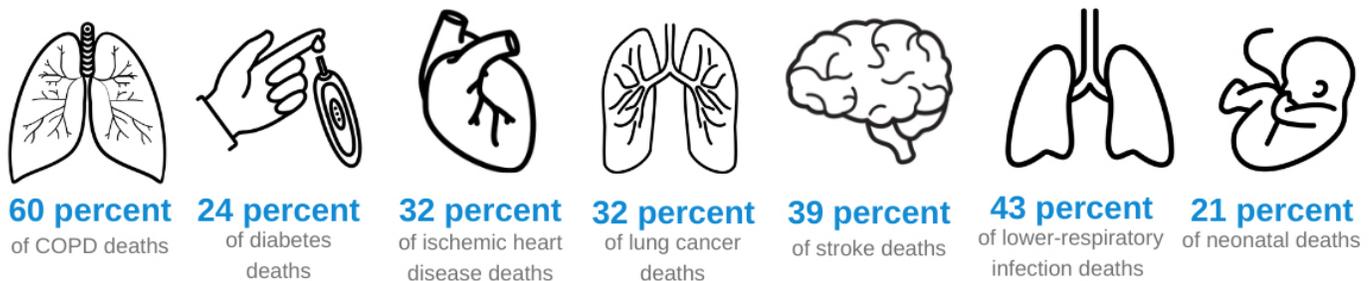
\* Please note that PM<sub>2.5</sub> concentrations reported here are estimated using a combination of satellite data, ground air quality monitoring data, and chemical transport models. These estimates can be more uncertain in regions where ground monitoring data are limited or not available. In India, the best estimate of the annual average exposure is 83 µg/m<sup>3</sup>, but it may range from 76 µg/m<sup>3</sup> to 91 µg/m<sup>3</sup>.

\*\* WHO provides an Air Quality Guideline of 10 µg/m<sup>3</sup> for PM<sub>2.5</sub> to minimize health risks to populations, as well as three interim targets (15 µg/m<sup>3</sup>, 25 µg/m<sup>3</sup>, and 35 µg/m<sup>3</sup>) as incremental steps toward the progressive reduction of air pollution.

## **Air Pollution Accounts for a Substantial Percentage of Global Deaths from Specific Causes.**

Air pollution exposures, including exposure to outdoor PM<sub>2.5</sub> and HAP, have been linked to increased hospitalizations, disability, and early death from respiratory diseases, heart disease, stroke, lung cancer, and diabetes, as well as communicable diseases like pneumonia. Exposure to ozone is linked to chronic obstructive pulmonary disease (COPD), and in children, especially those under the age of 5, increases susceptibility to lower-respiratory tract infections. Exposure to PM<sub>2.5</sub> also puts mothers at risk of delivering babies too early and smaller than normal, and such babies are more susceptible to dying from a range of diseases.

## **Percentage of Deaths (by Cause) Attributed to Air Pollution in India in 2019**



## **Key Health Facts**

- Air pollution is the leading risk factor for premature death in India. Leading causes of death in India include ischemic heart disease, COPD, diarrheal diseases, lower-respiratory infections, and intracerebral hemorrhage, while leading risk factors include high blood pressure, tobacco, poor diet, and high blood sugar.
- There are 164 deaths per 100,000 people attributable to air pollution in India compared with 86 deaths globally, adjusted for differences in age.
- 18% of total air pollution-attributable deaths in India are in children under 5, and 18% are in people over 70.
- **GOOD NEWS:** Deaths attributable to HAP decreased by 26% since 2010. India released its National Clean Air Programme in 2019 with a view to reducing outdoor PM<sub>2.5</sub> levels by 2024. In April 2020, the country initiated a switch to Bharat Stage VI (BS-VI) emission standards, which is likely to bring benefits over the next few years.

### **FOR MORE INFORMATION:**

For the full report and additional data, please visit [www.stateofglobalair.org](http://www.stateofglobalair.org).

### **ADDITIONAL RESOURCES:**

For open-access, real-time air quality data, visit [OpenAQ](https://openaq.org).

For detailed data on air quality in India, visit [UrbanEmissions](https://urbanemissions.org).



For more details, please visit:  
[www.stateofglobalair.org](http://www.stateofglobalair.org)  
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IHME



The State of Global Air website is a collaboration between the Health Effects Institute and the Institute for Health Metrics and Evaluation, with expert input from the University of British Columbia.