STATE OF
GLOBAL AIR /2020

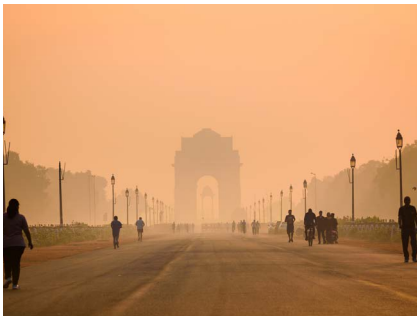
Air Pollution and COVID-19

How Has COVID-19 Affected Air Quality?

The response to COVID-19 has made humanity's influence on air quality more visible. While dramatic reductions in travel and industrial activity brought significant societal and personal costs, many places around the world saw blue skies and starry nights, often for the first time in many years.

During shutdowns, air quality monitoring data from around the world have shown:

- Substantial reductions in nitrogen dioxide (NO_2)
- Modest reductions in fine-particle air pollution ($PM_{2.5}$)
- Higher levels of ozone (O_3) (likely due in part to the reductions in NO_2 and changes in meteorological factors including temperature)



Amit kg/shutterstock.com

Clean Air Collective, India.

In many instances, these changes have been only temporary. As restrictions have lifted, emissions have risen — quickly erasing any gains in air quality. Nonetheless, the blue skies have offered a reminder of what pollution takes away, inspiring renewed demands for cleaner air in the longer term.

Does Air Quality Affect COVID-19 Susceptibility?

The health effects of long-term exposure to air pollution have likely made some people more vulnerable to COVID-19. Here's what we know about the possible connections so far:

- Long-term exposure to air pollution can cause many of the health conditions associated with increased vulnerability to COVID-19, such as diabetes, cardiovascular disease, and chronic obstructive lung disease.
- Exposure to air pollution has been shown to affect the body's immune defense, increasing susceptibility to respiratory and other infections.
- Studies of the SARS-CoV-1 outbreak in 2002–2004 reported an association between higher air pollution levels and higher than expected death rates for that disease.
- A few early studies of COVID-19 similarly appear to suggest that areas with higher air pollution levels experience higher rates of infection or of case fatalities.

Looking Forward

With time and a continued focus on tracking outcomes and possible contributing factors such as air pollution, the world will learn more about COVID-19 and how to reduce its toll. Just as the COVID-19 crisis has demonstrated the need for multiple strategies to manage the pandemic, solutions to air pollution will require multifaceted ongoing efforts to bring attention to its health threats, to identify the policy changes necessary to control it, and to monitor progress over time. The State of Global Air supports these efforts by providing a global report card on the current status of air pollution and health worldwide.

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.