

# COVID-19 and Air Pollution

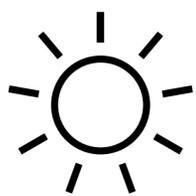


Air pollution consists of harmful or toxic substances in outdoor or indoor air. It is harmful to people even if they do not have lung disease, but it is particularly dangerous for people living with asthma, COPD, and other lung conditions.

## What is outdoor air pollution?

Air pollution describes the release of harmful pollutants into the air. Two widespread outdoor pollutants contribute to negative health effects: ground-level ozone smog and fine particulate matter smaller than 2.5 micrometers (PM2.5).

### Ground-level Ozone (Smog)



Organic chemical fumes and gases from burning fuels cook together in sunlight to make ozone.

### Fine Particulate Matter (Soot)



Fine particulate matter includes tiny droplets and solids from vehicle exhaust, power plants, and smoke.

## What is the relationship between air pollution and lung health?

Communities with severe levels of outdoor air pollution have higher rates of lung disease. When people breathe in dirty air, their airways become irritated which may cause shortness of breath, cough, respiratory episodes, and even chest pain. Air pollution poses a significant risk to:



Children and babies



People who work outdoors

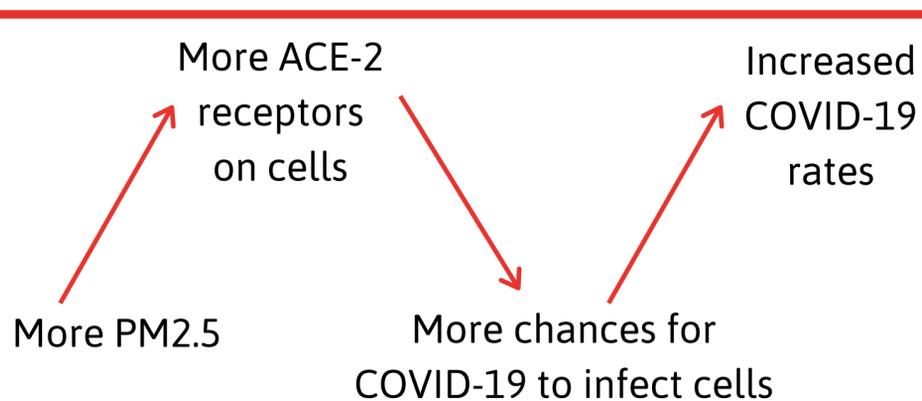


People living with heart or lung disease

65+  
Older adults

## How does air pollution affect COVID-19?

Recent research suggests that communities with high levels of air pollution have increased numbers of COVID-19 infections. Particulate matter in the air (PM2.5 and larger PM10) increases the likelihood of making lung diseases worse and getting sick with COVID-19. PM2.5 and PM10 describe particles that are smaller than 2.5 micrometers and 10 micrometers in diameter, respectively.



Particulate matter causes inflammation in lung airways, which causes some cells to create more 'ACE-2' receptors (ACE-2 is a protein). As more ACE-2 receptors form on the cells, the COVID-19 virus has more places to attach to and ultimately infect the cells. In a sense, ACE-2 acts as a doorway in which COVID-19 enters your body and infects. This then results in increased COVID-19 rates in areas that have high levels of air pollution.

## How to stay protected from COVID-19:



Wear a mask



Wash your hands



Watch your distance



Get your vaccine when possible