



## Climate Change and Respiratory Health

Science shows that an increase in average global temperature by more than two degrees Celsius above pre-industrial levels risks human health. Accelerating climate change poses a particular threat to people living with chronic disease, including respiratory issues like asthma, chronic obstructive pulmonary disease (COPD), allergies, emphysema, and lung cancer. While nations work to reduce greenhouse gasses by 80 percent by 2050 in order to curb many of these health consequences, some effects are inevitable and persons living with respiratory disease and their caretakers will need to adapt to a changing climate. Climate change factors affecting respiratory illness include more extreme weather events, more wildfires, higher levels of allergens, increased insect and water-borne diseases, and higher levels of air pollution.



### Extreme Weather Events

Climate change is increasing the frequency and severity of floods, droughts, heat waves, and blizzards. Extreme heat is projected to cause increased deaths and could lead to more frequent droughts. Climate change will not necessarily lead to warmer winters, but winters with more extreme blizzards. Increased precipitation will lead to more floods. Flooding can increase mold and fungi growth, which can exacerbate asthma and allergies. In addition to these direct harms, extreme weather events can physically limit people's access to care, medical supplies, and necessary services.

### Wildfire Smoke

Longer, hotter summers are leading to more wildfires. Wildfire smoke is worse for respiratory health than typical air particular matter; it can affect breathing conditions for hundreds of miles and increase respiratory hospital admissions.

### Allergies

Rising greenhouse gas concentrations are leading to plants producing more pollen each season and some plants and molds becoming more allergenic. Rising temperatures are also leading to longer pollen seasons. In addition, increased temperatures and humidity could increase building dampness and air conditioner usage, which can affect respiratory issues such as wheezing, asthma, and infections.

### Diseases

A warming climate will likely expand the range for diseases spread by insects and water. While the effect on respiratory health is uncertain, increased precipitation could lead to the spread of respiratory diseases such as hantavirus cardiopulmonary syndrome and legionnaires disease.

### Air Pollution

Climate change is likely to increase ground-level ozone (smog) and particulate matter air pollution. These climate-driven changes could affect people with respiratory disease. Ground-level ozone can diminish lung function, increase hospital visits for asthma, and increase premature deaths. Wildfires and desertification are contributing to more airborne particulate matter. However, promoting clean power and cutting carbon pollution from dirty power plants could reduce many of the harmful air pollutants that contribute to smog. Such measures could result in almost immediate public health benefits and could ultimately prevent thousands of premature deaths and hospitalizations due to heart and lung disease.