

Wildfires and Public Health

Summer heat brings an increased threat of wildfires. Wildfires are uncontrolled fires occurring in forests and vegetated areas that may spread rapidly and be difficult to control. Climate change is increasing the frequency and severity of wildfires due to increased warming and drought in areas such as the Western United States and Alaska. The impacts of increased wildfires will not only affect populations directly in wildfire-prone areas, but may also affect populations located thousands of miles downwind through smoke inhalation.

The composition of wildfire smoke is primarily made of carbon dioxide, water vapor, carbon monoxide, particulate matter, hydrocarbons and other organic chemicals, nitrogen oxides, and many other trace elements. However, smoke composition can vary, depending on the fuel type, fire temperature, and wind conditions. Of these pollutants, particulate matter (PM) is the most concerning, given their very small size and ability to be inhaled deeply into the lungs.

Children and Seniors:

Children, those with cardiovascular or respiratory issues, and the elderly are some of the populations most vulnerable to wildfire smoke. Children are more likely to be affected by smoke inhalation due to their developing airways and increased exposure from spending more time outdoors. For those with existing cardiac or respiratory problems, such as the elderly, fine and ultrafine particles found in smoke can aggravate chronic heart and lung diseases, and has been linked to premature death within these populations.

First Responders:

In addition to vulnerable populations, firefighters face a number of occupational hazards. Firefighters are exposed to significantly higher levels and longer periods of air pollutants from fires, leading to health risks that include decreased lung function, inflammation, and respiratory system problems, as well as physical injuries from burns and falling debris. Other common workplace hazards faced on the fire-line include being overrun by fire; heat-related illnesses and injuries; vehicle-related injuries (including aircraft); physical injuries; and exposure to particulate matter and other air pollutants in wildfire smoke.

The Community:

Wildfires can also create an increased burden on healthcare and public health systems. For example, wildfires near populated areas often necessitate large evacuations, requiring establishment of shelters, and treatment of individuals for injuries, smoke inhalation, and mental health impacts. Increased housing development in or near the wildland–urban interface has expanded over the last several decades, placing larger numbers of people at risk. As these development trends continue, at the same time that climate change worsens, population vulnerability to wildfires increases.

In the Aftermath:

Exposure to PM generated from wildfires has been associated with a wide range of human health effects, such as **wheezing, coughing, sore eyes and throats, and shortness of breath**, to more adverse health outcomes, ranging from increases in asthma-related hospitalizations, chronic and acute respiratory and cardiovascular health outcomes, and premature death.

If you or a loved one are experiencing any of these symptoms, seek help immediately.

Your Employee Assistance Program:

Following a wildfire, **the psychological recovery of residents can be one of the most difficult challenges.** The loss of homes, livestock, and pets affected people deeply. Emergency responders and volunteers may be affected by long working hours, the stress of responding to a severe disaster, and personal loss. A wildfire affects the entire community whether your family is evacuated or not. Whether you've lost your home or not.

For support and resources during this extremely difficult time, reach out to your EAP.

<https://www.nfpa.org/Public-Education/By-topic/Wildfire/Wildfire-safety-tips>

ADDITIONAL RESOURCES

- **Red Cross**, [redcross.org](https://www.redcross.org)
- **Federal Emergency Management Agency (FEMA)**, [fema.gov](https://www.fema.gov)
- <https://www.fs.fed.us/science-technology/fire>
- <http://www.nfpa.org/Public-Education/By-topic/Wildfire/Wildfire-safety-tips>

Your EAP is here for you.

We're available to talk 24 hours a day, 7 days a week.