

Why We Provide N95 Air Pollution Masks



The primary cause of death from wildfires is smoke inhalation. 50 to 80 percent of fire deaths are from smoke inhalation.

How to protect yourself from wildfire smoke – IQAir

When considering the dangers of wildfires, thoughts of fleeing your home while a raging wildfire rapidly approaches can easily consume your imagination. However, the number one cause of death from fires is smoke inhalation.

Inhaling smoke damages your body in one or both of the following ways:

- by robbing it of oxygen
- through particulate matter irritation

Smoke inhalation is particularly dangerous because you may not show symptoms until 24 to 48 hours after exposure. 50–80 percent of fire deaths are from smoke inhalation.¹ Read on to learn how to help protect the health of yourself and your loved ones, and learn some wildfire smoke safety tips to rest assured that you've taken the necessary wildfire safety precautions to reduce the consequences of toxic wildfire smoke.

Smoke can travel for miles beyond its source. In 2020, smoke from wildfires in the Western United States drifted for nearly 5,000 miles, eventually being detected in Europe.

What's in wildfire smoke?



Wildfire smoke is a mixture of thousands of individual compounds, including harmful particles and gases that pose a severe health risk to anyone (including pets) nearby and downwind from a fire.

Wildfire smoke often contains:

- water vapor
- particulate matter
- trace minerals
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- hydrocarbons and nitrogen oxide compounds that contribute to elevated ozone (O₃) levels
- volatile organic compounds (VOCs), including acrolein and formaldehyde (potent respiratory irritants)

Wildfire smoke often contains fine (PM_{2.5}) and ultrafine particles that can be absorbed directly into your blood stream and reach any organ or area of your body.



Pictured: The typical contents of wildfire smoke, including ultrafine particles (≤ 0.3 microns), PM_{2.5} (2.5-10 microns), acrolein, PM₁₀ (> 10 microns), formaldehyde, carbon dioxide (CO₂), carbon monoxide (CO), nitrogen oxides, and hydrocarbons. Source: IQAir

Wildfire smoke composition depends upon multiple factors, including:

- the types of wood and vegetation burning
- the moisture content
- the fire temperature
- wind conditions
- other weather-related influences

The primary pollutant threatening the health of those nearby and downwind of a wildfire is particulate matter. Wildfire smoke often contains fine (or PM2.5) and ultrafine particles. These tiny airborne particles are the most dangerous to your health. Fine particles (smaller than 2.5 microns) penetrate deeply into your lungs.

The most dangerous are ultrafine particles (smaller than 0.1 microns), which represent 90% of all airborne particles. These particles are tiny and can be absorbed directly into your bloodstream. Once in your blood, they can reach any organ or area of your body.

Wildfire smoke and at-risk populations

Most healthy adults will recover from smoke exposure. However, certain individuals are more at risk for severe health consequences, including:²

- **Young children.** Children whose lungs are still developing are considered more vulnerable, regardless of whether they have a pre-existing condition.
- **Pregnant women.** Wildfire smoke inhalation puts pregnant women and their unborn children at a higher risk than the general population.
- **Older adults.** This population is at-risk due to an increased rate of pre-existing heart and lung disease.
- **Anyone with a respiratory disease.** Individuals with emphysema, chronic bronchitis, COPD, asthma, or another respiratory disease are at-risk.
- **Individuals with heart disease.** Circulatory diseases include high blood pressure, vascular diseases, heart failure, and cerebrovascular conditions. These conditions make sufferers susceptible to heart attacks, transient chest pain, heart failure, stroke, and sudden death from cardiac arrhythmia.