

Health Effects of Smoke

The effects of breathing smoke from wildfires vary from person to person. They also depend on how long a person is exposed to the smoke and what pollutants are in it. Some of the short and long-term effects are:

- Irritation of eyes and respiratory tract
- Persistent cough and wheezing
- Asthma or bronchitis
- Reduced lung function
- Aggravation of existing breathing and heart diseases

Most healthy adults recover quickly from smoke exposure. Some people are more sensitive, and they may experience more severe short-term or long-term symptoms.

Sensitive groups:

- Children
- The elderly
- People with asthma or other breathing diseases
- People with high blood pressure or heart disease
- Smokers

Pollutants in wildfire smoke

The composition of smoke varies depending on the type of fuel. Different woods are made up of different amounts of cellulose, tannins, resins, waxes and other compounds, which produce different pollutants when burned.

The most common ingredients in smoke are carbon dioxide, water vapor, carbon monoxide, fine particulate matter, nitrogen oxides, and hydrocarbons.

More Information

Lewis and Clark Public Health
Air Quality Hotline 447-1644
HelenaAir.org

MT Dept. of Environmental Quality
deq.mt.gov/Air/FireUpdates

U.S. Centers for Disease Control
emergency.cdc.gov/disasters/wildfires



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Wildfire Smoke



A public health guide

Wildfires produce smoke that contains dangerous pollutants. These can hurt your eyes, irritate your respiratory system, and worsen existing heart and lung disease.



Judging the Health Effects of Smoke Using Visibility

Some communities, like Helena, have air-quality programs and use monitoring equipment to determine whether air quality is good or bad. But smoke conditions can change quickly. Published air-quality reports may not keep up with these changes. Sometimes visibility – how far you can see through the smoke – can be a better way to determine health hazards.

Air Quality Category	Recommendation	Visibility
Good	Enjoy outdoor activities. No limitations.	13 miles or more
Moderate	May make existing heart or lung disease worse.	9 – 13 miles
Unhealthy for sensitive groups	Increased likelihood of breathing problems in sensitive people, including those with heart or lung disease, the elderly, and children. These individuals should limit strenuous activity outside.	5 – 9 miles
Unhealthy	Increased breathing problems in the general population as well as in those with heart and lung disease. The elderly and people with heart or lung disease should avoid prolonged exertion outdoors. The general population should limit prolonged exertion outdoors.	2 – 5 miles
Very unhealthy/ Hazardous	Serious increase in breathing problems, even in healthy people. Premature death possible in the elderly and people with heart or lung disease. Sensitive people should stay indoors. Everyone should avoid all outdoor exertion.	Less than 2 miles

Coping with Smoke

Here are some tips for coping with wildfire smoke and reducing its impacts on your health:

- **Pay attention to local air quality reports.** Watch for health warnings about smoke and follow recommended safety measures, like limiting or avoiding time outdoors
- **Pay attention to visibility guides.** These can help you determine how much pollution is in the air. (See the guide at left.)
- **Stay indoors when advised, and keep your indoor air as clean as possible.** Keep windows and doors closed. Run an air conditioner if you have one, but keep the fresh-air intake closed and the filter clean to prevent outdoor smoke from getting in. If you don't have an air conditioner and it's too warm to stay inside with the windows closed, seek shelter elsewhere.
- **Reduce indoor pollution.** When smoke levels are high, don't use anything that burns. Don't vacuum, because that stirs up particles already inside your home. Don't smoke, because that pollutes the air even more.
- **Follow your doctor's advice if you have asthma or another lung disease.** Call your doctor if your symptoms get worse.
- **Don't rely on dust masks for protection.** The paper masks you find at hardware stores are made to trap large particles, like sawdust. They won't protect your lungs from smoke. An N95 mask, worn properly, will offer some protection.
- **Avoid smoke exposure during outdoor recreation.** If smoke conditions become severe, officials may decide to postpone or cancel local activities.