

Wildfire Smoke

Wildfires are becoming larger and more frequent in the United States and Canada, in part due to the influence of climate change. Not only are we seeing hazier skies in Minnesota, we're experiencing more unhealthy air from wildfire smoke. Breathing wildfire smoke can make anyone sick, but some people are at greater risk than others of experiencing health-related problems like heart and lung disease. All Minnesotans need to take steps to decrease the risks from breathing wildfire smoke and protect health.

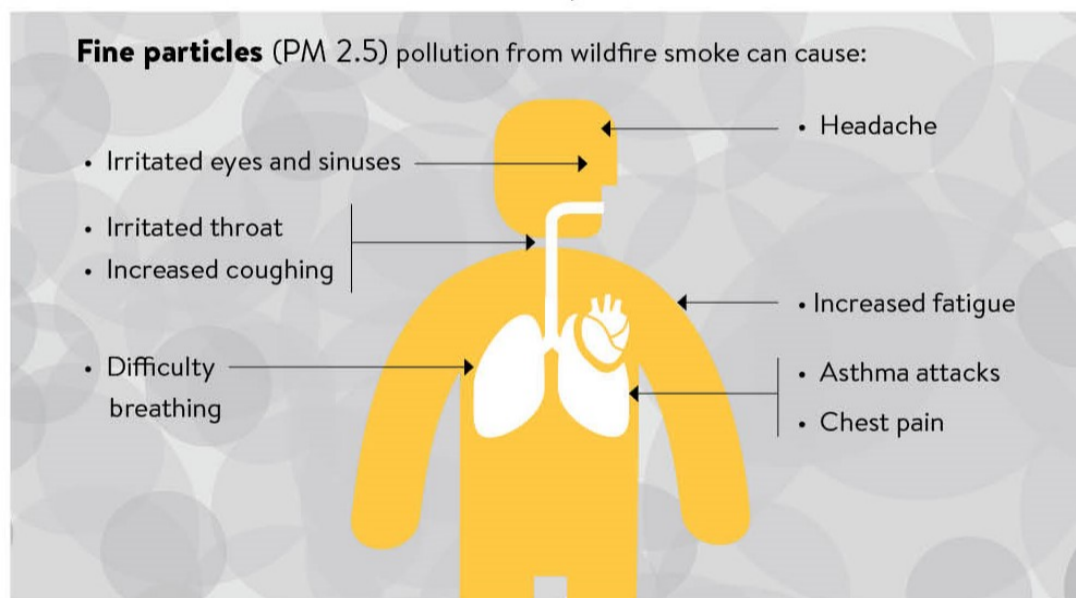


How can wildfire smoke impact health?

Wildfire smoke is a mix of gases and fine particulate matter from burning vegetation and materials. The pollutant of most concern from wildfire smoke is fine particulate matter (PM 2.5). PM 2.5 from wildfire smoke is damaging to human health because it has the ability to deeply penetrate lung tissue and even affect the heart and circulatory system.

Wildfire smoke can make anyone sick. Breathing wildfire smoke can have immediate health impacts, including respiratory and cardiovascular effects. Particle pollution may also affect the body's ability to remove inhaled foreign materials, such as viruses and bacteria, from the lungs.

Wildfire Smoke Health Impacts



Who's Most At-Risk?

Some populations may experience more severe acute and chronic symptoms from exposure to wildfire smoke including:

- **Children:** Their lungs are still developing and there is a greater likelihood of increased exposure to wildfire smoke because of more time spent outdoors, engaging in more vigorous activity and inhaling more air per pound of body weight compared to adults.
- **Older adults:** Adults older than 60 can be at a higher risk of harmful effects from wildfire smoke due to the frequency of pre-existing respiratory and heart conditions, as well as a decline in natural physiological defense systems.
- **People with chronic respiratory or cardiovascular disease:** Individuals living with heart or lung diseases, such as coronary artery disease, asthma or chronic obstructive pulmonary disease (COPD), are more likely to be affected when fine particle pollution reaches an unhealthy level.

- **People experiencing low socioeconomic status:** Socioeconomic status (SES) is often defined using a variety of indicators, such as level of education, poverty status, race/ethnicity, and location of residence. Lower SES compared to higher SES may contribute to increased exposure to wildfire smoke. For example, some residents may be exposed to a higher baseline of unhealthy air quality if located near other sources of air pollution, such as roadways, freeways and areas with heavy industry. Moreover, minority and impoverished children and adults bear a disproportionate burden of heart and lung diseases, which may increase susceptibility to the health effects of wildfire smoke.

Protect Your Health

Wildfire smoke can originate locally or travel into areas of Minnesota from other states, even other countries. In fact, in recent years, wildfires in Canada have been responsible for more “bad air” days than in-state sources. Air quality alerts should be taken seriously by everyone in affected areas.

Limit your exposure to wildfire smoke:

- **Stay informed.** Current air quality conditions (MPCA) [\[LINK https://www.pca.state.mn.us/air-water-land-climate/current-air-quality-conditions\]](https://www.pca.state.mn.us/air-water-land-climate/current-air-quality-conditions), or follow [@mpca_aqi](https://twitter.com/mpca_aqi) on Twitter [\[LINK https://twitter.com/mpca_aqi\]](https://twitter.com/mpca_aqi) for current and forecasted air quality conditions.
- **Limit outdoor activities or take it easy if you must be outside.** This includes reducing the intensity of exercise or strenuous work if possible.
- **Keep indoor air as clean as possible.** Use a portable air cleaner and/or run the central heating, ventilation, and air conditioning (HVAC) system with the fresh-air intake closed/set on recirculate to prevent outdoor smoke from getting inside and to filter the air. If you don't have air conditioning and it's too warm to stay inside with the windows closed, seek shelter in an evacuation center or a public facility that has air conditioning and air filtration (e.g., library, community center).
- **Avoid activities that increase indoor air pollution.** Avoid smoking, frying or broiling food, burning candles or incense, using a gas stove or vacuuming. Vacuuming stirs up particles already inside your home, and activities like smoking, frying food, burning candles or using a gas stove can create more pollution.
- **Do not rely on dust masks for protection.** Paper “comfort” or “dust” masks trap large particles, such as sawdust, but they do not protect your lungs from the small particles found in wildfire smoke. An “N95” mask, properly worn, can offer some protection. If you decide to keep a mask on hand, see the Respirator Fact Sheet [\[LINK https://www.cdc.gov/niosh/docs/2003-144/\]](https://www.cdc.gov/niosh/docs/2003-144/) for further guidance.

Take care of yourself:

- Take it easy, listen to your body and pay attention to your symptoms.
- Monitor your body for any changes in your breathing or health.
- If you have asthma or other breathing conditions, like COPD, make sure you have your rescue inhaler with you.
- People with asthma should review and follow their asthma action plan.
- Call your doctor or healthcare provider if you're having trouble breathing or if your symptoms worsen.

Air Quality Index

Meteorologists at the Minnesota Pollution Control Agency (MPCA) forecast the Air Quality Index (AQI) at 18 locations in five regions across the state. Forecasts are important to help Minnesotans who are sensitive to air pollution for planning ahead to protect their health.

On most days, the AQI across Minnesota is in the green (good) category, but occasionally, the AQI climbs into the yellow (moderate) category, or even into the orange (unhealthy for sensitive groups) or above categories (unhealthy for everyone). While sensitive populations such as those with asthma, chronic obstructive pulmonary

disease (COPD), children, and older adults are more likely to experience health effects during orange and red AQI levels, unusually sensitive individuals can experience effects in the yellow category.

The chart below is based on an EPA chart found in the [Air Quality Guide for Particle Pollution \(PDF\)](https://www.airnow.gov/sites/default/files/2021-03/air-quality-guide_pm_2015_0.pdf), [LINK https://www.airnow.gov/sites/default/files/2021-03/air-quality-guide_pm_2015_0.pdf].

- (Spanish) [Air Quality Guide for Particle Pollution \(PDF\)](https://www.airnow.gov/sites/default/files/2018-05/air-quality-guide_particle_SPA.pdf), [LINK https://www.airnow.gov/sites/default/files/2018-05/air-quality-guide_particle_SPA.pdf]

Air Quality Index	Who Needs to be Concerned?	What Should I do?
Good (0-50)	It's a great day to be active outside.	
Moderate (51-100)	Some people who may be unusually sensitive to particle pollution.	Unusually sensitive people: Consider reducing prolonged or heavy exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier. Everyone else: It's a good day to be active outside.
Unhealthy for Sensitive Groups (101-150)	Sensitive groups include people with heart or lung disease, older adults, children, and teenagers.	Sensitive groups: Reduce prolonged or heavy exertion. It's OK to be active outside, but take more breaks and do less intense activities. Watch for symptoms such as coughing or shortness of breath. People with asthma should follow their asthma action plans and keep quick relief medicine handy. If you have heart disease: Symptoms such as palpitations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these, contact your health care provider.
Unhealthy (151-200)	Everyone	Sensitive groups: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling. Everyone else: Reduce prolonged or heavy exertion. Take more breaks during outdoor activities.
Very Unhealthy (201-300)	Everyone	Sensitive groups: Avoid all physical activity outdoors. Move activities indoors or reschedule to a time when air quality is better. Everyone else: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling to a time when air quality is better.
Hazardous (301-500)	Everyone	Everyone: Avoid all physical activity outdoors. Sensitive groups: Remain indoors and keep activity levels low. Follow tips for keeping particle levels low indoors.

Sign up to get alerts and forecasts via email: [Air Quality Notifications \(AirNow\)](http://www.mn.enviroflash.info/signup.cfm), [LINK <http://www.mn.enviroflash.info/signup.cfm>]

Check out the current air quality:

- [Current Air Quality \(MPCA\)](https://www.pca.state.mn.us/air/current-air-quality), [LINK <https://www.pca.state.mn.us/air/current-air-quality>]
- [AirNow \(EPA\)](https://www.airnow.gov/), [LINK <https://www.airnow.gov/>]

Additional Resources

- [Wildfire Information](https://www.dnr.state.mn.us/forestry/fire/index.htm), [LINK <https://www.dnr.state.mn.us/forestry/fire/index.htm>], Minnesota Department of Natural Resources
- [Wildfires](https://www.cdc.gov/disasters/wildfires/index.html), [LINK <https://www.cdc.gov/disasters/wildfires/index.html>], Centers for Disease Control and Prevention
- Environmental Protection Agency
 - [Wildfire Smoke and Your Patients Health](https://www.epa.gov/wildfire-smoke-course), [LINK <https://www.epa.gov/wildfire-smoke-course>]
 - [Smoke-Ready Toolbox for Wildfires](https://www.epa.gov/smoke-ready-toolbox-wildfires), [LINK <https://www.epa.gov/smoke-ready-toolbox-wildfires>]

