



Health Effects of Wildfire Smoke

Wildfire smoke is a complex mixture of fine particulate matter (PM2.5) and gases, such as carbon monoxide, nitrogen oxides, and volatile organic compounds. The mixture can change depending on the fuels, the weather, and distance from the fire. Wildfire smoke causes episodes of the worst air quality that most people will ever experience in British Columbia.



Although wildfire smoke is different from air pollution caused by traffic or industry, it is also harmful to human health.

- Smoky air makes it harder for your lungs to get oxygen into your blood.
- Wildfire smoke can irritate your respiratory system and cause an immune response, which may lead to inflammation that affects other parts of your body.
- Common symptoms include eye irritation, runny nose, sore throat, mild cough, phlegm production, wheezy breathing, or headaches. Such symptoms can usually be managed without medical attention.
- Some people may have more severe symptoms, such as shortness of breath, severe cough, dizziness, chest pain, or heart palpitations. You should seek prompt medical attention if you experience any of these symptoms.
- Smoky air may increase risk of some infections, such as pneumonia COVID-19, and ear infections in children.

Reducing exposure to wildfire smoke is the best way to protect your health.

- Portable air cleaners that use HEPA filtration can effectively remove smoke particles from the indoor air. Do your research to find something suitable for your needs.
- If you have forced air heating, you can use different filters and settings to minimize the amount of wildfire smoke that comes into your home. Talk to your service provider about what will work best for your system.
- Libraries, community centres, and shopping malls often have cooler, filtered air that can provide a break from outdoor smoke.
- When driving, keep the windows up, the air conditioner on, and use the recirculate setting to limit intake of the outdoor air.
- The harder you breathe, the more smoke you inhale. Take it easy during smoky periods, consider exercising indoors, and drink lots of water to help your body cope with the smoke.
- If you have an outdoor occupation, refer to resources from WorkSafe BC <https://u.nu/4vl8>



BC Centre for Disease Control
Provincial Health Services Authority

FOR MORE INFORMATION bccdc.ca/wildfiresmoke

Different people respond differently to wildfire smoke, and some people are at higher risk of experiencing health effects.

THOSE MOST AFFECTED



PEOPLE WITH CHRONIC LUNG/HEART DISEASE



OLDER ADULTS



PREGNANT WOMEN



INFANTS, YOUNG CHILDREN

It is especially important for the following groups to reduce their exposure.

- People whose health is compromised by an illness or chronic condition. Smoky air makes daily activities harder, both physically and mentally.
- **People with respiratory conditions** such as asthma or chronic obstructive pulmonary disease (COPD) are at highest risk of experiencing health effects caused by wildfire smoke. People with conditions such as heart disease, diabetes, cancer, or mental illness are also at increased risk.
- Unborn children and infants may be vulnerable. **Pregnant women and people caring for infants should consider using portable air cleaners.**
- Young children have sensitive lungs and may need to decrease their activities during smoky periods, especially when outdoors.
- Not everybody will experience noticeable effects from wildfire smoke. Even if you are not affected, remember to look out for others around you.

Most health effects of wildfire smoke are transient, meaning that they will disappear as the air quality improves.

There is very little research on whether there are longer-lasting health effects from seasonal wildfire smoke, and caution is recommended in the absence of scientific evidence.

- Remember that reducing exposure is the best way to protect against any health effects from wildfire smoke.
- Infants, unborn children, and those with obstructive lung conditions such as asthma and COPD are most likely to experience longer-term health effects.
- Wildfires are becoming more extreme and intense in British Columbia and elsewhere. Local and international scientists are working hard to understand how these changes affect health in populations exposed to wildfire smoke.