

# WILDFIRE SMOKE



CUPE members are experiencing wildfires that are increasing in number and severity. These fires and the smoke they create harm everyone's physical and mental health, especially equity-seeking groups like Indigenous populations and people with disabilities. Even if workers are far away, the bad air quality from wildfires can still affect them, both indoors and outdoors. Employers have a duty to take all reasonable precautions to protect workers from the risks of poor air quality, no matter where the air pollutants come from or how far away they are.

## **Wildfire smoke is an occupational hazard**

Breathing in wildfire smoke is dangerous. Wildfire smoke is made of tiny particles and gases that have harmful chemicals. Depending on the wildfire, the smoke may also contain cancer-causing substances. Chemicals in wildfire smoke can also include heavy metals and hydrocarbons that stay in the environment for a long time.

## **Impact of wildfire smoke**

Wildfire smoke can affect your health now and in the future. It can cause minor problems like eye, nose and throat irritation, as well as headaches. But it can also worsen allergies and cause more serious issues like persistent coughing, wheezing, shortness of breath, chest tightness and increased mucous production. Workers with existing health conditions, especially those with lung or heart issues, may have more problems on days with poor air quality. Pregnant and older workers are especially at risk.

## **Employer responsibility**

Employers must protect workers from the dangers of wildfire smoke.

Occupational health and safety laws require employers to assess hazards at work and take reasonable precautions to get rid of them. If a hazard can't be eliminated, your employer must find ways to reduce workers' exposure to it. Personal protective equipment (PPE) should only be used as a last resort when other measures fail.

To address poor air quality, employers should:

- Identify workers who are more likely to be exposed.
- Inform workers how the employer will monitor poor air quality and advise workers of the dangers (see the AQHI Table below).
- Explain the dangers of smoke exposure and the symptoms to watch out for.
- Provide guidance on what to do if a worker shows signs of smoke inhalation.
- Establish protocols to signal an emergency and get immediate help.
- Provide training on administrative controls and personal protective equipment, including how and when to use and maintain the equipment.
- Regularly check in with workers.

Workers have the right to know about hazards at work and to participate in the workplace health and safety system. The joint health and safety committee is responsible for assessing risks and suggesting ways to protect workers.

## **Eliminating the hazard**

Employers can't eliminate the hazard of wildfire smoke at its source. However, at risk workers and workers with health conditions may experience worsened symptoms on days with wildfire smoke. These workers may require accommodation that, depending on the situation, could include working elsewhere. Visit [cupe.ca](http://cupe.ca) for more information on the duty to accommodate.

## Controls along the path

### INDOORS

- Balance ventilation systems in buildings and vehicles to limit outdoor intake and ensure proper exhaust, with help from a qualified HVAC professional.
- Use high efficiency particulate air (HEPA) filters. Replace clogged or dirty filters.
- Windows and doors should be closed.
- Improve indoor air quality with portable air purifiers.

### OUTDOORS

- Determine if outdoor activities can be moved indoors.
- Determine if outdoor activities can be suspended until the air quality improves.
- If work needs to be done outside, try to postpone or halt strenuous or heavy activities.
- Choose activities that are unlikely to increase breathing or heart rate.
- Take frequent breaks, preferably indoors.

## PPE

Using a respirator can reduce exposure to wildfire smoke contaminants. The Canadian Standards Association has a respirator selection tool to help workers ensure they have adequate equipment (<https://www.csagroup.org/store/standards-support-tools/occupational-health-and-safety/respirator-selection-tool/>).

If an employer provides a respirator, like an N95, they must make sure it fits properly (through fit testing) and train workers on correct use and disposal.

A filtering facepiece respirator, like an N95, can filter out particles but won't protect against toxic gases. Respirators can also be uncomfortable and cause heat stress, especially in warm conditions. Employers should take this into consideration and adjust work factors like pace (reduce) and rest periods (increase).

## Using the Air Quality Health Index

There are no specific safety thresholds for working in wildfire smoke due to its complex composition. The health risks depend on factors like the smoke content, exposure level and duration, as well as the worker’s age and susceptibility. For these reasons, outdoor air readings are used to determine the right measures to take.

Health Canada created the Air Quality Health Index (AQHI) to show the health risks from air pollution. The AQHI considers three main pollutants:

- Ground-level ozone (O<sub>3</sub>) produced by chemical reactions in the atmosphere.
- Fine particulate matter (PM<sub>2.5</sub>) consisting of small particles that can be deeply inhaled.
- Nitrogen dioxide (NO<sub>2</sub>) emitted by vehicles and fossil-fuel based power plants.

The table below shows the health messages for “at risk” individuals and the general public for each of the AQHI risk categories.

HEALTH RISK	AIR QUALITY HEALTH INDEX	HEALTH MESSAGES	
		At risk population*	General population
Low	1 – 3	Enjoy usual activities	Ideal for outdoor activities
Moderate	4 – 6	Consider reducing or rescheduling strenuous activities outdoor	No need to modify your usual outdoor activities unless you experience symptoms such as coughing and throat irritation.
High	7 – 10	Reduce or reschedule strenuous activities outdoors. At risk populations should also take it easy.	Consider reducing or rescheduling strenuous activities outdoors if you experience symptoms such as coughing and throat irritation.
Very High	Above 10	Avoid strenuous activities outdoor. At risk populations should also avoid outdoor physical exertion.	Reduce or reschedule strenuous activities outdoors, especially if you experience symptoms such as coughing and throat irritation.

\*At risk populations include those with heart or breathing problems including those who are pregnant and are at greater risk for negative health outcomes. Follow your medical provider’s advice about exercising and managing.

**Current air quality conditions can be found by checking your regional weather service.**

# Using the Air Quality Index

Health Canada recommends the following steps when applying the AQHI to actual conditions.

## STEP 1.

Check the current hourly AQHI as you go about your daily activities.

When planning outdoor activities, use the forecast maximums and corresponding health messages as a guide. These values estimate the maximum that the AQHI will reach during each forecast period.

## STEP 2.

Follow the health advice given in the corresponding health messages.

## STEP 3.

Listen to your body and calibrate how you are feeling with the index value – air quality affects you differently depending on your risk. You can determine your level of risk to air pollution by consulting your physician.

### Norman Wells - Air Quality Health Index

**⚠ SPECIAL AIR QUALITY STATEMENT**

**1** Observed Conditions ± [Past 24 hr](#)  
**Not Available**

**2** Forecast Maximums [Next 24 hr](#) | [Health Message](#)  
**Issued at:** 6:00 AM MDT Thursday 27 July 2023

Thursday	7 - High Risk	
Thursday night	7 - High Risk	
Friday	7 - High Risk	
Friday night	5 - Moderate Risk	

**3**

**Who is at risk?**  
People with heart and lung conditions are most affected by air pollution.  
To find out if you are at risk, consult [the health guide](#), or your physician.  
Visit the [national AQHI Web site](#) to learn more about the AQHI.

**Did you know...?**  
Seniors are at higher risk because of their advanced age, weaker immune systems and increased likelihood of health problems such as heart and lung disease.

## Right to refuse

In Canada, workers have the legal right to refuse unsafe work, including work made unsafe by wildfire smoke.

You can refuse work if you believe it could endanger your health and safety or the health and safety of others. This can be due to equipment, workplace conditions or violations of occupational health and safety regulations.

It is illegal for employers to threaten, dismiss, discipline, intimidate or pressure you for following health and safety laws.

You can find more information on the right to refuse at [cupe.ca](http://cupe.ca).

## Conclusion

Wildfires are likely to continue and CUPE members will continue to experience days where work will need to be adjusted to keep them safe. Although employers may claim that they have no control over wildfires, they have a duty to ensure the safety of CUPE members at work. When it comes to eliminating hazards at work, including wildfire smoke, we must continue to hold employers to account and exercise our right to work that is healthy and safe.

### FOR MORE INFORMATION, CONTACT:

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