

# Safety Hazards

## Outdoor Air Quality

### On this page

[Is outdoor air quality an occupational concern?](#)

[What impacts outdoor air quality in Canada?](#)

[Does poor air quality equally impact everyone?](#)

[What is an Air Quality Health Index \(AQHI\)?](#)

[What are severe air quality alerts?](#)

[What should employers do when outdoor air quality is poor?](#)

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## Is outdoor air quality an occupational concern?

Outdoor air quality can be an occupational concern, especially during poor air quality events. Employers have a duty to protect workers from hazards in the workplace, including environmental hazards, such as outdoor air quality.

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## What impacts outdoor air quality in Canada?

Outdoor air pollution comes from both human activity and natural sources. Natural sources contributing to air pollution include dust storms, wildland fires, spray pollen spores, and volcanic activity. Pollution also forms through chemical and physical reactions in the atmosphere. Climate change is increasing wildland fire frequency, further contributing to the worsening air quality.

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## Does poor air quality equally impact everyone?

Exposure to air pollutants can cause a range of symptoms. Workers who are otherwise healthy may experience irritated eyes, increased mucus production in the nose or throat, coughing, or difficulty breathing. Difficulty breathing may be made worse by activity levels at work. People with certain health conditions may experience increased frequency or severity of symptoms. Some workers may not be aware that they have a medical condition that air quality would aggravate.

Populations in the workplace at higher risk also include those who are older and those who are pregnant. Workers with existing or underlying medical conditions or chronic health conditions, such as cancer, diabetes, allergies, and lung or heart conditions, may also be at a greater risk. The level of activity you are engaged in during a poor air quality event is also a factor. Individuals who work outdoors and are involved in strenuous outdoor exercise may experience worsening symptoms.

## What is an Air Quality Health Index (AQHI)?

The AQHI is a scale used in Canada to help people understand the daily impact of air quality and its health impacts. The AQHI uses a scale of 1-10+ to communicate health risks associated with air quality. The value of 1 on the scale indicates safe air quality, while 10+ indicates high-risk air quality events. This scale considers events such as wildland fires, smoke, and smog. The AQHI is available for all communities across Canada. Most weather networks and apps reference the AQHI and advise on air quality daily.

Table 1: Air Quality Health Index Messages\*

<b>Health Risk</b>	<b>Air Quality Health Index</b>	<b>Health Messages for at-Risk Population</b>	<b>Health Messages General Population</b>
<b>Low Risk</b>	1-3	Enjoy your usual outdoor activities	Ideal air quality for outdoor activities
<b>Moderate Risk</b>	4-6	Consider reducing or rescheduling strenuous activities outdoors if you are experiencing symptoms.	No need to modify your usual outdoor activities unless you experience symptoms such as coughing and throat irritation.
<b>High Risk</b>	7-10	Reduce or reschedule strenuous activities outdoors. Children and the elderly should also take it easy.	Consider reducing or rescheduling strenuous activities outdoors if you experience symptoms such as coughing and throat irritation.
<b>Very High Risk</b>	Above 10	Avoid strenuous activities outdoors. Children and the elderly should also avoid outdoor physical exertion.	Reduce or reschedule strenuous activities outdoors, especially if you experience symptoms such as coughing and throat irritation.

\* This table has been adopted from [Environment and Climate Change Canada's Air Quality and Health Index Messages](#). If you are unsure if you are at risk, Environment and Climate Change Canada provides a document called [Health risks of air pollution](#) which has more information.

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## What are severe air quality alerts?

Severe air quality alerts are issued when the air quality is expected to reach hazardous levels, posing a health risk to the population. Your local weather network or weather network phone application generally shares severe air quality alerts. Verify your local jurisdictions' method of communicating air quality events.

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## What should employers do when outdoor air quality is poor?

Employers have the duty to take all reasonable precautions in the circumstances to protect workers. This duty includes protecting workers from the hazards associated with poor outdoor air quality, poor air quality weather events, and related hazards.

Your workplace's emergency preparedness plan should include severe air quality events. Workers should be trained on this plan. Protective measures will vary depending on the severity of the air quality and the tasks being performed.

If you are working **outdoors** during a poor air quality event:

- Use the appropriate level of personal protective equipment, to be determined based on a risk assessment
- Limit the amount of time spent outside
- Plan outdoor work when air quality is better
- In severe circumstances, cancel outdoor work

If you are working **indoors** during a poor air quality event:

- Limit the amount of external air coming inside
    - Set your Heating, Ventilation and Air Conditioning (HVAC) system to a mode that allows air to recirculate instead of bringing in large amounts of external air
    - Keep windows closed
  - Use an air purifier – if available
  - Use filters with the appropriate ratings and replace as needed
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