
Wildfire smoke

OHS information for employers and workers

This resource explains hazards associated with wildfire smoke. Read this document if you work outdoors and can be exposed to wildfire smoke.

KEY INFORMATION

- Wildfire smoke is a hazard that can impact workers anywhere in Alberta.
 - Outdoor workers doing strenuous work close to the source of the wildfire are most exposed.
 - Hazardous substances in the air are typically below occupational exposure limits.
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What is in wildfire smoke?

Wildfire smoke is a common, seasonal health hazard in Alberta during the spring, summer and autumn months. The hazardous ingredients of smoke include particulate matter, carbon monoxide, and chemicals.

Health risks

The health effects can range from eye, nose and throat irritation to reduced lung function, bronchitis, exacerbation of asthmas and even risk of death.

- Firefighters and those with cardiovascular disease have more risk.
- Those with existing lung or heart conditions may experience worsening of symptoms (for example, difficulty breathing).
- Being close to a fire increases exposure to carbon monoxide – symptoms can include headache, weakness, nausea, dizziness, visual impairment, loss of consciousness or death at high concentrations.
- Particulate matter (dust) exposure may result in irritated eyes, stuffy nose or throat, and/or coughing or difficulty breathing, especially during strenuous work.
- Chemicals contained in the smoke can irritate eyes and lungs and may trigger asthma.
- Chemicals in wildfire may also increase cancer risk over a lifetime.
- Traumatic events like emergencies and natural disasters can have an impact on workers' mental health.

- Ensure staff are aware of, and have access to, the organization's employee assistance program, if there is one.
- Direct workers to Alberta Health Services' [Help in tough times](#) web page for a list of resources.
- [Mental Health Help Line](#): 1-877-303-2642

Exposure risks

Outdoor workers near to the source and those performing strenuous activities are most exposed; however, workers in any number of jobs may be exposed to wildfire smoke.

While [outdoor air](#) may appear smoky, the amount of hazardous substances in the air are typically far below occupational exposure limits (OELs) found in the Alberta Occupational Health and Safety Code (Schedule 1, Table 2).

Workers near to the source of the wildfire smoke or those whose health is compromised (for example, sensitive worker populations) are at the greatest risk. Even though levels of hazardous substances in locations distant from the source are likely below the OELs, these exposures may still pose a health hazard to some workers. At-risk workers should follow the health advisories as posted by [Alberta Health Services](#).

Sensitive populations include:

- Outdoor workers required to perform strenuous activity.
- Workers with existing respiratory conditions such as asthma, lung cancer, chronic obstructive lung disease including chronic bronchitis and emphysema.
- Workers with existing cardiovascular conditions such as angina, previous heart attack, congestive heart failure, or irregular heartbeat.
- Workers with compromised lung function who smoke.
- Elderly workers, due to deteriorating respiratory, cardiovascular and immune system function.
- Pregnant workers.
- Diabetic workers, as they may have underlying conditions such as cardiovascular disease.

Hazard assessment and control

As per Part 2 of the Alberta Occupational Health and Safety (OHS) Code, employers must identify hazards in the workplace and implement controls, following the hierarchy of controls set out in Section 9. Eliminating or preventing

exposure is the best way to protect health. When employers cannot eliminate wildfire smoke, they must assess the hazard, evaluate the hazard controls available and put together a plan for how they will control potential worker exposure using the hierarchy of controls.

HIERARCHY OF CONTROLS

You must eliminate hazards wherever you can.

If hazards cannot be eliminated, they must be controlled. Controls must be implemented in the order stated:

- Engineering controls.
- Administrative controls.
- Personal protective equipment (PPE).

If a hazard cannot be eliminated or controlled by using a single control method, the employer may use a combination of engineering controls, administrative controls, and PPE.

- If you have chest tightness, chest pain, or shortness of breath, call 911 or go to the nearest emergency department right away.
- If you have unusual tiredness, contact a community health nurse or your doctor – do this even if you don't have a heart or lung problem.
- If you have an emergency, call 911; for general health information, call Health Link at 811.

When administrative controls are unable to reduce exposures to acceptable levels, respiratory equipment may be used and must be selected in accordance with [CSA Standard Z94.4-02](#), *Selection, Use and Care of Respirators*.

Employers need to do the following when putting a plan together to deal with wildfire smoke:

- Involve workers in planning.
- Identify workers at increased risk of exposure.
- Outline the signs and symptoms of exposure to smoke.
- Explain the hazards to workers.
- Outline what to do if a worker shows adverse symptoms suspected of being a result of smoke inhalation.
- Identify any training requirements for the administrative and personal protective equipment controls chosen.

Engineering controls may include moving work indoors to clean air work areas where ventilation reduces the exposure to smoke.

Administrative controls are another option.

- If your work is not critical and can be moved to an area where smoke levels are lower, consider relocating or rescheduling it when air quality conditions improve.
- Reduce levels of physical activity, as necessary, to decrease inhaling pollutants.
- Pay attention to warnings – public health warnings apply to you and should be followed.
- Refrain from smoking and avoid second-hand smoke.
- To prevent smoky air from getting in your vehicle, keep your windows closed and air systems on recirculate.
- Drink water and stay hydrated to help ensure your nose and mouth are moist.

Contact us

OHS Contact Centre

Alberta toll-free

- 1-866-415-8690

Edmonton region

- 780-415-8690

Deaf or hard of hearing (TTY)

- 1-800-232-7215 (Alberta toll-free)
- 780-427-9999 (Edmonton region)

Notify OHS of health and safety concerns

alberta.ca/file-complaint-online.aspx

Call the OHS Contact Centre if you have concerns that involve immediate danger to a person on a work site.

Report a workplace incident to OHS

alberta.ca/ohs-complaints-incident.aspx

Website

alberta.ca/ohs

OHS Resource Portal

ohs-pubstore.labour.alberta.ca

Get copies of the OHS Act, Regulation and Code

Alberta King's Printer

alberta.ca/alberta-kings-printer.aspx

OHS

alberta.ca/ohs-act-regulation-code.aspx

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For more information

Alberta Environment and Sustainable Resource Development – Air Quality Technical Map
airquality.alberta.ca/map/

Alberta Health Services – Health Advisories
albertahealthservices.ca/news/Page1926.aspx

Alberta Wildfire Status Dashboard
arcgis.com/apps/dashboards/3ffcc2d0ef3e4e0999b0cf8b636defa3

Hazard Assessment and Control: a handbook for Alberta employers and workers (BP018)
ohs-pubstore.labour.alberta.ca/bp018

Respiratory Protective Equipment: an employer's guide (PPE001)
ohs-pubstore.labour.alberta.ca/ppe001

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