

# SCHOOLS AND WILDFIRE SMOKE

## Schools can help protect health during wildfire smoke events



Wildfire smoke events are becoming more frequent as the climate changes, resulting in more days with poor air quality that can impact health. Wildfire smoke is a mixture of small particles and many gases. The small particles, also known as fine particulate matter (PM2.5), are the greatest health concern as they can travel deep into the lungs when inhaled and cause irritation and inflammation. This can have both short-term and longer-lasting health impacts.

**Children and people with certain chronic health conditions (e.g. asthma, heart disease, and diabetes)** are particularly susceptible to the health effects of poor air quality, and exposure can increase during outdoor physical activity in smoky conditions.

**Reducing exposure to wildfire smoke can help to protect health during wildfire events.**

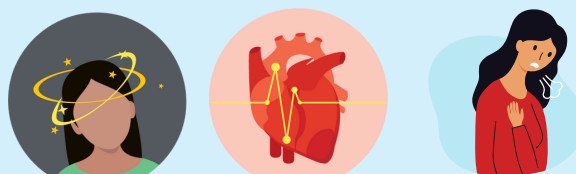
### Common symptoms of wildfire smoke exposure:

- Sore throat
- Eye irritation
- Runny nose
- Mild cough
- Phlegm production
- Headaches



### Severe symptoms of wildfire smoke exposure:

- Shortness of breath
- Severe cough
- Dizziness
- Chest pain
- Wheezing
- Heart palpitations



People with symptoms should be supported to promptly stop physical activity and seek cleaner air during smoky conditions. Those with severe symptoms should be supported to access medical attention.

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## What can schools do to **prepare for the wildfire season?**

- [Subscribe](#) to air quality advisories and alerts in your region.
- Prepare staff to know the signs of illness due to poor air quality and recognize when medical attention is needed. Schools should be aware of students with chronic health conditions that make them more vulnerable to poor air quality and make appropriate arrangements during poor air quality events (e.g. supporting less strenuous activities during outdoor physical education).
- Ensure that those with chronic health conditions who are prescribed medications (e.g. inhalers for asthma) have easy access their medications at school.
- Maintain clean air inside your school:
  - Ensure building ventilation and air filtration systems are maintained according to manufacturers' specifications.
  - Where possible, install air filtration with a rating of MERV 13 or greater (e.g. MERV 13, MERV 16 or HEPA filters) in the existing building ventilation system.
  - Consider using portable air cleaners with HEPA filtration during wildfire smoke events. Ensure that they are adequate for the size of the space. The Clean Air Delivery Rate (CADR) is a performance measure that can be used when selecting appropriate air filters. Some portable air cleaners also have activated carbon filters that can address the gaseous pollutants in wildfire smoke. Avoid air cleaners that produce ozone. The BC Centre for Disease Control provides online information on choosing and using air cleaners (see resource in the table below).
  - Heat may become an issue during smoky periods. Schools should apply measures (e.g. air conditioning, window shading) to maintain safe indoor temperatures and cool spaces with cleaner air.
- Develop a "Wildfire Smoke Readiness Plan", using public health resources below, to prepare for wildfire smoke. Vancouver Coastal Health and Fraser Health programs are available to provide support.



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## What should schools do during a wildfire event?

- Monitor the situation closely. Check your local Air Quality Health Index (AQHI) and air quality advisories regularly. Note that the index can vary depending on your location and can change throughout the day.
- Be alert to symptoms among students. Take action to reduce their exposure to smoke and seek medical attention if they have severe symptoms.
- Reduce everyone's exposure to wildfire smoke as much as possible.
  - Use public health guidance based on the AQHI (shown on the next page). Consider cancelling recess and other outdoor activities if the AQHI is 7 or higher, and supporting modified activities for students who are sensitive to smoke.
  - Keep windows and doors closed during times of heavy smoke if temperatures allow. Meanwhile, note that indoor temperatures should be maintained below 26°C to prevent heat-related illnesses. If it is necessary to open windows or doors for cooling (i.e. in spaces without air conditioning), do so when outdoor smoke has decreased, if possible.
- School closures for health reasons including wildfire smoke exposure should only be implemented in discussion with public health authorities.

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## AQHI and Recommended Actions for Schools

1-HOUR PM <sub>2.5</sub> (µg/m <sup>3</sup> )	PROVINCIAL AQHI	AQHI RISK CATEGORY	HEALTH MESSAGE FOR PEOPLE AT HIGHER RISK	HEALTH MESSAGE FOR GENERAL POPULATION	ACTIONS FOR SCHOOLS
0 – 10	1	LOW	Enjoy your usual outdoor activities.	Ideal air quality for outdoor activities.	Encourage outdoor play as much as possible.
11 – 20	2				
21 – 30	3				
31 – 40	4	MODERATE	Consider reducing or rescheduling strenuous activities outdoors if you experience symptoms.	No need to modify your usual outdoor activities unless you experience symptoms.	Be aware of students who are sensitive to and/or experiencing the effects of air pollution.
41 – 50	5				
51 – 60	6				
61 – 70	7	HIGH	Reduce or reschedule strenuous activity outdoors.	Consider reducing or rescheduling strenuous activities outdoors if you experience symptoms.	Consider cancelling or planning less intense outdoor activities, or rescheduling them to another day.
71 – 80	8				
81 – 90	9				
91 – 100	10				
101+	10+	VERY HIGH	Avoid strenuous activity outdoors.	Reduce or reschedule strenuous activity outdoors, especially if you experience symptoms.	Move all outdoor activities indoors or reschedule them to another day.

Table adapted from BC CDC Wildfire Smoke and Air Quality Health Index fact sheet (see link below); expanded to include recommended actions for schools.

## Wildfire Smoke Resources

<a href="#">Vancouver Coastal Health Wildfire Smoke webpage</a> <a href="#">Fraser Health Wildfire Smoke webpage</a>	Information for the public, community partners and health professionals regarding wildfire smoke, including a number of links to public fact sheets and resources.
<a href="#">Vancouver Coastal Health Extreme Heat webpage</a> <a href="#">Fraser Health Sun and Heat Safety webpage</a>	Information for the public, community partners and health professionals regarding extreme heat, including a number of links to public fact sheets and resources.
<a href="#">BC Centre for Disease Control Wildfire Smoke during Extreme Heat events Fact Sheet</a>	Summer can bring both smoke and heat. Information on wildfire smoke and extreme heat concurrent events, with emphasis on access to cooler, cleaner air.
<a href="#">BC Centre for Disease Control Wildfire Smoke Fact Sheets</a>	Public facing fact sheets about the health effects of wildfire smoke, tips on how to prepare for the wildfire season, choose portable air cleaners, and using the AQHI.
<a href="#">HealthLinkBC Wildfires and your Health</a>	Information and links to resources for before, during, and after a wildfire (including stress and trauma) in multiple languages.
<a href="#">BC Air Quality Subscription Service</a> <a href="#">Metro Vancouver Air Quality Advisories</a>	Subscribe to receive emails when Smoky Sky Bulletins (outside of Metro Vancouver) or Air Quality advisories (Metro Vancouver) are issued.
<a href="#">BC Centre for Disease Control Portable Air Cleaners for Wildfire Smoke</a>	Information on the types of portable air cleaners to reduce wildfire smoke indoors.
<a href="#">WeatherCAN app</a>	App that informs users of the level of health risk associated with local outdoor air quality. Includes user-defined push notifications based on the chosen AQHI level.
<a href="#">BC Particulate Matter and AQHI data by Monitoring Station</a> <a href="#">Metro Vancouver Air Quality Data</a>	Contains air quality information and maps. For wildfire smoke, make sure to look at both the AQHI data and the PM2.5 data.