

WILDFIRE SMOKE & HEALTH



WHO ARE WE?

This fact sheet was created by the CRD Community Health Network*. We are a multi-sectoral health network committed to **building and sustaining healthy communities** through facilitating discussion and catalyzing action around the social, economic, and environmental determinants of health and wellness.

*also known as the Regional Outcomes Monitoring Group

Wildfire smoke is a complex mixture of **fine particulate matter (PM2.5)** and gases, such as carbon monoxide, nitrogen oxides, and volatile organic compounds.



PM2.5 particulates are 20x smaller than the width of a human hair and can penetrate deep into the lungs.



People with heart and lung diseases are most sensitive to wildfire smoke, but absolutely everyone is affected by poor air quality on smoky days.



Pose the **greatest risk** to human health (of all the pollutants in wildfire smoke).

Source: BCCDC, Fact sheet: health effects of wildfire smoke, 2020

PM2.5 image credit: Jen Burgess/IsolineStudios for BC Centre for Disease Control

Source: Henderson, Brauer, Stull, n.d.

BACKGROUND



PM2.5 contributes to reduced air quality, which can increase susceptibility to COVID-19 by affecting the immune system ([HealthlinkBC, 2020](#)).

IN 2017 & 2018

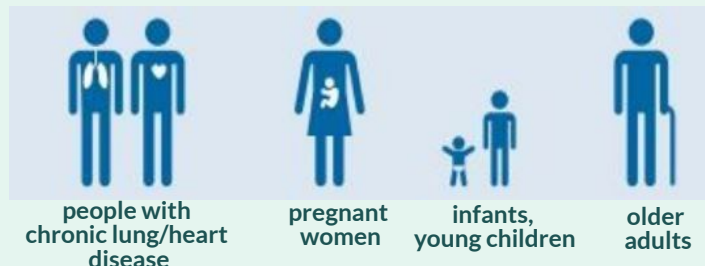
Wildfire smoke was widespread in 2017 and 2018 with record PM2.5 concentrations recorded in many areas of the Province ([BC Lung Association](#)).



Climate change is linked to increasing wildfire risk due to longer, hotter, and drier wildfire seasons.

Source: [Young et al. \(2018\). Attribution to the influence of human-induced climate change on an extreme fire season.](#)

WHO CAN BE MOST IMPACTED?



Source for this section: [BCCDC, Fact sheet: health effects of wildfire smoke, 2020](#)

MENTAL HEALTH IMPACTS

During a wildfire smoke event it is common to feel anxious, stressed out, sad, or isolated. It is especially important to take care of your mental health during this time.

Source: [Government of Canada, 2020](#)

HEALTH IMPACTS



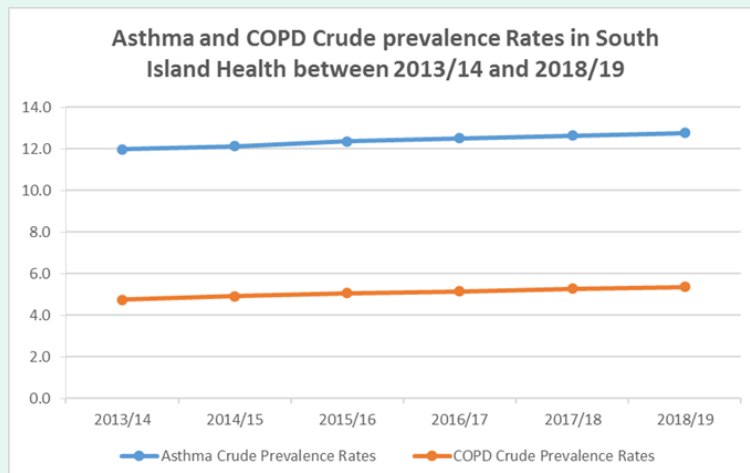
- makes it harder for your lungs to get oxygen into blood
- irritates your respiratory system, which can lead to inflammation that affect other parts of the body

COMMON SYMPTOMS



- eye irritation
- runny nose
- sore throat
- mild cough
- phlegm production
- wheezy breathing
- headaches

OUR REGION HAS SEEN AN INCREASE IN ASTHMA & COPD*



*COPD is Cardiovascular Obstructive Pulmonary Disease

Please note: Those with Asthma or COPD, are especially at risk of experiencing health effects from wildfire smoke

Source: [Saskatchewan Lung Association](#)

WHERE TO FIND INFORMATION & WHAT CAN YOU DO?

REAL-TIME AIR MONITORING

- Air conditions can change quickly.
- The CRD has 2 real-time air monitoring stations at [Topaz Park](#) and [Colwood City Hall](#).
- [PurpleAir monitors](#) are low-cost citizen-science sensors that provide real-time data of PM2.5 concentrations. While these sensors do not provide the same high-quality data as the main air monitoring stations, they do provide valuable information on the extent and intensity of smoke.

AIR QUALITY : CURRENT STATE & PROJECTIONS

- [FireWork](#) provides wildfire smoke forecasts for the next 48 hours.
- For historical readings, the [Georgia Strait Air Zone](#) provides data for the CRD.
- The BC Lung Association's Air Quality and Health Steering Committee releases an annual [State of the Air report](#). It provides a snapshot of key air quality issues across the province .
- [Climatedata.ca](#) is an online portal that enables the user to access, visualize, and analyze climate data.

HEALTH KNOWLEDGE TRANSLATION TOOLS

- This [BC Asthma Prediction System](#) shows the # of dispensations of asthma medications and air pollution.
- [Air Quality Health Index](#) provides information on air quality and health advice for different risk categories.

WHAT CAN YOU DO?



Set up a **cleaner air shelter in your home** by using a portable [HEPA air cleaner](#) to filter the air.

Consider a shopping mall or community clean air shelter ([BCCDC, 2014](#)) with cooler filtered air ([Island Health, 2020](#)).

Switch to heat pumps instead of oil or gas furnaces/boilers or woodfire. Heat pumps can help people by reducing airborne irritants like wildfire smoke, and improve the overall air quality in the home ([CleanBC, 2019](#)).



Work with your municipality to **improve baseline air quality** through reducing burning activities. Explore provincially funded initiatives such as the [provincial woodstove exchange program](#).



Municipalities may want to **evaluate business continuity and business operations** as smoke may impact any staff working outdoors, or contribute to increased absences for health reasons.

Eating well, getting enough sleep, exercising indoors and staying in contact with friends can help take care of your mental health during a wildfire smoke event ([Government of Canada, 2020](#)).

Thank you to our reviewers from Island Health, Ministry of Environment, Simon Fraser University. We would also like to thank our MPH student, Sidney Tham, for all of her support in this work.

Created by:

If you are looking for more information on the **data and resources** listed in this fact sheet OR if you would to **join the health network**, please contact **Kirsten Mah**, CRD Community Health Network Coordinator, at kmah@crd.bc.ca or 250-360-3174.