

# Fumée et feux de forêt :

## Comprendre, communiquer et réduire les risques pour la santé publique

### (2<sup>e</sup> partie)

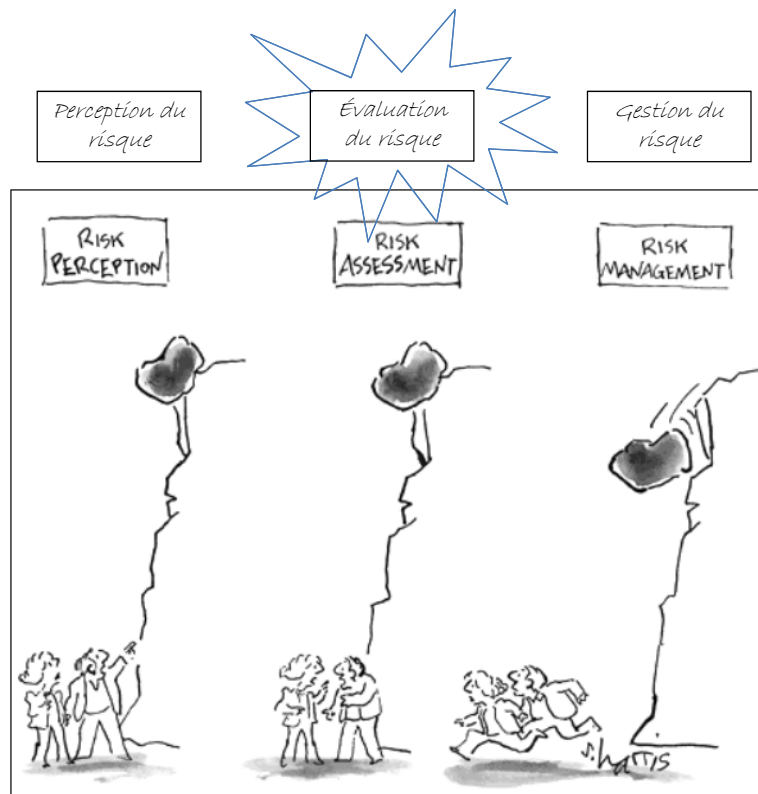
Journées annuelles de santé publique

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VOTRE SANTÉ ET VOTRE SÉCURITÉ... NOTRE PRIORITÉ.



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## Effets à la santé

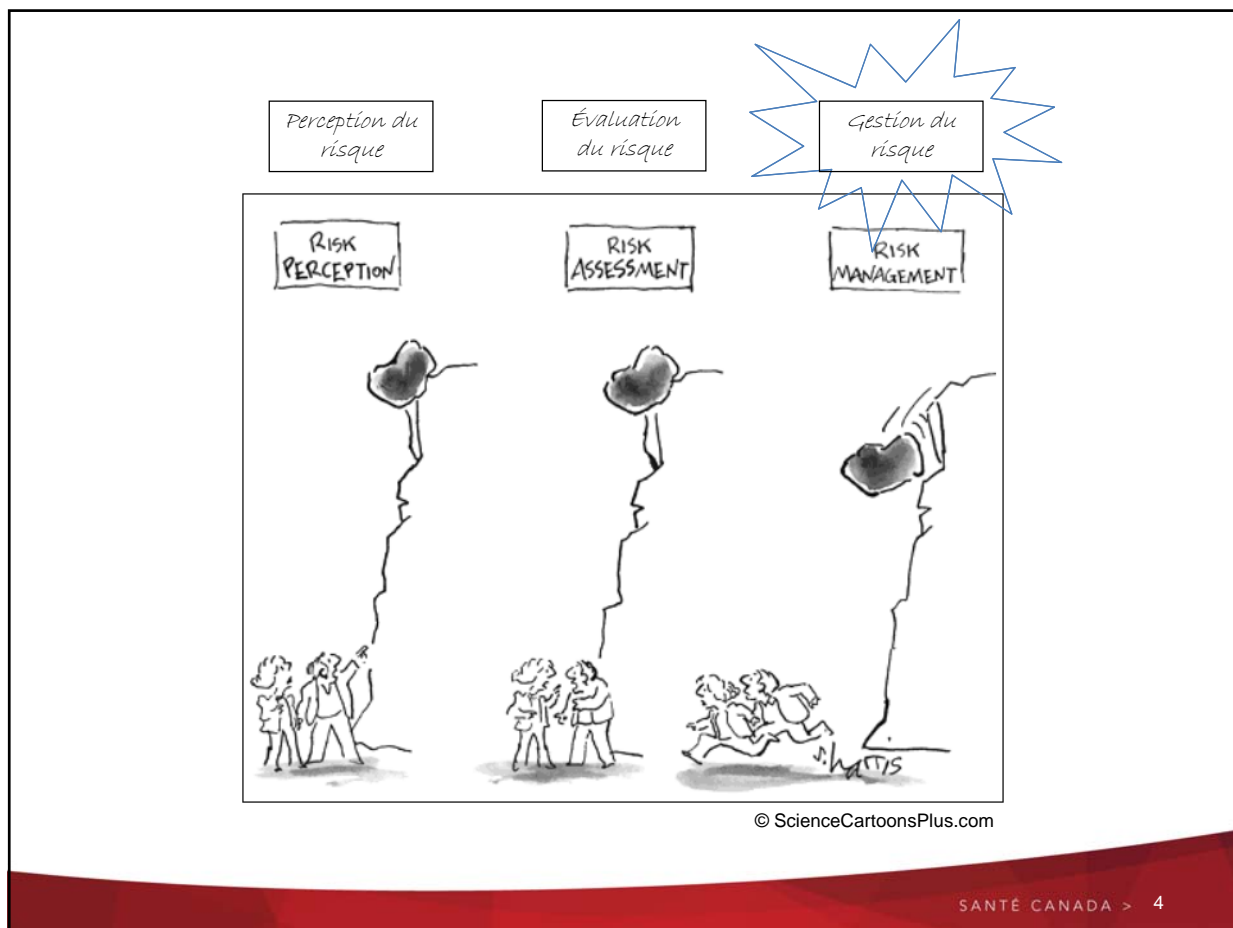
- Composition de la fumée : particules fines (PM<sub>2.5</sub>), monoxyde de carbone, méthane, oxydes d'azote, composés organiques volatils...
- Populations vulnérables (à la pollution de l'air en général) : personnes ayant une maladie respiratoire ou cardiaque, aînés, enfants, femmes enceintes
- Forte association<sup>1</sup> :
  - entre l'exposition à la fumée, les PM<sub>2.5</sub> et la mortalité et la morbidité respiratoire toutes causes confondues;
  - entre l'exposition à la fumée et les exacerbations d'asthme et de MPOC, de bronchite et de pneumonie.
- Santé mentale<sup>2</sup> :  
Yellowknife et environs (été 2014) : Évacuation et isolement ont mené à de l'incertitude, de la peur, du stress.

1 Reid CE, Brauer M, Johnston FH, Jerrett M, Balmes JR, Elliott CT. Environ Health Perspect (2016) 124:1334–1343. <http://dx.doi.org/10.1289/ehp.1409277>

2 Dodd, W., Scott, P., Howard, C. et al. Can J Public Health (2018) 109: 327. <https://doi.org/10.17269/s41997-018-0070-5>

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## Fournir les bons conseils... aux bonnes personnes... au bon moment.

- Collaboration avec ECCC et autres instances (par ex. : BC Centre for Disease Control, Manitoba Health Office of Disaster Management)

## Ressources du BC Centre for Disease Control

### WILDFIRE SMOKE AND YOUR HEALTH

#### Health Effects of Wildfire Smoke

Wildfire smoke is a complex mixture of particulate matter (PM<sub>2.5</sub>) and gases, such as nitrogen oxides, and volatile organic compounds. The mixture can change depending on weather, and distance from the fire causes episodes of the worst air quality people will ever experience in British Columbia.

Although wildfire smoke is different from air pollution caused by traffic or industry, it is also harmful to human health.

Smoky air makes it harder for your lungs to get oxygen into your blood.

Wildfire smoke can irritate your respiratory system and cause an immune response, which may lead to inflammation that affects other parts of your body.

Common symptoms include eye irritation, runny nose, sore throat, mild cough, phlegm production, wheezy breathing, or headaches. Such symptoms can usually be managed without medical attention.

Some people may have more severe symptoms, such as shortness of breath, severe cough, dizziness, chest pain, or heart palpitations. You should seek prompt medical attention if you experience any of these symptoms.

Smoky air may increase risk of some infections, such as pneumonia in older people and ear infections in children.

Reducing exposure to wildfire smoke is the best way to protect your health.

- Portable air cleaners that use HEPA effectively remove smoke particles from the air. Do your research to find one that suits your needs.
- If you have forced air heating, you may want to consider having your filters and settings to minimize the amount of smoke that comes into your home. Ask your service provider about what your system.
- Libraries, community centres, and other public places, filtered air that breaks from outdoor smoke.
- When driving, keep the windows closed, and use the recirculate mode to reduce the amount of outdoor air that enters your car.
- The harder you breathe, the more smoke you inhale. Take it easy during smoky days. Exercise indoors, and drink lots of water to help you cope with the smoke.
- If you have an outdoor occupation, consider wearing a respirator from WorkSafe BC. <http://www.worksafebc.com>

FOR MORE INFORMATION: [bccdc.ca/health-info/health-your-env](http://bccdc.ca/health-info/health-your-env)

### WILDFIRE SMOKE AND YOUR HEALTH

#### Wildfire Smoke and Outdoor Exercise

Exercising outdoors is good for most people, but it is more difficult when the air is smoky.

Exercise is good for physical and mental health. However, some people are at higher risk of experiencing health effects while exercising when it is smoky outside:

- People with conditions such as asthma, chronic obstructive pulmonary disease (COPD), or respiratory infections
- People with other chronic health conditions such as heart disease and diabetes
- Pregnant women and their developing infants
- Children
- The elderly

Children may be especially susceptible to wildfire smoke. Although children have smaller lungs than adults, they breathe more air per unit of body weight. The lungs of children are not fully developed. The sensitive tissues continue to branch and grow into late adolescence.

Children are generally more active than adults, especially outdoors.

People breathe and move deeper when they are exercising.

- The average adult spends about 15 minutes a day with more intense activity.
- An adult doing less than 15 minutes a day of moderate activity.

FIGURE 1: Breathing more air during outdoor exercise.

FOR MORE INFORMATION: [www.bccdc.ca/health-info/health-your-env](http://www.bccdc.ca/health-info/health-your-env)

### WILDFIRE SMOKE AND YOUR HEALTH

#### Portable Air Cleaners for Wildfire Smoke

Wildfire smoke is a complex mixture of air pollutants, including small particles that can cause irritation and inflammation when inhaled. Smoke can come into buildings through windows, doors, vents, air intakes, and other openings.

Most people spend up to 90% of their time indoors, where portable air cleaners can be used to reduce the impacts of wildfire smoke.

Most portable air cleaners use high efficiency HEPA filters to trap the very small particles in wildfire smoke.

- Some units use electrostatic precipitators to remove particles from the air. This process creates ozone gas, which can be a lung irritant. People with respiratory conditions should only consider purchasing HEPA filtration units.
- Both HEPA filters and electrostatic precipitators can only remove particles from the air, not gases. However, some units also have activated carbon filters that can reduce the gaseous pollutants in wildfire smoke.
- Some units use negative ionizers to remove smoke particles from the air.

Portable air cleaners plug into regular wall sockets and can be moved between rooms.

Studies have tested indoor portable air cleaners on pollution from many different sources, including wildfire smoke. In most of these studies, portable air cleaners have reduced small particle concentrations by 40-80%.

Use of portable air cleaners has been associated with better lung function, lower blood pressure, and reduced inflammation in children and adults.

FOR MORE INFORMATION: [bccdc.ca/health-info/health-your-env/air-quality](http://www.bccdc.ca/health-info/health-your-env/air-quality)

The people who can benefit most from portable air cleaners are those with asthma, chronic obstructive pulmonary disease (COPD), heart disease, pregnant women, infants and young children, and the elderly.



## Et les masques N95?

Conseils du BC CDC:

- D'aucune efficacité contre les contaminants gazeux;
- Importance d'assurer une certaine étanchéité autour du masque;
- Inadéquat pour les enfants;
- Quand les remplacer?
- Porter un masque N95 peut rendre la respiration plus difficile.



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## Bulletin spécial de la qualité de l'air

- Exemple d'un extrait de Bulletin spécial sur la qualité de l'air :

*Si vous ou vos proches êtes exposés à la fumée de feux de forêt, prenez des précautions supplémentaires pour réduire le plus possible votre exposition. La fumée de feux de forêt est un mélange de particules et de gaz en constante évolution qui contient de nombreux produits chimiques pouvant présenter des risques pour la santé.*

*Pour plus de détails, consultez le <https://www.canada.ca/fr/environnement-changement-climatique/services/cote-air-sante/fumee-feux-foret-qualite.html>.*

Photo : Edmonton, été 2017. Fumée provenant des feux en C.-B. Crédit photo : Petr Smida


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## La fumée des feux de forêt, la qualité de l'air et votre santé

Si votre collectivité est menacée par l'approche d'un feu de forêt, suivez les directives de vos responsables locaux des urgences et de la santé.


Soyez prêt à procéder à une évacuation à tout moment. Si l'on vous dit de quitter, faites-le.

[Apprenez-en davantage sur les mesures à prendre en cas d'urgence liée à un feu de forêt.](#)



**Demeurez informé lors des feux de forêt**

Alertes sur la qualité de l'air, prévisions, renseignements sur les feux de forêt



**La fumée des feux de forêt et votre santé**

Protéger votre santé contre les effets de la fumée, provenant des feux de forêt

- Limitez les activités à l'extérieur et les activités physiques intenses autant que possible
- Échangeurs d'air : régler de façon à minimiser l'entrée de fumée
- Utiliser un purificateur d'air si possible
- ...

## Modèle hybride en Colombie-Britannique

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 TO REDUCE WILDFIRE SMOKE EXPOSURE
0 – 10	1	LOW	Enjoy your usual outdoor activities.	Ideal air quality for outdoor activities.	Normal air quality in British Columbia
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.	<ul style="list-style-type: none"> <li>Use a portable air cleaner to reduce smoke in your home</li> <li>Stay inside with doors and windows closed, but keep cool – being too hot is more risky than breathing smoke for most people</li> </ul>
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.	<ul style="list-style-type: none"> <li>Visit places with cleaner and cooler air, such as libraries, community centres, and shopping malls</li> </ul>
71 – 80	8				
81 – 90	9				
91 – 100	10	VERY HIGH	Avoid strenuous activity outdoors.	Reduce or reschedule strenuous activity outdoors, especially if you experience symptoms.	<ul style="list-style-type: none"> <li>If you cannot access cleaner air, consider using a well-fitted N95 respirator or relocating to an area with less smoke</li> </ul>
101+	10+				

## Planification

- Gouvernement du Manitoba (Santé, Aînés et Vie active)
  - Symposium canadien sur les communications concernant la fumée des incendies de forêt (avril 2019, Winnipeg)
- Centre de collaboration nationale en santé environnementale
  - Enquête sur les pratiques actuelles en planification et sur les interventions



National Collaborating Centre  
for Environmental Health  
Centre de collaboration nationale  
en santé environnementale



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## Autres ressources

- Centre de collaboration nationale en santé environnementale
  - <http://www.ccnse.ca/environmental-health-in-canada/health-agency-projects/fumée-de-feux-de-forêt-et-santé>
  - Références sur les sujets suivants :
    - Réduction des risques;
    - Préparation et planification;
    - Communication;
    - Leçons apprises;
    - Communautés autochtones et éloignées;
    - Réintégration du domicile;
    - Santé au travail.
- Communauté de pratique sur GCcollab.ca (*Wildfire Smoke Science Community*)

GCcollab

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## Appareil de surveillance de la qualité de l'air en situations d'urgence

- Appareil pouvant être déployé rapidement lors d'urgences touchant la qualité de l'air
- Équipement
  - Échantillonneur de PM<sub>2,5</sub>
  - Enregistreur et transmetteur de données à distance
- Soutien lors des interventions d'urgence et de suivi
  - Conseils sur l'équipement à utiliser, ou prêt d'équipement
  - Conseils sur les polluants préoccupants, l'interprétation des données et les messages relatifs la santé



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# MERCI!

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