Forest Fires and Respiratory Health Fact Sheet

Wildfires are an ongoing concern where there is dry, hot weather. During a wildfire, people throughout the surrounding area may suffer the effects of forest fire smoke. If you have respiratory problems such as asthma, emphysema and bronchitis or a chronic heart disease, we urge you to monitor your breathing and exposure to airborne matter. If problems develop call your physician immediately.

Forest fires are the second-largest source of PM$_{2.5}$ (particular matter\textsuperscript{1}) from wood smoke in the BC province (second to open-burning sources). They can have significant impacts on local air quality, visibility and human health. Emissions from forest fires can travel large distances, affecting air quality and human health far from the originating fires. These emissions include:

- particulate matter;
- carbon monoxide;
- atmospheric mercury;
- ozone-forming chemicals; and
- volatile organic compounds.

General Recommendations

**Stay indoors:** People living in close proximity to the fire-stricken areas should remain indoors and avoid inhalation of smoke, ashes and particulate matter.

**Don't count on a dust mask:** Ordinary dust masks, designed to filter out large particles, will not help as they still allow the more dangerous smaller particles to pass through. Special, more expensive dust masks with true HEPA filters will filter out the damaging fine particles, but are difficult for people with lung disease to use. Consult with your physician before using a mask.

**Don't exercise outside:** If you live close to or in the surrounding area, it's recommended that you refrain from exercising outdoors, especially if you smell smoke or notice eye or throat irritation.

**Take precautions for kids:** Extra precaution should be taken for children, who are more susceptible to smoke because their respiratory systems are still developing and they breathe in more air (and consequently more pollution) per pound of body mass than adults.

**Roll up your car windows:** When driving your car in smoky areas, keep your windows and vents closed. Air conditioning should only be operated in the "re-circulate" setting.

**Put air conditioners on re-circulate:** Stay inside as much as possible, with doors, windows and fireplace dampers shut and preferably with clean air circulating through air conditioners and air cleaners. Use air conditioners on the recirculation setting so outside air will not be moved into the room.

\textsuperscript{1}Wood and fossil-fuel burning are the two main human-caused sources. Particulate matter that is 10 microns (micrometres) in diameter or less is called PM$_{10}$. Of major concern are particles that are 2.5 micrometres or smaller in diameter (PM$_{2.5}$) because they can lodge deep in the lungs, and cause respiratory and cardiac problems.
Health Effects of Smoke Exposure due to Forest Fires

From Provincial Health websites

How does smoke in the air affect my health?
How smoke conditions may affect your health is determined by a number of factors, such as the length of time you are exposed, how much air you breath in, your health status and the concentration of smoke in the air.

Smoke is made up of a number of components. The unhealthiest material in forest fire smoke is the small particles (particulates). They may make it harder to breathe or make you cough. These small particles can also make existing heart and lung conditions worse.

Who is most at risk from exposure to smoke?
Young children, the elderly, and people with heart or lung conditions, like asthma, chronic bronchitis, emphysema, and congestive heart failure are more sensitive to the adverse effects of exposure to smoke. People participating in sports or strenuous work outdoors may also be more susceptible, because they are breathing air deeply and rapidly. Risks increase when smoke becomes heavier and as the length of time a person is exposed increases.

What are the symptoms of smoke exposure?
Exposure to smoke can cause sore eyes, tears, cough and a runny nose. If the smoke lasts days to weeks or is very heavy, it can cause lung problems and a longer-lasting cough. Exposure to smoke can also make heart and lung conditions worse.

What should I do if I’m concerned about smoke?
Citizens who are concerned about smoke can take the following precautions:

• Limit outdoor activities, especially if it makes you tired or short of breath.
• Stay inside and keep windows and doors closed. If you have an air conditioner set it to “re-circulate” and keep it running to help filter the air and keep you cool. If you do not have air conditioning, if possible, try spending some time in an air conditioned place (such as a mall or library) to cool off.
• Keep a close watch on at risk individuals, particularly those that live alone. Young children, elderly people and individuals with chronic conditions may be more sensitive to heat or smoke.
• If you are in your car or truck, keep the windows closed and put the air system on “re-circulate.”
• Limit any strenuous indoor activities if you have been exposed to smoke.
• If you have room air cleaners with HEPA filters turn them on.
• Don’t burn anything, including wood stoves, gas stoves and even candles.
• Check local weather forecasts and Government websites for information on fire conditions in your area.
When should I start taking precautions?
Smoke levels from forest fires may vary considerably due to fire conditions and wind directions.

People who are at higher risk such as young children, the elderly and people with heart or lung conditions should consider taking precautions when smoke conditions are light to moderate. This is usually indicated by a smoke odour and haziness or visibility that is less than eight km.

People who are considered healthy should consider taking precautions when smoke conditions are heavy. Heavy smoke conditions exist when visibility is less than about four kilometers, and is especially of concern when these conditions last for a day or more.

When should I seek medical care?
The decision to seek medical care will be affected by factors such as age, existing health problems or the symptoms a person is experiencing at the time. It is important to listen to your body’s cues, especially if you have a condition that puts you at higher risk.

If you or someone you know experiences any of the following symptoms it is important to seek medical care as soon as possible:

- A cough that is persistent or worsening;
- Shortness of breath, beyond what is usually experienced;
- Chest pain or tightness; or
- Significant weakness or fatigue.

If you have questions or are concerned that you may need care, contact your health care provider.