



SECOND-HAND SMOKE

What is second-hand smoke?

Exposure to second-hand smoke is more than a nuisance. It is a serious health hazard that can lead to disease and premature death in children and non-smoking adults. THERE IS NO SAFE LEVEL OF EXPOSURE TO SECOND-HAND SMOKE. Even brief exposure can be harmful to people's health.

Second-hand smoke comes from the burning end of a lit cigarette, cigar or pipe. Two-thirds of the smoke from a burning cigarette is not inhaled by the person smoking, and enters the surrounding area.

The way smoke moves throughout a building is unpredictable and cannot be controlled. The gases in cigarette smoke expand to fill spaces around pipes and electrical conduits and between walls and floors or ceilings.

Research conducted in Minnesota apartment buildings found that while, generally, smoke travels into the units above, it can also move into adjacent units.

Second-hand smoke:

- is poisonous, and exposes residents and families to over 7,000 chemicals.
- contains more than 70 chemicals that are known to cause cancer (U.S. Department of Health and Human Services (2010)).
- contains higher concentrations of 100s of toxins found in cigarette smoke.
- is a class 'A' cancer causing substance and ranked with the most deadly substances, including benzene, chromium, cadmium, and arsenic (US Environmental Protection Agency).

Second-hand smoke is a major problem for many Nova Scotia residents living in apartments and condominiums, especially those who suffer from chronic health conditions such as heart disease, asthma, allergies, diabetes and respiratory illnesses. For many forced to breathe their neighbour's smoke, the only remedy is to move. However, moving is not always an option for the elderly, or for people with limited incomes or disabilities.

Why is second-hand smoke so dangerous?

Each year in Canada, breathing second-hand smoke causes more than 1000 deaths in non-smokers due to lung cancer and heart disease, and keeps thousands more from leading normal, healthy lives.

The most comprehensive scientific report on the health effects of second-hand smoke was conducted by the US Surgeon General in 2006 and should be a wake-up call for non-smokers and smokers alike. The [US Surgeon General's Report](#) warns that no amount of second-hand smoke exposure is safe.

Key conclusions from the report reveal that:

Second-hand smoke increases risk of heart disease and lung cancer

- Concentrations of many cancer-causing and toxic chemicals are potentially higher in second-hand smoke than in the smoke inhaled by the people smoking.
- Exposure to second-hand smoke at home or work increases a non-smoker's risk of developing heart disease by 25 to 30 percent and lung cancer by 20 to 30 percent.
- Breathing second-hand smoke for even a short time can have immediate negative effects on the cardiovascular system and interferes with the normal functioning of the heart, blood and vascular systems in ways that increase the risk of heart attack.
- People who already have heart disease are especially at high risk of suffering negative effects from breathing second-hand smoke. They should take extra precautions to avoid even brief exposure.

Second-hand smoke causes acute respiratory problems

- Second-hand smoke contains many chemicals that can quickly irritate and damage the lining of the airways.
- Even brief exposure can trigger respiratory symptoms, including cough, phlegm, wheezing and breathlessness.
- Persons with asthma or other respiratory conditions are at especially high risk, and should take extra precautions to avoid breathing second-hand smoke.

Exposure to second-hand smoke harms children

- Babies exposed to second-hand smoke are at a greater risk for sudden infant death syndrome (SIDS).

- Babies exposed to second-hand smoke have weaker lungs than unexposed babies, which increases the risk for many health problems.
- Among infants and children, second-hand smoke causes bronchitis and pneumonia, and increases the risk of ear infections.
- Second-hand smoke exposure can cause children with asthma to experience more frequent and severe attacks.

Ventilation Myths

Air filters, purifiers and ventilation systems cannot eliminate second-hand smoke. Some of the smoke and larger particles from the air may be removed, but they will not remove the smaller particles or gases found in second-hand smoke. They should not be considered viable alternatives to smoking bans in multi-unit dwellings.

The scientific evidence proves that ventilation and air-cleaning systems do not provide effective protection against the health hazards of second-hand smoke. While ventilation and related methods can clear some of the smoke from the air, there is no ventilation system that can remove enough toxins to effectively protect people from the dangers of second-hand smoke.

Some facts to consider:

- Second-hand smoke can drift from one residence to another through cracks in walls, doorways, plumbing and electrical systems, heating and air conditioning ducts, and outdoor patios and balconies. Once the smoke enters your home, many of the dangerous chemicals remain in the air and settle on surfaces in the room, like walls, drapes, carpets, furniture and clothes.
- Current heating, ventilation and air conditioning systems do not eliminate exposure to second-hand smoke. Rather, the operation of these systems can distribute second-hand smoke throughout a building.
- The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), the pre-eminent U.S. body on ventilation issues, has concluded that ventilation technology cannot be relied on to control health risks from exposure to second-hand smoke. ASHRAE states, "Currently, the only way to effectively eliminate health risks associated with indoor exposure is to ban smoking activity."

- James Repace, an internationally recognized second-hand smoke physicist, conducted a review for ASHRAE on controlling tobacco smoke. He concluded that, “ventilation technology cannot possibly achieve acceptable indoor air quality in the presence of smoking, leaving smoking bans as the only alternative.”

Sources: [Position Document on Environmental Tobacco Smoke: The American Society of Heating, Refrigerating, and Air Conditioning Engineers](#), the [US Surgeon General Report](#) and [James Repace, Biophysicist](#)

More information on how to reduce second-hand smoke exposure in multi-unit dwellings is available [here](#).