Road Traffic and Air Pollution

The Issue

Vehicle engines are known to produce a number of air pollutants that pose risks to your health.

Background

Cars, buses, trucks and other motorized vehicles are one of the largest sources of air pollution that have been clearly linked to negative health effects. When engines burn fuel (gasoline or diesel), chemicals such as fine particulate matter, nitrogen oxides, carbon monoxide, and volatile organic compounds (VOCs) are emitted. In addition, some of the gasoline used by engines evaporates without having been burned, and this also creates pollution. Overall, traffic related emissions are a key contributor to the formation of smog.

Most Canadians are exposed to air pollution from road traffic on a daily basis, whether at home, travelling, walking, or standing along busy streets. The Government of Canada has introduced strict regulations to decrease pollution from motor vehicles by improving engine performance and fuel formulation, including renewable fuels. Although technology improvements have reduced vehicle emissions, there is still cause for concern because:

- the number of vehicles on Canada's roadways continues to increase
- urban development has increased the demand for vehicles
- vehicles are a main contributor to greenhouse gases

The Health Effects of Air Pollution from Road Traffic

Air pollution from road traffic has been linked to a variety of negative health effects. Scientific studies in Canada, the United States, and Europe show that children living in areas with high road traffic volumes have more respiratory-related illness symptoms than other children. More specifically, a significant number of studies conclude that

exposure to traffic pollution can aggravate asthma in children.

Exposure to air pollution from road traffic has been linked to a number of other health issues including heart attack, coronary artery disease and increased risk of death from respiratory and cardiac conditions. Air pollution may worsen symptoms for people with existing heart and lung conditions. Although some evidence suggests associations with other health issues, including exacerbation of allergies and reproductive effects, further studies are required to fully understand the population health impacts.

Minimizing Your Risk

You can help minimize the risk posed by pollution from road traffic by taking these steps:

- Take public transit instead of using a vehicle.
- If public transit is not available, car pool.
- Take fuel efficiency into account when buying a vehicle by consulting Natural Resources Canada's *Fuel Consumption Guide* (to obtain a copy, see the *Need More Info?* section).
- Turn off your car's engine when you stop for more than ten seconds, unless you are in traffic or at an intersection.
- Keep your vehicle well maintained – an efficient engine and proper tire inflation reduces fuel consumption and emissions and saves money.

You can also take steps to minimize your risk of health effects from road traffic air pollution:

- *The Air Quality Health Index (AQHI)* is a tool to help people make informed decisions to better protect themselves and those in their care from the health risks posed by air pollution. Check the AQHI in your community regularly by visiting www.airhealth.ca. If the AQHI is not yet available in your community, check your provincial Environment Ministry website for information on local air quality.

- Avoid or reduce exercising near areas where traffic is heavy, especially during rush hour. Instead, bicycle or walk along routes with low traffic flow.
- People with known health problems should take additional precautions to minimize their risk.

If you have a heart or lung condition, talk to your health care professional about additional ways to protect your health when air pollution levels are high.

- Since traffic pollution can aggravate asthma as well as heart and lung conditions, consider traffic patterns when choosing a school, daycare or purchasing a home.

Health Canada's Role

Health Canada's investigation into the health effects of air pollution has played an important role in developing national air quality standards. This work also contributed to the development of regulations to lower sulphur levels in gasoline and diesel fuel which, in turn, reduces emissions. Health Canada continues to study the health effects of traffic-related air pollution. For example, given the move towards the use of renewable fuels in Canada, Health Canada is assessing the health impacts of using renewable fuels to reduce emissions.

Health Canada research results for the health effects of air pollutants from road traffic can be used by municipalities to reduce pollution through sound urban planning, resulting in a positive impact on community health.

Health Canada Santé Canada

Your health and safety... our priority. *Votré santé et votre sécurité... notre priorité.*

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Updated:

April 2011

IT'S YOUR HEALTH

Need More Information?

- Health Canada's Air Quality web section: www.hc-sc.gc.ca/ewh-semt/air/index-eng.php
- Environment Canada's *Air Quality Health Index* at: www.airhealth.ca
- *Itôs Your Health* - Smog and Your Health: www.hc-sc.gc.ca/hl-vs/iyh-vsv/environ/smog-eng.php
- Environment Canada's Air website at: www.ec.gc.ca/air/
- Natural Resources Canada's *Idle Free Zone*: http://oee.nrcan.gc.ca/communities-government/idling.cfm
- Natural Resources Canada's Office of Energy Efficiency: http://oee.nrcan.gc.ca/english/
- Natural Resources Canada's Fuel Consumption Guide : http://oee.nrcan.gc.ca/transportation/tools/fuel-consumption-guide/fuel-consumption-guide.cfm
- Health Effect's Institute Special Report - Health Effects of Traffic-Related Air Pollution: http://pubs.healtheffects.org/view.php?id=334
- Public Health Agency of Canada's Chronic Disease web section: www.phac-aspc.gc.ca/cd-mc/index-eng.php

For more articles on health and safety issues go to the *It's Your Health* web section at: www.health.gc.ca/iyh

You can also call toll free at 1-866-225-0709 or TTY at 1-800-267-1245*

Original: May 2004

Catalogue : H13-7/95-2011E-PDF
ISBN : 978-1-100-17749-6

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