Carbon Monoxide Safety

Keeping Safe from the "Silent Killer"

As cooler weather approaches, we want to remind everyone to have furnaces and other fuel-burning appliances in their homes inspected by authorized service personnel, to prevent the serious hazards of carbon monoxide (CO) poisoning.

What is carbon monoxide?

Carbon monoxide is a colourless, odourless, tasteless and toxic gas, and is often referred to as the "silent killer". When inhaled it inhibits the blood's capacity to transport oxygen throughout the body. It can poison the body quickly in high concentrations, or slowly over long periods of time.

What are symptoms of carbon monoxide poisoning?

Exposure to CO can cause flu-like symptoms such as headaches, nausea, dizziness, burning eyes, confusion, drowsiness and even loss of consciousness. In severe cases, CO poisoning can cause brain damage and death. The elderly, children and people with heart or respiratory conditions may be particularly sensitive to CO.

How is carbon monoxide generated in the home?

Carbon monoxide is a by-product of incomplete combustion of fuel such as natural gas, propane, heating oil, kerosene, coal, charcoal, gasoline or wood. This incomplete combustion can occur in any device that depends on burning for energy or heat, such as furnaces, room heaters, fireplaces, hot water heaters, stoves or grills and any gas powered vehicle or engine. Automobiles left running in attached garages, gas barbecues operated inside the house, grills or kerosene heaters that are not properly vented, or chimneys or vents that are dirty or plugged may create unsafe levels of CO. When **properly installed, maintained** and **vented**, any CO produced by these devices will not stay inside the home.

What are some danger signs?

You or other members of your family have symptoms of CO exposure (see above).

You notice a sharp, penetrating odour or smell of gas when your furnace or other fuel-burning equipment turns on.

The air is stale or stuffy.

The pilot light of your furnace or other fuel-burning equipment goes out.

Chalky white powder forms on the chimney/exhaust vent pipe or soot build-up occurs around the exhaust vent.

How can unsafe levels of carbon monoxide be detected?

Carbon monoxide detectors monitor airborne concentration levels (parts per million) of carbon monoxide and sound an audible alarm when harmful CO levels are present. Be sure that your detector has been certified to the Canadian Standards Association CAN/CGA 6.19 standard or the Underwriters Laboratories (UL) 2034 standard.

If you suspect carbon monoxide in your home...

If you or anyone else in your home is experiencing the symptoms of CO poisoning, ensure that everyone leaves the home immediately, leaving the door open. Call your local fire department or 911 from a neighbours telephone. If your CO detector sounds do NOT assume it to be a false alarm. Open all doors and windows to ventilate the home. If you cannot find the problem and the alarm continues, contact the fire department. If there is a strong smell of natural gas in your home, evacuate immediately, leaving the door open, and contact your local gas utility. If no symptoms are experienced, reset the detector and check to see if the alarm activates. If the detector sounds a second time, call the local fire department for their assistance. If the detector does not sound a second time, check for common conditions that may have caused a CO build-up (see the accompanying illustration) or contact a qualified heating contractor to check your fuel-burning equipment.

Where should a carbon monoxide detector be located in the home?

Proper placement of a CO detector is important. In general, the human body is most vulnerable to the effects of CO during sleeping hours, so a detector should be located in or as near as possible to the sleeping area of the home. If only one detector is being installed, it should be located near the sleeping area, where it can wake you if you are asleep. Where sleeping areas are located in separate parts of the home, a detector should be provided for each area. Additional CO detectors should be placed on each level of a residence and in other rooms where combustion devices are located (such as in a room that contains a solid fuel-fired appliance, gas clothes dryer or natural gas furnace), or adjacent to potential sources of CO (such as in a teenager's room or granny suite located adjacent to an attached garage). Unlike smoke, which rises to the ceiling, CO mixes with air. Recognizing this, a CO detector should be located at knee-height (which is about the same as prone sleeping height). Due to the possibility of tampering or damage by pets, children, vacuum cleaners and the like, it may be located up to chest height. To work properly, a detector should not be blocked by furniture, draperies or other obstructions to normal air flow. If a combination smoke/carbon monoxide detector is used, it should be located on the ceiling, to ensure that it will detect smoke effectively. Please refer to the manufacturer's instructions for additional information regarding proper use and maintenance.

To keep safe, please remember:

You have a responsibility to know about the dangers of carbon monoxide. Your knowledge and actions may save lives.

CO detectors are a good second line of defense, but do not eliminate the need for regular inspection, maintenance and safe use of fuel-burning equipment.

Take the time to learn about the use of CO detectors in your home to ensure your are using this equipment properly and effectively

The Office of the Fire Marshal is part of a Carbon Monoxide Awareness Committee (comprised of representatives from industry, government, fire services, public utilities, standards and certification agencies and appliance manufacturers) that is dedicated to an ongoing, coordinated approach to protecting the public against CO hazards through greater awareness and understanding. Home heating safety information is available on the Technical Standards and Safety Authority website at www.tssa.org

Potential Carbon Monoxide Sources in the Home