

Macomb Township Fire and Life Safety Tips

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Carbon Monoxide

Carbon Monoxide is a colorless, odorless and tasteless gas which is slightly lighter than air. Also known as CO, Carbon Monoxide is highly toxic to humans and animals in higher quantities.

Because it is impossible to see, taste or smell the toxic fumes, CO can kill you before you are aware it is in your home.

SOURCES OF CO IN YOUR HOME

- Unvented kerosene and gas space heaters
- Leaking chimneys and furnaces
- Back-drafting from furnaces
- Gas water heaters
- Wood stoves, and fireplace
- Generators
- Gasoline powered equipment
- Automobile exhaust from attached garages;
- Worn or poorly adjusted and maintained combustion devices (e.g., boilers, furnaces) can be significant sources, or if the flue is improperly sized, blocked, disconnected, or is leaking.

ALERT: Put generators outside.

Never use a generator inside homes, garages, crawlspaces, sheds, or similar areas. Deadly levels of carbon monoxide can quickly build up in these areas and can linger for hours, even after the generator has shut off.

SYMPTOMS OF CO POISONING

CO enters the body through breathing. CO poisoning can be confused with flu symptoms, food poisoning and other illnesses. Some symptoms include shortness of breath, nausea, dizziness, light headedness or headaches. High levels of CO can be fatal, causing death within minutes. The effects of CO exposure can vary greatly from person to person depending on age, overall health and the concentration and length of exposure

The concentration of CO, measured in parts per million (**ppm**) is a determining factor in the symptoms for an average, healthy adult.

- 50 ppm: No adverse effects with 8 hours of exposure.
- 200 ppm: Mild headache after 2-3 hours of exposure.
- 400 ppm: Headache and nausea after 1-2 hours of exposure.
- 800 ppm: Headache, nausea, and dizziness after 45 minutes; collapse and unconsciousness after 1 hour of exposure.
- 1,000 ppm: Loss of consciousness after 1 hour of exposure.
- 1,600 ppm: Headache, nausea, and dizziness after 20 minutes of exposure.
- 3,200 ppm: Headache, nausea, and dizziness after 5-10 minutes; collapse and unconsciousness after 30 minutes of exposure.
- 6,400 ppm: Headache and dizziness after 1-2 minutes; unconsciousness and danger of death after 10-15 minutes of exposure.
- 12,800 ppm: Immediate physiological effects, unconsciousness and danger of death after 1-3 minutes of exposure.

HOW DOES CARBON MONOXIDE EFFECT YOU?

Carbon monoxide is harmful when breathed because it displaces oxygen in the blood and deprives the heart, brain, and other vital organs of oxygen. Large amounts of CO can overcome you in minutes without warning—causing you to lose consciousness and suffocate.

REDUCING CARBON MONOXIDE IN YOUR HOME

- Keep gas appliances properly adjusted.
- Consider purchasing a vented space heater when replacing an unvented one.
- Use proper fuel in kerosene space heaters.
- Install and use an exhaust fan vented to outdoors over gas stoves.
- Open flues when fireplaces are in use.
- Choose properly sized wood stoves that are certified to meet EPA emission standards. Make certain that doors on all wood stoves fit tightly.
- Have a trained professional inspect, clean, and tune-up central heating system (furnaces, flues, and chimneys) annually. Repair any leaks promptly.
- Do not idle the car inside garage.

HOW TO DETECT CARBON MONOXIDE IN YOUR HOME

- Carbon Monoxide Detectors
 - Available at most home improvement stores
- CO alarms should be installed in a central location outside each sleeping area and on every level of the home and in other locations where required by applicable laws, codes or standards. For the best protection, interconnect all CO alarms throughout the home. When one sounds, they all sound.

- Follow the manufacturer's instructions for placement and mounting height.
- Choose a CO alarm that has the label of a recognized testing laboratory.

WHAT SHOULD YOU DO WHEN THE CO ALARM SOUNDS?

Never ignore an alarming CO alarm! It is warning you of a potentially deadly hazard.

If the alarm signal sounds **do not try to find the source of the CO:**

1. Immediately move outside to fresh air.
2. Call your emergency services, fire department, or 911.
3. After calling 911, do a head count to check that all persons are accounted for. DO NOT reenter the premises until the emergency services responders have given you permission. You could lose consciousness and die if you go in the home.
4. If the source of the CO is determined to be a malfunctioning appliance, DO NOT operate that appliance until it has been properly serviced by trained personnel.

Links for Carbon Monoxide Safety:

- More Safety Tips on Carbon Monoxide
 - NFPA
 - <http://www.nfpa.org/itemDetail.asp?categoryID=1705&itemID=41146&URL=Safety%20Information/For%20consumers/Fire%20&%20safety%20equipment/Carbon%20monoxide/Carbon%20Monoxide%20safety%20tips>
 - <http://www.nfpa.org/assets/files//PDF/Public%20Education/COSafety.pdf>
 - EPA
 - http://www.epa.gov/iaq/pdfs/co_factsheet_en.pdf
 - OSHA
 - http://www.osha.gov/OshDoc/data_General_Facts/carbo_nmonoxide-factsheet.pdf

References:



National Fire Protection Association
The authority on fire, electrical, and building safety



US Consumer Product Safety Commission

▶ Consumer Safety

▶ About CPSC

▶ Library - FOIA

▶ Business