



CARBON MONOXIDE *POISONING DANGERS*

What is Carbon Monoxide?

Often called the invisible killer, carbon monoxide is a deadly, odorless, colorless, poisonous gas created when various household appliances that burn fossil fuels, including furnaces, hot water heaters, clothes dryers, space heaters, cooking ovens, fireplaces, and fuels such as coal, wood, gasoline, kerosene, charcoal, natural gas, propane, oil and methane burn incompletely. Products and equipment powered by internal combustion engines such as portable generators, cars, lawn mowers and power washers also produce carbon monoxide.

Carbon Monoxide (CO) Dangers and Risks:

Carbon monoxide (CO) is the leading cause of accidental poisoning deaths in America. According to the Centers for Disease Control, each year, more than 400 Americans die from unintentional carbon monoxide poisoning, more than 20,000 visit the emergency room and more than 4,000 are hospitalized due to carbon monoxide poisoning.

In addition to the use of CO detectors/alarms, a better understanding of carbon monoxide, including its sources, dangers and health risks, can go a long way in preventing many of these deaths and hospitalizations.

How can I prevent CO poisoning? My First Line of Defense:

- Make sure all appliances are installed and operate according to the manufacturer's instructions and West Dundee's Building Codes. Most appliances should be installed by qualified professionals. Have your furnace inspected annually to ensure proper operation. The inspector should also inspect chimneys and flues for blockages, corrosion, disconnections and loose connections.
- Never service fuel-burning appliances without proper knowledge, skill and tools. Always refer to the owners manual when performing minor adjustments or servicing fuel-burning equipment.
- Never operate a portable generator or any other gasoline engine powered tool either in or near an enclosed space such as a garage, house, or other building. Even with open doors and windows, these spaces can trap CO and allow it to build up to lethal levels.
- Install a CO alarm that meets the requirements of the current UL 2034 safety standard. A CO alarm can provide added protection, but it is no substitute for proper use and upkeep of appliances that can produce CO. Install a CO alarm within 15' from all sleeping areas, an alarm on each level of your home, and install an alarm in your home near the attached garage door entry.

- Never use portable fuel-burning camping equipment inside a home, garage, vehicle or tent unless it is specifically designed for use in enclosed spaces and provides instructions for safe use in enclosed areas.
- Never burn charcoal inside a home, garage, vehicle or tent.
- Never leave a car running in a garage, even when the garage door is open.
- Never use gas appliances such as ranges, ovens, or clothes dryers to heat your home.
- A poorly maintained gas stove gives off twice the amount of CO than a stove in good working order.
- Do not cover the bottom of natural gas or propane ovens with aluminum foil. Doing so blocks the combustion air flow through the appliance and can produce CO. Your stove's burners should always burn with a blue flame. Improper burning will show a blue and orange flame. If that happens, clean your burners.
- Never operate unvented fuel-burning appliances in any room where people are sleeping.
- During home renovations, ensure that appliance vents and chimneys are not blocked by tarps or debris. Make sure appliances are in proper working order when renovations are complete.

What CO level is dangerous to my health?

The health effects of CO depend on the CO concentration and length of exposure, as well as each individual's health condition. CO concentration is measured in parts per million (ppm). Most people will not experience any symptoms from prolonged exposure to CO levels of approximately 1 to 50 ppm, but some heart patients might experience chest pain. As CO levels increase, symptoms may become more noticeable and can include headache, fatigue and nausea. At sustained CO concentrations above 150 to 200 ppm, disorientation, unconsciousness, and death are possible.

Can you be more specific about CO Detectors?

Every home with at least one fuel-burning appliance/heater, attached garage or fireplace should have carbon monoxide monitors or carbon monoxide detectors. Assure the detectors you purchase are UL (Underwriters Laboratories) listed. The alarm manufacturers use the terminology of "detector" and "alarm" as the same. Carbon Monoxide has a similar weight as air, so it does blend in your home in all areas. For this reason, detectors can be ceiling or wall mounted.

What types of detectors and monitors are available?

There are two types of carbon monoxide detection devices: alarms/detectors and monitors. They work like smoke alarms, simply alerting you when it senses there is a dangerous amount of carbon monoxide in your home. They both activate in alarm when they reach an unsafe level of CO in your home. The carbon monoxide monitor provides a digital read out of the parts per million of CO present.

To Do:

- Install a CO alarm on each level of your home per manufacturer's instructions.
- Install a CO alarm within 15' of each sleeping room.
- Install a CO alarm in your home near the attached garage door entry. Cars produce a large amount of CO quickly.
- Test you CO alarms monthly; replace their batteries annually or whenever you receive a low battery signal.
- Replace your CO alarms every 5 to 7 years. Technology is always advancing so we recommend you stay current with your CO alarms. Be aware that most CO alarms have a 7 year life cycle. At seven years you will receive an "End of Life Signal", informing you your alarm has reached the age that the manufacturer recommends replacement. Be aware alarms manufactured prior to 2007 do not have the end-of-life signal. Immediately replace those alarms as they may not work. Newer technology has given us 10 year alarms with 10 year batteries.

Don't:

- Place alarms in close proximity of fuel burning appliances.
- Place alarms in high humidity areas such as bathrooms.
- Place the alarm in direct sunlight.
- Place the alarm near any source of blowing area such as a fan, vent or open window.

What types of signals does a CO Detector provide?

A CO Detector has three signals – alarm, trouble, and end-of-life signal.

- Detector activation is a series of 4 rapid beeps followed by a five second pause and then repeats. When you have a combination CO/Smoke alarm, upon activation the alarm will say fire or carbon monoxide and then provide the rapid beeps.
- A trouble signal indicating some type of fault or low battery is a ½ second chirp every 30 – 60 seconds.
- The end-of-life signal may be a distinct signal, or the same signal as a trouble signal providing there is a visual indicator to indicate that signal is the end-of-life signal. It is important that the detector is replaced.

You must read the manufacturers informational sheet provided with each device. They will provide the specific information regarding signals for the device you are installing. Although most alarms are similar, not all have the exact same signals.

What should I do when the CO detector activates or I suspect CO symptoms?

- Immediately move all occupants outside to fresh air.
- Call 911, the West Dundee Fire Department will respond to your home and provide medical care for those ill and assist in finding the source of the CO, turning off that appliance and ventilating your home of the poisonous gas. Be aware that if the appliance causing CO is a furnace, we will turn off the furnace and your home may not be habitable in cold weather until the furnace is repaired.
- After moving outside, do a head count of all occupants in your home and inform the fire department upon their arrival of any missing occupants.

If you have any (non-emergency) questions please contact the West Dundee Fire Department at 847-551-3805 or email Fire Prevention Officer Rick Paul at rpaul@wdundee.org.

The Silent Killer

Potential Carbon Monoxide Sources in Your Home

Chimney
Clogged or blocked chimney opening

Bedroom
Unvented space heater

Cracked Flue

Kitchen
Improperly installed or faulty gas oven, range or cooktop vent

Living Room
Gas or wood burning fireplace

Garage

- Auto exhaust fumes
- Operating barbecue grill in enclosed area
- Powered outdoor equipment operated close to home

Basement
Improperly installed or faulty gas clothes dryer, furnace or water heater

Carbon Monoxide is one of the leading causes of accidental poisoning deaths. The odorless, tasteless and colorless gas, known as "The Silent Killer," is undetectable to human senses. CO is produced by common household appliances that burn fossil fuels, including gas or oil furnaces, water heaters, clothes dryers, space heaters, gas ovens and wood burning or gas fireplaces. Other potential sources include cracked flues or blocked chimneys, car exhaust fumes entering the house from an attached garage, lawnmowers, propane garage heaters, power washers and propane fired pool heaters. Early symptoms of CO poisoning such as headaches, nausea and fatigue are often mistaken for the flu and the gas goes undetected in the home. Prolonged exposure to CO can lead to brain damage and even death. Installing a carbon monoxide alarm on each level of the home is the first line of defense homeowners have against this household hazard.

Sources: www.safeathome.ca, kidde smoke and CO alarms

Resources: NFPA, CPSC.gov, Kidde, WDFD