

“Silent Killer”: What You Need to Know About CO

What is carbon monoxide?

Carbon monoxide (CO) is a colorless, odorless, tasteless, poisonous gas that is produced by the incomplete burning of various fuels, including coal, wood, charcoal, oil, kerosene, propane, and natural gas. Equipment powered by internal combustion engines—such as cars, portable generators, lawn mowers, and power washers—all produce carbon monoxide.

Through the normal process of respiration, oxygen enters the lungs and is transported by hemoglobin in the blood to various organs and tissues in the body such as the heart and brain. When CO is inhaled, it enters the bloodstream and attaches to hemoglobin forming the COHb molecule. COHb reduces the ability of the blood to carry oxygen to vital organs by preventing the oxygen molecule from attaching to hemoglobin.

What are the symptoms of carbon monoxide poisoning?

Because CO has no odor, color, or taste and is otherwise undetectable by human senses, people may not realize they are being exposed to the “silent killer.” Detrimental health effects depend on the length of exposure, blood concentration levels, and personal health conditions.

The symptoms of CO poisoning at low to moderate concentrations are similar to the flu and include—

- Headaches
- Dizziness
- Sleepiness
- Nausea
- Shortness of breath
- Mental confusion
- Disorientation
- Vomiting

At high concentrations in the blood, CO can cause—

- Cognitive impairment
- Loss of muscle coordination
- Loss of consciousness
- Coma
- Death

The Centers for Disease Control and Prevention (CDC) estimates that there are nearly 500 deaths and more than 15,000 injuries each year from CO poisoning. Because symptoms are similar to the flu, CO deaths and injuries have been “grossly underreported” and according to estimates, actual deaths may

exceed 2,000. Even when there are not deaths, long term effects on the nervous system and heart can occur in as many as 40% of the cases.

How can I prevent CO poisoning?

There are a number of preventative measures you can take to reduce the likelihood that you or your loved ones will experience CO poisoning, such as—

- Make sure appliances are installed and operated according to the manufacturer's instructions and applicable local building codes. Most should be installed by qualified professionals.
- Have your furnace, chimney, and flues inspected annually by a professional to check for leaks, blockages, and/or corrosion.
- Install CO detection devices that meet the requirements of the Underwriters Laboratories (UL) standard 2034 or UL 2075. These alarms should be installed in accordance with National Fire Protection Administration (NFPA) 720 and the manufacturer's instructions in the following locations: (1) outside each separate sleeping area in the immediate vicinity of bedrooms; and (2) on every level of dwelling, including basements.
- Never use a portable generator or other gasoline-powered tool 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 dangerous levels.
- Do not burn charcoal inside a house, garage, vehicle, tent, or other enclosed space.
- Never leave a vehicle running in an attached garage, even with the door open.
- Do not use gas appliances such as ranges, ovens, or clothes dryers to heat your home.
- Do not operate unvented fuel-burning appliances in rooms where people are sleeping.
- When servicing fuel-burning appliances, be sure you have the proper knowledge, skills and tools. Consider hiring a professional.

For more information on the dangers posed by carbon monoxide, please see the section on carbon monoxide in our *Frequently Asked Questions*. You can access this information by clicking on the FAQs tab on <http://www.lifesafetysolutionsonline.com>.