

# Loss Control Insights

## Carbon Monoxide

### Question 1: What is carbon monoxide?

**Answer:** Carbon monoxide, known by the chemical formula "CO," is a poisonous gas that kills approximately 500 people in the United States alone every year. Of that number, about 200 people were killed by carbon monoxide emitted from a consumer product, like a stove or water heater. You can't hear, taste, see or smell it. It's nicknamed the "silent killer" because it sneaks up on its victims and can take lives without warning.



### Question 2: What are the sources of CO?

**Answer:** CO is a by-product of incomplete combustion. Sources of the gas can include malfunctioning appliances — including furnaces, stoves, ovens and water heaters — that operate by burning fossil fuels such as natural or liquefied petroleum (LP). When malfunctioning appliances aren't adequately ventilated, the amount of CO in the air may rise to a level that can cause illness or even death.

Other CO sources include vehicle exhaust, blocked chimney flues, fuel-burning cooking appliances used for heating purposes, and charcoal grills used in the home, tent, camper, garage or other unventilated areas.

### Question 3: How does CO affect the human body?

**Answer:** When victims inhale CO, the toxic gas enters the bloodstream and replaces the oxygen molecules found in the critical blood component hemoglobin, depriving the heart and brain of the oxygen necessary to function.

The following symptoms are related to carbon monoxide poisoning and should be discussed with all members of the household:

- **Mild exposure:** Symptoms are often described as flu-like, including slight headache, nausea, vomiting and fatigue.
- **Medium exposure:** Severe throbbing headache, drowsiness, confusion and fast heart rate.
- **Extreme exposure:** Unconsciousness, convulsions, cardiorespiratory failure and death.

Many cases of reported carbon monoxide poisoning indicate that while victims are aware they are not well, they become so disoriented that they are unable to save themselves by either exiting the building or calling for assistance. Young children and household pets are typically the first affected.

Carbon monoxide alarms are intended to sound at carbon monoxide levels below those that cause a loss of ability to react to the danger of carbon monoxide exposures.

### Question 4: What are the symptoms of CO poisoning?

**Answer:** CO poisoning victims may initially suffer flu-like symptoms including nausea, fatigue, headaches, dizziness, confusion and breathing difficulty. Because CO poisoning often causes a victim's blood pressure to rise, the victim's skin may take on a pink or red cast.

**Question 5: How can I tell if there is a risk of CO poisoning in my home?**

**Answer:** Have your fuel-burning appliances inspected by a qualified technician at least once a year. A qualified technician should have practical knowledge of the operation, installation and proper ventilation of fossil-fuel-burning devices; carry the applicable insurance; be bonded; and be licensed to perform heating, ventilation and air conditioning (HVAC) work in your area.

Be alert to these danger signs that signal a potential CO problem:

- Streaks of carbon or soot around the service door of your fuel-burning appliances.
- The absence of a draft in your chimney (indicating blockage).
- Excessive rusting on flue pipes or appliance jackets.
- Moisture collecting on windows and walls of furnace rooms.
- Fallen soot from the fireplace.
- Small amounts of water leaking from the base of the chimney, vent or flue pipe.
- Damaged or discolored bricks at the top of your chimney.
- Rust on the portion of the vent pipe visible from outside your home.

Also, recognize that CO poisoning may be the cause when family members suffer from flu-like symptoms that don't disappear but improve when they leave home for extended periods of time.

**Question 6: How can I avoid CO poisoning?**

**Answer:** The most important steps are preventive. Have a qualified service professional inspect your fuel-burning appliances at least once a year. Install UL certified CO alarms outside of sleeping areas and near all fuel-burning appliances.

Other precautions include:

- Avoid using charcoal grills inside the home, tent or camper, or in an unventilated garage.
- Don't allow vehicle exhaust fumes to enter the home.
- Ensure all fuel-burning appliances are properly ventilated.

**Question 7: What should I look for when I buy a CO alarm?**

**Answer:** Rather than searching for specific features, look for the UL Mark with the adjacent phrase "Single Station Carbon Monoxide Alarm."

UL certified CO alarms are designed to detect elevated levels of CO and sound an alarm to alert you and your family to a potential poisoning risk. Although CO indicator cards and other devices on the market are also intended to detect elevated levels of CO, most aren't designed with an audible alarm. The presence of an audible alarm may be significant — especially while you and your loved ones sleep.

UL certified CO alarms are required to have manually operated alarm reset/silence button that will allow you to silence the alarm signal. If elevated levels of CO continue to exist, the alarm will sound again in six minutes.

**Question 8: How can I protect my family when we're traveling? When we're working in the garage?**

**Answer:** UL evaluates and certifies CO alarms intended for use in recreational vehicles (RVs) and areas such as garages or attics where dampness, humidity and temperatures isn't as controlled as in the living space of the home. CO alarms used in these areas comply with additional requirements designed to address the special conditions often present in these environments.

UL also evaluates CO travel alarms. These devices are equipped with a mounting bracket for temporary mounting only.

UL certified CO alarms intended for use in these environments are marked accordingly near the UL Mark.

**Question 9: Do CO alarms operate differently than smoke alarms?**

**Answer:** Although they may look and sound similar, CO alarms and smoke alarms are designed and intended to detect two separate, distinct hazards. Therefore, to help protect your family from both hazards, it's important to install both UL Listed CO alarms and UL Listed smoke detectors. Remember: Find Peace of Mind. Look for UL.

**Question 10: How do I install my CO alarm?**

**Answer:** Follow the installation instructions found in the manufacturer's use and care booklet that accompanies the product. Proper installation is an important factor in receiving optimum performance. It's important to follow these instructions exactly.

**Question 11: How do I take care of my CO alarm?**

**Answer:** Like smoke detectors, CO alarms need to be tested regularly and cleaned as indicated in the manufacturer's use and care booklet. If the unit is battery-operated, test the detector weekly and replace the battery at least once a year. Never allow anyone to "borrow" the battery. Like any appliance or power tool, a CO alarm can't work unless it has a functioning power source.

**Question 12: Will exposure to other household gases or vapors cause the CO alarm to sound a false alarm?**

**Answer:** When UL evaluates samples of residential CO alarms, consideration is made that your home may contain moderate levels of cleaning chemicals and other substances. UL 2034, the Standard UL engineers and technicians use to test residential carbon monoxide alarms, includes exposure tests to normal concentrations of methane, butane, heptane, ethyl acetate (nail polish remover), isopropyl alcohol (rubbing alcohol), carbon dioxide and propane — all gases that would typically be found in a home.

You should, however, keep these chemicals away from your CO alarms. Low exposure over an extended period of time could damage the sensing device and cause false alarms.

**Question 13: What do I do if my CO alarm sounds?**

**Answer:** Immediately operate the reset/silence button and call your emergency services (fire department or 9-1-1).

Move to fresh air — either go outside or move to an open door or window. Check to make sure that everyone in your household is accounted for. Do not re-enter the premises nor move away

from the open door or window until the emergency services have arrived, the premises have been sufficiently aired out, and your CO alarm remains in its normal condition.

If your CO alarm reactivates within a 24-hour period, operate the reset button, call your emergency services and move to fresh air. Call a qualified technician to examine and/or turn off your fuel-burning appliances or other sources of combustion. If your RV, car or truck is idling in an attached garage, turn off the engine. Although your problem may appear to be temporarily solved, it's crucial that the source of the CO is determined and appropriate repairs are made.

Remember that an alarm indicates elevated levels of CO in your home. CO is called the "silent killer" because it cannot be seen or smelled. Some people can be exposed to dangerous levels of CO and not feel any symptoms. Regardless of whether you feel symptoms, never ignore the alarm.