



Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless and tasteless poisonous gas. When inhaled it readily enters the bloodstream and ultimately deprives the heart and brain of oxygen. Initial signs of CO poisoning include flu-like symptoms such as fatigue, headaches, dizziness, nausea, confusion and irritability. The skin may also take on a pink or red appearance as blood pressure increases. Infants and small children are especially susceptible to CO poisoning.

CO is a by-product of the incomplete combustion of fossil fuels such as natural or liquefied petroleum (LP) gas, gasoline, kerosene, oil, wood and coal. Common sources of CO in the home include heating systems, kitchen ranges and ovens, clothes dryers and water heaters, as well as fireplaces and stoves. Other, often indirect sources include gas powered tools, charcoal grills and motor vehicles. In fact, elevated levels of CO can regularly occur in the home due to the exhaust gas from a car that is started up in an attached garage. Levels may only be elevated for a short time in most cases but repeated exposure on a daily basis can be a significant hazard.

The likelihood of excessive CO production or buildup is reduced when fuel burners are properly adjusted and maintained, there is adequate air for combustion, and suitable venting is provided for the exhaust gases. But the type of fuel-burning unit, as well as its method of use, will have a bearing on the potential for changing conditions to create a future CO buildup problem. For example, most people would not consider a kitchen oven a primary cause for excessive CO levels in a home, but if the burner is poorly adjusted and/or operated for an extended time in a tightly sealed house, lethal levels can develop.

To help minimize potential CO concerns, it is generally recommended that all fuel-burning systems and venting provisions be checked annually or if any signs of system damage or other potential concerns are observed. Do not use any unvented fuel burning items, such as a charcoal grill, in a house, or even beneath an overhang that could funnel gases into the house. Also be careful of the potential infiltration of exhaust gases from an attached garage or carport. Move the car out and away from the house right after the engine is started.

It is also generally recommended that at least one CO detector be installed in every house, especially whenever a fuel-burning appliance, fireplace, stove or attached garage is present. Even if there are no fuel-burning appliances, adjacent dwellings (e.g., apartment or townhouse complexes) can be the source of CO. Placement guidelines vary but it is generally recommended that the first unit be placed in the sleeping areas; additional units can be located on other floor levels or in other areas of the house.

In some situations, a CO detector may sound an alarm at a time other than when there are elevated CO levels. The unit may be activated by elements found in household cleaning products such as ammonia or chlorine, aerosol sprays, other chemicals and combustible gases. Operation may also be affected by moisture and temperature. Long-term exposure to such elements may also damage the unit and cause it to malfunction.

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Carbon Monoxide (continued)

These factors highlight the advantage to having more than one detector. If one unit fails to sound an alarm, a second unit may give you a second warning. Having at least one unit with a digital readout is also advised as it may help to identify the CO source or the cause of nuisance alarms triggered by temporary factors. Battery-operated units will provide protection during periods when the power is out; a time when improper usage of fuel-burning devices for emergency heating is common.

All detectors should be tested monthly using the built-in tester. Be aware, however, that the built-in test button on the unit only confirms that the detector is energized and the alarm is functional, not its ability to pick up CO. The batteries in battery operated units should be changed at least yearly.

When purchasing a detector look for an Underwriters Laboratories (UL) listing on the label indicating compliance with UL standard 2034. The effectiveness of CO units declines with age; plan to replace them every few years as indicated by the manufacturer's recommendations. Very old units may fail to sound an alarm or may give false alarms.

In all cases, follow specific manufacturer installation and maintenance guidelines and instructions on responding to CO alarms. The cause and severity of the specific situation will dictate the sequence of actions to be taken when a CO alarm sounds. Response should include, evacuation, notification to emergency services, ventilation, elimination of the source, and remediation of the cause. Do not re-enter the house until the problem is corrected. Exhaust products from the start-up of a car in an attached garage is often overlooked when trying to evaluate the cause of an alarm because it may take some time for the gases to infiltrate from the garage into the house.

Also while you're considering your CO detector purchase and placement needs and options, do not forget the need to install and regularly test smoke/fire detectors.

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