

Carbon Monoxide Poisoning



What is carbon monoxide and who is at risk?

Carbon monoxide (CO) is a colorless, odorless deadly gas. Because you can't see, taste or smell it, carbon monoxide can kill you before you know it's there. At lower levels of exposure, carbon monoxide causes health problems.

Everyone is at risk for carbon monoxide poisoning. Medical experts believe, however, that some individuals are more vulnerable to poisoning such as unborn babies, infants, children, senior citizens and people with heart or lung problems.

Why is carbon monoxide so dangerous?

The great danger of carbon monoxide is its attraction to hemoglobin in the bloodstream, which normally carries life-giving oxygen to cells and tissues. As even small amounts are breathed in, carbon monoxide quickly bonds with hemoglobin in the blood, displacing the oxygen that organs need to function. When CO is present in the air, it rapidly accumulates in the blood, forming a toxic compound known as carboxyhemoglobin (COHb). Carboxyhemoglobin causes symptoms similar to the flu, such as headaches, fatigue, nausea, dizzy spells, confusion and irritability.

Because these symptoms are similar to the flu, misdiagnosis can occur. As levels of COHb increase, vomiting, loss of consciousness and eventually brain damage or death can result.

Where does carbon monoxide come from?

Carbon monoxide is a common by-product of combustion, present whenever fossil fuels are burned. It is produced by malfunctioning or unvented gas or oil home appliances such as furnaces, clothes dryers, ranges, ovens, water heaters and space heaters, as well as fireplaces, charcoal grills and wood burning stoves. Automobile exhaust also contains high levels of carbon monoxide that can seep into a home if a car is left running in an attached garage. All of these sources can contribute to a CO problem in the home.

Usually, carbon monoxide is vented safely to the outside. However, insulation meant to keep indoor air warm during the winter or cool in the summer can help trap CO-polluted air in the home. Furnace heat exchangers can crack; vents and chimneys can become blocked. If there is an inadequate indoor fresh air supply for combustion, airflow in flues and chimneys may reverse direction causing a downdraft, which traps combustion gases in the home.

How can I protect myself and my family from carbon monoxide poisoning?

The Consumer Product Safety Commission (CPSC) recommends installing at least one carbon monoxide alarm with an audible warning signal near the sleeping area. Choose an Underwriters Laboratories Inc. (UL) listed alarm that sounds an audible warning. Look for the UL logo on the package.



The International Association of Fire Chiefs (IAFC) also recommends UL listed carbon monoxide alarms -- on every level of the home and in areas near appliances that are potential sources of CO. Look for the IAFC logo on the package when you select an alarm.

recommended by the manufacturer.

In addition to installing carbon monoxide alarms as a first line of defense, consumers should have a qualified professional check all fuel burning appliances, furnaces, venting and chimney systems at least once a year or as

How do carbon monoxide alarms work?

Many people believe carbon monoxide alarms work just like smoke alarms, meaning if they detect any carbon monoxide, they immediately go into alarm. Actually, the CO alarm technology is little more complex. The alarm measures the amount of carbon monoxide and the time of exposure.

Carbon monoxide alarms measure levels of carbon monoxide over time and are designed to sound an alarm before an average, healthy adult would experience symptoms. It may be a higher amount of CO over a short period of time or a lower amount for an extended time frame. Either way, when the alarm senses a certain saturation level of carbon monoxide, it will sound an alarm tone. It is very possible that you may not be experiencing symptoms when you hear the alarm -- this does not mean there is no carbon monoxide present! Do not ignore your alarm if it goes off. Take appropriate action to stay safe.

What do I do if my carbon monoxide alarm goes off?

If any member of the household is feeling sick, leave the building immediately and call 911 or the fire department. Do a head count to be sure everyone is accounted for. Do not re-enter the building until the fire department says it is okay to do so. Have the problem corrected at once.

If no one is feeling ill, press the test/silence button on the alarm. Turn off all appliances or other sources of combustion at once. Open doors or windows to get fresh air into the house. Call a qualified technician to correct the problem.

Which type of carbon monoxide alarm is right for me and my family?

There are different advantages and benefits to each type of carbon monoxide alarm. First Alert®, the leading name in home safety, now offers a new Combination Smoke and Carbon Monoxide Alarm, powered by a single 9-volt battery. This new alarm is designed to help protect against both carbon monoxide poisoning and fire and eliminates the need to have two separate units. It can be installed on a wall or ceiling, out of the reach of children and pets.

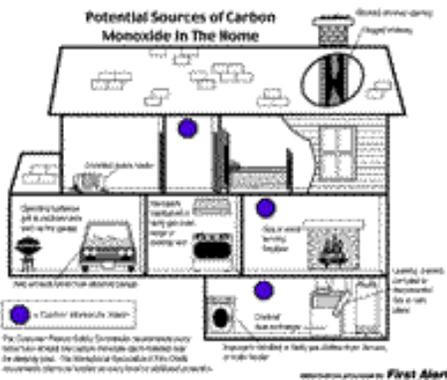
Battery powered units, such as the First Alert Replaceable Battery Carbon Monoxide Alarm or the First Alert Combination Smoke and Carbon Monoxide Alarm, will continue to work during a power outage and do not take up outlet space.

A new Replaceable Battery Carbon Monoxide Alarm which requires no installation is also available from First Alert -- it can be placed on a tabletop or shelf and will monitor continuously for carbon monoxide. The sensor is permanently housed within the unit and does not require replacement. Only the 9-volt battery needs to be replaced annually. A convenient action chart hidden behind the alarm explains what to do when an alarm activates.

Plug in alarms require no installation and no batteries -- they plug directly into a standard electrical outlet. Some plug in models, such as the First Alert Carbon Monoxide Alarm with Digital Display, feature a digital readout of carbon monoxide levels when the unit is in alarm. Plug in alarms use electrical current to operate and will not work in a power outage unless they have a battery back-up feature.

Hard-wired carbon monoxide alarms require installation by a qualified electrician. These units will not operate in a power outage unless they have a battery back-up feature. They do not require outlet space and can be installed on a wall or ceiling.

Whatever type of carbon monoxide alarm you choose, be sure keep it clean and free of grease, soot and debris -- clean it with a slightly damp cloth (no chemical cleansers) or vacuum it. Test your alarm regularly.



Where should I install my carbon monoxide alarm?

If you have only one carbon monoxide alarm, you should install it in the hallway near the sleeping area so it will awaken you if the alarm goes off while you are asleep. Additional alarms on each level of the home provide extra protection.

Install carbon monoxide alarms at least 15 feet from any combustion appliance, such as a gas or oil furnace, oven, water heater, etc. Do not install your alarm in the garage or in areas of high humidity or where it will be exposed to strong chemical solvents or cleaners.

If you have a plug in alarm, do not install in an outlet controlled by a light switch or dimmer or in an area where it can be easily knocked off the wall.

Carbon monoxide is roughly the same weight as air and distributes evenly throughout a room. A carbon monoxide alarm will be effective whether it is placed at floor or ceiling level, or anywhere in between -- wherever is most convenient, with the exception of the locations mentioned above.