

# Centers for Disease Control and Prevention

## Carbon Monoxide Poisoning

Carbon monoxide (CO), an odorless, colorless gas, which can cause sudden illness and death, is produced any time a fossil fuel is burned. CDC works with national, state, local, and other partners to raise awareness about CO poisoning and to monitor CO-related illness and death in the U.S.

## Prevention Guidance

### You Can Prevent Carbon Monoxide Exposure

- **Do** have your heating system, water heater and any other gas, oil, or coal burning appliances serviced by a qualified technician every year.
- **Do** install a battery-operated CO detector in your home and check or replace the battery when you change the time on your clocks each spring and fall. If the detector sounds leave your home immediately and call 911.
- **Do** seek prompt medical attention if you suspect CO poisoning and are feeling dizzy, light-headed, or nauseous.
- **Don't** use a generator, charcoal grill, camp stove, or other gasoline or charcoal-burning device inside your home, basement, or garage or near a window.
- **Don't** run a car or truck inside a garage attached to your house, even if you leave the door open.
- **Don't** burn anything in a stove or fireplace that isn't vented.
- **Don't** heat your house with a gas oven.

## Frequently Asked Questions

### What is carbon monoxide?

Carbon monoxide, or CO, is an odorless, colorless gas that can cause sudden illness and death.

### Where is CO found?

CO is found in combustion fumes, such as those produced by cars and trucks, small gasoline engines, stoves, lanterns, burning charcoal and wood, and gas ranges and heating systems. CO from these sources can build up in enclosed or semi-enclosed spaces. People and animals in these spaces can be poisoned by breathing it.

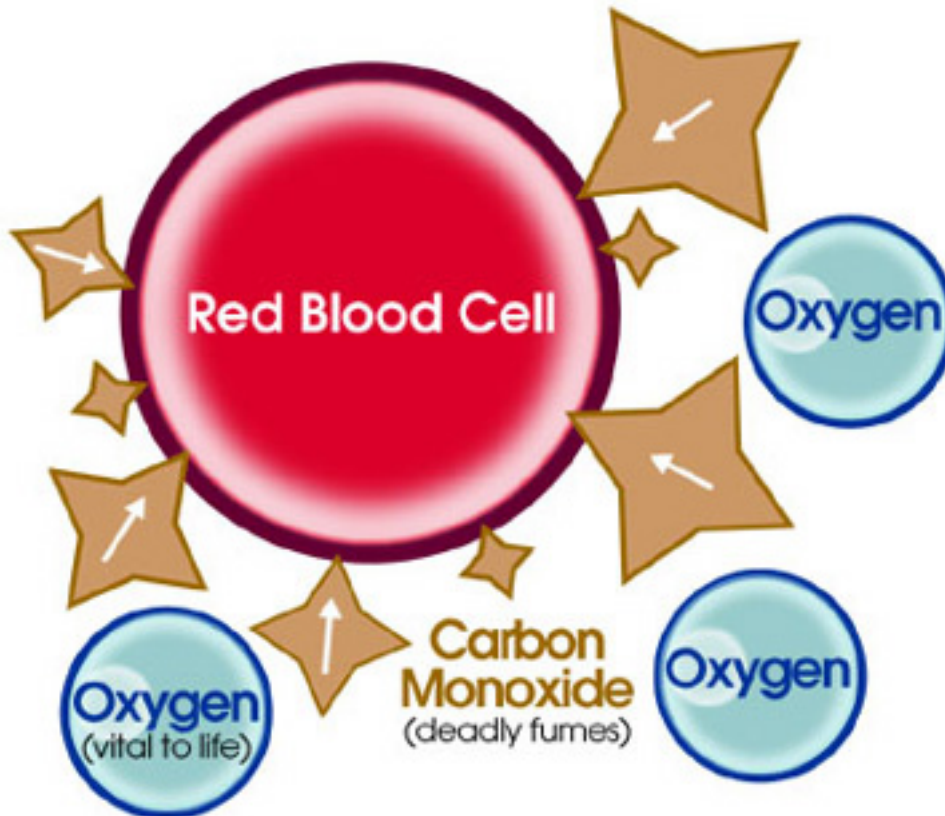
### What are the symptoms of CO poisoning?

The most common symptoms of CO poisoning are headache, dizziness, weakness, nausea, vomiting, chest pain, and confusion. High levels of CO inhalation can cause loss of consciousness and death. Unless

suspected, CO poisoning can be difficult to diagnose because the symptoms mimic other illnesses. People who are sleeping or intoxicated can die from CO poisoning before ever experiencing symptoms.

### **How does CO poisoning work?**

Red blood cells pick up CO quicker than they pick up oxygen. If there is a lot of CO in the air, the body may replace oxygen in blood with CO. This blocks oxygen from getting into the body, which can damage tissues and result in death.



### **Who is at risk from CO poisoning?**

All people and animals are at risk for CO poisoning. Certain groups — unborn babies, infants, and people with chronic heart disease, anemia, or respiratory problems — are more susceptible to its effects. Each year, more than 400 Americans die from unintentional CO poisoning, more than 20,000 visit the emergency room and more than 4,000 are hospitalized due to CO poisoning. Fatality is highest among Americans 65 and older.

### **How can I prevent CO poisoning from my home appliances?**

- Have your heating system, water heater and any other gas, oil, or coal burning appliances serviced by a qualified technician every year.
- Do not use portable flameless chemical heaters (catalytic) indoors. Although these heaters don't have a flame, they burn gas and can cause CO to build up inside your home, cabin, or camper.
- If you smell an odor from your gas refrigerator's cooling unit have an expert service it. An odor from the cooling unit of your gas refrigerator can mean you have a defect in the cooling unit. It could also be giving off CO.
- When purchasing gas equipment, buy only equipment carrying the seal of a national testing agency, such as the American Gas Association or Underwriters' Laboratories.
- Install a battery-operated CO detector in your home and check or replace the battery when you change the time on your clocks each spring and fall.

## How do I vent my gas appliances properly?

- All gas appliances must be vented so that CO will not build up in your home, cabin, or camper.
- Never burn anything in a stove or fireplace that isn't vented.
- Have your chimney checked or cleaned every year. Chimneys can be blocked by debris. This can cause CO to build up inside your home or cabin.
- Never patch a vent pipe with tape, gum, or something else. This kind of patch can make CO build up in your home, cabin, or camper.
- Horizontal vent pipes to fuel appliances should not be perfectly level. Indoor vent pipes should go up slightly as they go toward outdoors. This helps prevent CO or other gases from leaking if the joints or pipes aren't fitted tightly.

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### Here's the Safe Way to Connect Heating Equipment to the Chimney

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## How can I heat my house safely or cook when the power is out?

- Never use a gas range or oven for heating. Using a gas range or oven for heating can cause a build up of CO inside your home, cabin, or camper.
- Never use a charcoal grill or a barbecue grill indoors. Using a grill indoors will cause a build up of CO inside your home, cabin, or camper unless you use it inside a vented fireplace.
- Never burn charcoal indoors. Burning charcoal — red, gray, black, or white — gives off CO.
- Never use a portable gas camp stove indoors. Using a gas camp stove indoors can cause CO to build up inside your home, cabin, or camper.
- Never use a generator inside your home, basement, or garage or near a window, door, or vent.

## How can I avoid CO poisoning from my vehicle?

- Have a mechanic check the exhaust system of my car every year. A small leak in your car's exhaust system can lead to a build up of CO inside the car.
- Never run a car or truck in the garage with the garage door shut. CO can build up quickly while your car or truck is running in a closed garage. Never run your car or truck inside a garage that is attached to a house and always open the door to any garage to let in fresh air when running a car or truck inside the garage.
- If you drive a vehicle with a tailgate, when you open the tailgate, you also need to open vents or windows to make sure air is moving through your car. If only the tailgate is open CO from the exhaust will be pulled into the car.