



# Carbon monoxide

## FACT SHEET



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Carbon monoxide is a colorless, odorless, tasteless gas that is produced by the incomplete burning of fuels such as natural gas, liquefied petroleum, gasoline, wood and oil. Exposure to carbon monoxide can be fatal so it is important to understand where it comes from and how to protect yourself and your family from carbon monoxide poisoning.

### CARBON MONOXIDE IN THE HOME

Combustion appliances such as heating systems, gas ranges/ovens, water heaters, gas dryers, gas fireplaces and wood-burning stoves/fireplaces all are potential sources of carbon monoxide in the home. Appliances kept in good working condition produce very little carbon monoxide. Improperly-operating appliances, however, can produce dangerous levels of carbon monoxide. Carbon monoxide can also build up in your home from running car or lawn mower engines in an attached garage, even with the garage door open.

Carbon monoxide is measured in parts per million molecules of air (ppm). Average levels near a properly-adjusted gas range/oven can range from 5 ppm to 15 ppm. Levels near poorly-adjusted stoves may be 30 ppm or higher. If you have a gas range or oven, install a range hood that is vented to the outside to reduce buildup of carbon monoxide in the kitchen.

### CARBON MONOXIDE AND YOUR HEALTH

The health effects of exposure to carbon monoxide are dependent on the level (ppm), length of exposure and individual health conditions. The initial symptoms of carbon monoxide poisoning are similar to the flu and include headache, fatigue, nausea, irregular breathing and dizziness. A healthy individual may feel fatigue from exposure to low levels of carbon monoxide, and impaired vision and coordination, headache, nausea and dizziness at higher levels. High concentrations of carbon monoxide are fatal. If you suspect that you have carbon monoxide poisoning, get fresh air immediately.

### REDUCE YOUR EXPOSURE TO CARBON MONOXIDE

Properly installed, vented and maintained combustion appliances are critical to reducing your exposure to carbon



**Gas stoves can be a source of carbon monoxide. Make sure yours is properly adjusted and vented.**

monoxide.

- Make sure all appliances are installed according to manufacturers' instructions and local building codes.
- Have your heating system (including chimney and vents), water heater and other combustion appliances inspected and serviced annually. Sealed-combustion appliances should be serviced every other year.
- Do not use combustion space heaters in living spaces.
- Follow manufacturers' directions for safe operation and proper ventilation of all combustion appliances. Adequate ventilation reduces your risk of exposure to carbon monoxide.
- Examine vents and chimney regularly for improper connections, visible rust or stains.

Watch for problems that could indicate improper appliance operation:

- Sooting, especially on appliances
- Unfamiliar or burning odor
- Heavy condensation on windows
- Decreasing hot water supply
- Heating system that runs constantly or is unable to heat house

When replacing furnaces or water heaters, purchase power-vented or direct-vented models.

### CARBON MONOXIDE DETECTORS

The United States Consumer Product Safety Commission



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**Atmospherically vented appliances, such as this water heater, should be direct-vented to minimize carbon monoxide exposure.**

recommends installing carbon monoxide detectors that meet UL standard 2034. The standard requires detectors to sound an alarm before carbon monoxide levels reach 100 ppm over 90 minutes, 200 ppm over 35 minutes or 400 ppm over 15 minutes. A carbon monoxide detector can provide added protection but is not a substitute for proper maintenance of your combustion appliances.

Proper placement of a carbon monoxide detector is important. The Commission recommends installing detectors in the area outside individual bedrooms to wake sleepers if there is a potential danger. However, don't place detectors within 15 feet of heating or cooking appliances or in or near humid areas such as bathrooms.

### **WHAT YOU SHOULD NOT DO**

In order to avoid carbon monoxide problems, follow these rules.

- Never use your gas range or oven for heating
- Never operate unvented fuel-burning appliances in the home or garage
- Never leave a car running in a garage (even with the door open)
- Never use portable fuel burning camping equipment indoors
- Never use outdoor grills indoors
- Never burn charcoal indoors or in a garage

### **LEARN MORE**

**[focusonenergy.com](http://focusonenergy.com)**

Contact Focus on Energy to learn more about smart energy choices.

### **Home Performance with ENERGY STAR® Program**

Partners can help you address carbon monoxide problems. For more information call 800.762.7077.

### **[www.cpsc.gov](http://www.cpsc.gov)**

The Consumer Product Safety Commission provides the following documents:

- Carbon Monoxide Questions and Answers
- Carbon Monoxide Poisoning with Camping Equipment
- Carbon Monoxide Detectors Can Save Lives

### **[www.epa.gov/iaq/co.html](http://www.epa.gov/iaq/co.html)**

The United States Environmental Protection Agency provides detailed information on carbon monoxide.