



# carbon monoxide

Preventing carbon monoxide  
poisoning in your home



# Carbon Monoxide (CO) and Your Home

Carbon monoxide (CO) is a poisonous gas that can kill you if inhaled. It is a colorless, odorless, and tasteless gas created when a fuel is burned. Common fuels that produce carbon monoxide when burned include natural gas, propane, gasoline, and wood. If dangerous concentrations of CO build up indoors it can cause illness or even death. Symptoms of CO poisoning are very similar to the flu and this may cause you to ignore the early signs of poisoning. You won't know CO is in the air unless an alarm sounds.

The good news is that carbon monoxide poisoning can be prevented with simple actions such as having a working CO alarm in your home. This brochure will explain the causes and health effects of CO exposure and explain ways to maintain your home. You can prevent CO poisoning and keep your family safe.



**Each year, around 345 Minnesotans go to the ER for accidental CO poisoning.**

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### Carbon Monoxide Poisoning

**Can't be seen**

**Can't be smelled**

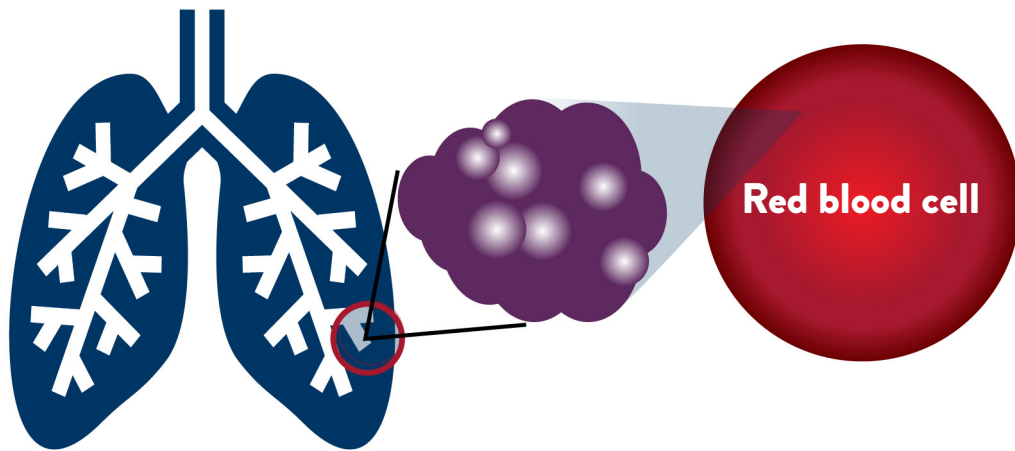
**Can't be heard**

**Can be stopped with a CO alarm**

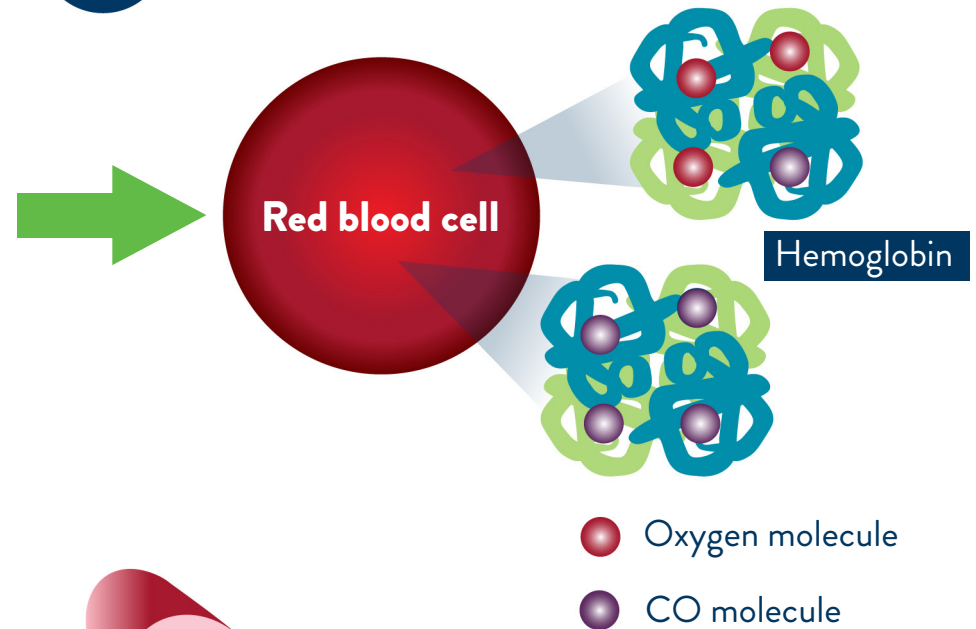
# CO Poisoning

When air containing CO is inhaled, it gets into the bloodstream. It reduces the blood's ability to carry oxygen to important organs such as the heart and the brain.

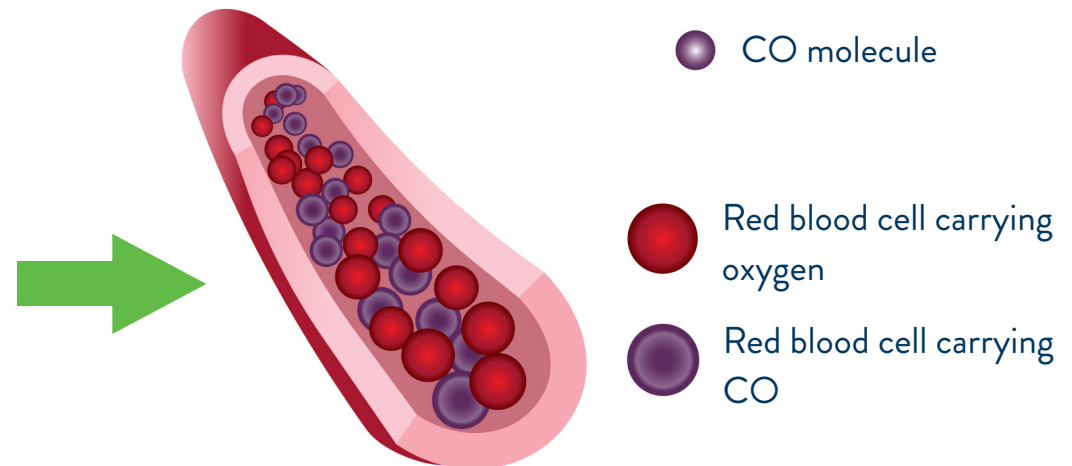
**1** Carbon monoxide (CO) gas from the lungs enters the red blood cell.



**2** There CO binds to the hemoglobin molecules instead of oxygen.



**3** Red blood cells transport more CO and less oxygen to vital organs like the brain and the heart leading to CO poisoning.



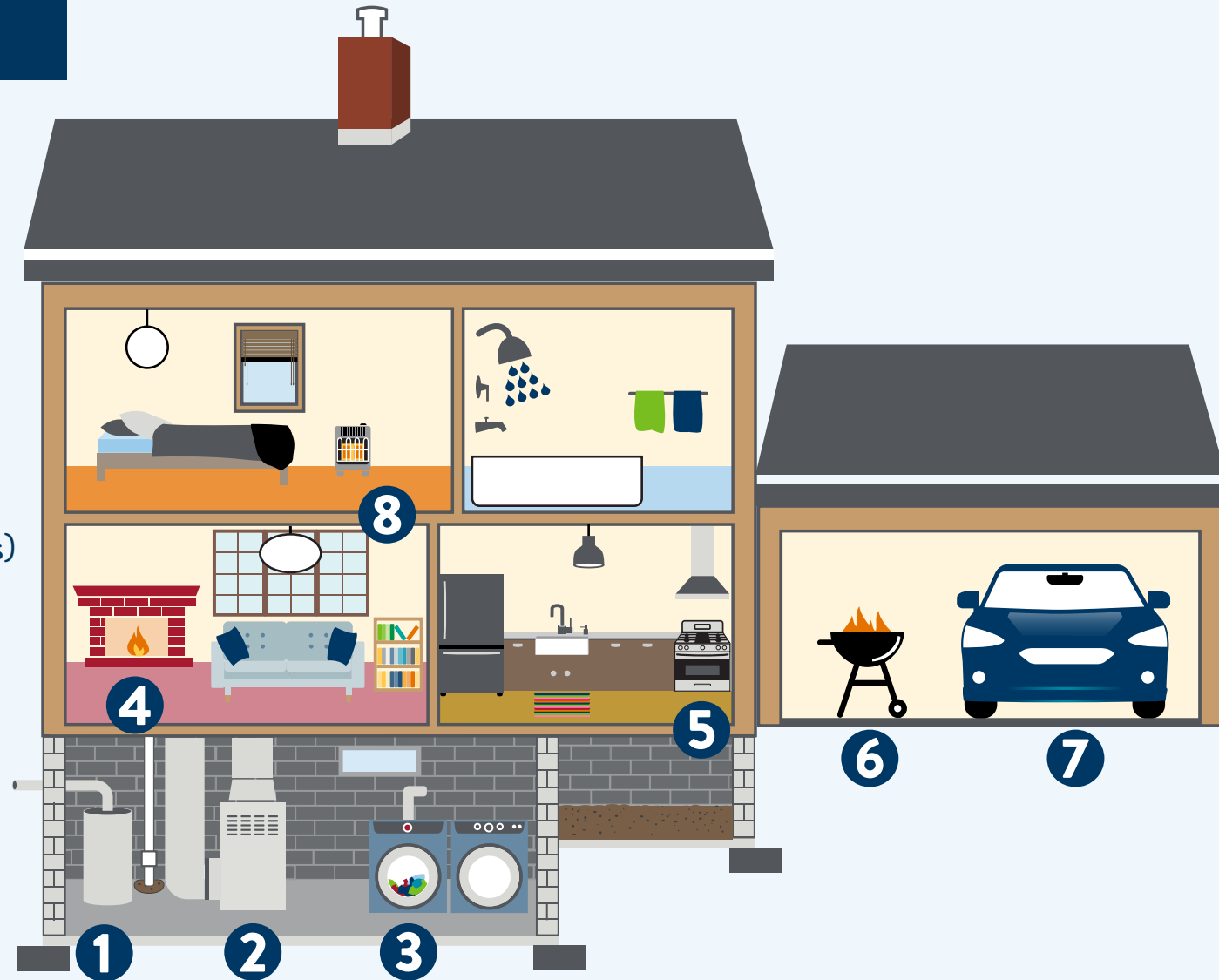
# Sources In Your Home

Types of fuel include:

-  Natural gas
-  Propane
-  Gasoline
-  Wood

Potential CO sources:

- 1** Water heaters (gas)
- 2** Furnaces and boilers (gas)
- 3** Clothes dryers (gas)
- 4** Fireplaces (not electric)
- 5** Stoves (gas)
- 6** Power tools, generators, and grills
- 7** Cars (gas)
- 8** Space heaters (gas)



CO is produced whenever a fuel burns.

# Appliances

Most appliances need to be vented outside.  
These include:



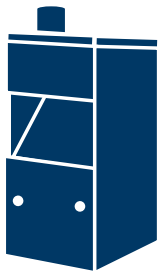
Dryers



Wood Burning Stoves



Furnaces



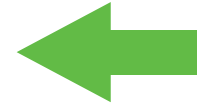
Boilers



Water Heaters



Some Fireplaces



Adding a vent hood that exhausts outdoors is a good idea. A vent hood reduces CO and other indoor air pollutants when using the stove and oven.



Signs appliances are not venting properly:

- Streaks of soot around appliances
- No upward draft in chimney
- Orange or yellow flame in pilot light or gas burner (the flame should be blue)
- Excess moisture and rust
- Melting plastic caps on the water heater

If you see these signs there is a chance that dangerous concentrations of CO can build up in the home.



**Make sure nothing is blocking the outside vents. This includes the snow.**



**Open ducts in the basement supply fresh air to water heaters and furnaces. If the home has one, don't tie them off or block them.**

# Recreation



## Boats

- Be aware of where a boat motor exhausts.
- Tow passengers at least 20 feet away from the back of the boat.
- Boats equipped with a cabin are required to have a marine CO alarm.



## Ice Fishing

- Regularly inspect heating equipment and verify it is in good condition before use.
- Use a battery powered CO alarm in ice houses and carry extra batteries.



## Camping

- Camp stoves, grills, and fuel-burning lanterns are made for outdoor use. Never use them inside of a tent, RV, or cabin.



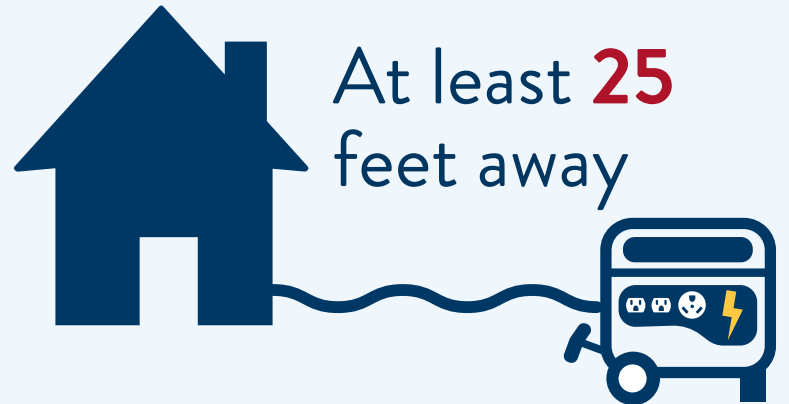
## Garages

- Avoid idling car engines in enclosed spaces.
- Avoid using fuel-burning tools indoors. Examples include pressure washers, leaf blowers, lawn mowers, or concrete saws.
- Do not use charcoal or gas grills inside of closed garages.



## Portable Generators

- Never place a portable generator indoors. They can produce a lot of exhaust.
- Keep generators away from windows and doors.



# Know the Symptoms of CO Poisoning

CO is often called the “silent killer” because the symptoms of CO poisoning are very similar to the flu. This means that many people will ignore the early signs and let the poisoning get worse.

For most people, the first signs of exposure include:

- Headache
- Breathlessness with mild exercise
- Dizziness
- Fatigue
- Nausea



Symptoms can progress to:

- Confusion and irritability
- Impaired judgment and loss of coordination
- Unconsciousness

Signs that it is CO poisoning and not the flu:

- You feel better when you are away from home.
- Symptoms appear or seem to get worse when using fuel-burning equipment.
- Everyone is sick at the same time. (For example, with COVID and the flu virus it will spread over time from person to person).
- No fever or body aches.



**CO can affect everyone, but babies, children, and pregnant women are more at risk.**

**CO affects pets too.**



# CO Alarms

Under Minnesota law, every home is required to have at least one operating **CO alarm within 10 feet of every room used for sleeping.**

The alarms can be hard-wired, battery powered, or plug-in devices. Make sure that alarms are UL listed and follow the package instructions for proper placement.

## CO alarms do not last forever

Most alarms need to be replaced every 5 to 7 years. Look at the owner's manual to see the recommended replacement schedule. Have extra batteries on hand in the home in case the CO alarm "chirps" notifying you the batteries are low. And remember to replace the batteries at least once a year.

## If the CO alarm sounds:

- Go outside to fresh air.
- Make sure everyone is accounted for.
- If exhibiting symptoms of CO poisoning, call your local fire department or 9-1-1.
- If feeling fine, call your gas utility company.
- Do not reenter the home until safe.
- Identify the source of CO and make repairs.



Some CO alarms have a digital readout. The readout should always be 0. Any reading above 0 should be looked into.

# Furnaces

CO poisonings occur more often in the winter months and one of the largest contributors are furnaces. Have your furnace checked by a qualified heating contractor once a year, this includes having an annual tune-up. Not only is this important to maintain your furnace, but the contractor will look for potential CO problems.







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