

Carbon monoxide

Carbon monoxide (CO) is an odorless, colorless, deadly gas. It can kill you before you know it because you can't see it, taste it or smell it. At lower levels of exposure, it can cause health problems. Some people may be more vulnerable to CO poisoning such as fetuses, infants, children, senior citizens and those with heart or lung problems. When an individual breathes in CO, it accumulates in the blood and forms a toxic compound known as carboxyhemoglobin (COHb). Hemoglobin carries oxygen in the bloodstream to cells and tissues. Carbon monoxide attaches itself to hemoglobin and displaces the oxygen that the body organs need.

Carboxyhemoglobin can cause headaches, fatigue, nausea, dizzy spells, confusion and irritability. Later stages of CO poisoning can cause vomiting, loss consciousness and eventually brain damage or death.

Symptoms can mimic a common cold, a hangover, food poisoning, depression or flu (without body ache or fever). If the family's (or pet's) symptoms decrease when away from the house, seek medical treatment or get a carboxyhemoglobin level blood test for CO poisoning. Some of the symptoms can also include are:

- Dizziness, ringing in the ears
- Blurred vision, burning eyes
- Persistent throbbing headaches
- Tightness across the forehead
- Pale skin
- Nausea and vomiting
- Confusion, disorientation, loss of muscle control
- Fainting, unconsciousness
- Sleepiness, never feeling rested
- Rapid heartbeat or pulse, fluttering or throbbing of the heart, tightening of the chest
- Shortness of breath
- Chest pain (angina) when exercising
- Intoxicated appearance
- Sudden Death

Carbon monoxide is a by-product of combustion of fossil fuels. Fumes from automobiles contain high levels of CO. Appliances such furnaces, space heaters, clothes dryers, ranges, ovens water heaters, charcoal grills, fireplaces and wood burning stove produce CO. Carbon monoxide usually is vented to the outside if appliances function correctly and the home is vented properly. Problems occur when furnace heat exchanger crack or vents and chimneys become blocked. Insulation sometimes can trap CO in the home.

The Consumer Product Safety Commission and the Allen Park Fire Department recommend installing at least one carbon monoxide detector with an audible alarm near the bedrooms. If a home has more than one story, a detector should be placed on each story.

Be sure the detector has a testing laboratory label. We also recommend a detector that has a digital read out that shows the amount of CO that is present and one that plugs into a house hold circuit. The less expensive detectors have a history of false alarms and confusing alarms that signal low batteries not a CO problem in the home.

The following is a checklist for where to look for problem sources of CO in the home:

A forced air furnace is frequently the source of leaks and should be carefully inspected.

- Measure the concentration of carbon monoxide in the flue gases.
- Check furnace connections to flue pipes and venting systems to the outside of the home for signs of corrosion, rust gaps or holes.
- Check furnace filters and filtering systems for dirt and blockage.
- Check forced air fans for proper installation and to assure correct airflow of flue gases, Improper furnace blower installation can result in carbon monoxide build-up because toxic gas is blown into rather than out of the house.
- Check the combustion chamber and internal heat exchanger for cracks, holes, metal fatigue or corrosion. be sure they are clean and free of debris.
- Check burners and ignition system. A flame that is mostly yellow in color in natural gas fired furnaces is often a sign that the fuel is not burning completely and higher levels of carbon monoxide are being released. Oil furnaces with similar problems can give off an oily odor. Remember you can't smell carbon monoxide.

Check all venting systems to the outside including flues and chimneys for cracks, corrosion, holes, debris, blockages. Animals and birds can build nests in chimneys preventing gases from escaping.

Check all other appliances in the home that use flammable fuels such as natural gas, oil, propane, wood or kerosene. Appliances include water heaters, clothes dryers, kitchen ranges, ovens or cooktops; woodburning stoves and gas refrigerators.

- Pilot lights can be a source of carbon monoxide because the by-products of combustion are released inside the home rather than vented outside.
- Be sure space heaters are vented properly. Unvented space heaters that use a flammable fuel such as kerosene can release carbon monoxide into the home.
- Barbecue grills should never be operated indoors under any circumstances nor should stovetops or ovens that operate on flammable fuels be used to heat a residence.
- Check fireplaces for closed, blocked or bent flues, soot and debris.
- Check the clothes dryer vent opening outside the house for lint build-up.

Outside the Home: Cars, outdoor equipment, recreational vehicles

- Never leave a vehicle running in a garage with or without the garage door open. Inspect for exhaust leaks.
- Never use fuel-burning heaters or lanterns while sleeping in tents, campers, RVs or other enclosed areas.
- Do not store propane tanks indoors.
- Start all gas-, diesel- or propane-powered equipment outside.
- Use paint strippers and solvents outdoors or in adequately ventilated areas.
- Even with the door open, never use a barbecue grill in the garage or house, in a trailer, van or camper.

Inside the Home:

- Avoid extensive use of kerosene heaters; always vent to outside.
- Inspect and service heating and cooling system before each season.

- Check water heater for improper burner adjustment and low supply of hot water.
- Keep fireplace flue open for adequate ventilation and until embers are completely burned out.
- If you see a mostly yellow pilot light not positioned upright, call for service; never adjust it yourself.
- Never install or operate gas-burning appliances, furnaces or water heaters in unvented enclosures.
- Examine chimney and vents for blockages, cracks, leaks; improper connections, rust, water, streaking, stains, debris and soot; loose, damaged, discolored bricks or masonry; hot draft or none at all.
- Never use a gas range or oven for heating.

Things to watch for:

- Stuffiness, stale, smelly air; exhaust fume smell; unfamiliar or burning odor.
- Moisture on walls and windows; lint by dryer's exterior vent; soot on appliances.
- A furnace that runs constantly but heats inadequately; loose or missing furnace panels.
- Appliances that shut off, activating safety devices.

Treatment

If you suspect carbon monoxide might be in your environment, you should turn off the heater or source of the gas, open windows to ventilate all rooms and/or go outside and get some fresh air. If in a vehicle, switch off engine and remove yourself or the person from the vehicle. Seek emergency medical assistance. When inhaled, carbon monoxide is quickly absorbed into the blood. It displaces oxygen by combining with the blood's oxygen's. If you find someone who you suspect maybe suffering from carbon monoxide poisoning, remove from the area and check the ABCs (Airway, Breathing and Circulation) and begin resuscitation if required.

Useful Tips

- Install proper ventilation in all homes, mobile homes, garages and work places.
- Ventilation, don't block them off.
- Use Carbon monoxide detectors in the home.
- Remove vehicles from the garage immediately after starting the ignition.
- Do not run a vehicle or other fueled engine or motor indoors, even if the garage doors are open.
- Have your vehicle inspected for exhaust leaks if you have any symptoms of carbon monoxide poisoning.
- Always use barbecue grills, which can produce carbon monoxide, outside. Never use them in the home or garage.

THE IMPORTANT 8'S IN FIRE SAFETY

1. Have a Fire Escape Plan with a meeting place that everyone understands and conduct periodic drills.
2. Smoke Detectors that are located properly and tested regularly can be lifesavers.

3. Sleep with your bedroom door closed to keep smoke out, but make sure you can hear the Smoke Detectors.
4. In case of fire, remain calm, get down, and get out. Crawl to stay below deadly smoke and gases and get out of the house.
5. If your clothes catch fire, STOP where you are, DROP to the floor, and fold your arms high on your chest to protect your face, ROLL on the floor to smother the fire.
6. Don't panic if you are trapped in the house. If you are over-anxious you will breathe faster and take in more smoke and toxic gases, stay in your room and wait for help.
7. Once you're outside NEVER go back inside, call the Fire Department from a neighbor's telephone.
8. Remember the emergency phone number 911 and make sure you know your correct address.