



# 5-minute safety talk

## Carbon Monoxide: Fight the Invisible Killer

Sometimes called the “silent killer,” carbon monoxide (CO) is a colorless, odorless gas that can sicken or even kill people exposed to high levels. Carbon monoxide poisoning strikes thousands of people each year, either on the job or at home. Of those thousands affected, hundreds die.

### CO robs you of precious oxygen

Carbon monoxide interferes with the blood’s ability to deliver oxygen to the brain, heart and other vital organs. The early signs of carbon monoxide poisoning include flu-like symptoms such as headache, fatigue, weakness, dizziness, nausea and shortness of breath. More advanced symptoms include vomiting, heart palpitations, coma and convulsions. Another symptom, mental confusion, can leave victims too disoriented to realize they need to get fresh air. The consequences can be tragic.

Infants, pregnant women, people with heart and respiratory illnesses, and the elderly are at a greater risk for harmful effects from carbon monoxide exposure. Smokers run a higher risk from exposure to carbon monoxide gas than non-smokers because smoking raises the level of carbon monoxide in the body.

### Is your job risky?

Sources of carbon monoxide in the workplace range from furnaces to various types of machines. Any device or tool with an internal combustion engine emits some carbon monoxide. Examples include generators, gas-burning water or space heaters, gasoline-powered saws, pressure washers, cement cutters and other equipment.

Industries such as steel manufacturing, smelting, foundry operations, pulp and paper processing, petroleum refining, and coal mining produce high volumes of carbon monoxide. Workers in these industries face the risk of poisoning, as do agriculture, forestry and construction workers; auto mechanics, garage attendants, cooks, bakers, welders, sandblasters, toll-booth attendants and sewer workers.

Individuals who operate forklifts inside warehouses, ships, semitruck trailers and other poorly ventilated spaces may face exposure to carbon monoxide. Firefighters face an extraordinarily high risk because fires release large volumes of carbon monoxide, as well as other toxic gases.

Risky jobs share the common elements of inadequate ventilation coupled with a carbon monoxide-producing device or event. Typically, the risk of poisoning occurs in confined spaces. In the construction industry, trenches and excavations with poor ventilation pose the same threat. Tunnels and underground parking garages can be risky as well.

### Tackle CO before it tackles you

To reduce the risk of poisoning, prevent carbon monoxide buildup at the source. Maintaining and tuning up devices that produce the gas is the first step in prevention.

Look at your furnace at least once a year to make sure the burners are burning properly and to change filters periodically throughout the winter months.

For devices with internal combustion engines, tune-ups reduce carbon monoxide emissions. This also improves the vehicle’s performance. Another piece of advice is switching from gasoline-powered to propane-fueled devices and only using engines with catalytic converters.

A secondary level of prevention is ventilation. Exhaust fans are typically used to draw carbon monoxide out of a confined space. When ventilation techniques are not enough to protect workers, they should wear personal protective equipment, such as respirators.

Carbon monoxide monitors can help to make sure the gas is not accumulating to an unhealthy level. A carbon monoxide alarm is even better, because it actively alerts workers when dangerous levels have accumulated. The symptoms of carbon monoxide poisoning may occur at levels as low as 60 parts per million (ppm). Levels above 2,000 ppm kill quickly. The federal OSHA standard for carbon monoxide mandates exposure of less than 50 ppm averaged over eight hours. Some state standards may be even stricter.

### CO at Home

Here are some tips to prevent dangerous levels of carbon monoxide in your home:

- Have fuel-burning appliances professionally installed and professionally inspected at the beginning of every heating season.
- Whenever possible, purchase appliances that vent their exhaust to the outside.
- When using a fireplace, make sure that the flue is fully open.
- Use the proper grade of fuel in kerosene space heaters.
- Always burn charcoal in a well-ventilated area, never inside a home, garage or recreational vehicle.
- Never run your car in the garage, even with the door open.
- Never sleep in a room with an unvented gas or kerosene space heater.
- Never use ovens or gas ranges to heat your home.
- Have your heating system, chimneys and flues cleaned by professionals.
- Make sure that your furnace has an adequate intake of outside air.
- Never use small gasoline-powered engines in enclosed spaces.

Don’t let this “silent killer” attack you. Carbon monoxide detectors are great to have as a backup, especially near sleeping areas in homes, but they should never replace proper use and maintenance of your fuel-burning appliances. Equally important is remembering the signs and symptoms of carbon monoxide poisoning so you can get yourself or any victim to fresh air before it’s too late.

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