Every year, about 50,000 people in the U.S. visit emergency rooms due to accidental carbon monoxide (CO) poisoning, and at least 430 die. Many people fall victim to these hazardous vapors while using gasoline-powered tools inside buildings or in other semi-enclosed spaces.

High-pressure washers, concrete cutting saws, power trowels, floor buffers, welders, pumps, compressors, generators, and other small gasoline-powered tools can cause a rapid, dangerous, and sometimes fatal CO buildup within minutes -- even in well-ventilated areas. For example:

- a farmer died of CO poisoning 30 minutes after using an 11-horsepower gasoline-powered pressure washer to clean his barn;
- a municipal employee lost consciousness due to CO poisoning while trying to exit from a 59,000-cubic-foot room with open doors at a water treatment plant where he was working with an eight-horsepower gasoline pump;
- five workers received treatment for CO poisoning after using two eight-horsepower gasoline-powered pressure washers in a poorly ventilated underground parking garage; and
- a plumber using a gasoline-powered concrete saw in a basement with open doors, windows, and a cooling fan was diagnosed with CO poisoning after experiencing a severe headache, dizziness, and paranoid behavior.

These CO poisoning reports show a range of effects, work settings, exposures, times, and different types of ventilation. Workers in areas with closed doors and windows experienced symptoms within minutes. Opening doors and windows or operating fans do not guarantee safety. Operating gasoline-powered engines and tools indoors presents serious health hazards.

Recognizing CO Poisoning

Gasoline-powered equipment and tools produce high amounts of CO — a colorless, odorless, nonirritating, poisonous gas that can cause illness, permanent nerve damage, and death. CO can overcome an exposed person without warning. Often when a person experiences symptoms, there is not enough time to seek safety. Previously using gas-powered equipment without experiencing symptoms has sometimes given users a false sense of safety. However, such users can be poisoned at other times in similar work environments.

The most common symptoms of CO poisoning are **headache, dizziness, weakness**,
nausea, vomiting, chest pain, and confusion. Other symptoms may include visual disturbances, changes in personality, and loss of consciousness. People who are sleeping or who have been drinking alcohol can die from CO poisoning before ever having symptoms.³

Safety Tips

The following tips can prevent CO poisoning:

**Employers and equipment users should:**

- ban the use of gasoline-powered engines or tools inside buildings or in partially-enclosed areas unless gasoline engines can be located outside and away from air intake vents (except in emergency rescues when equipment operators, assisting personnel, and the victim are provided with supplied-air respirators);
- learn and recognize the symptoms of CO overexposure;
- run only washer lines inside facilities when using a high-pressure washer, and place the pump and power unit outdoors away from air intake;
- use electric or compressed air tools when available and safe to use;
- use personal CO monitors with audible alarms to warn workers when CO concentrations become high;

**CARBON MONOXIDE POISONING**

- watch coworkers for signs of CO toxicity;
- immediately turn off equipment and go outdoors or to a place with uncontaminated air if experiencing symptoms;
- call 911 or another local emergency number for medical attention or assistance if symptoms occur;
- never allow a person with symptoms to drive a motor vehicle to a health care facility or other location; and
- never return to a work area that has had high CO levels until the equipment or tool is deactivated, gas vapors are measured, and concentration readings are below accepted guidelines and standards.

**Employers should also:**

- conduct a workplace survey to identify all sources of possible CO exposure;
- educate workers about the sources, conditions, symptoms, and control of CO exposure;
- substitute less hazardous equipment when possible and always use equipment that allows
gasoline-powered engines to be placed outdoors and away from air that enters the building; and

• monitor employee CO exposure to determine possible hazards.

**Tool rental agencies should:**

• put warning labels on gasoline-powered tools such as “WARNING — CARBON MONOXIDE PRODUCED DURING USE CAN KILL — DO NOT USE INDOORS OR IN OTHER SHELTERED AREAS”;

• tell renters that gasoline-powered tools should NOT be used indoors and explain why;

• recommend safer tools for the intended use if available;

• have portable, audible CO monitors for rent and encourage their use; and

• provide renters with educational materials such as this fact sheet.

**Tool manufacturers should:**

• design tools that are safe for indoor use;

• provide warning labels for existing and new gasoline-powered equipment;

• provide recommendations for equipment maintenance to reduce CO emissions; and

• recommend the use of portable, audible CO monitors with small gasoline-powered engines.

For more information on CO poisoning prevention tips, contact the [Centers for Disease Control and Prevention](https://www.cdc.gov), the [Occupational Safety and Health Administration](https://www.osha.gov), or the [Environmental Protection Agency](https://www.epa.gov).

Texas Department of Insurance, Division of Workers’ Compensation
www.txsaftyatwork.com
HS05-023C (12-21)
References

