

## Carbon Monoxide Poisoning – The “Invisible” Killer

You cannot see or smell carbon monoxide (CO), but at high levels it can kill you in minutes. CO enters the body through the lungs and accumulates in the blood. It prevents the blood from carrying and using oxygen properly, and it harms the brain and other organs. Electrical equipment does not cause CO. CO is made when fuels burn improperly.

Many fuels can produce carbon monoxide, such as:

- Wood
- Oil
- Natural gas
- Gasoline
- Kerosene
- Propane
- Coal
- Diesel

Other sources of CO are commonly used tools or heating systems that are not serviced regularly, not indicated for indoor use or in which the exhaust flow is blocked.



### Myth or Fact?

**Myth:** CO does not smell, so you are not at risk for CO poisoning if there is an odor in your home such as smoke.

**Fact:** Carbon Monoxide is colorless and odorless; however, it can be mixed with other substances that have a smell (such as car exhaust or smoke).

**Myth:** It is easy to know if you have CO poisoning.

**Fact:** CO poisoning symptoms are similar to common illnesses, such as a cold or flu. This increases the likelihood of a misdiagnosis by the victims and health care providers. The best way to know if you have been exposed to CO is to have a CO alarm in your home.

**Myth:** CO is produced only when burning gasoline.

**Fact:** CO is made when fuels burn improperly. These fuels include wood, oil, natural gas, coal, gasoline, and kerosene.

See page 2 for more Myths and Facts

CO is one of the leading causes of unintentional poisoning deaths in the United States. CO poisoning is more common during winter months, but can occur anytime. Men and the elderly have higher rates of death. According to the Center for Disease Control (CDC), there are approximately 3,800 deaths from fires or other sources of carbon monoxide each year. Of these, 2,400 are intentional or suicides. An estimated 500 non-fire-related, unintentional CO deaths occur each year, 200 of which are from CO produced by fuel-burning appliances.

Common scenarios include:

- burning charcoal inside a home, garage, vehicle or tent;
- running cars in attached garages;
- using portable generators indoors or in partially-enclosed spaces.

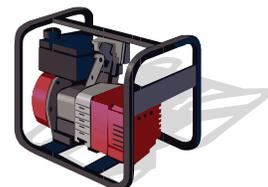
In 2006, the NNEPC handled roughly 200 CO exposures. Most of these exposures occurred during October through March.

There are approximately 50,000 Emergency Room visits of non-fatal acute CO poisoning each year. Significant underreporting is a concern. One study estimates the rate of missed diagnosis to be as high as 30%.

Automobile-related CO exposures have declined 80% since 1975 due to catalytic converter reduced CO emissions. The catalytic converter does not protect against CO poisoning when the tailpipe is obstructed. For example, a car stuck in a snow drift and is kept running for heat may expose the occupant to dangerous exhaust.



Remember:  
Keep grills and  
generators  
outside!

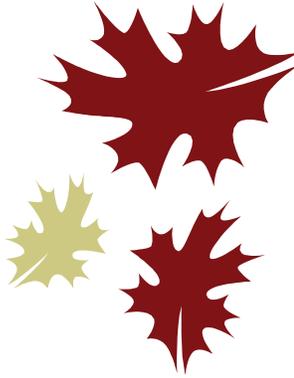


## Myths or Facts Continued...

**Myth:** If your CO detector alarms, you should open the windows in your home.

**Fact:** If you suspect that you have been exposed to carbon monoxide you need to get to fresh air right away. Opening the windows in your home may increase the amount of time you are exposed to carbon monoxide.

Everyone should get out of the building right away and call 911 or the local fire department. Call the Northern New England Poison Center at 1-800-222-1222 for more information.



## How to select and install a CO detector/alarm

A CO alarm is different than a smoke detector. A CO alarm is designed to alarm if potentially dangerous levels of CO are detected in the home or business. CO alarms can be purchased from any hardware store and most department stores. A CO alarm should meet special requirements set by the Consumer Product Safety Commission (CPSC). The label should list that the detector meets the requirements of the current UL standard 2034 or the requirements of the IAS 6-96 standard.

A properly installed and operating CO alarm will sound an alarm for different levels of CO. The concentration is measured in parts per million (ppm). When the concentration is 1 to 70 ppm, most people will not experience any symptoms. As the level rises, some people may experience headaches, dizziness, fatigue and nausea. Heart patients may experience an increase in chest pain. When the levels increase above 150-200 ppm, unconsciousness and death are possible.

A CO alarm should be installed according to the manufacturer's instructions. Follow directions carefully and save the directions in a safe place. Learn how the alarm works. A CO alarm should be installed in hallways outside every sleeping area of the home. The alarm must not be covered by furniture or draperies. Because CO mixes with the air in the building, the alarm may be placed high on the wall or installed in a plug-in receptacle.

If your detector sounds an alarm,

**DO NOT IGNORE IT!**

For further information, call NNEPC at 1-800-222-1222 or visit our website at [www.nnepc.org](http://www.nnepc.org).

For further information on CO alarms, visit [www.cpsc.gov](http://www.cpsc.gov).

### Carbon Monoxide and Smoke Alarm Laws

As of May 2005, Vermont law requires carbon monoxide alarms in all residential buildings. Since then, many lives have been saved because of these alarms. A family of five in Killington may have died if the CO alarm had not been installed to meet the new statewide requirements.

The law is now part of the Vermont Fire and Building Code. The location of these alarms varies depending on building type and operational features. CO alarms are now required for both single family dwellings and public buildings.

New owner-occupied single family dwellings and dwellings sold or transferred must have a CO alarm installed in the immediate vicinity of any bedroom. New construction must also have CO alarms that are wired in with battery back-up.

### Want more information?

Contact the Vermont Department of Public Safety, Division of Fire Safety at 1-800-640-2106

- [Technical Assistance](#)
- Specifications on CO Alarms
- Audibility of CO Alarms
- [Rules Regarding CO Alarms and Protection](#)
- [Certification of Compliance](#) -



## Education Materials Spotlight

Visit our [Carbon Monoxide Poisoning Prevention website](#) to find out more information on:

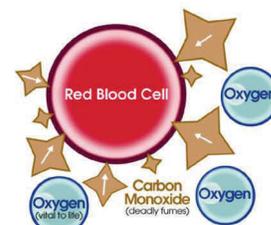
- Training information
- Resources for Prevention
- Resources for School Educators
- Resources for Emergency Responders
- Resources for Health Care Professionals
- Resources for Media
- Resources for Non-English Speakers
- Materials for the Visually Impaired
- References/Research Articles
- Data

## Prevention – What you can do!

Take action during October at your home, school or workplace by calling 1-800-222-1222 or visiting [www.nnepc.org](http://www.nnepc.org) to:

- Order and distribute CO brochures and phone stickers to all staff (and students).
- Download and hang up the CO poster in your school or workplace.
- Download the Public Service Announcements to include in your morning announcements.
- Download one of the press releases and include it in your agency newsletter.
- View our online CO poisoning PowerPoint and learn more about CO poisoning.
- Check your CO alarm batteries and remind your neighbors to do the same.

## Carbon Monoxide Poisoning and Prevention



Carbon monoxide prevents oxygen from being carried in the blood.

The "Invisible" Killer  
*You cannot see or smell carbon monoxide -- but at high levels it can kill you in minutes.*

Northern New England  
Poison Center

# Preparation is the best prevention!



Purchase and install a carbon monoxide alarm this fall!

