



American College of Medical Toxicology

Physicians Specializing in the Care of Poisoned Patients

Carbon Monoxide

What is carbon monoxide?

Carbon monoxide (CO) is an odorless, tasteless, colorless gas that is formed from the incomplete combustion of most carbon containing compounds. Since exposure to CO does not produce warning signs, such as burning of the eyes or a cough, you will not notice if CO is present in your environment. Carbon monoxide is extremely difficult to detect without an appropriate detector. It is readily absorbed when it is inhaled and causes illness by preventing blood cells from delivering enough oxygen to the body.

What are the most common sources of exposure to carbon monoxide?

The most common sources of CO are exhaust systems, furnaces, water heaters, kerosene space heaters, boat engines, cigarette smoke, gasoline or diesel powered generators, and fireplaces. It is more common for CO exposures to occur in the winter months or following natural disasters. Carbon monoxide poisoning often occurs following the first few cold days of the fall or winter when people are turning on their heaters for the first time that season.

What are the signs and symptoms of carbon monoxide exposure?

Early CO poisoning presents with a variety of nonspecific symptoms, which are often confused with a viral syndrome. Symptoms of CO poisoning include headaches, nausea, vomiting, dizziness, and chest pain. As the level of CO in the body increases, abnormal heart rhythms, decreased oxygen delivery to the heart, loss of consciousness, vision changes, difficulty walking, and confusion can develop. Some people may experience persistent or delayed effects of CO poisoning, such as difficulty concentrating, problems with walking and balance, and vision changes. Delayed effects usually develop within 30 days of CO exposure and are most commonly associated with a loss of consciousness at the time of the initial exposure.

What should I do if I think I have been exposed?

If you think you have been exposed to carbon monoxide you should call 911 or the fire department to have the level of CO in your home checked and you should go to the emergency department. You should not go back into the area of possible exposure until you know the level of CO is within the safe range.

What is the treatment for carbon monoxide exposure?

If you are seen in the emergency department for a possible carbon monoxide exposure, the doctor will draw your blood and check a carboxyhemoglobin (COHb) level. Normal levels of COHb in non-smokers range from 0-5%. Smokers can have COHb levels ranging from 2-10%. The initial treatment for carbon monoxide poisoning is 100% oxygen delivered by a face mask. Other tests and treatments provided will depend on your symptoms and other medical history. There is conflicting evidence on using hyperbaric oxygen to treat severe carbon monoxide exposures at this time.

How can I protect my family from carbon monoxide poisoning?

You should install a carbon monoxide detector in your home. It is also advised that you do not place grills or gasoline/diesel run generators inside an enclosed space, such as your home.

Created by Kathy Kopec, DO on behalf of the American College of Medical Toxicology