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Carbon Monoxide and You[1]

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Each year, 1,500 Americans die from carbon monoxide (CO) poisoning. About 900 of these deaths occur in homes. Most of the deaths could be prevented if people were more aware of the dangers.

Carbon monoxide is a colorless, tasteless, odorless gas that is slightly lighter than air. Only small insignificant amounts of CO are produced by normal combustion. However, incomplete combustion of any fuel greatly increases the production of poisonous carbon monoxide. Even normally safe, fuel-burning furnaces can present a danger if not cared for properly. Fuel-burning appliance systems should be kept in good repair and checked at least annually. Especially prior to the heating season, make sure that the chimney is not blocked by birdnests, leaves, soot, loose mortar, bricks or trash.

FLAME INDICATES EFFICIENCY

The flames on most burners that use a gaseous fuel such as natural gas or liquified petroleum gas should burn steadily with a clear, blue flame, except for special designs such as fireplace logs and torches. A wavering, yellow flame on a normal gas burner indicates that the burner is out of adjustment or the air inlet is restricted. As a result, the burner may be producing excessive amounts of CO. However, the flames in burners that use fuel oil should burn with a clear yellow or orange flame. This is an indication of good combustion in equipment that burns fuel oil.

Portable, unvented heaters should not be used as the main source of heat. They can, however, bc used safely as a temporary heat source during the waking hours or during a power failure. If used, ventilation must be provided. The minimum ventilation should be one square inch of fresh air per 1,000 BTUs of the heater's rated output.

Whenever there is a flame or combustion, some deadly carbon monoxide gas can be produced. The following factors, however, increase the production of this highly toxic gas:

1. Improper fuel-air mixture.
2. Insufficient ventilation of combustion gases.
3. Insufficient fresh air intake.

When none of these conditions exist, burning a solid, liquid or gaseous fuel produces little danger of CO poisoning. Under ideal conditions, only small amounts of CO are given off, and these are quickly dissipated.

But if one condition exists, such as an improper burner adjustment of a furnace, the possibility of CO poisoning is greatly increased. The carbon monoxide, however, still may be vented to the outside through a chimney or stack.

When any combination of the hazardous conditions exist, there is a possibility of a serious threat to health, For instance, if the burner on the kitchen range is improperly adjusted in a tightly fitted dwelling, such as a mobile home, the danger of CO poisoning is greatly increased because normally there is little ventilation.

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PRECAUTIONS

Do not use the oven of a gas kitchen stove for heating.

Avoid use of charcoal grills and hibachi pots indoors for cooking or to eliminate the chill in a room or closed garage. They give off CO fumes, even when no glow is visible in the coals.

Make sure that fuel-burning equipment is installed by qualified, licensed or trained persons. Such installation should conform to all local codes and standards.

Provide a constant supply of fresh air for safe burning of fuels. This can be done by leaving a window slightly open. Provide for the positive venting of combustion gases to the outside. This can be accomplished by vent or flue pipes, exhaust systems, etc.

Heating systems, water heaters, kitchen stoves and other fuel-burning devices should be thoroughly inspected and maintained at least once a year by a qualified person (professional service representative).

Never convert a particular unit from one type of fuel to another without having necessary burner changes and adjustments made by a trained and experienced person. (Example: Changing from liquified petroleum fuel [L.P.] to natural gas.)

Never run any internal combustion engine equipment, such as a power lawnmower or snowblower, in an enclosed space such as a closed garage. Always start it outside or with the door open.

Automobile exhaust systems also can be hazardous, especially in the winter when cars ale operated with the windows closed. A noisy engine may indicate a faulty exhaust system. Check the system and have it repaired if there is a blown-out gasket, loose exhaust manifold, leaking exhaust pipe connections or holes in the muffler.

Be sure the doors are open in the garage or enclosure where an automobile motor is running.

CO AND CAMPING-TRAILERS

Pickup campers and travel trailers have largely replaced the tent and bedroll for campers. monoxide, the silent killer, is one of the major hazards of mechanized camping.

Headache and drowsiness may occur in mild cases, while prolonged exposure can cause nausea, vomiting, heart flutter, extreme sleepiness and shortness of breath, which can be followed by unconsciousness and death. If the equipment is faulty, liquid petroleum fuel provides a major hazard from fire or explosion. In a camping situation, the exposure could easily exceed eight hours, and continued exposure to CO as low as 25 parts per million could cause non-fatal poisoning. Remember, carbon monoxide cannot be seen, tasted or smelled.

PRECAUTIONS FOR CAMPERS

1. Have the liquefied petroleum gas or heating system checked thoroughly prior to each camping season and once or twice a season after traveling long distances. Gas line fittings sometimes loosen.
2. Adjust range, oven, lamp and heater flames at the start of each camping trip. A yellow flame indicates improper adjustment and a possibility of excessive carbon monoxide.
3. Do not use the oven as a source of heat. Most camper ovens do not have an exterior vent.
4. Liquefied petroleum gas is heavier than air, and if there is a leak in the system, a flash fire could occur from flame or spark near the floor.
5. Provide adequate cross ventilation. Don’t rely only on roof vents.
6. Install a fire extinguisher, and be sure everyone knows how to use it.

FIRST AID FOR CO POISONING

Prevention is always the best way, to deal with accidents, but sometimes then, happen despite the best efforts to foresee all possibilities. When they do occur, knowing what to do and acting quickly can save a life. This is especially true in cases of acute CO poisoning because time is of the utmost importance. These are the steps to take:

1. Remove the victim to fresh air immediately,.
2. If he is not breathing, or is breathing irregularly, start mouth-to-mouth resuscitation at once. Breathe for the victim at the rate of one breath every three seconds.
3. Have someone call for help immediately. (DO NOT leave the victim.) Call:
   a. Fire Department
   b. Police Department
   c. Family Doctor
4. Keep the victim warm. Mouth-to-mouth resuscitation should be continued until the victim starts to breathe normally. If resuscitation is stopped, watch the victim for a relapse.

5. Give the victim nothing to eat or drink.
6. When emergency equipment and personnel arrive, let them take over.
7. Take the victim to the hospital.