CARBON MONOXIDE

Carbon monoxide (CO) is an odorless, colorless, deadly gas. Lower levels of exposure can cause headache, dizziness and fatigue. Higher level or prolonged exposure can kill you before you know it because you can't see it, taste it or smell it. Infants, children, senior citizens and those with heart or lung problems may be more vulnerable to the effects of CO.

When an individual breathes in CO, it accumulates in the blood and forms a toxic compound known as carboxyhemoglobin (COHb). Hemoglobin is an element of the blood that carries oxygen through the bloodstream to cells and tissues. While hemoglobin likes oxygen, it likes carbon monoxide two hundred times more than oxygen so it will easily pick up the CO, thereby displacing the oxygen that the internal organs need to function. As the oxygen supply to the organs is reduced and in some cases eliminated, the increased carbon monoxide and build-up of carboxyhemoglobin may cause headaches, fatigue, nausea, dizzy spells, confusion and irritability. Later stages of CO poisoning are evidenced by vomiting, loss of consciousness and eventually brain damage or death.

Carbon monoxide is a by-product of fossil fuels. Fumes from automobiles contain high levels of CO. Appliances such as furnaces, space heaters, clothes dryers, ranges, ovens, water heaters, charcoal grills, fireplaces and wood burning stoves produce CO. Carbon monoxide usually is vented to the outside if appliances function correctly and the home is vented properly. Problems occur when furnace heat exchanger crack or vents and chimneys become blocked. Insulation sometimes can trap CO in the home.

The Consumer Product Safety Commission and the Maryland Heights Fire Protection District recommend installing at least one carbon monoxide detector with an audible alarm near the bedrooms. If a home has more than one story, a detector should be placed on each story.

Be sure the detector has a testing label.

The following is a checklist for where to look for problem sources of CO in the home:

1. A forced air furnace is frequently the source of leaks and should be carefully inspected.
    - Measure the concentration of carbon monoxide in the flue gases.
    - Check furnace connections to flue pipes and venting systems to the outside of the home for signs of corrosion, rust gaps, holes.
    - Check furnace filters and filtering systems for dirt and blockage.
    - Check forced air fans for proper installation and to assure correct airflow of flue gases. Improper furnace blower installation can result in carbon monoxide build-up because toxic gas is blown into rather than out of the house.

- Check the combustion chamber and internal heat exchanger for cracks, holes, metal fatigue or corrosion. Be sure they are clean and free of debris.
- Check burners and ignition system. A flame that is mostly yellow in color in natural gas fired furnaces is often a sign that the fuel is not burning completely and higher levels of carbon monoxide are being released. Oil furnaces with similar problems can give off an oily odor. Remember you can't smell carbon monoxide!

2. Check all venting systems to the outside including flues and chimneys for cracks, corrosion, holes, debris, blockages. Animals and birds can build nests in chimneys preventing gases from escaping.

3. Check all other appliances in the home that use flammable fuels such as natural gas, oil, propane, wood or kerosene. Appliances include water heaters, clothes dryers,
   Kitchen ranges, ovens or cooktops: woodburning stoves, gas refrigerators.
   - Pilot lights can be a source of carbon monoxide because the by-products of combustion are released inside the home rather than vented outside.
   - Be sure space heaters are vented properly. Unvented space heaters that use a flammable fuel such as kerosene can release carbon monoxide into the home.
   - Barbecue grills should never be operated indoors under any circumstances nor should stovetop or ovens that operate on flammable fuels be used to heat a residence.
   - Check fireplaces for closed, blocked or bent flues, soot and debris.
   - Check clothes dryer vent opening outside the house for lint.

SOME COMMONLY ASKED QUESTIONS

How many detectors should I have? At least one for each level of the home.

Is any one detector better than the others? Not really, each one is designed to detect carbon monoxide. The primary differences are in the detector's appearance, placement and cost.

What should I do if my detector is sounding? If anyone in the residence is feeling ill (headache, nausea), leave immediately and call 911 from a neighbor's home. In this case, the 911 dispatcher will dispatch the closest engine company, ambulance and rescue squad. If no one is feeling ill, you may call 911 and inform the dispatcher that your CO detector is sounding and you would like to have it checked. The rescue squad will respond and check your home for the level of CO and possible sources.

What about maintenance of the CO detector? Once a month or so you may vacuum the unit to insure it hasn't become clogged with dirt or dust.