



Carbon Monoxide Instructional Guide

Porter County Emergency Management Agency



Carbon Monoxide: The Silent Killer

Carbon Monoxide (CO) is a colorless, odorless gas which is created by incomplete combustion. Car exhaust, malfunctioning or improperly installed furnaces, gas heaters or stoves that burn carbon-based fuels are some sources of carbon monoxide. What makes the gas so deadly is that it blocks the absorption of oxygen into the body's cells. In fact, the human body will absorb carbon monoxide 250 times more readily than oxygen. Therefore, when both are present, the body will absorb the carbon monoxide before it will absorb the oxygen in the air. In sufficient quantities, this can not only damage the body, it can cause death. The danger is compounded by the fact that you cannot see it or smell it.





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Factors affecting the rate of absorption of carbon monoxide into the bloodstream include:

- **Concentration:** The concentration of carbon monoxide in the free air.
- **Exposure:** The length of time an individual is exposed.
- **Physical Activity:** The higher the rate of respiration, the more carbon monoxide will be inhaled.
- **Physical Health:** Sick persons, especially those with heart or respiratory ailments are more susceptible to carbon monoxide.
- **Age:** Infants and elderly are more susceptible.
- **Sex:** Females are more affected than males.
- **Altitude:** The higher altitude, the greater effect of poisoning

Carbon monoxide absorbed in the bloodstream is cumulative. The human body has difficulty removing it from the bloodstream and requires 5 hours to reduce the level by half.

Deaths from carbon monoxide typically rise in the winter months due to people warming their homes. If the heat source they are using is not functioning correctly or is improperly vented, the gas can accumulate in the home's living spaces.



Every home should have carbon monoxide detectors installed to give early warning of the presence of the gas. Models include units that plug into an electrical outlet (preferably with battery backup), battery powered (similar to many smoke alarms) and units that can be integrated into a home's security system.

Homeowners must choose the type that works best for their home and their budget. Carbon monoxide detectors must be replaced when the sensor is at the end of its life cycle, which is typically 10 years. Most detectors will start to chirp or alert you when the sensor is going bad.



A distinct advantage of detectors integrated into a home's security system is that the monitoring company (if the security system is monitored by the alarm company) will summon help even if the homeowner is overcome by the gas or if they are not home. This offers protection above those that simply emit an audible alarm inside the home. Integrated units typically cost between \$125.00 and \$150.00 dollars each. While these are more expensive



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than units which do not integrate into the alarm system, the cost is well worth it. If you have a security system, we highly recommend you integrate carbon monoxide detectors with it.

Symptoms of carbon monoxide poisoning include:

Early Exposure	Prolonged Exposure	Final Stages
1. Flu-like symptoms	1. Confusion	1. Drop in blood pressure
2. Tightness across the forehead	2. Disorientation	2. Complete loss of muscular control
3. Headache, throbbing at temples	3. Conscious, but unable to move due to muscular weakness	3. Unconsciousness
4. Dizziness		4. Convulsions
5. Weakness		5. Death
6. Nausea		
7. Vomiting		
8. Partial loss of muscle control		
9. Increased pulse & respiration		

Note: Cherry-red skin is often listed as a symptom of carbon monoxide poisoning. While, this can occur, it is normally in the final stages of poisoning and often not present until just before the point of death.

If you think you may be exhibiting the symptoms of carbon monoxide poisoning, seek medical assistance immediately. Also, have your home tested to see if carbon monoxide is present.

