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# Weekly Safety Meeting

## Carbon Monoxide – The Silent Killer

Carbon monoxide is a poisonous, colorless, odorless and tasteless gas, so it is impossible to detect without a monitor—unless you start feeling lightheaded and then it might be too late! According to the CDC, around 400 Americans die from CO every year, and around 50,000 people become sick or injured by CO in the US alone.

### Why CO Is Deadly

Carbon monoxide has the chemical formula C-O because it consists of one carbon atom and one oxygen atom. So, how is such a simple molecule so deadly? It binds tightly with the hemoglobin in your blood, and the system that delivers oxygen to your cells cannot do its job. When CO displaces O in the blood, it deprives vital organs of oxygen.

Symptoms that may present themselves can vary widely, but include headache, nausea, vomiting, confusion and bodily collapse. CO poisoning can result in irreversible brain and heart damage, as well as reproductive risk.

### Where CO Is Present

Many industries produce CO as a byproduct, especially those that burn material contain carbon such as natural gas, gasoline, kerosene, oil, propane, coal, or wood. Forges, furnaces, and ovens produce CO but one of the most common sources of it is gas-powered vehicles with internal combustion engines.

A few of the professions that may face risk of CO exposure include welders, mechanics, firefighters, forklift operators, marine terminal workers, customs inspector, police office and taxi drivers.

In the home, faulty furnaces are largely to blame and should be inspected yearly by a qualified technician to make sure they are in working order. Also consider if your vehicle exhaust is too close to an enclosed area. According to the CDC, most fatalities occur in the individuals over age 65 and risk factors are higher for the elderly, infants, and people with chronic illnesses.

### What Employers Can Do to Prevent CO Poisoning

Employers should take the following actions to reduce the chances of CO poisoning:

- Make sure there an adequate ventilation system installed that will remove CO from work areas.
- Maintain equipment and appliances in good working order to promote their safe operation.
- Consider using battery-powered tools and equipment rather than gas-powered.

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- Provide personal CO monitors with audible alarms where exposure could occur.
- Test for CO regularly in areas where it may be present.
- Use a full-facepiece SCBA where there are very high levels of CO.
- Use respirators with appropriate canisters as well as CO monitoring where CO levels are high.
- Educate workers about the sources of CO and exposure risks and symptoms.

## What Employees Can Do to Prevent CO Poisoning

Employees have the right to working conditions that do not pose a risk of serious harm, and to a healthy and safe working environment. They have the right to file a complaint to OSHA if they have reason for concern that they believe is not being addressed properly by their employer. Employees should do the following to reduce their chances of CO poisoning in the workplace:

- Report any situation to their employer that might cause CO to accumulate (ex. A gas-powered generator won't turn off near a non-ventilated area).
- Avoid using gas-powered engines in enclosed spaces.
- Be alert to ventilation problems especially where fossil fuels are being burned.
- Pay attention to how they feel and report any dizziness, drowsiness, headache, or nausea.
- Avoid overexertion and leave the area if you suspect CO poisoning.
- Don't rush in to save someone before knowing the dangers and how to protect yourself – you could be the next victim.
- Tell your doctor if you suspect you have been exposed to CO.

## OSHA Exposure Limits

Physical symptoms such as nausea, headache, fatigue and dizziness can occur when CO is as low as 9 ppm. Physical symptoms can occur after 6-8 hours at 35 ppm, but the OSHA PEL per 8-hour day is 50 ppm. Over 400ppm results in physical symptoms in 1-2 hours, lack of consciousness in 2 hours and is fatal in 2-3 hours.

***NOW YOU KNOW…ABOUT CO!***

# Safety Meeting Sign-In Sheet

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| Supervisor: | Subject: |
| Location: | Date: |
| Conducted By: | Trainer Signature: |

| Name (print clearly) | Signature | Comments / Safety Concerns / Training Requests |
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