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*Democracy Dies in Darkness*

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## **Why a carbon monoxide monitor in your home may not be enough to protect you**



*Experts recommend getting the furnace inspected twice a year to ensure it isn't emitting high levels of carbon monoxide into the home. (Gerald Martineau/The Washington Post)*

The recent death of a Bethesda man from carbon monoxide poisoning is a tragic reminder of the need to properly maintain gas furnaces in our homes.

Carbon monoxide (CO) is known as the “silent killer.” At low levels, it can make you sick. At high levels, it is deadly.

“This is just sad, very sad,” said Mike Hartman, president of Thos. E. Clark Plumbing and Heating in Silver Spring. Technicians from his company evaluated the cause of the CO-related death in Bethesda. “It was a simple venting problem.”

Carbon monoxide is a highly poisonous gas that is colorless, odorless, tasteless and nonirritating. It is produced from burning fuels such as propane, gasoline, natural gas,

heating oil or wood. It inhibits blood from absorbing oxygen into cells, tissue and vital organs.

According to the Centers for Disease Control and Prevention, CO kills hundreds and causes serious illness in thousands of people each year.

I spoke with a local CO expert who believes these numbers are much higher.

Albert Donnay, a consulting toxicologist based in Hyattsville, Md., said he believes that more than 200,000 emergency-room visits per year should be attributed to CO poisoning, and the death rate is closer to 2,000 per year. He said he thinks the numbers are higher than reported because CO-related illnesses often go undiagnosed and are treated incorrectly.

“Families may develop chronic flulike symptoms, headaches, fibromyalgia, irritable bowel syndrome and weakness from low levels of CO,” said Donnay. “Doctors don’t know to ask about CO in their homes.”

Some national experts agree with these higher estimates.

“Tens of thousands don’t realize that CO is the cause of their medical problems,” said Jim Davis, a senior trainer with the Comfort Institute in Ohio. The Comfort Institute trains HVAC contractors, fire departments, engineers and home inspectors in the proper testing of appliances that use CO-producing fuels. “The damage is cumulative over time and affects your memory, heart and lungs.”

The National Fire Protection Association (NFPA) reports that those with physical conditions that limit their body’s ability to use oxygen (asthma, heart disease, etc.), infants, and pregnant women are at the highest risk of death from CO poisoning. Among the healthy adult population, more men than women succumb to CO poisoning.

[The CDC website](#) warns that CO is a critical health issue, even though its estimates are lower.

How do you know if your home has CO?

Davis of the Comfort Institute said that you must use the proper testing equipment when searching for CO leaks. “You should be using a combustion analyzer,” Davis said.

Davis explained the difference between an analyzer and a monitor. “A monitor just tests the CO levels in a house,” he said. “An analyzer determines if there is proper combustion efficiency, ventilation and fuel-air mixture. You want to know if your furnace is mechanically sound.”

According to Davis, a combustion analyzer should always be used during installation and maintenance of appliances. “Sadly, only 2 percent of contractors are trained and certified in

the use of combustion analyzers,” he said. “Not one state requires certification in combustion and carbon monoxide.”

Hartman of Thos. E. Clark said he has been sending his technicians for training on the use of combustion analyzers for 15 years. “We have saved many people from getting poisoned or from dying,” he said.

What else should you consider when installing and maintaining a furnace?

In a recent email, Glen Blanc of Pro-Spex Home Inspections said: “First and foremost, do not let anyone change an appliance without a permit.” Blanc wrote that he sees indicators of poor venting all the time and hardly ever sees proof of inspection by the gas company.

How often do homeowners consider the need for HVAC maintenance?

“People treat their heating systems like a crock pot,” Hartman said. “Set it and forget it. They believe if it seems to be working okay, you don’t have to do anything.”

Hartman suggests having your systems checked twice a year. “Right before the season starts,” Hartman said, referring to winter and summer.

Hartman said that there are indications of possible CO leaks that can be observed visually by a homeowner.

“Look for rust on top of the heater or on the smoke pipe going from the heater to the chimney,” Hartman said. “Also, if the paint on the top of the heater is bubbled up and flaking, that could be evidence that there is a CO leak. And check for a white powdery substance on the top of the heater which is evidence of condensation.”

These visual indicators do not replace regular maintenance by a licensed professional.

Furnaces are not the only appliances guilty of causing CO illnesses and deaths.

“The main sources are furnaces, cars and generators,” Donnay said. “Someday, Americans will wake up and realize that attached garages were a terrible mistake. It was a stupid thing when we put them in the house.”

Idling a car or putting a gas generator in an attached garage is a deadly mistake. High levels of CO get trapped inside a garage and slowly leak into the house. Commercial garages must adhere to regulations that require large fans to turn on when CO reaches specified levels. There are no such regulations for residential garages.

There are more sources of CO in homes, including but not limited to, gas ovens, lawn mowers, snowblowers, fireplaces, grills and indoor pools.

What can you do to protect yourself and your family?

Residential CO monitors are available online or at hardware stores. Most of them are designed to meet the minimum standards set by Underwriters Laboratories, which creates safety standards for consumer products.

According to Donnay, these monitors are not sufficient for keeping you safe. "These monitors only warn you when it is too late. People are lulled into a false sense of security that if the alarm does not go off then there is no CO in the house," he said.

"In the past, residential monitors would detect low levels of CO, but the fire department received too many calls they believed to be a waste of time since nobody was dying," Donnay said. "So the standards were changed to only sound an alarm at high levels."

Donnay recommends buying a commercial-grade monitor that senses low levels of CO, and one that has a digital display to monitor CO data in your house. He also recommends buying a portable CO monitor to attach to your key chain or belt. CO may be in many places we visit each day.

Some additional tips include:

- Install a CO alarm outside every sleeping area.
- CO is lighter than air, thus it rises. Install CO monitors closer to the ceiling.
- Test CO alarms once a month.
- Remove the car from the garage immediately after starting it.
- Gas and charcoal grills should be used outside only.
- Never use the oven to heat your home.
- Inspect chimneys every year before use.

An NFPA report says that fire departments receive an average of nine calls per hour from CO incidents.

Don't be a statistic.