



Why You Should Strongly Consider Low Level Carbon Monoxide Detectors

By Greg R. Wayman, ASHI Certified Inspector

The symptoms of carbon monoxide poisoning

- *Light headed
- *Dull headache
- *Throwing up
- *****DEATH*****
- *Nauseous
- *Dizzy
- *Blurred vision
- *Weak
- *Shortness of breath
- *Passing out

Sources of Carbon Monoxide In Your Home

1. Gas furnace or boiler
2. Gas water heater
3. Wood or Gas Fireplace/Stove
4. Ventless fireplace
5. Vehicle running in the garage
6. Gas oven/stove
7. Gas dryer
8. Kerosene space heaters

What Is a Safe Level of Carbon Monoxide?

0 ppm (parts per million). Any reading higher than 0 should alert you to take action by either trying to pinpoint the source and correcting it or hiring a professional Home Inspector or licensed HVAC Contractor to trouble shoot. If you have any CO levels in your home, you never know when the pressures or conditions can change that may dramatically raise those CO levels to an unsafe or even deadly situation.

What carbon monoxide detectors are manufactured to do

Carbon monoxide detectors that you buy from retail stores are designed to alert the occupants of carbon monoxide at 70 ppm or higher inside the home. These detectors are designed to protect healthy adults only. Most families are not aware that levels below 70 ppm can lead to the death of their newborn, young child, or grandparents. They have the misconception that because they have a CO detector that their family is protected.

Per UL Standard 2034, carbon monoxide detectors must go off within 1-4 hours at 70 ppm, 10-50 minutes at 150 ppm, and 4-15 minutes at 400 ppm.

There are some retail models that have a peak level button. These enable you to determine the highest level the carbon monoxide reached since the last time you reset it. At least with this option, you have a little better awareness of the CO levels in your home if you check it on a regular basis.

What are the Code Requirements?

New Construction:

Carbon monoxide detectors that meet UL Standard 2034 are required just outside each sleeping room in new construction that has gas or some type of fuel appliances. They are also required in new

construction any time a garage is attached to the home.

Existing Homes:

When work is done inside a home that requires a permit, the same rule above for new construction then applies to an existing house.

What About Exposure to Lower Levels of Carbon Monoxide?

CO detectors that you find in retail stores are not designed to alert the occupants of low level exposure. In the fine print in the package, each manufacturer has disclaimers informing the purchaser that those CO detectors are not designed to protect infants, the elderly, pregnant women, young children, or people with asthma, bronchitis, emphysema, heart disease or anemia. When low levels of carbon monoxide are present, this causes the more susceptible to have trouble breathing. This adds extra stress to their cardio-vascular & respiratory systems. If the stress is too great, it can lead to death.

Impact of Low Level Carbon Monoxide

*Can be fatal to infants

*Can be fatal to elderly

*Can result in low birth weights of newborns if the mother was exposed

*Impedes brain development in children

*Can lead to permanent brain damage in children if subjected over long enough time

The Carbon Monoxide Safety Association has a website www.carbon-monoxide-survivor.com that goes into great detail the short-term & long-term impacts exposure to carbon monoxide can have & treatment options. It's truly a wealth of information! On the left navigation bar, there's a "Poisoning Damage" link. Click on it and select "Real Stories". You'll be left with tears in your eyes.

Real Examples of Low Level CO We Have Found On Our Inspections

1. Glue joints on PVC exhaust lines for high-efficiency furnaces leaking flue gases to the interior
2. Cracked heat exchangers allowing CO to sneak through from the burner chamber to the supply air & be blown throughout the home
3. A bird's nest clogging the B-vent flue pipe from the furnace and water heater causing 100% of the flue gases to backdraft into the finished basement
4. An inefficiently burning gas log set fireplace leaking 14 ppm of CO gas into the living room
5. Clay-tile chimney liners that shifted with deteriorated mortar joints allowing flue gases to leech through the liner into the homes
6. Ventless fireplaces that weren't kept clean producing 20-30 ppm of CO gas into the room
7. Gas dryers that had holes in the dryer vent or the dryer vent had fallen off
8. Gas ovens that aren't vented to the outside usually produce 5-9 ppm of CO into the kitchen, but if dirty or faulty have tested at 200-300 ppm of CO

My family's experience with carbon monoxide

Nine years ago this Fall, I was holding my baby in my arms in his room trying to get him to sleep. The brand new carbon monoxide detector I had just installed in his room caught my eye. I pushed the peak level button and was surprised to see it registered 15 ppm. The alarm never went off because, as I later found out, they aren't designed to alert you until the levels reach 70 ppm for over an hour! After I got him to sleep, I went out to my truck, got my work carbon monoxide detector, and started to walk around the house. I thought there could be a chance we let the car run in the garage too long and that there were lingering amounts of CO gas that seeped into the home. When I reached our furnace, my detector went nuts! Carbon monoxide was spilling out into the room through 2 quarter-sized holes that had rusted through in the draft diverter box. Our furnace was pumping over 600 ppm of CO gas directly into our home!!! Of course I immediately turned the furnace off and aired out the house. We had a new furnace installed the next day.

Had there been a low level CO detector in our house, it would have alerted us to the danger. I thank God for keeping my family safe that night!

Foundation-2-Rooftop, Inc. Recommends Low Level Carbon Monoxide Detectors

Long term exposure to low levels of carbon monoxide can cause permanent physiological and nervous system damage to any of us. To reduce the risks of CO poisoning, there are carbon monoxide detectors that have higher quality sensors to detect CO gas sooner at low levels. They are not only for your home, but can be used in your car, on a boat, in a hotel room, on a plane, etc.

The best one available to the public I found was the "CO Experts Model 2014" which goes for \$249.00, but is on sale now for \$179.00 at www.inspectortools.com.

Make sure your family is safe this winter season!

Greg Wayman is the President of Foundation-2-Rooftop, Inc., an ASHI Certified Inspector, has been inspecting full-time for over 11 years, and has personally inspected over 2,800 properties. Greg is Heat Exchanger Experts Certified and is a NE Radon Measurement Specialist. He is a past member of the GO-ASHI Chapter in Omaha. He is the past Nebraska Chapter of NAHI President from '03-'07, past Board member of NAHI from '07-'08, and past national Secretary/Treasurer of NAHI '08.



Copyright 2002-2013 F2R, Inc. All rights reserved.

Foundation-2-Rooftop, Inc. Phone: (402) 330-1701 Website: www.Omaha-Home-Inspection.com