

## What You Don't Know Can Kill You!

By Catherine A. Isaacson

You can't see it; you can't smell it – you can't detect it with any of your senses – but it can creep up on you when you least expect it – and you will likely be unaware until it is too late. Imagine. Even if you're innocently grilling a steak, mowing your lawn, idling your car, heating your home – this “**silent killer**” can attack you without warning; yet, there are no police units searching for it.

This deadly invader, a byproduct of combustion, is *Carbon Monoxide* – also referred to simply as C-O. You might ask: “*How do you know this?*” It has become personal. I am a health and fitness instructor and Pilates Studio owner. I was a victim of CO poisoning – in my Pilates studio!... I am now a CO survivor.

While operating my 2<sup>nd</sup> floor commercial studio in bucolic Newtown, PA, I was subjected to toxic CO emissions for over 1 year. The source pointed to the business below my studio (cooking without functioning exhaust fans and possibly also a defective gas fired water heater.)

It seems local ordinances in the township I worked in, and in many other localities throughout the country, require smoke/fire detectors and often sprinklers, but NOT Carbon Monoxide detectors – not even in commercial settings where combustion is a daily occurrence. I experienced massive “thunderclap” headaches, with periods of disorientation and difficulty concentrating. My vision was becoming impaired. I was diagnosed with “borderline glaucoma.” My muscles became so tight I could no longer bear to be hugged. At the end of my workday, I was shivering in my studio even though the heat was on. Once home, I started to feel the warmth permeating my body once more, the headaches vanish and my concentration returns. I purchased a digital CO detector, and in no time, an alarm sounded with the display of a high CO reading.

In a sense, I was lucky, as my dog (and studio mascot) prompted me to vacate the space. CHIN feverishly paced back and forth between the exit signs and pushed his weight against my leg while I was teaching. (Even if Carbon Monoxide is detected, disorientation and confusion, characteristic symptoms of initial CO exposure, typically stifle clear thinking and the impulse to leave and seek a less noxious, CO free environment.) Sudden, high, toxic CO levels (as well as sustained, lower levels) are lethal. (*The CDC reports unintentional CO exposure accounts for an estimated 15,000 emergency department visits and 500 unintentional deaths in the United States each year!*) Exposure can cause the victim to collapse into a rapid, unconscious state followed by death. When CO is present, it will enter the bloodstream, displacing the oxygen normally carried by the blood to the vital organs, especially to the brain. And even after CO has left the body, major organs may have been affected and secondary symptoms to CO poisoning may haunt CO survivors for the remainder of their lives.

I strongly recommend BOTH a Smoke and a Carbon Monoxide detector in your home and also in your workplace – especially whenever any combustion exists, such as with gas fed cooking stoves and gas fired furnaces and water heaters. People have died in their sleep, in the apparent safety of their homes, when a defective gas heating system or other fuel-fed device released toxic CO that permeated their home. There is no acrid smell, smoke or visible flame with Carbon Monoxide, as there is with fire; CO is completely undetectable to all our senses and can only be confirmed with a reliable CO detector, or an immediate blood test for those who have been exposed to high levels. Even if one is NOT exposed long enough to become unconscious or die, as in my case, the lingering effect (including headaches, tinnitus, cognitive, neuro-muscular problems, and so forth) can become disabling and even permanent.

## **I urge you to be aware of the following CO related symptoms:**

### **Exposure to chronic, low levels and increasing levels –**

Headaches, light-headedness, tinnitus, nausea, malaise, and fatigue.

(Note: These symptoms are *often mistaken for a virus*, such as influenza, or other illnesses like food poisoning or gastroenteritis.)

### **Exposure to moderate & higher levels –**

Any of the above symptoms may be present, plus:

Fast heart rate, low blood pressure, dizziness, unsteady gait and confusion.

### **Exposure to sustained and toxic levels –**

Any of the previous symptoms may occur, rapidly followed by symptoms that include:

Cardiac arrhythmia, delirium, hallucinations, seizures, unconsciousness, respiratory arrest, and death.

Even if the victim of acute CO exposure is able to escape the toxic environment, *severe, delayed and even permanent neurological manifestations may occur*. These problems include persistent headaches, tinnitus and even more serious conditions such as short-term memory loss, irritability, imbalance, depression, speech disturbances, dementia and even Parkinson's disease-like syndromes.

*Did I say I was lucky?* Though I avoided death from Carbon Monoxide exposure, I remain sensitive to even low exposures (as low as 5ppm/parts per million) that wouldn't bother most people. To protect myself wherever I go, I carry a portable meter designed for pilots, that registers levels as low as 1ppm. To avoid any further CO contamination or other health issues, I had to vacate an otherwise ideal commercial space that I developed and publicized over the years. I also continued for 4 years to have chronic headaches, tinnitus, memory issues and related cognitive problems, and so made ongoing visits to my neurologist (who believed my symptoms have become permanent.) I work at my all electric, CO free residential studio, hoping to find a more business friendly, CO free commercial space to reinvigorate my practice.

During 1999 – 2004, CO poisoning was listed as a contributing cause of death on 16,447 death certificates in the United States. So take it from me – protect yourself (and your loved ones) and ensure your workplace (and home) have CO monitors and well maintained, efficiently operating fuel fed systems. Your life (and theirs) depends on it. (I ensured that no one else got hurt in the Newtown studio; confirmed by the Newtown Township Supervisor.)

### **For more information:**

Wikipedia: **Carbon Monoxide Poisoning** [http://en.wikipedia.org/wiki/Carbon\\_monoxide\\_poisoning](http://en.wikipedia.org/wiki/Carbon_monoxide_poisoning)

Safety Guidelines:

**National Institute for Occupational Safety and Health (NIOSH)**

**Occupational Safety and Health Administration (OSHA)**

**Department of Energy (DOE)**

**FEMA; U.S. Fire Administration**

**A Guide to Preventing Carbon Monoxide Poisoning** (<http://www.carbon-monoxide-poisoning.com/>)

**MRI and Neuropsychological Correlates of Carbon Monoxide Exposure: A Case Report**

<http://ehp03.niehs.nih.gov/article/fetchArticle.action?articleURI=info:doi/10.1289/ehp.021101051>

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