Carbon Monoxide Detector Placement: Where to Place CO Alarms in Your Home

What are carbon monoxide alarms?

Carbon monoxide detectors, also known as CO alarms, function similarly to smoke alarms. If carbon monoxide levels are present in your home, the detector will emit a sharp beeping sound to alert you to the danger. Like smoke alarms, it is important to change your CO detector batteries regularly; I like to schedule new batteries for Daylight Savings time change, since they make it easy to remember this twice-yearly swap.

What is carbon monoxide?

Carbon monoxide is known as the “silent killer” because it is odorless, tasteless and colorless. It’s also toxic, since the gas can prevent your body from properly transporting oxygen. If inhaled in high concentrations, carbon monoxide poisoning can happen quickly; it can also occur slowly if toxic gas levels build up slowly over time.

What are the symptoms of carbon monoxide poisoning?

People who have been exposed to carbon monoxide experience a range of symptoms that may include headaches, confusion, drowsiness, dizziness, burning eyes and loss of consciousness. An acute case can result in brain damage and death. Note that children, seniors and people who have pre-existing respiratory or heart conditions are often more sensitive to the effects of carbon monoxide.

What are possible sources of carbon monoxide in my home?

Carbon monoxide is a natural by-product of many home appliances. If you use charcoal, gasoline, kerosene, wood, propane, natural gas or heating oil to create energy or heat – hot water heaters, grills, furnaces, fireplaces, stoves, room heaters, etc. – then there is potential for carbon monoxide in your home. It’s important to have these products installed by a professional, since proper installation, ventilation and maintenance will reroute any carbon monoxide emissions out of your home to keep your family safe.

Carbon monoxide is a toxic gas known as the “silent killer”

Carbon Monoxide Detector Placement

There are a number of important factors to take into account when selecting the best place to install a carbon monoxide detector, and we will take you through the process step by step.

Where should I place carbon monoxide detectors in my home?

Since we are most vulnerable to the effects of carbon monoxide poisoning while we sleep, it is important to place alarms near your family's bedrooms. If you only have one CO alarm, place it as close to everyone's sleeping area as possible.

Ideally, you should have carbon monoxide detectors placed throughout your home, as you do smoke alarms. You should place a CO detector in each major area of your home: in the kitchen, in your living/dining room, in your bedrooms, and the office. If you have children or elderly family members living with you, provide extra protection near their rooms. If you live in a multi-story home, be sure to place at least one carbon monoxide detector on each level.

If your furnace is located in the basement, be sure to place a CO detector there, as well. Likewise, if you have a gas clothes dryer, put an alarm in the laundry room. Place one in the garage, if you park your cars there. Wherever you have a solid fuel-fired appliance – anything that could produce carbon monoxide – you should also have a CO alarm.

Places within the Home

Every Floor of your Home

If your home has several levels, including basements and any attics that are used, then you will need detectors on each level.

The reason for this is that a dangerous buildup of CO gas will often be trapped within a single level of your home. Your main living level might be quite safe, but you might go down to the basement only to receive a dangerous dose of Carbon Monoxide because you failed to have a detector there - don't make this mistake.

Near Bedrooms

As is the case with smoke detectors, you want your CO detectors to wake you during the night if something goes wrong. This means that the most important place is near your bedrooms.

We recommend that you have a carbon monoxide detector within 15 feet of each bedroom door, 10 feet is even better if you can afford more detectors. If two bedroom doors are 30 feet apart or less, then place one in the middle. If however they are more than 30 feet apart you will need more than one detector.

Homes with attached Garages

If you have an enclosed garage directly attached to the home, then you should also place a detector within 10 feet of the internal door to your garage. If a motor vehicle is left running in the garage, then a dangerous level of Carbon Monoxide can quickly build up inside your home. You should also place a detector in any room situated directly above your garage.

Getting the Height Right

You must ensure you get your carbon monoxide detector installation height right. While some guides might recommend placing your detectors on the ceiling, we don't agree. carbon monoxide detector attached to an exposed beam

The specific gravity of Carbon Monoxide is 0.9657 (with normal air being 1.0), this means that it will float up towards the ceiling because it is lighter than regular air. However, when a buildup of dangerous levels of CO gas is taking place, this is nearly always due to a heat source that is not burning its fuel correctly (motor vehicle exhaust fumes are an exception). This heated air can form a layer near your ceiling which can prevent the Carbon Monoxide from reaching a ceiling detector.

For this reason we suggest that it is best to mount your detectors on the walls at least a couple of feet below the height of the ceiling. If your detector has a digital read-out, then we recommend placing it at about eye level so you can easily read it. Or if you have some other structure, like the exposed beam in this photograph which is positioned below the ceiling level, then you can attach your carbon monoxide detectors to it instead.

Places to Avoid

Most importantly you want to avoid false positive readings from your detectors. To ensure your alarm goes off only when needed, you should place your detectors at least 15 feet away from any fossil fuel burning appliances such as:

•Gas powered Kitchen Stove/Oven
•Heating Furnace
•Fireplace

Carbon Monoxide Detectors are designed to work within certain tolerances for temperature and humidity. For this reason you must avoid placing your detectors in any locations such as:

•Bathrooms
•In Direct Sunlight
•Close to Appliances that generate heat

Other places to avoid include:

•Anywhere children can reach
•Open windows or anywhere else there might be a strong draft
•Behind curtains or any structure that might prevent Carbon Monoxide from reaching the sensor

How do I install a carbon monoxide alarm?

Heat and smoke rise, which is why we place smoke alarms high on the wall or ceiling. Carbon monoxide, however, mixes with the air. For this reason, it is preferable to install CO alarms at knee level – the approximate height of a sleeping person's nose and mouth. If you have young children or pets that could tamper (play) with your detectors, you can move them up to chest height. Another option is to place them in a hard-to-reach area, where even curious hands and overzealous tails would have a hard time reaching. Bear in mind that a CO detector should never be blocked by furniture, curtains or other objects, as restricted airflow can affect its function.

A single-function carbon monoxide alarm is recommended, but if you are installing a dual smoke-CO detector, place it on the ceiling so it can detect smoke.

Carbon monoxide detectors should be strategically placed around your home