



E³A: Energy Management for Home

Steps in the Home Energy Series

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Carbon monoxide

Carbon monoxide (CO) is an invisible gas that you should be aware of. You can't see or smell it, but in high enough concentrations it can be lethal within minutes. At low levels, it can make you sick.

Symptoms of CO poisoning include dizziness, headaches, fatigue, confusion, nausea and shortness of breath. They resemble those of the flu and other common illnesses, so CO poisoning can be hard to diagnose. Suspect mild CO poisoning if the symptoms disappear when you leave your house and reoccur when you come home.

CO quickly enters your blood stream and prevents it from delivering the oxygen your body needs to function. People with anemia, heart or lung problems, children and unborn babies are particularly susceptible to its deadly effects. Don't take any chances if the symptoms come on quickly and you have reason to suspect CO poisoning. If you hesitate, you could lose consciousness and die. Get everyone out into fresh air immediately, and go to an emergency room. There is a blood test to check for CO poisoning. Contact a qualified heating contractor to check your fuel-burning appliances before re-entering your house.

Fuel-burning appliances emit carbon monoxide

Small amounts of CO are produced when fossil fuels burn, such as gas, oil, kerosene, charcoal or wood. Only a small amount of CO is produced when these fuels burn efficiently and are exhausted properly. However, trouble arises when the burn is incomplete and exhaust leaks into your house. Sometimes when a fuel-burning appliance is operating at the same time as a powerful exhaust vent, combustion gases can be sucked out of the appliance or pipe and enter the house. This is called appliance backdrafting. Protect your household by having a trained professional perform a safety inspection on all fuel-burning appliances. These appliances include gas or oil furnaces, water heaters, ranges, ovens, cooktops, clothes dryers, portable kerosene or gas space heaters, and coal- or wood-burning stoves and fireplaces.

The contractor should check to make sure:

- Appliances are installed and operating properly.
- Burners are getting enough outside air for complete combustion.
- Production levels of CO are within normal limits for each appliance.
- All vents, chimneys and flues are clear and securely connected. An inspector can make sure your chimney is clear and safe.
- Minimizing CO production should be your first priority, but you can also install CO detectors. Plug-in and battery-powered detectors are designed to sound an alarm when they sense harmful CO levels. Make sure any detectors you buy meet American Gas Association or Underwriters Laboratories (UL2034) standards and use them only as a backup measure, not as a substitute for common sense and annual appliance inspections and maintenance. When you purchase the detector, note the life expectancy of the sensor cell located inside the detector as the cell may have to be replaced according to the manufacturer's recommendations (usually five to seven years). If your detector is battery-powered, the battery should be tested monthly and replaced annually (like a smoke detector). Install detectors on the wall or ceiling outside your bedroom.



When using fossil-fuel-burning appliances, look for these warning signs:

- A gas appliance with a yellow flame (it should be blue).
- Soot buildup on or around your appliance.
- Rust stains and corrosion on vents or chimneys.
- Increased condensation on windows.
- Furnace running longer and not heating as well.
- Unfamiliar smells or sounds coming from appliances.

Although some CO detectors look like smoke detectors, their function is completely different. For a safe home, you should have smoke *and* carbon monoxide detectors.

Energy efficiency

If your home is properly insulated and air leaks are sealed with caulking and weatherstripping, you must be extra careful. Ensure all combustion appliances are operating properly, because CO levels can build up rapidly in a tight home.

Follow these safety tips

- Never use an oven or range as a space heater.
- Never let the car run in an attached garage.
- Never use an unvented heater unless it is equipped with an oxygen depletion sensor and has proper combustion air.
- Never sleep in a room with an unvented gas or kerosene space heater.
- Operate unvented space heaters only in rooms with a window cracked and the door open. (Better yet, avoid using them entirely.)
- Always follow operating and maintenance instructions for combustion appliances.
- Never operate gasoline-powered engines (generators, chain saws, etc.) in enclosed spaces.
- Never use a barbecue grill indoors.

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