

# Is your home as Fire Safe as you can make it?

The answers to these questions will help determine if your home is as safe as you can make it.

## **Do you have the right kind of Fire & Smoke Detectors**

**If your house has natural gas, propane or oil service, or a fireplace/wood stove, do you have Carbon Monoxide Detectors?**

**Are the detectors in the right places?**

**Did you replace the detectors when you moved into your home and at least every 10 years thereafter?**

**Do you test the detectors on a monthly basis?**

**Have you replaced the detector batteries recently?**

**Do you have the right kind of Fire Extinguishers in the right places?**

**Do you have a fire escape plan and practice it with your children?**

**Do you have a fireproof container for all your really important documents?**

*(Birth Certificates, Stocks, Wills, that precious drawing from grade school, etc)*

**Do you have a residential fire sprinkler system in your house?**

(These are mostly found in newer homes. They typically cost \$0.60 to \$1.00 a square foot in new homes (about the same as a carpet replacement) and can greatly reduce both fire and water damage. Only heads exposed to the fire start spraying water. The 15—18 gallons a minute from the sprinkler system are significantly less than the 75—250 gallons from the firefighter's high pressure hose! Costs to retrofit a home with a sprinkler system will be higher.)

## **Smoke Detectors:**

There are three basic types of residential smoke detectors, all with different means for detecting smoke and fire, different types of fires they detect best, and different replacement reasons & needs.

**Ionization Smoke Detectors** powered by batteries are the most common kind and economically available at most local hardware and discount stores. They can be mounted easily in just about any location. They use a small radioactive source (*not harmful to humans*) to cause the air inside the detector to be capable of carrying electric current. As particles of smoke enter the detector they block the flow of electricity. Low electrical current causes the alarm to sound. These detectors work best on flaming type fires (wood, paper, etc) and react a little slower on smoldering fires (mattresses, couches, etc). Batteries need to be replaced occasionally. If your detector starts making a chirping sound every so often, you need to change the battery. A general recommendation is to change these batteries every six months, usually timed to a major event like springing forward to daylight savings time or falling back to normal time. (*Some newer smoke detectors come with a 10 year Lithium battery that eliminates the need to change batteries.*) Remember battery powered detectors operate even during power failures.

**Photoelectric Smoke Detectors** use a light sensitive photocell to detect smoke inside the detector. They usually require a connection to an electrical supply but are also available with a battery backup. A light bulb puts out a beam of light. The photocell is hidden from direct exposure to the light beam. Smoke entering the detector causes the light beam to be reflected in several directions. The photo cell detects the reflected light and causes the alarm to go off. These detectors work best on smoldering fires and react a little slower on flaming type fires. The light bulbs need replacement every few years.

**Thermal Detectors**, usually requiring a connection to an electrical supply, react to heat rather than smoke. A fire must raise the heat level near the detector to cause the alarm to go off. This type of detector is mostly used in dusty, dirty environments usually found in industrial and commercial applications. This is the type of detector that most fire sprinkler heads use to detect heat, pop, and start spraying water. This detector would be good near a cooking stove where an ionization or photoelectric smoke detector might cause false alarms.

## **Where Should You Put Smoke Detectors?**

The National Fire Protection Association (NFPA) recommends smoke detectors in every room; unfortunately that doesn't fit everyone's budget abilities.

In a hallway near several bedrooms, or even in each bedroom, is the most important placement as most fires occur during sleeping hours.

In the basement, preferably on the ceiling near the basement stairs.

In the garage, over the door to the house, is a needed location because of all the combustible materials we store there.

If your house has more than one level, there should be at least one detector on each level.

Put the detectors on the ceiling or on the wall with the top of the detector between six to twelve inches from the ceiling.

**DO NOT** put detectors on walls or ceilings within six inches of the ceiling/wall corner. There is very little circulation within this dead area.

**DO NOT** put them near heating and air conditioning supply & return vents.

## **Why should you replace your smoke detectors every 10 years?**

The NFPA recommends, and some cities Fire Codes require, that smoke detectors be tested at least monthly and replaced when they fail to respond or every 10 years maximum. In addition, most manufacturers now mark their detectors for a maximum life of 10 years.

### **Why do they need to be replaced every 10 years?**

10 years is a somewhat arbitrary figure, developed by the Consumer Product Safety Commission (CPSC) but, as with any equipment you buy (TVs, VCRs, etc), parts start breaking and failing as the equipment ages. This includes smoke detectors. Sometimes stuff just breaks without us noticing (in the case of smoke detectors, it's sometimes too late). The detection chamber gets clogged with dust & other airborne debris. In addition, as detectors age the sensitivity settings tend to drift toward being more sensitive causing more false alarms and people tend to disconnect the power supply on those detectors. A 1994 CPSC study found that sixty percent of detector failures were caused by the power supply (electricity or batteries) intentionally being removed due to problems with false alarms. Fifty percent of the failed detectors were more than 10 years old. The fact that some older detectors were made to be more sensitive also resulted in their disconnection from power.

## **Always replace your detectors whenever any of the following occur.**

The detector fails to respond to the monthly test and it has power.

The detector has gotten wet, been painted, or has other physical damage.

The detector has been exposed to a fire or large amounts of grease (*kitchens!*)

The detector causes several false alarms without apparent cause.

## **When you move into a used home, you have no way of knowing how old the detectors are.**

**Be Safe... Be Sure... Replace them when you move in.**

## **Carbon Monoxide (CO) Detectors**

Carbon Monoxide kills silently and sneakily. It is a colorless, odorless gas that is a byproduct of fossil fuel burning. It can be generated by wood stoves, fireplaces, appliances that use natural gas, propane or oil such as furnaces, space heaters, dryers, kitchen ranges, or other open flame

appliances. Normally the gases generated by burning are vented safely outside the house, however blocked vents or not enough oxygen to the burners can quickly cause elevated levels of CO.

### **The best defense is a good offense.**

Check your fireplaces & wood stoves for closed or blocked flues.

Have a qualified chimney sweep (find one at [www.csia.org](http://www.csia.org)) inspect chimneys and vents yearly for cracks, blockages (e.g., bird's nests, twigs, old mortar), corrosion or holes.

If you want to enclose a furnace or water heater in a smaller room make sure there is plenty of combustion air available.

Have a Heating & Air Conditioning contractor check your fuel burning appliances, before cold weather sets in. Make sure they are in working order.

If you have a downdraft cooktop, such as a Jenn-Aire, or a powerful kitchen ventilation fan over the stove, make sure it doesn't pull fumes back down your wood stove flue or chimney.

Don't use gas or propane cooking stoves or ovens to heat your home.

Don't use barbecue grills inside the garage or house. Not even charcoal grills.

Open your garage door before starting the car in the garage. Back the car out of the garage right away and close the door. Not doing so can draw fumes into the house. Nor should you use a remote starter if the car is in the garage.

Don't run gasoline engines in a garage or house.

Don't use a kerosene fueled space heater in a garage or house. If you absolutely have to, make sure there is plenty of ventilation and combustion air by opening windows or doors. When you have to put more fuel in the heater, cool it down first and take it outside to refuel.

Clean the ductwork for the gas clothes dryer regularly. Also check it for blockage by snow, plants or lint.

CO is sneaky. CO hurts you by rapidly accumulating in the blood stream which depletes the blood's ability to carry oxygen throughout the body. Even at low levels, carbon monoxide can cause serious health problems.

Some of the symptoms of CO poisoning are similar to those of the flu, i.e. headaches, nausea, fatigue, dizzy spells, etc. If you may have been exposed to CO and feel like the flu bug bit you, you should also ask your doctor to check you for CO poisoning.

Battery powered and electrically connected CO detectors are available that can detect CO at levels as low as .01 percent.

Follow the manufacturer's recommendations in placing & testing CO detectors. They are generally placed near sleeping areas and the home's furnace.

Most manufacturers recommend testing CO Detectors weekly and **replacing them every five years**. Just like smoke detectors, they wear out and fail.

### **How Should You Respond to a CO Alarm?**

**DO NOT IGNORE** the CO Detector's alarm if it sounds. CO Detectors should sound an alarm before a healthy adult feels any effects from CO. Treat each alarm seriously.

Get everyone, including pets, out of the house. Count heads to make sure everyone is out.

If flu like symptoms are present, call 911. If there are no health problems call your heating contractor, gas company or fire department to have your house tested.

**DO NOT** ventilate your home, reset the CO detector, or turn off fuel burning appliances unless it is an apartment, duplex or other multifamily type home. If it is, the safety of your neighbors is more important than finding the CO source. *(Many CO alarms have been designated false alarms because the homeowner ventilated the home and turned off the fuel burning equipment before the source could be traced.)*

**DO NOT** go back in the home until the testing technician tells you that it is safe to do so.

If you need a CO Detector and you have it, you'll be glad you had it.

If you need a CO Detector and don't have it, you may never know the difference, but your relatives will!

### **Fire Extinguishers**

Neither one extinguisher nor one type of extinguisher is adequate to protect your home. In a three bedroom home with a basement and a garage, I recommend that you have at least four extinguishers.

One Class B extinguisher (meant for grease, gas & other flammable liquids) in the **kitchen**.

*Don't keep it to close to the stove. You don't want to reach into a fire to get the extinguisher.*

One Class A extinguisher (meant for wood, cloth, paper, plastics, etc) in the **garage**.

One Class A extinguisher **near the bedrooms**.

One Class A extinguisher in the **basement**.

Only try to fight minor blazes. If it becomes a serious fire, **GET OUT!** Call 911 from a neighbor's house.

### **Fire Escape Plan**

Draw your home's floor plan being sure to include all doors and windows.

Determine at least two exits from every room.

Make sure every person living in the home is familiar with the fire escape plan.

Designate a meeting place outside the house so you can easily determine that everybody made it out. *(Some mommies, daddies & firefighters have been seriously injured or killed trying to get back in to a house to get a child who was already out of the house.)*

Place fire ladders in rooms that are too far above ground to jump.

Practice your fire escape plan at least once a year.

## **Be Safe... Be Sure... Plan for your family's fire safety.**

This information is my opinion based on my research and education. It is provided for general information purposes only. Any actions you take based on this information are your responsibility. I suggest that you consult a specialist in the particular field to determine the best practices in your particular situation.