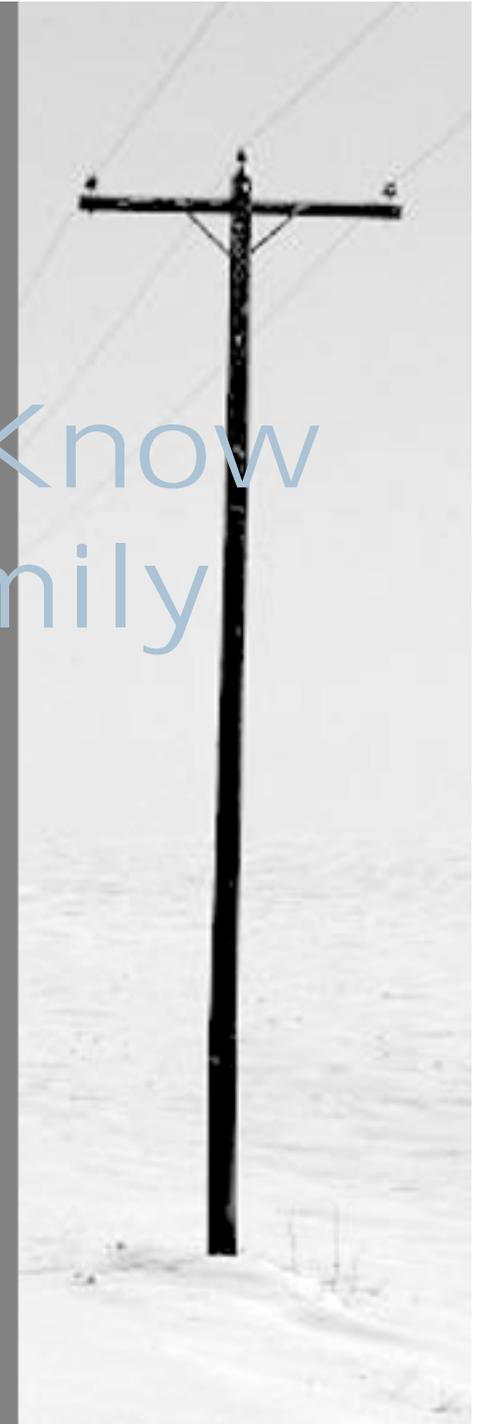


Carbon Monoxide:

What You Need To Know
To Protect Your Family

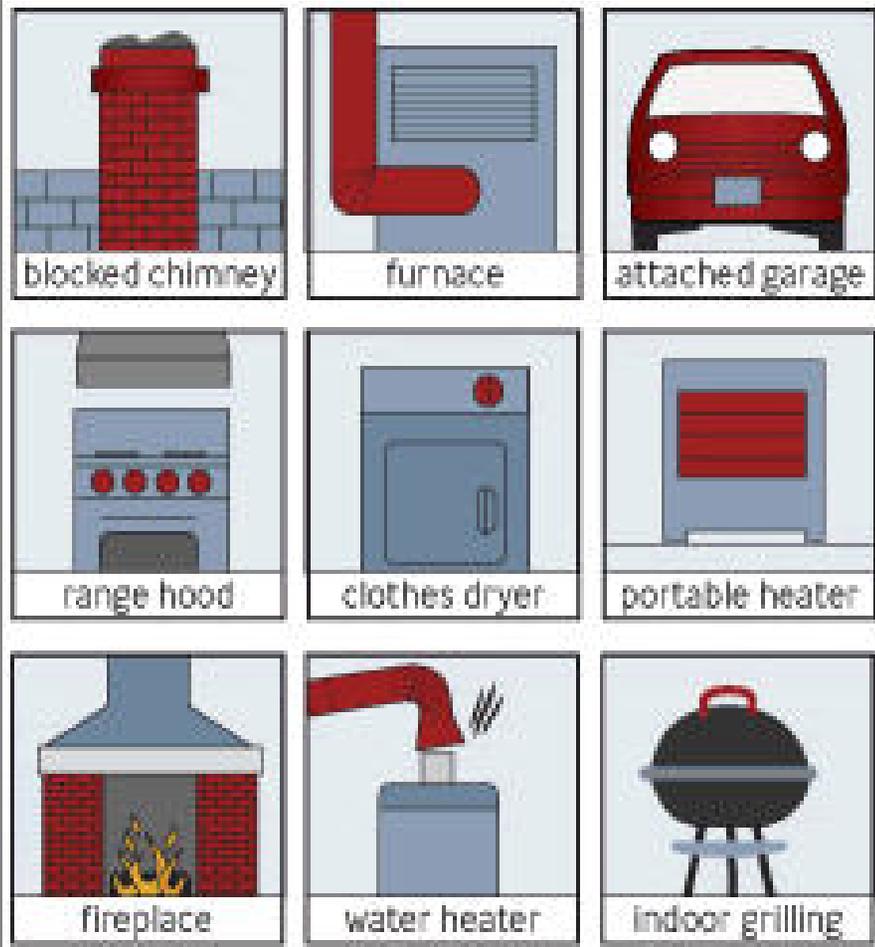


What is Carbon Monoxide?

- Carbon Monoxide (CO) is a natural by-product of incomplete combustion from fuels such as gasoline, wood, coal, propane, oil and methane.
- It is flammable at high temperatures.
- In the right concentrations, it can be explosive.



All of these
can be
sources of
carbon
monoxide in
the home:



CO Properties

- It is slightly lighter than air.
- It tends to rise with warm air and then spread throughout a space as it cools.
- It is a colorless, odorless, tasteless, non-irritating dangerous gas that is virtually impossible to detect without special detectors.



CO Properties

- It is absorbed into the body when you breath.
- Can build up slowly or rapidly based on numerous factors.
- Children and the elderly are more affected by carbon monoxide than the average healthy adult.

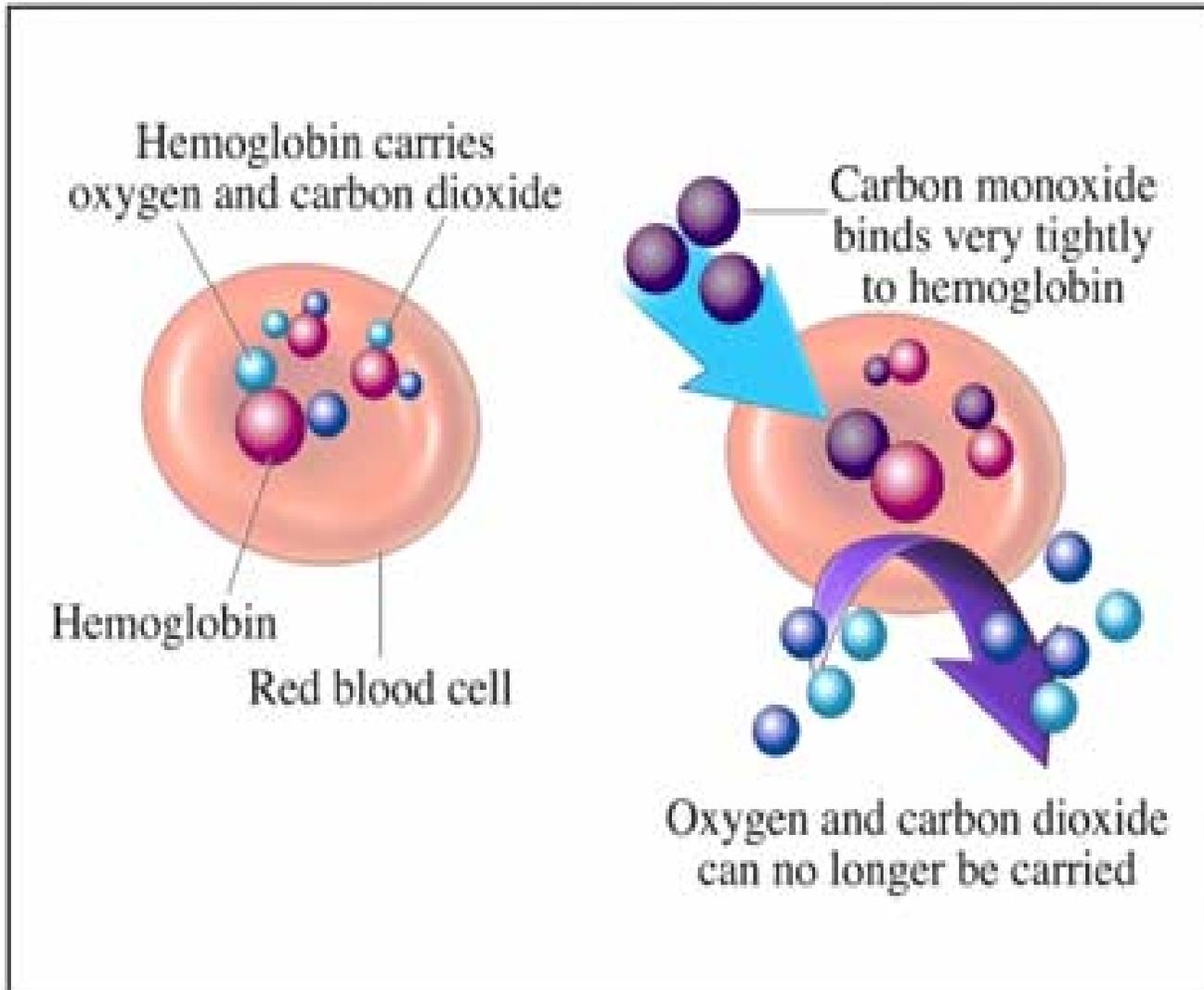


CO Properties

- It forms a compound called carboxyhemoglobin (COHb), which reduces the blood's ability to transport oxygen to the cells of the body.
- Your body will hold onto it 200 times more readily than normal oxygen.
- This causes the cells to suffocate due to a lack of oxygen



CO Properties



Carboxyhemoglobin in the Blood

- This is affected by:
 - Body mass and age
 - Respiratory rate and activity level
 - Concentration of CO inhaled
 - Length of time exposed to CO

An 8 year-old boy died from CO poisoning while being towed behind a boat in 2003. →

FIGURE. Vacationers during a holiday weekend in the Bridgewater Channel of Lake Havasu, where carbon monoxide levels were found to be elevated — Lake Havasu City, Arizona, 2003



Photo/CDC



"Amanda's Law"

In Memory of Amanda Hansen

You Cannot See, Smell or Taste
Carbon Monoxide.

Protect Your Family from the
Dangers of Carbon Monoxide!



- Amanda's Law was named in memory of Buffalo resident Amanda Hansen, a 16 year old girl who lost her life to carbon monoxide poisoning from a defective boiler when sleeping over at a friend's house in January 2009.





"Amanda's Law"

In Memory of Amanda Hansen

You Cannot See, Smell or Taste
Carbon Monoxide.

Protect Your Family from the
Dangers of Carbon Monoxide!



- In New York, CO detectors must be installed in all new and existing one and two-family homes, apartments and rentals having a fuel-burning appliance, building system or attached garage.
- Some examples would be:
 - Gas stoves, heating or hot water heaters
 - Propane stoves or heating systems.
 - Coal or wood burning stoves or boilers





Gasoline-powered portable equipment can generate high levels of CO in a short amount of time.

From 1999 to 2010, nearly 600 generator-related carbon monoxide (CO) deaths have been reported to the Consumer Product Safety Commission.

You can get more information regarding generator safety at

<http://www.usfa.fema.gov/citizens/co/generator.shtm>

Symptoms of Carbon Monoxide Poisoning

100 ppm	.01%	Slight headache in two to three hours
200 ppm	.02%	Slight headache within two to three hours
400 ppm	.04%	Frontal headache within one to two hours
800 ppm	.08%	Dizziness, nausea, and convulsions within 45 minutes. Insensible within two hours.
1,600 ppm	.16%	Headache, dizziness, and nausea within 20 minutes. Death in less than two hours.
3,200 ppm	.32%	Headache, dizziness and nausea in five to ten minutes. Death within 30 minutes.
6,400 ppm	.64%	Headache and dizziness in one to two minutes. Death in less than 20 minutes.
12,800 ppm	1.28%	Death in less than three minutes.



CO Poisoning Treatment



- To reverse the buildup of Carboxyhemoglobin in the body, over 200 oxygen molecules are required to replace one CO molecule.
- Patients with high levels may need a hyperbaric chamber to flush the CO from their systems as quickly as possible.



OSHA Guideline For CO

OSHA has established a maximum safe working level for CO at 35 ppm (parts per million) over an eight hour period in the general workplace.

The effects of Carbon Monoxide are cumulative.



EPA Residential Level

Not to exceed 9 ppm over an eight hour average.



Where Should Our CO Detector(s) Be Located?

- If you only have one detector, it should be located on the lowest level where people sleep.
- Ideally, one should be located on each level of the home (excluding an attic).
- Battery operated or plug in CO detectors are both acceptable.



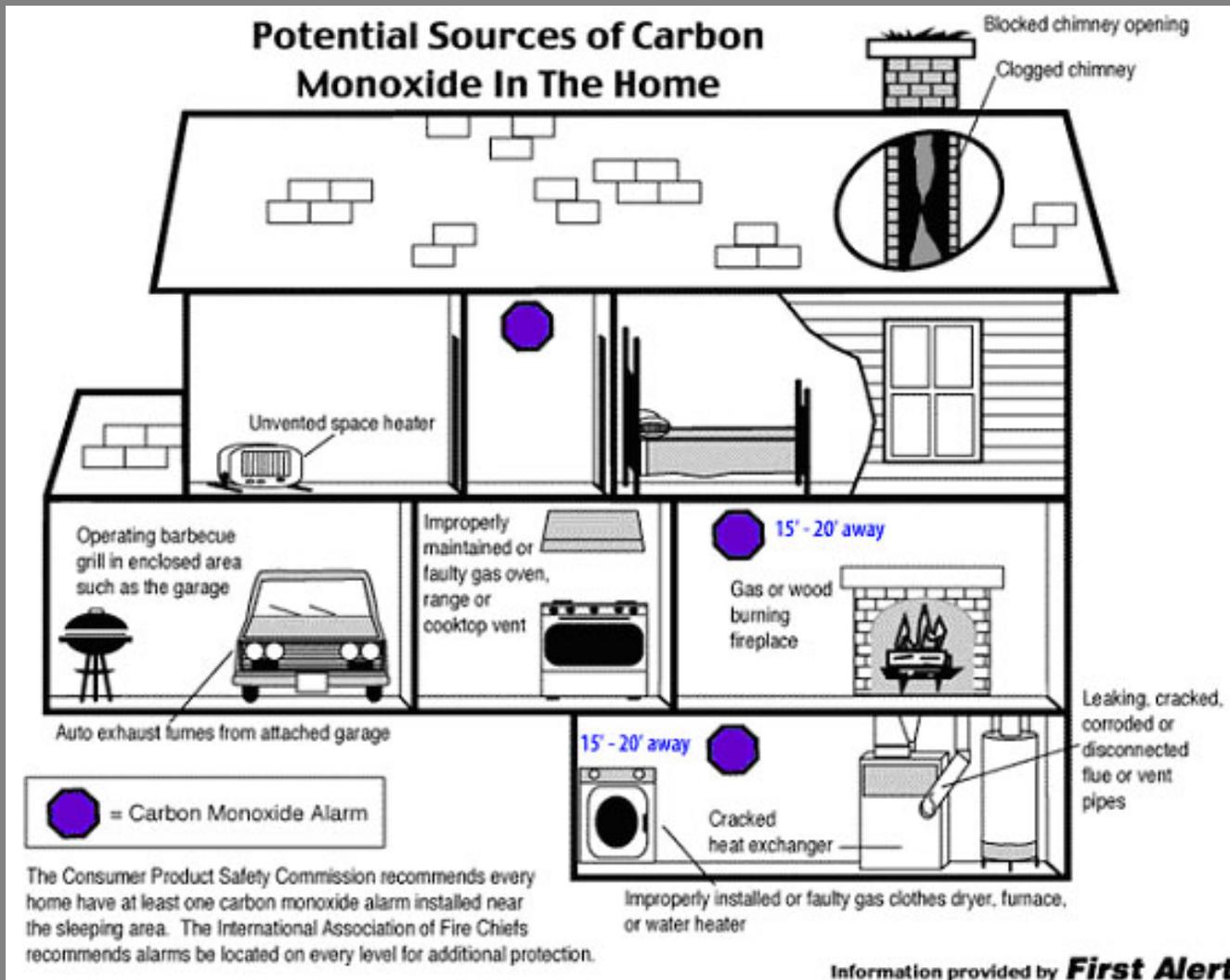
Should They Go High Or Low?



Since CO is almost the same weight as air, a CO detector can be effective in either location.



Recommended CO Detector Placement



Testing And Maintaining Your CO Detector

- Test CO alarms at least once a month. The sensors in CO alarms have a limited life. Replace the CO alarm after 5-7 years or when the end-of-life signal sounds.
- Know the difference between the sound of the CO alarm and the smoke alarm, and their low-battery signals. If the audible low battery signal sounds, replace the batteries or replace the device. If the CO alarm still sounds, get to a fresh air location and call 9-1-1 or the fire department.
- To keep CO alarms working well, follow manufacturer's instructions for cleaning.



What Should Our Family Do If Our CO Detector Goes Off?

- Get your family out of the home; go to a neighbor's home or outdoors.
- Call 911 and report the alarm from a safe location.
- The City of Cortland Fire Department will respond and investigate the alarm.



Additional Carbon Monoxide Information and Resources

- Check the Safety tab on this website or
- <http://www.dhses.ny.gov/ofpc/resources/co-toolkit/>
- <http://www.dhses.ny.gov/ofpc/news/press/documents/2011-1101-OFPC-co-warning.pdf>
- <http://www.cdc.gov/co/>

