

# Keeping Minnesota *Ready*



## INDOOR WINTER SAFETY

As the winter months arrive, and people begin spending more time indoors, indoor air quality becomes a greater health concern - especially for children and people with health concerns.

The hazards can range from deadly carbon monoxide. Some of the more important health hazards associated with indoor air quality are the potential for extended exposure to lead, asbestos or other types of environmental hazards in a home - especially during renovation and remodeling activities.



### CARBON MONOXIDE - THE DEADLY WINTER HAZARD

Carbon Monoxide (CO) poisoning can happen at any time of the year, but the danger is greater during the winter when doors and windows stay closed and fireplaces, gas heaters, or other fuel burning appliances are in use. In addition, people can also be exposed to deadly CO levels when “warming up” their cars in garages or keeping them running when stuck in snow.

#### Protect Your Family from Carbon Monoxide Poisoning

- CO is a gas you can't see, taste or smell. CO is released when fuels like natural gas, oil, wood, kerosene or charcoal don't have enough oxygen to burn efficiently. This poisonous gas can escape into a home, car or garage and kill people.
- CO can accumulate inside the home from a variety of sources, including furnaces and water heaters, gas or kerosene space heaters, gas boilers, gas ranges and ovens, gas dryers, charcoal or gas grills, fireplaces and wood stoves, vehicles, and yard equipment with gasoline-powered engines
- Exposure to low levels of CO can cause flu-like symptoms – nausea, dizziness, drowsiness, weakness, intense headaches and shortness of breath. Higher levels can result in unconsciousness or death.
- People most vulnerable to the effects of CO include pregnant women, the elderly, small children, people with lung problems or other chronic health conditions, and people engaging in strenuous physical activity.
- CO is most likely to accumulate during the winter months, when a heating system is in use and the home has been sealed and insulated against the cold.

#### Safe Behavior

To protect yourself and your family from CO poisoning:

- Install a UL-listed carbon monoxide alarm in your home that will sound when potentially dangerous levels of CO are present. All homes should have BOTH a CO alarm and a smoke detector. A smoke detector does not warn you when CO is present. CO alarms and smoke detectors can be purchased at discount hardware and building supply stores.
- Have a qualified technician inspect your furnace and check fuel-burning appliances in the fall. Make sure your furnace has an adequate air supply. Make sure your heating system and all fuel-burning appliances are adequately vented and properly maintained.

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- When using a fireplace, wood stove or space heater, provide adequate ventilation.
- Portable propane camping equipment and gas barbecues are approved for outdoor use only. They should never be used inside cabins, tents, fish houses, recreational vehicles or boats. Read labels on recreational appliances and follow manufacturer's operating instructions.
- If your car is stuck in the snow, make sure that the exhaust (tail pipe) is cleared before starting the car engine. Be sure the exhaust is free of snow and check it periodically if you use the engine for heat. Watch for symptoms of carbon monoxide poisoning.
- During power outages, do not use gasoline engines or burn charcoal in enclosed spaces, including a garage, even if the door is open. Do not use gas stoves or ovens to heat living areas.

## Carbon Monoxide Alarms

- Carbon monoxide alarms should be installed within 10 feet of each sleeping room or inside each sleeping room.
- Test CO alarms monthly.
- If a CO alarm sounds and you feel ill, call 911 immediately. If you feel fine, open windows and doors and call your utility company.
- Clear snow and debris from furnace, dryer, fireplace or oven vents around your home to prevent a CO buildup.

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## CHEMICAL AND ENVIRONMENTAL EXPOSURE

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### Radon

- Radon is a naturally occurring radioactive gas produced by the decay of uranium and radium in the soil. Radon has no color, taste or odor.
- Radon can enter your home from the surrounding soil and accumulate in living areas, especially during the winter months, when homes are sealed and insulated against the cold.
- Radon typically accumulates in basements and other areas that are in direct contact with the soil.
- Exposure to radon over an extended period of time may increase your long-term risk of developing lung cancer. Radon is the second-leading cause of lung cancer deaths nationwide. The U.S. Environmental Protection Agency (EPA) has estimated that 21,000 people a year die of lung cancer caused by radon.
- Radon levels are measured in picocuries per liter of air (pCi/L). If radon levels in your home exceed the EPA action level of 4.0 pCi/L, the Minnesota Department of Health (MDH) recommends steps be taken to reduce your radon exposure.
- Testing done in Minnesota suggests that roughly one out of every three homes may exceed the EPA guideline for radon. MDH has officially recommended that all homes in the state be tested for radon.

### Safe Behavior

- The first step in protecting yourself against radon is to have your home tested. There are inexpensive testing devices readily available from reputable radon laboratories. These test devices provide quick radon test results. Follow the directions that come with the test kit. Contact MDH or your local city or county health department for discounted radon test kits.
- If the radon level in your home does exceed the EPA action level, the problem can be easily corrected. The best way to reduce radon in your home is by altering the pressure differences between your home and the soil. This is best accomplished by contacting a qualified radon contractor to install a radon mitigation system in your home. More detailed information about reducing radon levels in your home is available from MDH.

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## MOLD

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- Molds are simple, microscopic fungi found everywhere in indoor and outdoor environments. They spread and multiply by releasing tiny living cells called spores into the air.
- In order to grow, mold needs a source of nutrition (such as dust, wood products or paper), a place to grow, and a source of moisture. Your home may be at risk if you have had flooding, a backed-up sewer, a leaky roof, ice dams, high indoor humidity and condensation problems, a damp basement or ongoing plumbing leaks. Uncontrolled mold growth can cause health problems, damages to goods and furnishings, and structural problems in your home.
- The most common symptoms of exposure to mold include nasal and sinus congestion, eye and throat irritation, breathing difficulty, and other respiratory problems. If enough mold spores are in the air inside your home, they can contribute to asthma, allergies and other health problems.
- All molds should be treated the same with respect to potential health risks and removal.
- It is difficult to determine who may experience health effects associated with mold exposure, but mold exposure poses an increased risk of adverse health effects among children, the elderly, individuals with allergies and asthma, and individuals with immune suppression such as HIV infection, chemotherapy, or organ transplant. Consult a medical professional if you are having health problems you believe are related to mold.

## Safe Behavior

- Recognize mold if it appears in your home. Look for discoloration (white, orange, green, brown or black) on walls or other surfaces. Look for signs of water damage such as cracking plaster, loosening tape, warped wood, musty odor, and window condensation. Remember this basic rule: if you can see it or smell it, get rid of it. Be alert for possible symptoms of mold exposure, and always be suspicious of water-damaged areas and discoloration. Be aware that mold can grow in hidden areas under cabinets, inside walls, and under carpet, carpet padding and wall coverings.
- Some individuals may become ill when exposed to mold. Any time you find clean water damage in your home, try to dry thoroughly within 48 hours to prevent mold growth. You may use a water extraction vacuum, fan, and/or dehumidifier to facilitate the drying process. Any time you find mold in your home, you should take steps to remove it immediately.
- Mold removal can dramatically increase the number of mold spores in the air. Take steps to protect your health during cleanup. Consider using an N95 face mask, rubber gloves, eye goggles, and wear clothing that can be discarded or laundered afterward.
- Begin your cleanup by identifying and eliminating all leaks or other sources of moisture that may be contributing to the mold problem. Some winter causes of moisture are humidifiers, cooking/dishwashing, bathing/showering, ice dams plumbing or roof leaks, houseplants, fire wood, unvented clothes driers, line-drying clothes inside, and improper venting on combustion appliances.
- Remove and discard any porous materials that may have soaked up the water and remain wet for more than 48 hours. These include ceiling tiles, drywall, plaster, insulation, carpet and carpet padding, processed wood products (paneling, plywood, particle board, etc.), and upholstered furniture. If pieces have high monetary or sentimental value, you may wish to consult a restoration specialist. You do not need to discard studs, joists, rafters or other structural components made of solid lumber, unless they are no longer structurally sound.
- Fabrics (drapes, bedding, clothing, etc.) that are or may be moldy should be laundered in hot water with detergent and bleach or dry-cleaned.
- Clean non-porous and semi-porous moldy surfaces with a soap or detergent in hot water, or a good commercial cleaner. These include solid wood, plastics, metals, concrete, linoleum, ceramic tiles, and vinyl. Scrub surfaces with a stiff brush and then rinse well. Use a water extraction vacuum to take up the rinse water. Wear eye protection and rubber gloves, and make sure the work area is well ventilated.
- Disinfect affected surfaces (if desired) after removing visible mold and other soil from contaminated surfaces. A disinfectant could be used to kill mold missed by cleaning. In the case of sewage contamination, disinfection must take place. Contact the Minnesota Department of Health for appropriate advice. Mix 1¼ to 1½ cup of household bleach per gallon of water (approximately 10% bleach solution) and apply to surfaces where mold growth was visible

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before cleaning. Never mix bleach with any other liquid except water, or if the product clearly allows for mixing with bleach. Companies hired to apply antimicrobial chemicals are required to be licensed by the Minnesota Department of Agriculture.

- Following disinfection, dry out affected areas as quickly as possible, using fans and dehumidifiers. Be patient – it may take weeks for drying. Be sure that spaces inside walls are thoroughly dry before installing new building materials (carpet, paint, drywall, etc.). If you've had a mold problem in the past, be extra vigilant.
- If the mold grows back, continue to eliminate moisture sources and repeat the cleaning procedure.
- Landlords are responsible for correcting most moisture and mold issues in rental housing.

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## ASBESTOS

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- Asbestos is a naturally occurring mineral that easily breaks down into microscopic fibers. It has been used in literally thousands of different building materials and consumer products. Prior to the mid-1980s, asbestos-containing material (ACM) was widely used for home construction and remodeling. According to the federal Bureau of the Census, raw asbestos and ACM are still being imported into the U.S.
- When ACM is disturbed during remodeling or other activity, tiny fibers can be released to the surrounding air. If they are inhaled, they can become trapped in lung tissue. Asbestos can cause asbestosis, lung cancer and another form of cancer called mesothelioma, which affects the lining around the lung; it can take up to 30 years for these diseases to develop.
- There is no known "safe" level of asbestos exposure, so it's important to protect yourself and your family during any demolition or remodeling activities in your home.

## Safe Behavior

- Identifying materials that contain asbestos is the first step in protecting yourself. Unless you have product label information available, there isn't any way to tell whether a particular product or material contains asbestos. You can assume the material contains asbestos, or have a sample of the material analyzed by an approved laboratory to determine if it contains asbestos.
- Asbestos is only a hazard if the ACM is damaged or disturbed and the fibers are released into the air. In some cases, the best course is to repair or encapsulate the damaged material, using encapsulants or other appropriate materials. Check with a hardware or safety supply store to find out which materials can be used to encapsulate ACM.
- Homeowners may remove ACM from their own single family home that they reside in. However, if someone else, like a contractor, is hired to remove or encapsulate certain ACM and the amount is greater than 10 linear feet, six square feet or one cubic foot, the contractor must be licensed by MDH. Contractors make use of techniques and engineering procedures that are not available to the homeowner. They also collect air samples while the work is in progress, and within the work area after the project is done. These air samples determine if the air meets the indoor air standard, that assures the area is safe to be re-occupied.

**For more information contact:**

[Minnesota Department of Health](#)

Healthy Homes Minnesota

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