



# **Indoor Air Hazards in the Home**

## **Low- and No-cost Methods to Reduce Exposure**

Environmental Health Sciences Center  
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<http://ehsc.oregonstate.edu/outreach>

### **Environmental Tobacco Smoke (AKA secondhand smoke)**

- Do not smoke in your home or allow others to do so.
  - Avoid smoking in enclosed areas like homes or cars where others may be exposed to second-hand smoke.
  - Seek tobacco cessation assistance programs.
  - If a family member smokes indoors, increase ventilation in the area by opening windows.
  - Seek smoke-free environments in restaurants, theaters, and hotel rooms.
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### **Carbon Monoxide (CO)**

- Be sure all fuel-burning appliances are properly installed, maintained, cleaned and operated.
  - Use un-vented fuel-burning space heaters only while someone is awake to monitor them. Keep doors or windows in the room open to provide fresh air.
  - Never use a gas range or oven to heat a home.
  - Never use a charcoal grill, hibachi, gas lantern, or portable camping stove inside a home, tent, or camper.
  - Never run a generator, or any gasoline-powered engine inside a basement, garage, or other enclosed structure, even if the doors or windows are open, unless the equipment is professionally installed and vented.
  - Never leave the motor running in a vehicle parked in an enclosed or semi-enclosed space, such as a closed garage.
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### **Lead**

- If you suspect that you have lead based paint (not banned until 1978, very likely in homes built before 1960), test for lead using kits available at paint stores or hardware stores in the paint section. You may have to scrape newer paint layers to expose older layers that contain lead.
  - Leave lead-based paint undisturbed if it is in good condition or paint non-lead-based paint over to minimize flaking and peeling.
  - Do not sand or burn off paint that may contain lead.
  - Recognize that lead may be found in the soil around your home if lead-based paint is used on your home exterior and is peeling, flaking or in bad condition. Be sure to take off your shoes at the entrance.
  - If you choose to renovate an area that is covered in lead-based paint, be sure to carefully follow guidelines outlined in *Lead Paint Safety: A Field Guide for Painting, Home Maintenance, and Renovation Work* (2001) Publication HUD-1779-LHC
  - A child who gets enough iron and calcium will absorb less lead. Foods rich in iron include eggs, red meats, and beans. Dairy products are high in calcium.
  - Avoid mini-blinds made outside of the USA or purchase only products which state "Lead Free" on packaging.
  - Do not burn candles with a metal wire in the wick. These wires are often made of lead.
  - Check Consumer Product Safety Commission recall lists for toys and other objects which have been found to contain excessive lead levels.
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### **Volatile Organic Compounds (VOCs)**

- Read labels and follow directions when using any consumer products. They will advise you about the working conditions needed to reduce exposure to VOCs.
- Keep products containing VOCs out of reach of children.
- Select non-aerosol and non-toxic products. Use, apply, store and dispose according to

manufacturer's directions. Never mix products together. If products are concentrated, properly label storage container with dilution instructions. Use up product completely.

- When possible, allow materials containing VOCs to off-gas outside before bringing them into the home.
- When possible, apply finishes such as paint and sealers outside or in well-ventilated areas, and bring them into the home only after they are dry.
- When using products that may release VOCs (such as personal care products, cleaning products, art supplies, solvents, and glues) increase ventilation by opening doors and windows in your home.
- Do not store canisters of paint or similar products in your home that may release VOCs.

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### **Animal Dander**

- Control where pets sleep. Keep your pets out of the bedroom or other sleeping areas. Keep pets off the bed linens, carpet and upholstered furniture.
- Bathe and groom your pet's coat regularly. Clean and brush pets outside of your home. If you have dander allergies, have someone else in your home do this task.
- If you have dander allergies, avoid visiting homes with pets. If this is not possible, take appropriate medication several hours before your visit. Change your clothes and take a shower when you return home.
- Choose a pet without feathers or fur (such as fish).

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### **Cockroaches**

- Keep food and garbage in closed, tight-lidded containers.
- Never leave food out in the kitchen.
- Do not leave out pet food or dirty food bowls.
- Eliminate water sources that attract these pests, such as leaky faucets and drain pipes.
- Mop the kitchen floor and wash countertops at least once a week.
- Plug up crevices and cracks around the house through which cockroaches can enter. Young cockroaches need only a crack as thin as a dime (about .5mm wide) to crawl into. Adult males can squeeze into a space of 1.6mm or the thickness of a quarter.
- Limit the spread of food around the house, and especially keep food out of bedrooms.
- Use an exhaust fan in the kitchen to control moisture from cooking and dishwasher use.

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### **Dust Mites**

- Clean house and vacuum regularly. Dust often with a damp cloth. Vacuum carpet, fabric window coverings, and fabric-covered furniture at least once a week.
- Using vacuums with high efficiency filters (HEPA) may be helpful. Clean and maintain the vacuum regularly.
- Use a doormat. Remove shoes when entering the home.
- Use of allergy control covers on pillows and mattresses is the most important method of controlling mites. Cover mattresses, box springs and pillows with special allergen-proof fabric covers. The allergy covers should be wiped off with a damp (not wet) cloth or vacuumed using the hard-edged attachment tool once a month.
- Avoid down-filled comforters or pillows.
- Wash bedding (such as sheets, bedcovers and blankets) weekly in hot water above 130°F.
- Keep stuffed animals out of the child's bed and sleeping area. Wash stuffed animals in the same manner as bedding once a month.

- Avoid upholstered furniture that can trap allergens.
  - Recognize that blinds collect dust and try to replace them with washable curtains.
  - If anyone in the household has allergies or asthma, consider removing carpeting.
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### **Pollen**

- Avoid the outdoors in the morning and early evening (get more specific information if you have allergies to certain plants). Save outside activities for late afternoon or after a heavy rain, when pollen levels are lower.
  - Shower and change your clothes after outdoor activities when pollen levels are high.
  - Shower nightly to prevent carrying pollen into your bed.
  - Keep windows in your home and car closed to lower exposure to pollen.
  - Be aware that pollen can also be transported indoors on people and pets.
  - Recognize that pollen can collect on clothing and be carried indoors by drying your clothes outside.
  - If you have a grass lawn, have someone else do the mowing. If you must mow the lawn yourself, wear a mask.
  - Keep grass cut short.
  - Choose ground covers that don't produce much pollen.
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### **Mold**

- Prevent mold by controlling moisture.
- Open all windows for 3 to 5 minutes to ventilate the home and remove stale air without cooling down the house. This should be done in the morning and the evening, if possible.
- Don't put furniture against a wall to the outside.
- Don't block air supplies and air vents with furniture or other items.
- It is important to dry water-damaged areas and items within 24 - 48 hours to prevent mold growth.
- Use an exhaust fan in the kitchen to control moisture from cooking and dishwasher use.
- Clothes dryers should be vented to the outside, not into the attic or crawl space.
- Use an exhaust fan in the bathroom or open a window to remove moisture after showering for 15 minutes. Wipe down damp surfaces after bathing and dry completely.
- Scrub mold off hard surfaces with detergent and water, and dry completely.
- Remove moldy or dusty wallpaper and regularly wipe walls and hard floors with a damp cloth. Absorbent or porous materials, such as ceiling tiles and carpet, may have to be thrown away if they become moldy.

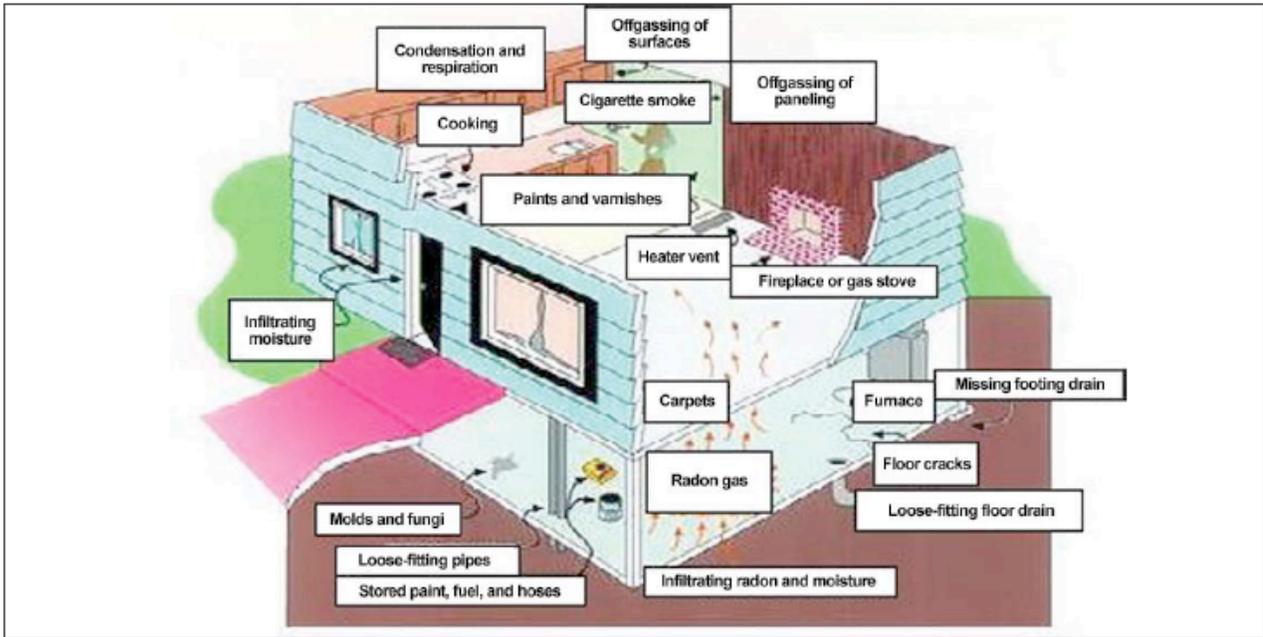


Figure 7.1. Sources of Moisture and Air Pollutants [1]