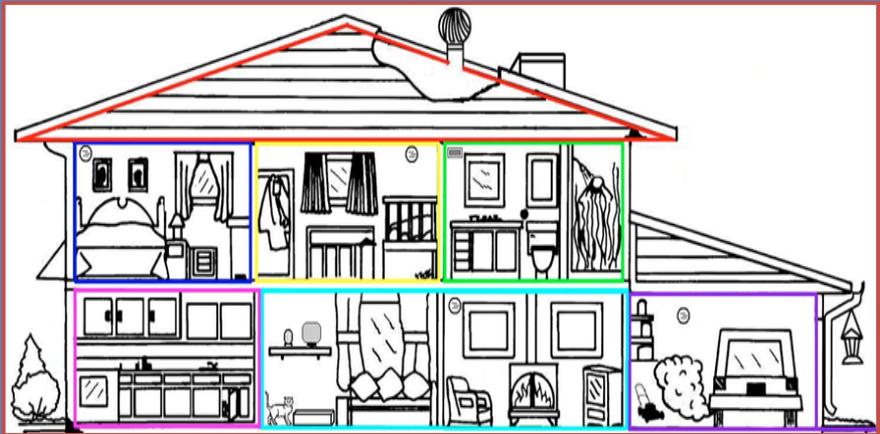


GUIDE TO A HEALTHY HOME



TENNESSEE
DEPARTMENT OF
HEALTH

HEALTHY HOMES

Americans spend about 90 percent of our time indoors. We eat, sleep, and breathe inside our homes. A healthy home is designed, built, and maintained in support of good health.

A healthy home is free of things that can cause health problems or injuries. Dust, mold, roaches, mice, carbon monoxide, fires, smoke, and poisons are some things that can be unhealthy.

This booklet tells you how to maintain your home to reduce risks. It also tells you how to prevent injuries so your home can be a safe and healthy place for your family to live. Start by learning the *Seven Principles of Healthy Homes*:

- 1. Keep it Dry:** Damp houses provide an environment for mites, roaches, rodents, and molds.
- 2. Keep it Clean:** Clean homes help reduce the risk of pest infestations and exposure to contaminants.
- 3. Keep it Pest-Free:** Exposure to mice and cockroaches can increase asthma attacks in children. Improper pesticide treatments for pest infestations can worsen health problems because pesticide residues in homes can pose health risks.
- 4. Keep it Safe:** The majority of children's injuries occur at home. Falls cause most of the residential injuries to children, followed by injuries from objects in homes, burns, and poisonings.
- 5. Keep it Contaminant-Free:** Chemical exposures include lead, radon, carbon monoxide, pesticides, and tobacco smoke.
- 6. Keep it Ventilated:** Fresh air improves respiratory health.
- 7. Keep it Maintained:** Poorly-maintained homes are at risk for moisture, pests, deterioration, and other unhealthy conditions.



BUGS, PETS, AND ALLERGENS

Mold, dust mites, roaches, rodents, and pet dander are common things that can make you sick. They are especially bad for people with asthma, allergies, or other preexisting respiratory illnesses.

Mold



A lot of people are allergic to mold. Mold smells musty. It grows in wet places, like basements and bathrooms. Here are some things you can do to stop mold from growing in your home:

- Clean up mold right away. Know that mold needs water to grow. Reduce excess moisture.
- Fix water leaks right away. Replace water-soaked materials like insulation, carpet, carpet pad, or wallboard. Repair damage to walls, floors, and ceilings.
- Make sure rainwater can drain away from your house. Clean and repair gutters. Attach extenders to downspouts. Slope the ground near the house so rainwater will drain away from the foundation.
- Use a dehumidifier or an air conditioner inside your house to keep the humidity between 30 and 50 percent.
- Connect the vent from the clothes dryer to the outside of your house. Use a vent fan when showering or bathing.

Learn more about mold and how to clean it up on our Healthy Homes Website at:

health.tn.gov/healthyhomes/mold.shtml.

Dust Mites



Many people are allergic to the tiny bugs that live in dust, called dust mites. Dust mites live in every home in soft items like mattresses, pillows, carpets, stuffed toys, furniture, and curtains. Here is how to reduce the number of dust mites in your home:

- Get rid of clutter. Dust all of the rooms in your house once a week using a damp cloth.
- Wash your bed sheets and blankets in hot water once a week. Set the temperature on your water heater to 120 degrees Fahrenheit.
- Use dust mite-proof mattress and pillow covers. Follow the cleaning instructions found on the package or label.
- If you keep a stuffed toy, wash it in hot water every week. If a toy cannot be washed, put it in the freezer for a day to kill the dust mites.
- Vacuum or use hot water to frequently clean pillows, rugs, and curtains.
- Vacuum at least once a week. Use a vacuum with a HEPA filter, if possible.
- Dust mites like moisture. Keep indoor humidity levels between 30 percent and 50 percent.

Cockroaches, Mice, and Rats



Many people are allergic to cockroaches. Cockroaches can trigger asthma attacks. Mice and rats can bring disease to people. Get rid of these pests. To help avoid pests:

- Keep food in hard, closed containers. Clean up food crumbs and wash food off dishes right away.
- Use a trash can with a lid. Regularly remove the trash from the house.
- Make sure there are no water puddles inside the home. Cockroaches, mice, and, rats need water to live. Fix water leaks right away.
- Do not leave pet food or water out overnight. Store extra pet food in sealed containers.
- Use traps or sticky pads to kill bugs and rodents instead of pesticide sprays or poisons.

Pet Allergies

Some people are allergic to dogs, cats, or birds. Pet allergies are caused by dander (dead skin that is shed), saliva, and urine. To help with pet allergies:

- Do not allow pets on beds or in the bedroom.
- Do not allow children with asthma or pet allergies to rub their faces in a pet's fur.
- Have children wash their hands after touching pets.

CHEMICALS

There are chemicals in your home, both natural and synthetic, that can make you sick or even cause death.

Carbon Monoxide



Carbon monoxide (CO) has no odor, no color, and is toxic. You cannot see it, taste it, or smell it. It comes from burning fuel like natural gas, wood, charcoal, or kerosene. Your furnace, stove, water heater, or fireplace might give off carbon monoxide if they are not working right. Cars and generators produce carbon monoxide when the motor is running.

Symptoms of carbon monoxide poisoning are similar to the flu. You may have a headache, nausea, dizziness, or feel tired. Carbon monoxide poisoning can lead to unconsciousness or death.

- Install a carbon monoxide detector. If the alarm goes off, get outside and call the fire department or gas company.
- If you think you have been poisoned by carbon monoxide, leave the building and call 911 right away.
- Never leave a car running in the garage.
- Do not use generators, kerosene or propane heaters, charcoal or gas grills, or fuel-powered machines indoors.
- Do not use a gas stove to heat your home.
- Have chimneys, water heaters, gas-burning furnaces, and fireplaces checked by a professional.

Lead

Lead is a metal used in some paints. Lead paint is most common in houses built before 1978. Lead is most harmful to young children. Even a few small dust particles of lead can cause poisoning in a child. Lead poisoning can slow a child's ability to learn and cause behavior problems. Children are in danger when they can reach items painted with lead-based paint such as windows, doors, stairs, porches, siding, and fences.

Lead gets into the body by breathing or swallowing it. Lead can be in dust, dirt, and paint. Young children can come into contact with lead as they crawl indoors and outside. Lead dust can be on their hands and anything else they put in their mouths.



- Test children less than six years of age for lead.
- Wash children's hands before they eat and sleep. Keep play areas and toys clean. Keep children from chewing on windows and other painted surfaces.
- Make sure children eat foods that lower how much lead is taken into the body. Dairy products and leafy green vegetables are rich in calcium. Fortified cereals, beans, and red meat are high in iron.

Lead can also be harmful to adults. It can cause high blood pressure, digestion problems, reproduction problems, nerve disorders, memory problems, and muscle and joint pain.

- There are some things you can do now to protect your family. Clean up paint chips. They are mostly found on windows, porches, and doors. Wet dust and mop at least once a week to remove lead dust.

- If your home was built before 1978, test your home for lead-based paint. Removing lead-based paint without training can be dangerous for you and your family. Hire a licensed company with lead-safe workplace training. To find people to test and remove lead paint, call the Tennessee Department of Environment and Conservation's Lead Hazard Program at 1-888-771-5323 or visit www.tn.gov/environment/solid-waste.

Secondhand Smoke

Secondhand smoke comes from the burning end of anything being smoked such as a cigarette, pipe, cigar, or drugs. It also comes from the smoke exhaled by smokers. Secondhand smoke is full of harmful chemicals.



Children breathing secondhand smoke are more likely to get sick. Secondhand smoke increases the chance of a child dying of Sudden Infant Death Syndrome (SIDS). Breathing secondhand smoke can cause asthma and asthma attacks. It can lead to ear and respiratory infections. Secondhand smoke can cause lung cancer and heart disease.

- Do not smoke. If you are a smoker, talk to your doctor to find ways to quit smoking.
- Until you quit, smoke outside every time. This keeps chemicals out of your home.
- Do not smoke in a car, especially with children present.

To help you quit smoking, call the free Tennessee Tobacco QuitLine at 1-800-784-8669 or visit www.tnquitline.com.

Pesticides

Pesticides are chemicals used to kill insects and rodents. They come in sprays, liquids, powders, granules, and foggers. Some pesticides can cause severe health problems if used improperly.

- Try to use methods to control pests that do not use chemicals.
- Use methods of Integrated Pest Management (IPM).
- Caulk windows, doors, cracks, and holes to keep pests out. Fix leaky toilets, pipes, drains, and faucets to get rid of water that pests need.
- Keep food in sealed containers. Clean up dirty dishes and wipe up food spills right away. Rinse empty bottles and get them out of the house.
- Wash pets to remove fleas.
- Store firewood, building materials, and other items away from your house. Pests like dark, moist places.
- Use boric acid powder for ants and cockroaches. Remember to keep it away from children and pets.
- If you use pesticides, follow the directions on the label. Do not overuse them. Store chemicals in a locked cabinet, out of the reach of children. Keep pesticides in their original containers with their labels so you know what they are.



Volatile Organic Compounds

Volatile organic compounds (VOCs) are in paints, paint strippers, varnishes, glues, cleaners, air fresheners, and some hobby products. You may have health problems if you breathe, swallow, or touch too much of a product containing VOCs. Health problems may include eye irritation, difficulty breathing, headaches, dizziness, or memory problems. Some VOCs may even cause cancer.

- Store chemicals in their original containers. Always follow the instructions on the labels. Using more than is needed will not do the job better and may make you sick.
- Use VOCs only in an open, well-ventilated area. Open windows and use fans to blow fumes outside.
- Most VOCs are harmful if swallowed or inhaled. Use cabinet safety locks or store chemicals where children cannot reach them. Keep the phone number for the Poison Center nearby: 1-800-222-1222.
- People with asthma may react to air fresheners, incense or candles. Instead of using an air freshener to cover up a smell, get rid of the source of the smell and keep the room aired out. Cleaning weekly and controlling moisture are often all that is needed to keep rooms smelling fresh.
- Consider using non-toxic cleaners.
- Contact the Tennessee Department of Environment and Conservation at 1-888-891-8332 to find out how to dispose of unwanted household hazardous waste products. Do not put them in the trash or down the drain.



Asbestos

Asbestos is a mineral once used in many building materials, including insulation, fireproofing, ceiling tiles, floor tiles, and furnace wrap. Asbestos can cause lung and chest cancer and lung scarring.

- Damaged asbestos is dangerous if you breathe it. If you think you have asbestos in your home and it is in good condition, leave it alone.
- If the asbestos is damaged, hire a professional to test it. The professional will tell you if it is better to leave the asbestos alone or to remove it.

Nitrogen Oxides and Sulfur Dioxide

Using an unvented gas stove, fireplace, or wood burner can lead to high indoor levels of nitrogen oxide (NO), nitrogen dioxide (NO₂), or sulfur dioxide (SO₂). These gases have no color or smell. Nitrogen oxides can hurt the lungs. Sulfur dioxide can burn the eyes, nose, and lungs. People with breathing problems can suffer the most. Keep in mind:

- When cooking with a gas stove, turn on the stove vent to move the air outside.
- If the vent does not move the air outside or you do not have a vent, open a door or window to clear the gases from the room.
- Do not use a gas stove or kerosene space heater to heat your house.
- Do not burn charcoal indoors.



Mercury

Mercury is a liquid metal used in thermometers, thermostats, blood pressure equipment, and fluorescent light bulbs. Mercury is a liquid that evaporates quickly into the air. When breathed in, mercury is harmful to adults and especially to children because of their smaller size.

- Replace your old mercury thermometer with a new mercury-free thermometer.
- Mercury needs to be cleaned up correctly. You can find out how by reading about mercury at health.tn.gov/environmental/mercury.htm.



Radon

Radon is a naturally occurring radioactive gas. It has no color or smell. It comes from the ground and seeps into basements and crawl spaces. Radon can cause lung cancer. It is possible for one home to have high levels of radon and for the home next door to have low levels.

- Test the lowest floor of your home used by your family. Radon test kits can be purchased from your local hardware store. Some government agencies or health departments also sell radon test kits.
- A home with radon can be fixed. In the basement, painting the floor, sealing cracks, and increasing air flow are low-cost mitigation methods. A trained company can install a radon-removal system for high radon levels.
- Read more about radon online at: health.tn.gov/environmental/radon.htm.



INJURY PREVENTION

The majority of children's injuries occur in the home. Many types of injuries can be prevented.

Burns

Touching a hot stove is only one way to get burned. Open flames, space heaters, electrical outlets, cigarettes, and house fires can lead to burns. A smoke alarm, fire extinguisher, and an escape plan can help prevent burns.

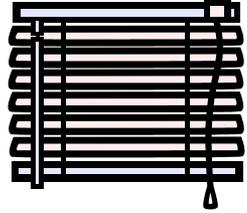


- Put a smoke alarm on every floor and in every bedroom. Test smoke alarms every six months to make sure they are still working. Replace batteries when needed.
- Put a fire extinguisher in your kitchen. Learn how to use it, before it is needed.
- Make a fire escape plan with your family and practice it.
- Keep space heaters away from curtains and bedding.
- If there are small children in the home, use electrical outlet covers or move furniture to block outlets.
- Do not overload electrical outlets with strips or plugs.
- Keep matches and lighters away from children. Teach them about fire safety.
- Do not smoke in the house, especially in bed.

Choking

Choking can happen suddenly. People who are choking often need help. Remember these ideas to prevent choking:

- Hotdogs, nuts, popcorn, hard candy, and small objects can cause choking. Supervise young children when they eat foods on which they could choke.
- Keep toys with small parts and strings away from young children.
- Use window blind cord holders to keep the cord out of a child's reach.
- Take a CPR or First Aid class to know what to do if someone is choking.



Drowning

A child can drown in only 2 inches of water. Always supervise children around water.

- No child should swim alone. Watch children at all times when swimming.



- Pool, spa, and hot tub areas should have a self-latching gate at least 5 feet high.
- Never leave a young child alone in the bathtub.
- Toilet lids should be closed to protect toddlers.

Falls

A majority of residential injuries to children are from falling. Older people are in more danger from falling injuries because their bones break more easily.

- Make sure there is lighting in hallways and stairs. Use night lights.
- Have a flashlight near the bed in case the electrical power goes out.
- Make sure stairs and handrails are sturdy. Install additional handrails where needed.
- Use rugs with a non-slip bottom or put gripper tape on the bottom of them.
- Remove floor clutter that can cause tripping.
- Use window guards on windows above the first floor to prevent children from falling out.



Guns

If you have a gun in the home, teach children guns are not toys and guns can hurt or kill people.

- Store the gun unloaded. Use a trigger lock, and keep the gun locked up. Lock bullets up away from the gun.
- Never point a gun at a person. Do not clean a gun with others in the room.
- Consider taking a gun safety class.



HOME MAINTENANCE CHECKLIST

Yard & Exterior	Spring	Fall	Annual
Remove trip, fall, choking, and edge hazards	X	X	
Check for signs of rodents and insects	X	X	
Drain outdoor faucets and hoses		X	
Clean window wells and check drainage	X	X	
Clean gutters and downspouts	X	X	
Basement & Crawl Spaces	Spring	Fall	Annual
Check sump pump and valve	X	X	
Check that floor drain works with no wet areas	X		
Vacuum basement surfaces	X		
Check for signs of rodents and insects		X	
Exterior Roof, Walls, & Windows	Spring	Fall	Annual
Make sure roof shingles are in good condition	X		
Check roof flashing (chimney and vents)	X		
Make gutters move water away from building	X		
Check attic for signs of roof leaks	X		
Remove icicles and ice dams			winter
Look for peeling paint	X		
Look for leaks where deck attaches to house	X		
Repair broken and cracked glass		X	
Look for leaks at window and door sills	X		
Clean dryer vent; make sure exhaust is clear	X	X	
Interior Walls, Ceilings, Windows, & Doors	Spring	Fall	Annual
Check for signs of water damage			X
Lubricate and repair windows and doors			X

Plumbing, Electrical, & Appliances	Spring	Fall	Annual
Check washer and dishwasher hoses for leaks			X
Clean and check refrigerator drip pan and icemaker connections			X
Check shower-tub surrounds for damage			X
Check water heater and boiler for leaks		X	
Check water meter, well pump, and pipes for leaks or sweating		X	
Check to ensure bath and kitchen fans work	X	X	
Check for damaged electrical cords	X	X	
Test ground fault circuit interrupters	X	X	
Check to ensure smoke and CO alarms work	X	X	
Clean septic tank	2 to 5 years or as needed		
Appliances	Spring	Fall	Annual
Clean range hood and exhaust fan screens	X		
Clean AC and dehumidifier coils, drain pans	X		
Service furnaces, boilers, and water heaters		X	
Attic	Spring	Fall	Annual
Check for signs of rodents and insects		X	
Check for water damage		X	
Check that fans and ducts exhaust to outdoors		X	
Ensure insulation is in place		X	
Heating, Ventilation, & Air Conditioning (HVAC) Equipment			
Replace filter in warm air furnace, air conditioner, or dehumidifier	every 30 to 60 days or as needed		

HEALTHY HOMES RESOURCES

TENNESSEE RESOURCES

Healthy Homes Website
health.tn.gov/healthyhomes

Department of Health
tn.gov/health

Department of Environment and Conservation
tn.gov/environment

Division of Consumer Affairs
www.tn.gov/consumer



Asthma Management Program
health.tn.gov/MCH/asthma.shtml

Carbon Monoxide
health.tn.gov/healthyhomes/carbonmonoxide.shtml

Lead
health.tn.gov/healthyhomes/lead.shtml

Mercury
health.tn.gov/environmental/mercury.htm

Mold
health.tn.gov/healthyhomes/mold.shtml

Radon
health.tn.gov/healthyhomes/radon.shtml

NATIONAL RESOURCES

American Lung Association
1-800-LUNG-USA (800-586-4872)
www.lungusa.org

Asthma and Allergy Foundation
1-800-7ASTHMA (727-8462)
www.aafa.org

Centers for Disease Control and Prevention
National Center for Environmental Health
www.cdc.gov/nceh

Consumer Product Safety Commission
1-800-638-CPSC (2772)
www.cpsc.gov

Environmental Protection Agency
www.epa.gov

EPA: Indoor Air Quality
1-800-438-4318
www.epa.gov/iaq

EPA: Asbestos
www.epa.gov/asbestos

EPA: Mold Information & Cleanup
www.epa.gov/mold

Housing and Urban Development
Office of Healthy Homes & Lead Hazard Control
www.hud.gov/offices/lead

National Center for Healthy Housing
1-877-312-3046
www.nchh.org

**For more Healthy Homes
information visit our website:**



health.tn.gov/healthyhomes



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**ADAPTED FROM 'A GUIDE TO A HEALTHY HOME'
BY THE MICHIGAN DEPARTMENT OF COMMUNITY HEALTH**



Tennessee Department of Health
Authorization No. 343078. 5,000 copies.
This public document was printed at a cost of \$1.56 per copy.

04/14



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