



Public Health
Prevent. Promote. Protect.

Pike County General Health District

Earthquake Safety Recommendations

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The following pages were compiled based on information from the Centers for Disease Control and Prevention.

Earthquake Preparation

While California has been the state most prone to serious earthquakes in recent years, there are many other fault zones in other areas of the United States. For example, geologists and seismologists have predicted a 97 percent chance of a major earthquake in the New Madrid seismic zone of the central United States (including Arkansas, Missouri, Tennessee, and Kentucky) between now and the year 2035. While earthquakes with the power of the one that hit the greater Los Angeles area in January 1994 are fairly rare, less severe earthquakes can interrupt your normal living patterns and cause substantial injury.

During a major earthquake, you may hear a roaring or rumbling sound that gradually grows louder. You may feel a rolling sensation that starts out gently and, within a second or two, grows violent.

OR . . .

You may first be jarred by a violent jolt. A second or two later, you may feel shaking and find it difficult to stand up or move from one room to another.

The real key to surviving an earthquake and reducing your risk of injury lies in planning, preparing, and practicing what you and your family will do if it happens.

Practice Drills

By planning and practicing what to do if an earthquake strikes, you and your family can learn to react correctly and automatically when the shaking begins. During an earthquake, most deaths and injuries are caused by collapsing building materials and heavy falling objects, such as bookcases, cabinets, and heating units. Learn the safe spots in each room of your home. If you have children, get the entire family to practice going to these locations. Participating in an earthquake drill will help children understand what to do in case you are not with them during an earthquake.

Make sure you and your child also understand the school's emergency procedures for disasters. This will help you coordinate where, when, and how to reunite with your child after an earthquake.

During your earthquake drill:

- Get under a sturdy table or desk and hold on to it.
- If you're not near a table or desk, cover your face and head with your arms; and
 - stand or crouch in a strongly supported doorway OR . . .
 - brace yourself in an inside corner of the house or building.
- Stay clear of windows or glass that could shatter or objects that could fall on you.
- Remember: If inside, stay inside. Many people are injured at entrances of buildings by falling debris.

Evacuation Plans

If an earthquake occurs, you may need to evacuate a damaged area afterward. By planning and practicing for evacuation, you will be better prepared to respond appropriately and efficiently to signs of danger or to directions by civil authorities.

- Take a few minutes with your family to discuss a home evacuation plan. Sketch a floor plan of your home; walk through each room and discuss evacuation details.
- Plan a second way to exit from each room or area, if possible. If you need special equipment, such as a rope ladder, mark where it is located.
- Mark where your emergency food, water, first aid kits, and fire extinguishers are located.
- Mark where the utility switches or valves are located so that they can be turned off, if possible.
- Indicate the location of your family's emergency outdoor meeting place.

Establish Priorities

Take time before an earthquake strikes to write an emergency priority list, including:

- important items to be hand-carried by you
- other items, in order of importance to you and your family
- items to be removed by car or truck if one is available
- things to do if time permits, such as locking doors and windows, turning off the utilities, etc.

Write Down Important Information

Make a list of important information and put it in a secure location. Include on your list:

- important telephone numbers, such as police, fire, paramedics, and medical centers
- the names, addresses, and telephone numbers of your insurance agents, including policy types and numbers
- the telephone numbers of the electric, gas, and water companies
- the names and telephone numbers of neighbors
- the name and telephone number of your landlord or property manager
- important medical information, such as allergies, regular medications, etc.
- the vehicle identification number, year, model, and license number of your automobile, boat, RV, etc.
- your bank's or credit union's telephone number, account types, and numbers
- radio and television broadcast stations to tune to for emergency broadcast information

Gather and Store Important Documents in a Fire-Proof Safe

- Birth certificates
- Ownership certificates (automobiles, boats, etc.)
- Social Security cards
- Insurance policies
- Wills
- Household inventory, including:
 - list of contents
 - photographs of contents of every room
 - photographs of items of high value, such as jewelry, paintings, collectors' items

Inspecting for Possible Home Hazards

An important step in earthquake preparedness is to inspect your home and its surroundings for possible hazards and then take action to lessen those hazards. Remember: anything can move, fall, or break during an earthquake or its aftershocks.

The following is a basic checklist to help you identify and correct possible home hazards.

Rooms in the Home

Look for the following hazards in each room:

- Windows and other glass that might shatter
- Unanchored bookcases, cabinets, refrigerators, water heaters, and other furniture that might topple
- Heating units, fireplaces, chimneys, and stoves that could move or fall
- Areas that could be blocked by falling debris

Securing Appliances

- Secure your large appliances with flexible cable, braided wire, or metal strapping.
- Install flexible gas and water connections on all gas appliances. This will significantly reduce your chances of having a major fire after an earthquake.
- Brace and support air conditioners, particularly those on rooftops.

The typical water heater weighs about 450 pounds when full. In an earthquake, the floor on which it is standing tends to move out from under the heater, often causing it to topple. The movement can also break the gas, electric, and water-line connectors, posing fire or electric shock hazards, and can shatter the glass lining within the water heater.

Here are two suggestions on how to secure your water heater:

- Wrap at least a 1/2-inch wide metal strap around the top of the water heater and attach it to wall studs with 3-inch lag screws. Attach another strap about 2/3 of the way down from the top of the water heater. OR...
- Wrap steel plumber's tape around the entire water heater at least twice. Then secure the tape to two different wall studs with 3-inch lag screws.

Securing Items in the Bathroom

Replace glass bottles from your medicine cabinet and around the bathtub with plastic containers.

Hanging and Overhead Items

- Inspect and anchor overhead light fixtures, such as chandeliers.
- Move heavy mirrors and pictures hanging above beds, chairs, and other places where you sit or sleep. Otherwise, anchor these items with wire through eyescrews bolted into wall studs. Or place screws on both sides, top, and bottom of the frame and screw these into the studs.
- Determine whether the full swing of your hanging lamps or plants will strike a window. If so, move them.
- Secure hanging objects by closing the opening of the hook.
- Replace heavy ceramic or glass hanging planters with light-weight plastic or wicker baskets.

Shelves, Cabinets, and Furniture

- Identify top-heavy, free-standing furniture, such as bookcases and china cabinets, that could topple in an earthquake.
- Secure your furniture by using:
 - "L" brackets, corner brackets, or aluminum molding to attach tall or top-heavy furniture to the wall
 - eyebolts to secure items located a short distance from the wall
- Attach a wooden or metal guardrail on open shelves to keep items from sliding or falling off. Fishing line can also be used as a less-visible means of securing an item.
- Place heavy or large objects on lower shelves.
- Use Velcro®-type fastenings to secure some items to their shelves.
- Secure your cabinet doors by installing sliding bolts or childproof latches.

Hazardous Materials

Identify poisons, solvents, or toxic materials in breakable containers and move these containers to a safe, well-ventilated storage area. Keep them away from your water storage and out of reach of children and pets.

Inspecting and Securing Your Home's Structure

Examine the structural safety of your house. If your house is of conventional wood construction, it will probably be relatively resistant to earthquake damage, particularly if it is a single-story structure.

For information on structural safety standards and qualified contractors in your area, contact your city or county government office on community development or building code enforcement.

The following suggestions will take an investment of time and money but will add stability to your home. If you want to do the work yourself, many hardware or home-improvement stores will assist you with information and instructions.

Foundation

Check to see if your house or garage is securely fastened to the foundation. (If your house was built before 1950, it probably does not have bolts securing the wood structure to the concrete foundation.) If your house is not secured to the foundation, take the following steps:

- Using a hammer drill and carbide bit, drill a hole through the sill plate into the foundation. Holes should be approximately 6 feet apart.
- Drop a 1/2- x 7-inch expansion bolt into each hole and finish by tightening the nut and washer.

Beams, Posts, Joists, and Plates

Strengthen the areas of connection between beams, posts, joists, and plates using the following hardware:

- "T" and "L" straps
- Mending plates
- Joist hangers
- Twin post caps
- Nails and lag screws

Pay particular attention to exposed framing in garages, basements, porches, and patio covers.

Roof and Chimney

- Check your chimney or roof for loose tiles and bricks that could fall in an earthquake. Repair loose tiles or bricks, as needed.
- Protect yourself from falling chimney bricks that might penetrate the roof, by reinforcing the ceiling immediately surrounding the chimney with 3/4-inch plywood nailed to ceiling joists.

Learning to Shut Off Utilities

- Know where and how to shut off utilities at the main switches or valves. Check with your local utility companies for instructions.
- Teach all family members how and when to shut off utilities.

Gas

- An automatic valve (Earthquake Command System) is commercially available that will turn the gas off for you in the event of an earthquake.
- After an earthquake, DO NOT USE matches, lighters, or appliances, and do not operate light switches until you are sure there are no gas leaks. Sparks from electrical switches could ignite gas, causing an explosion.
- If you smell the odor of gas, or if you notice a large consumption of gas being registered on the gas meter, shut off the gas immediately. First, find the main shut-off valve, located on a pipe next to the gas meter. Use an adjustable wrench to turn the valve to the off position.

Electricity

After a major disaster, shut off the electricity. Sparks from electrical switches could pose a shock or fire hazard. Carefully turn off the electricity at the main electrical breaker in your home.

Water

Water may be turned off at either of two locations:

- At the main meter, which controls the water flow to the entire property; or
- At the water main leading into the home. (Shutting off the water here retains the water supply in your water heater, which may be useful in an emergency.)

Attach a valve wrench to the water line. (This tool can be purchased at most hardware stores.) Also, label the water mains for quick identification.

Earthquake Safety

Indoor Safety

There are actions you can take, even while an earthquake is happening, that will reduce your chances of being hurt. Lights may be out, and hallways, stairs, and room exits may be blocked by fallen furniture, ceiling tiles, and other debris. Planning for these situations will help you to take action quickly.

- If an earthquake strikes, you may be able to take cover under a heavy desk or table. It can provide you with air space if the building collapses. If you get under a table and it moves, try to move with it.
- Inner walls or door frames are the least likely to collapse and may also shield against falling objects. If other cover is not available, go to an inner corner or doorway, away from windows or glass panels.
- Stay away from glass and hanging objects, and bookcases, china cabinets, or other large furniture that could fall. Watch for falling objects, such as bricks from fireplaces and chimneys, light fixtures, wall hangings, high shelves, and cabinets with doors that could swing open.
- Grab something to shield your head and face from falling debris and broken glass.
- If the lights go out, use a battery-operated flashlight. Don't use candles, matches, or lighters during or after the earthquake. If there is a gas leak, an explosion could result.
- If you are in the kitchen, quickly turn off the stove and take cover at the first sign of shaking.

High-Rise Buildings

Get under a desk and stay away from windows and outside walls. Stay in the building. The electricity may go out, and the sprinkler systems may come on. **DO NOT** use the elevators.

Crowded Indoor Public Places

If you are in a crowded public place, do not rush for the doorways. Others will have the same idea. Move away from display shelves containing objects that may fall. If you can, take cover and grab something to shield your head and face from falling debris and glass.

Outdoor Safety

If outdoors, move away from buildings and utility wires. The greatest danger from falling debris is just outside doorways and close to outer walls. Once in the open, stay there until the shaking stops.

Automobiles

If you are in a moving automobile, stop as quickly and safely as possible and move over to the shoulder or curb, away from utility poles, overhead wires, and under- or overpasses. Stay in the vehicle, set the parking brake, and turn on the radio for emergency broadcast information. A car may jiggle violently on its springs, but it is a good place to stay until the shaking stops. If you are in a life-threatening situation, you may be able to reach someone with either a cellular or an emergency roadside assistance phone.

When you drive on, watch for hazards created by the earthquake, such as breaks in the pavement, downed utility poles and wires, a fallen overpasses and bridges.

Special Needs Populations

Persons with Disabilities

Before an earthquake:

- Write down any specific needs, limitations, and capabilities that you have, and any medications you take. Make a copy of the list and put it in your purse or wallet.
- Find someone (a spouse, roommate, friend, neighbor, relative, or co-worker) to help you in case of an emergency. Give them the list. You may wish to provide a spare key to your home, or let them know where they can find one in an emergency.

During an earthquake:

- If you are confined to a wheelchair, try to get under a doorway or into an inside corner, lock the wheels, and cover your head with your arms. Remove any items that are not securely attached to the wheelchair.
- If you are able, seek shelter under a sturdy table or desk. Stay away from outer walls, windows, fireplaces, and hanging objects.
- If unable to move from a bed or chair, protect yourself from falling objects by covering up with blankets and pillows.
- If you are outside, go to an open area away from trees, telephone poles, and buildings, and stay there.

After an earthquake:

- If you are trapped, try to attract attention to your location.
- Turn on your battery-operated TV or radio to receive emergency information and instructions.
- If you can, help others in need.

Children's Needs

Fear is a normal reaction to danger. A child may be afraid of recurrence, injury, or death after an earthquake. They may fear being separated from their family or being left alone. Children may even interpret disasters as punishment for real or imagined misdeeds. Children will be less likely to experience prolonged fear or anxiety if they know what to expect before, during, and after an earthquake. Talking to children openly will also help them overcome fears.

Here are some suggestions:

- Explain that an earthquake is a natural event and not anyone's fault.
- Talk about your own experiences with natural disasters, or read aloud books about earthquakes.
- Encourage your child to express feelings of fear. Listen carefully and show understanding.
- Your child may need both verbal and physical reassurance that everything will be all right. Tell your child that the situation is not permanent.
- Include your child in clean-up activities. It is comforting to the child to watch the household begin to return to normal and to have a job to do.

NOTE: Symptoms of anxiety may not appear for weeks or even months after an earthquake, and can affect people of any age. If anxiety disrupts daily activities for any member of your family, seek professional assistance through a school counselor, community religious organization, your physician, or a licensed professional listed under "mental health services" in the yellow pages of your telephone directory.