

MU Guide

Is your family prepared for an earthquake?

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During the winter of 1811-1812, the legendary series of three earthquakes, 18 tremors and hundreds of aftershocks struck southern Missouri near New Madrid. This series of disruptions is regarded as perhaps the most severe ever felt. The greatest of the quakes measured 8.8 on the Richter Scale and was detected in the cities of Chicago, Washington, D.C., New Orleans and parts of Canada. The energy released from the earthquake was equal to 12,000 atomic bombs the size of those dropped on Hiroshima, or 150 million tons of TNT.

Settlements in Missouri and Arkansas were devastated, the Mississippi River flowed backwards for several days, islands disappeared, and boats capsized. An eyewitness of the New Madrid earthquake said: "The surface of the earth rose and fell like the long, low swell of the sea, tilting the trees until their branches interlocked, and opening the soil in deep cracks. Landslides swept down the steeper bluffs and hillsides. Considerable areas were uplifted, and still larger areas sunk and became covered with water emerging through fissures....High banks of the Mississippi caved in and were precipitated into the river. Sand bars and points of islands gave way, and whole islands disappeared."

Scientists estimate that an earthquake the magni-

tude of the 1811-12 quakes will occur about every 670 years. However, scientists agree that the New Madrid system has now stored up enough strain energy to produce an earthquake measuring 7.6 on the Richter Scale although its probability of occurring in the near future is remote.

Earthquake possible in Missouri

Scientists are most concerned about earthquakes that measure 6+ on the Richter Scale and occur about every 50 years. Earthquakes of this magnitude occurred at the southern end of the fault near Memphis in 1843, and at the northern end, near Charleston, Mo., in 1895. In 1968 a 5.5 magnitude earthquake caused shaking and some damage to structures as far away as St. Louis at a distance of 100 miles.

Results of recurrence studies in southeast Missouri show that there is a 50 percent probability that a 6.5 magnitude earthquake will occur by the year 2000. The Federal Emergency Management Agency estimates that an earthquake of this magnitude could result in \$13-\$14 billion in building losses alone. Major natural gas lines that provide natural gas to major cities such as St. Louis, Chicago, New York, Philadelphia, Pittsburgh, run within the fault area and probably will be ruptured, leaving these major cities without gas for heating and industry. The quake would affect 15 percent of the United States workforce. The death toll would be enormous, especially if the event occurs during the day when high-rise structures are filled with workers.

Preparation lessens danger

This guide is designed to help you and your family plan for and survive a major earthquake. With advance preparation, the impact of an earthquake can definitely be lessened. Set aside some emergency supplies, and plan with your family what to do at home during and after a disaster. You could be without help for up to 72 hours, so learn to cope for at least that long and possibly one week. Movement of the ground is seldom the actual cause of death or injury. Most injuries and casualties result from partial building collapses, falling objects and debris, such as top-

Earthquake preparation: Home emergency supply kit

- ✓ Flashlights with extra batteries
- ✓ Portable radio with spare batteries
- ✓ First-aid kit and handbook
- ✓ Multipurpose dry chemical fire extinguisher
- ✓ Non-perishable food
- ✓ Water for one week
- ✓ Medications
- ✓ Pipe and adjustable wrenches

pling chimneys, falling bricks, ceiling plaster, and light fixtures. Many of these conditions are preventable.

Because earthquakes occur without warning, it is important to take precautionary steps so you and your family can respond during this emergency.

Preparation saves lives

Before the earthquake happens, be prepared by having a home emergency supply kit available. The kit should include:

Flashlights with extra batteries. One of these flashlights should be near your bed. Never use matches or candles until you are certain no gas leak exists.

Portable radio with spare batteries. Most telephones will be out of order or should be used for emergency purposes only, so the radio will be your best source of information.

Note: Extra flashlight and portable radio batteries should be stored in refrigerator to extend their useful life.

Well-stocked first aid kit and handbook. Every member of the family should have basic first aid knowledge and be competent in CPR (Cardiopulmonary Resuscitation).

Fire extinguisher. Keep a multi-purpose dry chemical extinguisher handy for small fires. Every family member should know where and how to use these fire extinguishers. For additional information on fire extinguishers review MU Guide 1906 "Selecting and Using a Fire Extinguisher."

Food. Keep a supply of non-perishable food on hand that can be rotated into the family's diet and replaced on a regular basis. Have enough canned foods, a mechanical opener, powdered milk and/or canned juices for at least one week. Dried cereals, fruit and non-salted nuts are a good source of emergency nutrition.

Water. Store water in airtight containers and replace about every six months. Store at least six gallons of water per person to be prepared for a one week period.

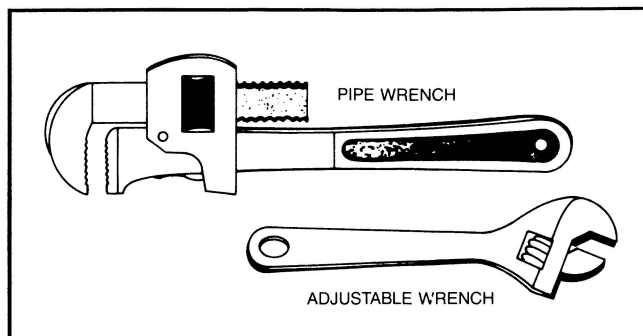
Also, have purification tablets such as Halazone and Globaline, but read the label on the bottle before using tablets. **Note:** Water may be disinfected with 5.25 percent sodium hypochlorite solution (household chlorine bleach). Do not use solution in which there are active ingredients other than hypochlorite. Use the following proportions:

	<u>Clean water</u>	<u>Cloudy water</u>
One quart	1 drop	3 drops
One gallon	4 drops	10 drops
Five gallons	1/4 teaspoon	1/2 teaspoon

Special items. Have at least one week's supply of medications and special foods needed for infants or

those on limited diets.

Tools. Pipe wrench and adjustable wrenches should be available for turning off gas and water mains. Family members should be taught where and how to shut off electricity, gas and water at the main, or main switch.



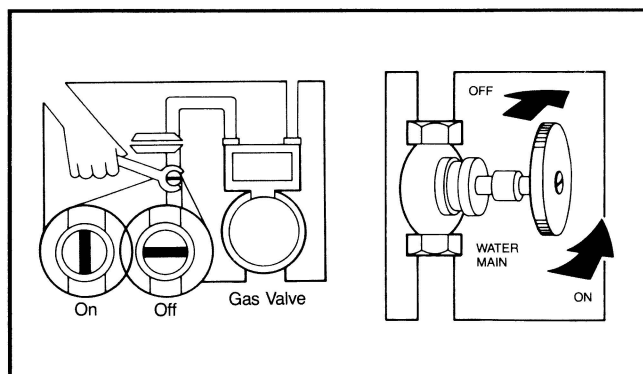
Keep pipe and crescent wrenches handy for emergencies.

How to shut off gas

Your main gas shut-off valve is located next to your meter on the inlet pipe. (On an LP Gas system, the shut-off is located at the tank.)

Use a wrench and give a quarter turn in either direction so that the valve runs crosswise on the pipe. The gas line is now closed.

Caution: Do not shut off gas unless an emergency exists. If gas is ever turned off, remember that all pilot lights must be relit when the gas is turned back on.



Know how to shut off gas and water.

How to shut off water

Locate the water shut-off valve where it enters the house.

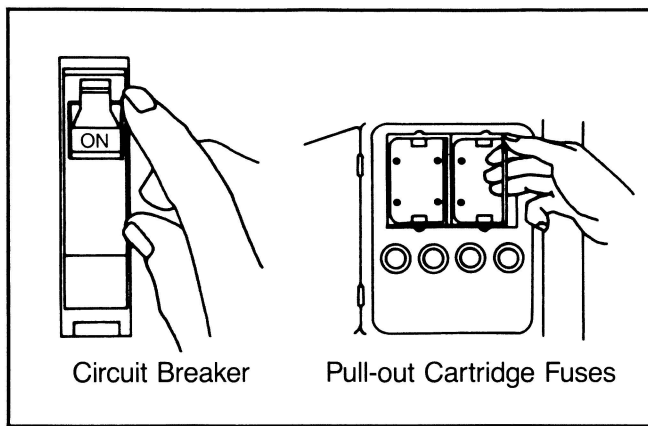
Show all family members where the valve is.

Also locate the main water shut-off at the water meter.

How to shut off electricity

Look closely at your circuit breaker box or fuse box. Locate the main cartridge fuses or circuit breaker.

Be certain you can shut off electricity if there is damage to your home electrical wiring

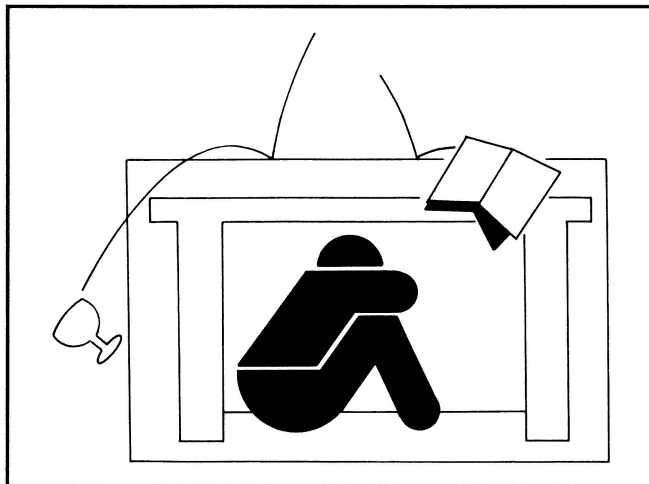


Locate your circuit breaker or fuse box.

Staying calm very important

First and foremost — keep calm! During a major earthquake, you may experience a shaking that starts out to be gentle and within a second or two grows violent and knocks you off your feet. Or, you may be jarred by a violent jolt — as though your house is being hit by a truck. A second or two later you will experience the shaking, making it difficult (if not impossible) to move from one room to another.

If you are indoors, stay there. Take cover under a heavy desk, table or bench in a supported doorway or along an inside wall. Stay away from windows, bookcases, china cabinets, mirrors and fireplaces until the shaking stops.



Take cover under a heavy desk, table or bench in a supported doorway or along an inside wall.

If you are in the kitchen, turn off the stove at the first sign of shaking, and quickly take cover under a counter or sturdy table, or in a doorway.

If you are in a high-rise, get under a desk or similar heavy furniture, stay away from windows and outside walls. Stay in the building on the same floor. Do not dash for exits since stairways may be broken or jammed with people. Don't be surprised if the elec-

tricity goes off, or if the elevator, fire alarm systems or sprinklers go on. **Do not use elevators!**

If you are in your car, pull to the side of the road and stop the car. Do not park under overpasses or power lines. Stay in your car until the earthquake is over. When you drive on, watch for hazards created by the earthquake, such as fallen or falling objects, downed electric wires, damaged, broken or undermined bridges, roadways or overpasses.

✓Check for injuries

If anyone has stopped breathing, give mouth-to-mouth resuscitation.

Stop any bleeding injuries by applying direct pressure to the wound. For more detailed emergency procedures, consult your first aid book.

Do not attempt to move seriously injured persons unless they are in immediate danger of future injury.

Cover injured persons with blankets to keep them warm. Be reassuring and calm.

Do not use the telephone unless there is a severe injury.

Wear shoes in all areas near fallen debris and broken glass.

Immediately clean up any spilled medicines, drugs or other potentially harmful materials — bleaches, lye, gasoline or other petroleum products.

✓Check for safety

Check your home for fire or fire hazards. If possible, put out small fires. If not possible, leave your home immediately, alert your neighbors and call the fire department.

Check utility lines and appliances for damage. If you smell gas or see a broken line, shut off the main valve. Do not search for a leak with a match or lighter. Do not use electrical switches or appliances because sparks can ignite gas from leaks or broken lines. Do not switch on the gas or electricity until the utility company has checked your home.

Do not touch downed lines or objects touching downed power lines or electrical wiring of any kind.

Check to see that sewage lines are intact before using. Plug bathtub, shower, drain or sink drain to prevent sewage backup.

Check your home, chimney and other structures for cracks and damage. Approach chimney and masonry walls with caution — they may topple. Do not use fireplaces and/or chimneys unless they are undamaged and without cracks. When in doubt, don't use it.

Check closets and cupboards. Open doors cautiously. Beware of falling objects tumbling off shelves.

✓Check your food supply

If water is off, emergency water supplies may be all around you — in water heaters, toilet water tanks,

melted ice cubes, canned fruits and vegetables, etc.

Do not eat or drink anything from open containers near shattered glass. Liquids may be strained through a clean handkerchief, cloth, cheese cloth, etc. if danger of glass contamination exists.

If power is off, check your freezer and plan meals to use up foods that will spoil quickly. Keep your freezer door closed and insulate the freezer with blankets, quilts, etc. to reduce cooling loss. Cook thawed frozen food immediately if they are still cool. If in doubt about its safety, do not use it.

Use outdoor charcoal broilers for emergency cooking. Never use the cookers indoors because of fire and carbon monoxide hazards.

If you must evacuate...

Don't use your vehicle unless there is an emergency. Don't go sightseeing! You will only hamper relief efforts. Keep streets and roads clear for the passage of emergency vehicles.

Don't use your telephone except to report medical or fire emergencies or violent crimes.

Turn on your portable radio for emergency information and damage reports.

Be prepared for aftershocks. Most of these are weaker than the main quake, but some may be large enough to do additional damage.

Cooperate with public safety officials — Civil Defense, fire, police, medical personnel, etc. Do not go into the damaged areas unless your help is requested.

If you must evacuate your home — post a message in clear view where you can be found. Take medicine, first aid kit, flashlights, radio and batteries, important papers, and cash, food, sleeping bags/blankets and extra clothing with you to the emergency shelter.

The potential for earthquakes in Missouri always exists. Family earthquake preparedness and what family members do during and immediately after the tremor can help minimize damage and may make a life-or-death difference.

More information

For more information about earthquakes, contact the Missouri Department of Natural Resources Division of Geology and Land Survey, P.O. Box 250, Rolla, MO 65401, at (314) 364-1752, or call the department's toll-free number: (800) 334-6946.

For more information on planning and preparing for earthquakes, contact your local University Extension Center or the State Emergency Management Agency, P.O. Box 116, Jefferson City, MO 65102, or call (314) 751-2748.