

# Earthquake Preparedness

Ples Spradley  
Associate Professor -  
Pesticide Safety  
Education

This fact sheet will help you plan for and survive a major earthquake. It tells you what to do before, during and after the quake to lessen the impact on your family and your home.

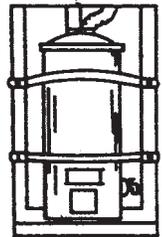
One of the worst earthquakes in recent history occurred along the New Madrid Fault in the winter of 1811-1812. This fault zone is of great concern to Arkansans because of the amount of damage that will result should another quake occur. Geologists predict that the chances of another major earthquake in the area are quite high. Being prepared can lessen the impact.

Be prepared to be self-sufficient for at least three days after the quake. Following are precautions to be taken before, during and after the earthquake.

## Before the Quake

1. Conduct a hazard hunt. Some possible hazards include:
  - Tall, heavy furniture which could topple, such as book-cases, china cabinets or modular wall units.
  - Appliances which could move enough to rupture gas or electrical lines.
  - Hanging plants in heavy pots that could swing free of hooks.
  - Heavy picture frames or mirrors over the bed.
  - Latches on kitchen or other cabinets which will not hold the door closed during shaking.
  - Breakables or heavy objects that are kept on high or open shelves.
  - A masonry chimney that could crumble and fall through an unsupported roof.

- Flammable liquids like painting or cleaning products that would be safer in a garage or outside shed.
- Hot water heaters which can be pulled away from pipes and rupture. To avoid damage, secure your water heater by strapping it to the wall.
- Anything that can move, break or fall when your house starts to shake.

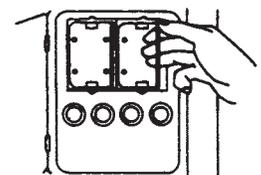


Take steps to correct these hazards. Secure or relocate heavy items.

2. Teach responsible members of your family how to turn off electricity, gas and water at main switch and valves. **Caution:** Do not shut off gas unless an emergency exists. If gas is ever turned off, remember that all pilot lights must be relit. Call your utility company.



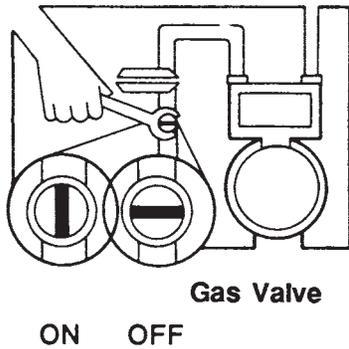
**Circuit Breaker**



**Pull-Out Cartridge Fuses**

*Arkansas Is  
Our Campus*

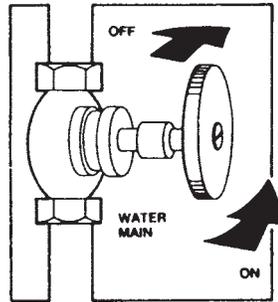
Visit our web site at:  
<http://www.uaex.edu>



**Gas Valve**

ON OFF

Label water shutoff valve, found where water enters the house. Also label main water shutoff valve, found with meter in a concrete box away from the house.



3. **Family Earthquake Drill** – It's important to know where you should go for protection when your house starts to shake. By planning and practicing what to do before an earthquake occurs, you can condition yourself and your family to

react correctly and spontaneously when the first jolt or shaking is felt. An earthquake drill can teach your family what to do in an earthquake.

- Each family member should know the safest and most dangerous spots in each room.
- Safe spots: The best places are under supported archways, against inside walls and under heavy pieces of furniture like a desk or sturdy table.
- Danger spots: Stay away from windows, hanging objects, mirrors, fireplaces and tall, unsecured furniture.
- Reinforce this knowledge by physically placing yourself in the safe location. This is especially important for children.
- In the days or weeks after this exercise, hold surprise earthquake drills. Call out “earthquake” and have each family member respond by moving to the safest place.
- Be prepared to deal with what you may experience after an earthquake – both physically and emotionally.
- Establish a point of contact for separated family members.

The map predicts damage corresponding to Roman numerals on the Modified Mercalli Scale in an 8.6 earthquake. If an earthquake is around 7.16 on the Richter scale, reduce the zone Roman numerals by one. For example, substitute X for XI in Mississippi and Crittenden counties and read the damage on the Modified Mercalli Scale under X. If the earthquake is a 6.6, then reduce the zone numeral by two. For example, Mississippi and Crittenden counties would experience damage listed under IX on the Modified Mercalli Scale.

**Modified Mercalli Intensity Scale**

**VI** People are frightened and run outdoors. Heavy furniture may be moved; some instances of fallen plaster and toppling of chimneys. Slight damage.

**VII** Everybody runs outdoors. Damage is negligible in buildings of good design and construction, slight to moderate in ordinary structures

and considerable in poorly built or badly designed structures. Chimneys broken. Felt in moving automobiles.

**VIII** Some damage even in buildings of good design and construction. Considerable damage in ordinary buildings, with some collapsing.

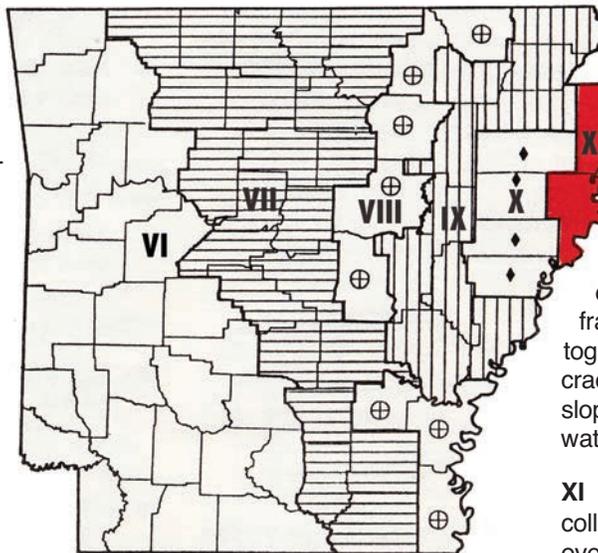
Great damage in poorly constructed buildings. Panel walls thrown out of frame structures. Falling of houses

and factory chimneys, columns, monuments and walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Hinders driving of automobiles.

**IX** Damage considerable in buildings of good design and construction. Structures thrown out of alignment with foundations. Ground cracked conspicuously. Underground pipes damaged.

**X** Wooden houses of good design and construction collapse. Most masonry and frame structures destroyed together with foundations. Ground cracked causing damage, rails bent, slopes and embankments slide, water surface rises.

**XI** Almost all masonry structures collapse, bridges destroyed, fissures over entire surface of ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent prominently.



4. Make sure you have emergency supplies on hand.
  - Flashlights with spare batteries. Secure a flashlight to your bed. Do not use matches or candles after an earthquake until you are certain no gas leaks exist.
  - Portable radios, cellular phones and laptop/tablet computers may be your best sources of information and communication. Make sure to have spare batteries or external recharging accessories for your devices.
  - First aid kit; first aid skills – Have a first aid book such as *Standard First Aid and Personal Safety* by the American National Red Cross. Take basic Red Cross first aid and CPR courses.
  - Fire extinguishers. Keep a Class ABC fire extinguisher handy for small fires.
  - Food. It's always a practical idea to keep a supply of nonperishable food on hand which can be rotated into your diet and replenished on a regular basis. Have a sufficient supply of canned or dehydrated food, powdered milk and canned juices for at least two weeks. Dried cereals and fruits and non-salted nuts are a good source of nutrition.
  - Water should be stored in airtight containers approved for food contact and replaced every six months. Store at least enough water per person for a two-week period. Also have purification tablets such as Halazone and Globaline, but read the label on the bottle before using tablets. Liquid household bleach can also be used to purify water. Use 5.25 percent sodium hypochlorite (liquid household bleach, not fresh or lemon scent) in the following amounts for cloudy water: 1 teaspoon per 5 gallons of water, 16 drops per gallon of water or 4 drops per quart. The amounts can be reduced by one-half for clear water. Water from an undamaged water heater could be a good source of water.
  - Special items. Have at least a two-week supply of medications and special foods needed for infants or those on limited diets. Be sure to check with your physician or pharmacist about how long these medications can be stored and still remain effective.
  - Tools. Pipe wrench and crescent wrench for turning off gas and water mains.
2. Ride out the earthquake. During a major earthquake, you may hear a roaring or rumbling sound that gradually grows louder and feel a rolling sensation 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 first by a violent jolt – as though your house was hit by a truck. A second or two later you'll feel the shaking and you'll find it very difficult to stand up or move from one room to another.
 

The rumbling and rolling may frighten you, but the whole tremor will only take a minute or two. Remember, the myths about the earth opening up and swallowing you are NOT true. Injuries are not caused by the earthquake itself, but by falling objects. Try TALKING yourself through the earthquake to relieve the stress and provide a calming effect for other members of your household.

  - If you are indoors, stay there. Get under a desk or table or in a corner like you practiced in your drills. Remember, stay clear of windows, book-cases, china cabinets, mirrors and fireplaces until the shaking stops.
  - If in a high-rise building, get under a desk, stay away from windows and outside walls. Stay in the building on the same floor. Don't be surprised if the electricity goes out or if elevator, fire alarm or sprinkler systems go on. **DO NOT USE ELEVATORS!**
  - If you happen to be in the kitchen, turn off the stove at the first sign of shaking and quickly take cover under a counter or table.
  - If in a crowded public place, do not rush for the doorway since other people are going to have the same idea. Move away from display shelves containing objects that may fall.
  - If you are outside, get into the open away from buildings, trees, walls and power lines.
  - 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. If the earthquake has been severe, do not attempt to cross bridges or overpasses. They may have been damaged.

**PROCEED WITH CAUTION WHEREVER YOU ARE.** The possibility of encountering **FALLEN POWER LINES** is great. If you are in your car, you will most likely be protected from the live wires, unless you touch grounded metal. If you are on foot, make a wide path around the wires. **NEVER** assume downed power lines are dead – or **YOU** may be! People, metal and damp objects are good electrical conductors. To avoid shock and serious burns, **STAY WELL AWAY!** A wrong move trying to rescue someone else **COULD KILL YOU!**

## During the Earthquake

1. Stay as calm as possible. Remaining calm will help you control your situation, and others that are with you will be less likely to panic. They will draw courage from you and lessen the chances of injury.

## After the Quake

### 1. Check for injuries.

- If anyone has stopped breathing, give mouth-to-mouth resuscitation. Stop any bleeding injury by applying direct pressure to the wound. **Do not** move seriously injured people unless they are in immediate danger of further injury. Cover injured persons with blankets to keep them warm.

- Do not use the telephone unless there is a severe injury. For more detailed emergency procedures, consult your first aid manual found in your standard first aid kit.

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

### 2. Check for hazards.

- Put out small fires, if possible. If not, get out immediately. Alert your neighbors.

# Three Day Survival Pack

## Top of the Barrel



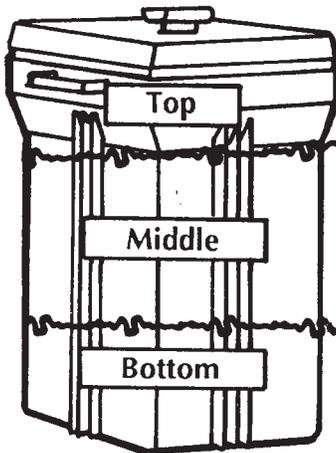
### Standard First Aid Kit

First aid manual  
Aspirin or pain relievers  
Laxatives  
Rubbing alcohol  
Diarrhea medicine  
Petroleum jelly  
Soap  
Salt  
Gauze  
Band-aids

Matches  
Needles  
Tweezers

Heavy string  
Syrup of ipecac  
Elastic bandage  
Individual medical needs  
Small splints, popsicle sticks  
Triangular bandage (36" x 36" x 52")  
Sanitary napkins (pressure dressing)  
Disposable diapers (dressing/splint/padding)  
Micropore adhesive, paper tape  
Baking soda (1/2 teaspoon soda +  
1 teaspoon salt + 1 quart water for shock)

Cotton balls  
Cotton swabs  
Safety pins  
Scissors  
Thermometer



## Middle of the Barrel

### Food

Can opener  
Three-day supply of food requiring no refrigeration.  
Date all food items. Write out a menu for each day.

### Examples

Commercially canned meat and food (1/2 lb/person)  
Nonfat dry milk (1/2 lb/person)  
Graham crackers (1/2 lb/person)  
Dried apricots (1/2 lb/person)  
Canned orange or tomato juice  
Peanut butter (1/2 lb/person)  
(Supplies daily 2,100 calories and essential nutrients.)  
Water (1/2 to 1 gal/person per day). Store separately.



### Bedding

Sleeping bag/blankets  
Plastic sheets/tarp

### Clothing

One change/person

### Personal Supplies

Toiletries  
Towel  
Good book  
Paper/pencil

**Infant/Children's Needs**  
if applicable

### Fuel and Light

Matches  
Candle  
Signal flare  
Sterno canned heat

### Equipment

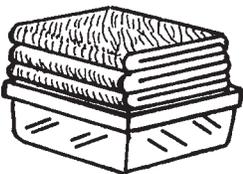
Can opener  
Dishpan  
Dishes (disposable)  
Utensils (disposable)  
Axe  
Shovel  
Bucket (plastic bag liners)

### Money

### Other

Water purification tablets  
Liquid chlorine/bleach  
Eyedropper  
Soap

## Bottom of the Barrel



- Check gas, water and electrical lines and appliances for damages. If you smell gas or see a broken line, shut off all utilities. Do not switch on the gas or electricity again until the power company has first checked your home. Do not search for gas leaks with a lighted match.
- Do not use electrical switches or appliances if gas leaks are suspected because sparks can ignite gas from broken lines.
- Do not touch downed lines or broken appliances.
- Clean up spilled medicines, bleaches, gasoline and other flammable liquids.
- Check to see that sewage lines are intact before using the toilet. Plug bathtub and sink drains to prevent sewage backup.
- Check food and water supplies. If water is cut off, use emergency water supplies found in water heaters and melted ice cubes.
- Check the building for cracks and damage, particularly the chimneys or masonry walls.

Do not use fireplaces unless the chimney is undamaged and without cracks.

- Check closets and cupboards. Open doors cautiously. Beware of objects tumbling off shelves.
- Use charcoal broilers for emergency cooking, **ONLY OUT OF DOORS.**
- Be prepared for aftershocks. These are usually smaller than the main quake, but some may be large enough to do additional damage to structures weakened during the main shock.
- Do not use your vehicle unless there is an emergency. Do not go sightseeing through badly damaged areas. You will only hamper the relief effort. Keep streets clear for the passage of emergency vehicles.

For more information on earthquake hazards and ways to reduce risk, contact the **Arkansas Department of Emergency Management**, Building 9501, Camp Joseph T. Robinson, North Little Rock, Arkansas 72199. Phone: 501-683-6700.  
<http://www.adem.arkansas.gov/aem/>

The original publication (Fact Sheet S107) was compiled and adapted for Arkansas by the **Earthquake Preparedness Committee – Bringle Jennings, Chairman**, Wallace Cummings, Jimmie Lee Edwards, Mike Hedges, James Peachey, Mark Peterson, Carol Reiner, Glenda Rushing and Eleanor Walls.

Printed by University of Arkansas Cooperative Extension Service Printing Services.

**PLES SPRADLEY** is associate professor - pesticide safety education, Department of Plant Pathology, University of Arkansas System Division of Agriculture, Little Rock.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Director, Cooperative Extension Service, University of Arkansas. The University of Arkansas System Division of Agriculture offers all its Extension and Research programs and services without regard to race, color, sex, gender identity, sexual orientation, national origin, religion, age, disability, marital or veteran status, genetic information, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.

FSA9600-PD-1-2016RV