



Federal Emergency Management Agency

EARTHQUAKES

Earthquakes strike suddenly, violently and without warning. Identifying potential hazards ahead of time and advance planning can reduce the dangers of serious injury or loss of life from an earthquake.

Check for hazards in the home.

- Fasten shelves securely to walls.
- Place large or heavy objects on lower shelves.
- Store breakable items such as bottled foods, glass, and china in low, closed cabinets with latches.
- Hang heavy items such as pictures and mirrors away from beds, couches, and anywhere people sit.
- Brace overhead light fixtures.
- Repair defective electrical wiring and leaky gas connections. These are potential fire risks.
- Secure a water heater by strapping it to the wall studs and bolting it to the floor.
- Repair any deep cracks in ceilings or foundations. Get expert advice if there are signs of structural defects.
- Store weed killers, pesticides, and flammable products securely in closed cabinets with latches and on bottom shelves.

Identify safe places in each room.

- Under sturdy furniture such as a heavy desk or table.
- Against an inside wall.
- Away from where glass could shatter—around windows, mirrors, pictures, or where bookcases or other heavy furniture could fall over.

Locate safe places outdoors.

In the open, away from buildings, trees, telephone and electrical lines, overpasses, or elevated expressways.

Make sure all family members know how to respond after an earthquake.

Teach all family members how and when to turn off gas, electricity, and water.

Teach children how and when to call 9-1-1, police, or fire department and which radio station to tune to for emergency information.

Contact your local emergency management office or American Red Cross chapter for more information on earthquakes.

Have disaster supplies on hand.

- Flashlight and extra batteries
- Portable, battery-operated radio and extra batteries
- First aid kit and manual
- Emergency food and water
- Nonelectric can opener
- Essential medicines
- Cash and credit cards
- Sturdy shoes

Develop an emergency communication plan.

In case family members are separated from one another during an earthquake (a real possibility during the day when adults are at work and children are at school), develop a plan for reuniting after the disaster.

Ask an out-of-state relative or friend to serve as the “family contact.” After a disaster, it’s often easier to call long distance. Make sure everyone in the family knows the name, address and phone number of the contact person.

If indoors:

- Take cover under a piece of heavy furniture or against an inside wall and hold on.

- Stay inside.

- The most dangerous thing to do during the shaking of an earthquake is to try to leave the building because objects can fall on you.

If outdoors:

- Move into the open, away from buildings, street lights, and utility wires.

- Once in the open, stay there until the shaking stops.

If in a moving vehicle:

- Stop quickly and stay in the vehicle.

- Move to a clear area away from buildings, trees, overpasses, or utility wires.

- Once the shaking has stopped, proceed with caution. Avoid bridges or ramps that might have been damaged by the quake.

Pets after an Earthquake

The behavior of pets may change dramatically after an earthquake. Normally quiet and friendly cats and dogs may become aggressive or defensive. Watch animals closely. Leash dogs and place them in a fenced yard.

Pets may not be allowed into shelters for health and space reasons. Prepare an emergency pen for pets in the home that includes a 3-day supply of dry food and a large container of water.

Be prepared for aftershocks.

Although smaller than the main shock, aftershocks cause additional damage and may bring weakened structures down. Aftershocks can occur in the first hours, days, weeks, or even months after the quake.

Help injured or trapped persons. Give first aid where appropriate. Do not move seriously injured persons unless they are in immediate danger of further injury. Call for help.

Listen to a battery-operated radio or television for the latest emergency information.

Remember to help your neighbors who may require special assistance — infants, the elderly, and people with disabilities.

Stay out of damaged buildings. Return home only when authorities say it is safe.

- Use the telephone only for emergency calls.

- Clean up spilled medicines, bleaches or gasoline or other flammable liquids immediately. Leave the area if you smell gas or fumes from other chemicals.

- Open closet and cupboard doors cautiously.

- Inspect the entire length of chimneys carefully for damage. Unnoticed damage could lead to a fire.

Inspecting Utilities in a Damaged Home

Check for gas leaks — If you smell gas or hear a blowing or hissing noise, open a window and quickly leave the building. Turn off the gas at the outside main valve if you can and call the gas company from a neighbor's home. If you turn off the gas for any reason, it must be turned back on by a professional.

Look for electrical system damage — If you see sparks or broken or frayed wires, or if you smell hot insulation, turn off the electricity at the main fuse box or circuit breaker. If you have to step in water to get to the fuse box or circuit breaker, call an electrician first for advice.

Check for sewage and water lines damage — If you suspect sewage lines are damaged, avoid using the toilets and call a plumber. If water pipes are damaged, contact the water company and avoid using water from the tap. You can obtain safe water by melting ice cubes.

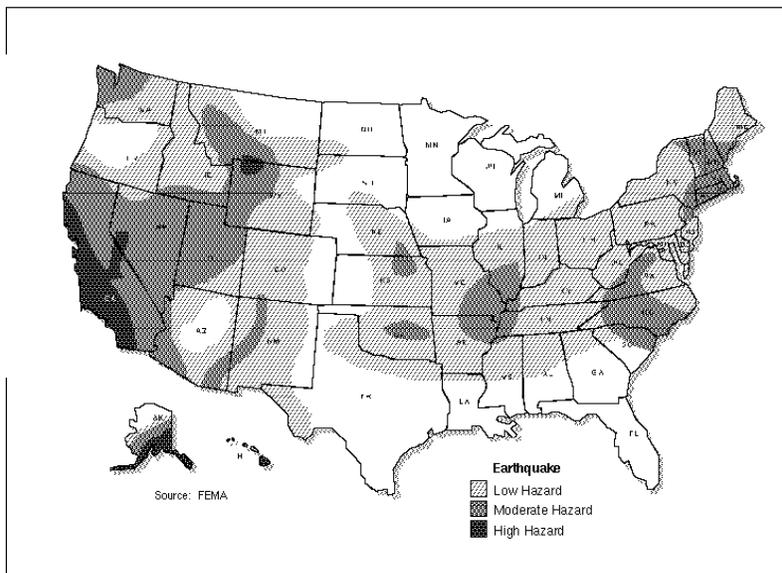
Mitigation

Mitigation includes any activities that prevent an emergency, reduce the chance of an emergency happening, or lessen the damaging effects of unavoidable emergencies. Investing in preventive mitigation steps now such as repairing deep plaster cracks in ceilings and foundations, anchoring overhead lighting fixtures to the ceiling and following local seismic building standards, will help reduce the impact of earthquakes in the future. For more information on mitigation, contact your local emergency management office.

E A R T H Q U A K E S

EMERGENCY INFORMATION

1. The best protection during an earthquake is to get under heavy furniture such as a desk, table, or bench.
2. The greatest danger exists directly outside buildings, at exits, and alongside exterior walls. Many of the 120 fatalities from the 1933 Long Beach earthquake occurred when people ran outside of buildings only to be killed by falling debris from collapsing walls.
3. Ground movement during an earthquake is seldom the direct cause of death or injury. Most earthquake-related casualties result from collapsing walls, flying glass, and falling objects.



Earthquakes occur most frequently west of the Rocky Mountains, although historically the most violent earthquakes have occurred in the central United States. All 50 states and all U.S. territories are vulnerable to earthquakes. Forty-one states or territories are at moderate to high risk.

WHAT IS AN EARTHQUAKE?

An earthquake is a sudden, rapid shaking of the Earth caused by the breaking and shifting of rock beneath the Earth's surface. This shaking can cause buildings and bridges to collapse; disrupt gas, electric, and phone service; and sometimes trigger landslides, avalanches, flash floods, fires, and huge, destructive ocean waves (tsunamis). Buildings with foundations resting on unconsolidated landfill, old waterways, or other unstable soil are most at risk. Buildings or trailers and manufactured homes not tied to a reinforced foundation anchored to the ground are also at risk since they can be shaken off their mountings during an earthquake. Earthquakes can occur at any time of year.

HELP YOUR COMMUNITY GET READY

The media can raise awareness about earthquakes by providing important information to the community. Here are some suggestions:



1. Publish a special section in your local newspaper with emergency information on earthquakes. Localize the information by printing the phone numbers of local emergency services offices, the American Red Cross, and hospitals.

2. Conduct a week-long series on locating hazards in the home.

3. Work with local emergency services and American Red Cross officials to prepare special reports for people with mobility impairments on what to do during an earthquake.



4. Provide tips on conducting earthquake drills in the home.

5. Interview representatives of the gas, electric, and water companies about shutting off utilities.

DID YOU KNOW...

- Many people think of California as “Earthquake Country,” but the state with the most major earthquakes is Alaska. The granddaddy of earthquakes was along the New Madrid Fault in Missouri where a 3-month long series of quakes in 1811-1812 included three quakes larger than a magnitude of 8. These quakes were felt over 2 million square miles.
- The Richter scale was developed by Charles F. Richter in 1935. It is a logarithmic measurement of the amount of energy released by an earthquake. Earthquakes with a magnitude of at least 4.5 are strong enough to be recorded by

sensitive seismographs all over the world. In the United States, several thousand shocks of varying sizes occur annually.

- The effects of earthquakes are also measured by the Modified Mercalli Intensity scale. The intensity of a quake is evaluated according to the observed severity of the quake at specific locations. The Mercalli scale rates the intensity on a Roman numeral scale that ranges from I to XII.
- The Loma Prieta (northern California) earthquake in October 1989 registered 7.1 on the Richter scale and as high as XI on the Mercalli scale.

HOW THE PUBLIC CAN HELP AFTER A DISASTER

When disaster strikes, people everywhere want to help those in need. To ensure that this compassion and generosity are put to good use, the media can highlight these facts:

- ▶ Financial aid is an immediate need of disaster victims. Financial contributions should be made through a recognized voluntary organization to help ensure that contributions are put to their intended use.
- ▶ Before donating food or clothing, wait for instructions from local officials. Immediately after a disaster, relief workers usually don't have the time or facilities to setup distribution channels, and too often these items go to waste.
- ▶ Volunteers should go through a recognized voluntary agency such as the American Red Cross or Salvation Army. They know what is needed and are prepared to deal with the need. Local emergency services officials also coordinate volunteer efforts for helping in disasters.
- ▶ Organizations and community groups wishing to donate items should first contact local officials, the American Red Cross, or Salvation Army to find out what is needed and where to send it. Be prepared to deliver the items to one place, tell officials when you'll be there, and provide for transportation, driver, and unloading.