This publication provides an introduction to earthquake safety for child care providers based in their homes and those based in larger facilities.

If you provide child care in a facility such as a school, church, or daycare center, you should consult your building's owner, landlord, building administrator, or school administrator about the standards, guidelines, and procedures that are already in place for seismic safety.

Cover photograph by Lloyd Wolf for the U.S. Census Bureau, Public Information Office (PIO).

Earthquake Preparedness
What Every Child Care Provider Needs to Know

You can never tell when there will be an earthquake, but you can take steps to reduce or avoid damage, injuries, or loss of life for the children in your care, your staff, and yourself. Preparing for an earthquake includes things you already do to protect the children's safety and health, such as having a fire extinguisher handy and maintaining your certifications for first aid and CPR. With additional planning and preparation, the children in your care will have a better chance at surviving an earthquake unharmed.

What You Can Do Before an Earthquake

Make your building more earthquake-proof, include earthquake preparedness in your emergency plans, teach children and staff what to do if an earthquake happens, and keep emergency supplies on hand.

It's not the Earth's shaking itself that causes the most injury and harm. Instead, it's the things that the earthquake puts into motion: the shaking of buildings, structures, and even ordinary household items. Anything that can move, fall, break, or cause a fire can be an earthquake hazard.

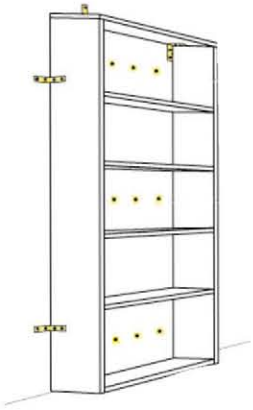
In an earthquake, most injuries and deaths are caused by loose objects in and on buildings. During the shaking, cabinets and bookcases topple, objects fall out of cabinets, and hanging or large plants fall. Door frames and window jams may be bent when walls move. Doors may slam or jam shut, and window glass can shatter, sending broken glass into the room. Light fixtures, sprinkler heads, and other ceiling components may pop out and fall. Objects mounted on the walls (such as clocks, maps, and art work) may shake loose and fly across the room. The electricity may go out, and the sprinkler systems or fire alarms may turn on.

Conduct a "hazard hunt"

Go through your home or facility, room by room, looking for objects or situations that might cause damage or injury. Make an inventory of all items that require attention. Walk the halls and classrooms. Stand in the center of each room and look all around you: imagine which objects or pieces of furniture might fall over or fly through the air.

Make your facility more earthquake-proof

Remove, move, fasten, or latch items that are likely to break, fall over, cause a fire, or hurt people. Work with the building's owner or manager and other building tenants if you rent or share space. If you are housed in a school, coordinate with your school administrator.



Securing a bookcase to the wall.

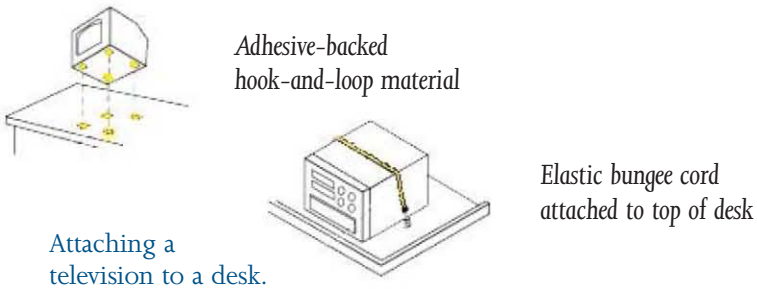
You or the building's owner may be able to correct most of these hazards.

- ❑ **Bolt down and secure to the wall studs:**

  water heater
  furnace
  gas appliances
  refrigerator

- ❑ **Fasten to wall studs:**

  bookcases
  shelves
  tall cabinets



Attaching a television to a desk.

- ❑ **Move heavy objects to lower shelves.**

  If heavy objects can't be moved, attach them to the desk or table they are sitting on with a heavy-duty hook-and-loop fastener, such as Velcro. If necessary, add lips to shelves to keep items from sliding off.

- ❑ **Make sure hallways and exits are clear of objects that might fall and make it difficult to get out of the building.**
- ❑ **Brace overhead light fixtures.**
- ❑ **Install latches on cabinet doors.**
- ❑ **Move beds and cribs away from windows, and lock their wheels if possible.**
- ❑ **Move heavy items such as pictures and mirrors away from sleeping and sitting areas.**
- ❑ **Lock wheels on rolling carts, such as a TV cart.**

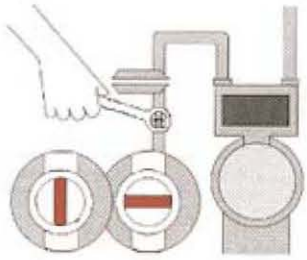
Have a professional help you with the following:

- ❑ **Bolt the building to the foundation if necessary.**

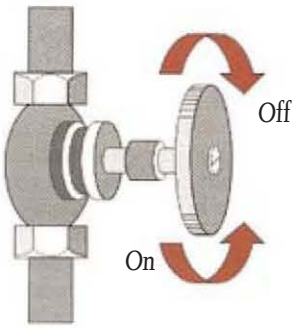
  Wood frame buildings that are bolted to the foundation are less likely to be damaged than those that aren't. Buildings built after 1960 typically are secured to their foundations. (You can call your local building department or county assessor's office to find out when your home or facility was built.)

- ❑ **Repair any deep cracks in ceilings or foundations.**
- ❑ **Repair or replace defective electrical wiring and leaky gas connections.***
- ❑ **Replace inflexible utility connections with flexible ones.***

Gas Valve



Water Main



* Do not repair gas or electrical lines yourself.

Know how to shut off electricity, gas, and water

You may need to turn off the electricity, gas, or water after an earthquake because of broken or exposed electrical wiring, a gas leak, or flooding from leaking pipes or sprinklers. Locate the gas and water "shut-off" valves and master electrical switch. Learn how to turn these off and train your staff to do so. Make sure you have a crescent or pipe wrench near the gas and water valves and in your emergency supplies.

Prepare an emergency kit

After a large earthquake, you may be on your own with the children for two or three days. In addition to the safety equipment you already have on hand such as a fire extinguisher, you need an emergency kit. This kit should include:

- ❑ Flashlight with extra bulbs and extra batteries
- ❑ Portable battery-operated radio and extra batteries
- ❑ First aid kit and manual
- ❑ Roster of children with addresses and their parents' emergency contact information
- ❑ Crescent and pipe wrenches to turn off gas and water supplies
- ❑ Emergency food and water

  Water—A supply of bottled water and cups (one gallon per person per day). Store water in sealed, unbreakable containers (for example, plastic). Identify the storage date and replace every three to six months. Include purification tablets or chlorine bleach in your kit to purify drinking water from other sources.

  Food—A supply of non-perishable packaged or canned food.

- ❑ Waterproof plastic bags (for protection from rain, ground cloths, removal of waste, etc.)
- ❑ Nonelectric can opener
- ❑ Essential medicines and medical supplies
- ❑ Diapers and wipes
- ❑ Blankets
- ❑ Work gloves
- ❑ Sturdy boots or shoes

Other items in the emergency kit might include:

- ❑ Paper and pens
- ❑ Permanent marker
- ❑ Games and toys
- ❑ Hard candy

Have a communication plan for disasters and keep parents informed

Parents need to know what you plan to do in an earthquake or any other type of emergency.

Develop a plan for reuniting families after an earthquake or any other disaster. Maintain up-to-date rosters of students with contact information for parents and emergency contacts. Encourage parents to identify an out-of-state contact for large-scale emergencies like an earthquake. After an earthquake, it may be easier to make out-of-state and long-distance calls as in-state and local calls may be blocked due to emergency calls.

Ask parents to make an earthquake plan for their homes and to talk to their children about earthquake safety.

Conduct earthquake drills

Just as you conduct drills for other types of emergencies (fires or tornadoes), you should conduct earthquake drills. (Ask your local office of emergency services or your Red Cross office for a recommendation on how frequently you should conduct earthquake drills in your area.)

Identify a safe gathering place outside.

Find a safe spot outside. This spot should be away from the building, trees, playground structures, fences, utility wires, or anything else that might fall on you. Make this your designated gathering place in case of an earthquake or other disaster. Ensure that all children and staff know where to go if you need to leave the building in an emergency.

Teach the children to Drop, Cover, and Hold.

During an earthquake, the most important thing for any child or adult to remember is to **Drop, Cover**, and **Hold.**

At the first sign of shaking

Drop to the ground.
Take **Cover** by getting under a sturdy table or other piece of furniture.
Hold on until the shaking stops.

Practice Drop, Cover, and Hold in earthquake drills.

Tell the children that during an earthquake, the Earth might move beneath their feet like a boat in the waves. Explain that earthquakes may be noisy, with loud banging, crashing, or rumbling sounds and ringing alarm bells.

Identify the safe places in each room:

- under sturdy furniture like a heavy desk or table
- against an inside wall, away from windows, mirrors, pictures, bookcases, or other heavy objects that might fall.

Spend time explaining the Drop, Cover, and Hold drill and demonstrate what you want them to do. Get the children's attention and give clear and distinct commands. Speak in a calm voice. At the command of "earthquake," you and the children should immediately: Drop, Cover, and Hold.

Because earthquakes and aftershocks come without warning, practice drop, cover, and hold drills outside, in your play area, and in various parts of your facility.

Plan several routes for getting out of the building after an earthquake and practice evacuation drills regularly.

Drop

Cover

Hold

Safety Chant

"If inside, drop, cover, and hold. That's where you'll be safe. If outside, stay outside, and find an open space."

What You Can Do *During* an Earthquake

At the first sign of shaking

- *Drop* to the ground
- Take *Cover* by getting under a sturdy table or other piece of furniture.
- *Hold* on until the shaking stops.

Sometimes smaller tremors come before or after a larger earthquake. Because we never know until the shaking has stopped which quake is the main event, it is essential to Drop, Cover, and Hold at the first sign of shaking.

If you are inside

- **Kneel down under a desk, table, or bench.** If there aren't enough sturdy pieces of furniture to get under, kneel next to an interior walls but away from windows, overhead light fixtures, and tall pieces of furniture that might fall over.
- **Stay under cover until the shaking stops** (at least one minute). Face away from windows, and bend your head close to your knees.
- **Hold on to the table leg or desk** (a few inches above the ground to avoid pinching fingers). Cover your eyes with your other hand. If your "shelter" moves, move with it. If you don't have a "shelter" to hang on to, clasp your hands on the back of your neck to protect your face.

- **Don't try to take cover in a doorway during an earthquake. The door may slam on you.**
- **Don't run outside during the shaking or use the stairways or elevators. Many people are killed just outside of buildings by falling bricks and other debris.**
- **Don't turn on the gas again if you turned it off; let the gas company do it.**
- **Don't use your telephone for the first 90 minutes after an earthquake, except for a medical or fire emergency. You could tie up the lines needed for emergency response.**

If you are outside

- **Move into the open,** away from buildings, fences, trees, tall playground equipment, utility wires, and street lights.
- **Kneel or sit on the ground and cover** your head and face with your hands.
- Once in the open, **stay there until the shaking stops.**

If you are in a car

Pull over to the side of the road—away from overhead power lines, trees, and overpasses. Stay in the car until the shaking stops.

What You Can Do *After* an Earthquake

1. Once the shaking has stopped, **look around for possible hazards to determine if it is safe for you to move before getting up and helping others.** *If time permits* and there is a small fire that can be put out with the fire extinguisher, do that.

2. If you are inside, **decide whether to evacuate or stay put.**

   - Any of the following require immediate evacuation: fire, damage to structure, a gas leak, or hazardous materials spill. In some situations, you may choose not to evacuate or to delay evacuation. For example, if there is a slight shaking with no apparent damage and another hazard such as severe weather, it may be more dangerous to move children outside.
   - If you smell gas or hear a blowing or hissing noise, open a window and then quickly leave with the children, and shut the gas off at the outside main meter.
   - Unless you must evacuate immediately (fire, severe damage to structure, gas leak, or hazardous materials spill), **check all children and adults for injuries and give first aid for injuries** before evacuating.
     - Do not move seriously injured persons unless they are in immediate danger of further injury (fire and flooding). Instead, cover them with a sturdy table or whatever is available and send someone for medical help after the earthquake shaking stops.

If you shut off the gas for any reason, a professional must turn it back on. It may take days or weeks before they are able to do so.

As time permits, **you may need to turn off utilities such as gas, electricity, and water.**

If electrical wires are crackling inside, shut off the gas first, then turn off the master electrical switch.

If you must evacuate, **get out of the building and to your designated safe gathering place, taking the emergency kit along with your list of children and their emergency contacts.**

When possible, to reduce the chances of both physical and emotional harm, move children who are able to walk away from danger, away from collapsed buildings, and away from severely injured survivors. If you must leave the area, **place a note for the parents outside the door, telling them where you are going.**

3. Call 9-1-1 if there is a fire or medical emergency. If the phone doesn't work, send someone for help.

4. **Treat minor injuries.**

5. **Reassure the children.** Tell them that their parents will come for them as soon as they can, that their parents know everyone will be safe with you, and that you are all together.

6. **Listen to a battery-operated radio for instructions** and the latest emergency information.

Be prepared for aftershocks

Aftershocks are follow-up earthquakes that are usually smaller than the first one. They are dangerous because they can cause things that were weakened in the first earthquake to fall down. You may need to Drop, Cover, and Hold again.

Reenter with caution

After a minor earthquake or after you are informed by emergency responders that it is safe to reenter the building, open cabinets cautiously and beware of objects that might fall off shelves.

Children's reactions to earthquakes

Earthquakes can be terrifying, and it is natural for children and adults to be afraid. According to the National Association of School Psychologists, earthquakes are especially difficult to cope with because they come without warning and are followed by aftershocks. With continued shaking, survivors do not experience a clear end to the crisis. Some children and adults may have reactions very soon after the event, while others may experience problems weeks or months later. The following tips from the National Institute of Mental Health and other organizations will help you help the children in your care.

During an earthquake

During (and after) an earthquake, children will usually become tearful and clinging. They will want their parent(s). Even toilet-trained children may have accidents or experience nausea and vomiting.

Deal with the situation as calmly as you can. In a disaster, the children will look to you and other adults for help. How you react to an emergency gives them clues on how to act.

After a disaster, children are most afraid that:

- the event will happen again
- someone will be injured or killed
- they will be separated from the family
- they will be left alone

As soon as you are sure the danger has passed

Let the children know that you understand why they are scared. Comfort them with a hug or reassuring words. Reassure them that their parents know where they are or where they may go. Their parents will come to get them as soon as they can. They are safe with you. You will look after them.

After an earthquake

- Return to routine as soon as possible.
- Express your own concerns openly, and let students know that it's normal to be afraid.

- Encourage the children to talk about their fears. Help them sort out what is real from what is unreal. Encourage them to draw or write about their feelings. Children are less afraid of things that they understand.
- Be aware that children begin to suck their thumbs, have difficulty eating or sleeping, wet their beds, or report mysterious aches or pains. It is common for children to "regress" or act younger when stressed. Do not criticize the children or call such behavior "babyish."

- Parents frequently look to you for advice, so help them understand their children's behavior and be aware that they also may be suffering. Parents may be afraid to leave their children after a disaster. Some parents may be angry or upset because their children are frightened. Reassure them that with support most children will recover without any lasting problems.
- Watch children for ongoing signs of emotional distress (avoiding things that remind them of the event, appearing numb or withdrawn, having nightmares). If a child continues to be disturbed for more than a few weeks, the family may need to seek professional counseling. While most children recover completely after a disaster, others may have more long-term problems that require treatment, including depression and post-traumatic stress disorder.
- Understand that you also may have emotional difficulties after a traumatic event and take care of yourself.

To Learn More

Community resources

Contact your local emergency management office or the American Red Cross chapter.

Disaster and safety requirements for child care providers

Contact your state's day care or child care licensing office.

Disaster planning and emergency preparedness

- Federal Emergency Management Agency
  www.fema.gov
- U.S. Department of Homeland Security
  www.ready.gov
- Red Cross
  www.redcross.org
- National Clearinghouse for Educational Facilities
  www.edfacilities.org

Understanding emotional reactions to disasters

- National Institute of Mental Health
  www.nimh.nih.gov
- Substance Abuse and Mental Health Services Administration
  www.mentalhealth.samhsa.gov
- American Red Cross
  www.redcross.org
- National Association of School Psychologists
  www.nasponline.org

Helpful publications

- *The Head Start Disaster Preparedness Workbook*, UCLA Center for Public Health and Disasters.
  www.cphd.ucla.edu/headstartwb.html
- *Practical Information on Crisis Planning: A Guide for Schools and Communities*,
  U.S. Department of Education Office of Safe and Drug-Free Schools.
  www.ed.gov/admins/lead/safety/emergencyplan/crisisplanning.pdf

Earthquake and disaster information for kids

- FEMA for Kids
  www.fema.gov/kids
- U.S. Geological Survey, Earthquakes for Kids
  www.earthquake.usgs.gov/4kids

Curriculum materials

- Tremor Troop: Earthquakes: A Teacher's Packet for K-6, FEMA
  www.fema.gov/hazards/earthquakes/nehrp/fema-159.shtm
- Be Ready 1-2-3, Red Cross
  www.redcross.org/pubs/dspubs/tchrschl.html
- Masters of Disaster Curriculum, Red Cross
  www.redcross.org/disaster/masters