

# What are YOU gonna do about... AN EARTHQUAKE?

Earthquakes can cause buildings and bridges to collapse, down telephone and power lines, and result in fires, explosions and landslides. Earthquakes can also cause huge ocean waves, called tsunamis [soo-nah'-mees], which travel long distances over water until they hit coastal areas.

Our planet's surface is actually made up of slowly-moving sections (called "tectonic plates") that can build up friction or stress in the crust as they creep around. An earthquake occurs when this built up stress is suddenly released and transmitted to the surface of the earth by earthquake waves (called seismic waves).

There are actually millions of small earthquakes, or seismic tremors, per year around the world. Many earthquakes are too small to be felt, but when they happen, you will feel shaking, quickly followed by a rolling motion that can rotate up, down, and sideways that lasts from a few seconds to several minutes.

## BEFORE AN EARTHQUAKE:

Learn the buzzwords - Learn the terms / words used with earthquakes...

- **Earthquake** - a sudden slipping of the earth's crust that causes a series of vibrations
- **Aftershock** - usually not as strong as earthquake but can occur for hours, days, months or years after a main quake
- **Fault** - area of weakness where two sections of crust have separated
- **Subduction zone** - where 2 tectonic plates collide and one plate dives or "subducts" underneath the other
- **Epicenter** - area of the earth's surface directly above the crust that caused the quake
- **Seismic Waves** - vibrations that travel from the center of the earthquake to the surface
- **Magnitude** - used to define how much energy was released (A Richter Scale is the device used to measure this energy on a scale from 0-10 ... each whole number equals an increase of about 30 times the energy released meaning a 5.0 is about 30 times stronger than a 4.0.)
- **Liquefaction** - when water-saturated ground loses strength and acts as a muddy fluid

Prepare - See EARTHQUAKE and POWER LOSS MITIGATION at the beginning of this Section. Also visit [www.shakeout.org](http://www.shakeout.org)

Reduce risks - Look for things that could be hazardous...

- Place large or heavy objects on lower shelves and fasten shelves to walls, if possible.
- Hang heavy pictures and mirrors away from beds.
- Store bottled foods, glass, china and other breakables on low shelves or in cabinets that can fasten shut.
- Repair faulty electrical wiring and leaky gas connections.

Learn to shut off - Know where and how to shut off electricity, gas and water at main switches and valves -- ask local utilities for instructions.

Do drills - Hold earthquake drills with your family to learn what to do...

- **DROP** - drop down to the floor
- **COVER** - get under heavy desk or table or against inside wall protecting head and neck with your arms
- **HOLD ON** - grab something sturdy, be ready to move with it and hold on until shaking stops!

Make a plan - Review Section 1 and develop a **Family Emergency Plan**.

Check policies - Review your insurance policies. Some damage may be covered even without specific earthquake insurance.

## **DURING AN EARTHQUAKE:**

Stay calm & be aware - Watch for falling objects and find a safe spot! Realize most injuries happen when people are hit by things when running IN or OUT of buildings.

**IF INDOORS** – Stay inside and ...

- Avoid danger zones like glass, windows, heavy things that can fall over or down on you.
- **DROP, COVER and HOLD ON** until the shaking stops. If there isn't a table or desk near you, cover face and head with arms and crouch in an inside corner of the building.

**IF IN A HIGH-RISE BUILDING** – Stay on the same floor!

- Move away from outside walls and windows.
- Stay on the same floor - you may not have to evacuate.
- Realize electricity may go out and alarms and sprinkler

systems may go on.

- DO NOT use the elevators!

**IF OUTDOORS** - Stay outside and, if possible, move away from buildings, signs, trees, power lines and street lights.

**IF IN A MOVING VEHICLE** - Stop as quickly and safely as you can!

- Try not to stop near buildings, trees, overpasses, or power lines and stay in vehicle until shaking stops.
- Watch for road and bridge damage and be ready for aftershocks once you drive again.

If you are trapped in an area:

- **light** - use a flashlight (if you have one) – do not use matches or lighters in case of gas leaks
- **be still** - try to stay still so you won't kick up dust
- **breathing** - cover your mouth with a piece of clothing
- **make noise** - tap on a pipe or wall so rescuers can hear you (shouting may cause you to inhale a lot of dust)

## **AFTER AN EARTHQUAKE:**

Aftershocks - Usually not as strong but can cause more damage to weakened structures and may continue for days, months or even years.

Injuries - Check yourself and people around you for injuries - do not try to move seriously injured people unless they are in danger. If you must move a person who is passed out keep their head and neck still and call for help! (see Section 3 – TIPS ON BASIC FIRST AID)

Light - Never use candles, matches or lighters since there might be gas leaks. Use flashlights or battery powered lanterns.

Check home - Look for structural damage -- call a professional if needed.

Check chimney - First check from a distance to see if chimney looks normal and have a professional check it if it looks strange. Check out the Chimney Safety Institute of America's homeowner tips at [www.csia.org](http://www.csia.org)

Clean up - Any flammable liquids (bleaches, gasoline, etc.) should be cleaned up immediately.

Inspect - Check all utility lines and appliances for damage:

- **smell gas or hear hissing** - open a window and leave

quickly. Shut off main valve outside, if possible, and call a professional to turn it back on when it's safe

- **electrical damage** - switch off power at main fuse box or circuit breaker
- **water pipes** - shut off water supply at the main valve
- **toilets** - do not use until you know sewage lines are okay

Water - If water is cut off or contaminated then use water from your **Disaster Supplies Kit** or other clean water sources. (see *TIPS ON WATER PURIFICATION*)

Power - If you use a generator, keep it outside and follow manufacturer's instructions. (see *some safety tips in POWER LOSS MITIGATION*)

Phones - Keep calls to a minimum to report emergencies since most lines will be down.

Listen - Keep up on news reports for the latest information.

Things to avoid:

- **going out** - try to stay off the roads to reduce risk
- **stay away** - unless emergency crew or First Responders ask for your help stay away from damaged areas
- **downed power wires**

Tsunami - If you live near the coast, a tsunami can crash into the shorelines so listen for warnings by local authorities. (see *section on TSUNAMIS*)

RED or GREEN sign in window – After a disaster, Volunteers and Emergency Service personnel will be going door-to-door to check on people. By placing a sign in your window that faces the street near the door, you can let them know if you need them to **STOP HERE** or **MOVE ON**.

Either use a piece of RED or GREEN construction paper or draw a big RED or GREEN “X” (using a crayon or marker) on a piece of paper and tape it in the window.

- RED means STOP HERE!
- GREEN means EVERYTHING IS OKAY...MOVE ON!
- Nothing in the window would also mean STOP HERE!

Recovery tips - Review TIPS ON RECOVERING FROM A DISASTER at end of this Section.