

ECA's Safer at Home Webinar Series

Step 6: Improve Safety (After Earthquakes)



**Earthquake
Country
Alliance**
We're all in this together.






EarthquakeCountry.org/step6

Terremotos.org/paso6

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Earthquake Country Alliance

- 3000+ *Public-Private-Grassroots* leaders
- Statewide *Sector-based committees* and *Outreach Bureaus* develop resources and deliver programs
- Local *Regional Alliances* organize meetings and outreach activities
- California's Office of Emergency Services provides FEMA funding for ECA activities
- USC's Southern California Earthquake Center administers ECA



Join Us: EarthquakeCountry.org/alliance

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Seven Steps To Earthquake Safety

	1. Secure Your Space 	2. Plan To Be Safe 	3. Organize Supplies 	4. Minimize Financial Hardship 
BEFORE				
	5. Drop, Cover, and Hold On 	6. Improve Safety 		7. Reconnect and Restore 
DURING			AFTER	
	EarthquakeCountry.org/sevensteps		Terremotos.org/sietepasos	

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Safer at Home Webinar Series

Step 1 – Secure Your Space:	June 30
Step 2 – Plan to Be Safe:	August 19
Step 3 – Organize Disaster Supplies:	September 2
Step 4 – Minimize Financial Hardship:	September 23
Step 5 – Drop, Cover, and Hold On:	September 30
Step 6 – Improve Safety:	October 28
Step 7 – Reconnect & Restore:	Mid-November

EarthquakeCountry.org/SaferAtHome

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Step 6: Improve Safety Webinar Team

Host

- **Janet Ruiz** (Director – Strategic Communications, Insurance Information Institute & Media Bureau Coordinator, Earthquake Country Alliance Bay Area)

Presenters

- **Margaret Vinci** (Manager, Caltech Office of Earthquake Programs & Chair, Earthquake Country Alliance Southern California)
- **Morgan Page** (Research Geophysicist, USGS)
- **Glen Granholm** (Vice President, Safe-T-Proof)
- **Scott O'Connell** (Regional Disaster Officer, American Red Cross Central California Region)
- **Yvette LaDuke** (Tsunami Planning Coordinator, California Governor's Office of Emergency Services)

Moderators

- **Mark Benthien** (Associate Director, So. California Earthquake Center (SCEC) @ USC & Executive Director, Earthquake Country Alliance)
- **Sharon Sandow de Groot** (Director for Strategic Partnerships, SCEC @ USC & Deputy Director, ECA)
- **Jason Ballmann** (Communications Manager, SCEC @ USC & Media/Participation Bureaus Liaison, ECA)

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Step 6 Webinar Agenda

1. Personal and Neighborhood Safety
2. Communicating and staying informed
3. Being alert for aftershocks (and what to expect)
4. If, when, and how to evacuate:
 - a) Due to damage/fire or as an element of safety plans
 - b) When shaking is felt near the coast, or if there is a tsunami warning
5. Helping the injured
6. Preventing further injuries or damage

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After an Earthquake...



Phones



Power



Water

Utilities may not work

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After an Earthquake...



Roads may be impassible



Transportation unavailable

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After an Earthquake...



Grocery stores,
pharmacies,
banks, etc.
may be closed

Getting accurate
information
will be difficult



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Staying Safe After the Earth Shakes



Margaret Vinci

Manager

Caltech Office of Earthquake Programs
& Chair, ECA SoCal

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Disaster Supplies Checklist

- Choose where you want to store your supplies:
 - Under-Bed bag?
 - Go-Bag?
 - Home?
 - Work?
 - Car?
- What personal items do you need?

EarthquakeCountry.org/step3

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Under-Bed Bags

Purpose: prevent injury and improve safety immediately after shaking



- Cut feet and hands
- Tripping over objects
- Open jammed doors
- Help injured




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Under-Bed Bags




Essential Items:

- Sturdy shoes
- Flashlight/batteries or miners light
- Work gloves
- Glasses

- Secondary Items:
- Hard Hat w/ miners light
- Protective clothing
- Crow Bar
- Whistle
- First Aid Kit
- Water
- Face Mask








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How to Signal Rescuers

- Teach everyone in your household to use emergency whistles and/or to knock three times repeatedly if trapped.
- Rescuers searching collapsed buildings will be listening for sounds.
- Keep one in every room of the house, car, pocket, etc.



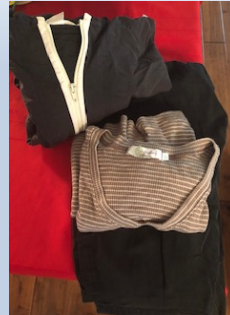



TAP, TAP, TAP...

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Immediately After an Earthquake

- Put on protective clothing
 - Long pants, long sleeved shirt
- Check for injuries – help others
- Smell gas – turn off
- Turn off water to the house
- Place Help or OK sign in the window



- **Grab “Go Bag”** and take to neighborhood meeting place
- If near water, go to high ground

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Remain Connected: Personal Support Team

AT LEAST 3 PEOPLE

Who can come to your assistance immediately

Practice:

- How to assist you
- Use of assistive devices
- Evacuating you with your supplies
- Emergency Drills/Exercises



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Keep Exits and Pathways Clear

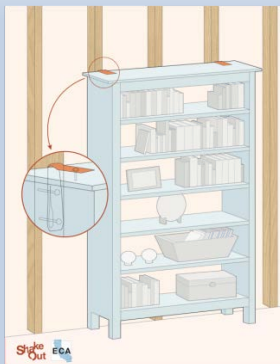


Ridgecrest Earthquake, 2019

Secure Furniture, TVs, and other Objects to Prevent Damage, Injury, and Blocked Exits

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Secure Furniture (In advance!)



Use flexible nylon straps (adhesive with Velcro or fasteners)

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Seniors and People with Disabilities Resources

- Earthquake Preparedness Guide for People with Disabilities and Other Access or Functional Needs
- Adapts messaging from ECA's *Seven Steps to Earthquake Safety*
- EarthquakeCountry.org/disability

Earthquake Preparedness Guide for Seniors, People with Disabilities, and Others with Access and Functional Needs (AFN)



Seniors, People with Disabilities, and others with Access and Functional Needs (AFN) may have additional needs before, during and after an earthquake.

Questions to consider:

- What can you do independently and where may you need assistance?
- Will your regular sources of assistance be available after a disaster?
- What if power, gas, and phone lines are not working?
- What if roads and sidewalks are impassible or your means of transportation is unavailable?
- How will you maintain supplies of water, food, medications, and other needs?

This guide follows the Seven Steps to Earthquake Safety (EarthquakeCountry.org/sevensteps) with content adapted for Seniors, People with Disabilities and AFN, as well as their caregivers.

Additional resources, including this guide, are at EarthquakeCountry.org/disability.

STEP 1 – SECURE YOUR SPACE

EarthquakeCountry.org/step1

Secure your space by identifying hazards and securing moveable items.

Earthquake shaking can move almost anything, even large or heavy items. Safe spaces are places where heavy or falling objects and breaking glass will not injure you, such as under tables or desks along inside walls. When you enter a room, look for safe spaces to protect yourself and identify emergency exits.

The more limitations you have, the more important it is to create safe spaces - especially if you cannot "Drop, Cover, and Hold On" under a desk or table. To create safe spaces in your home or office:

- Secure essential equipment such as oxygen tanks or other life support devices
- Secure furniture and electronics to wall studs
- Move heavy items to low shelves
- Hang mirrors and pictures with closed hooks
- Consider how to keep exit routes clear

Page 1 of 8 Earthquake Preparedness Guide for People with Disabilities/AFN © Earthquake Country Alliance 02/2020

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Communication - Let people know you are OK

- Register on the Red Cross "[Safe and Well](http://SafeandWell.org)" website so people will know you are okay:
- Phone service may be out. When possible, text or call your out-of-area contact and tell them where you are, **THEN STAY OFF THE PHONE**. This will allow calls to be made for emergencies.



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Stay Informed

- Check your battery-powered radio for a news station that is on the air. Listen for announcements and alerts.
- Also, listen to your NOAA Weather Radio for emergency information.
- Sign up for city, county, and/or state emergency alert systems to receive information via text, or download apps that provide similar information. (California: CalAlerts.org.)
- Your smart phones and computers are a great resource for information, as long as you have power or can recharge your batteries.



Ham Radio

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Earthquake Early Warning Options

Download from App Store:

- MyShake App
- ShakeAlertLA
- QuakeAlertUSA



earthquake.ca.gov

Push Notification:

- Wireless Emergency Alerts (WEA)
- Google Android OS



ShakeAlert.org

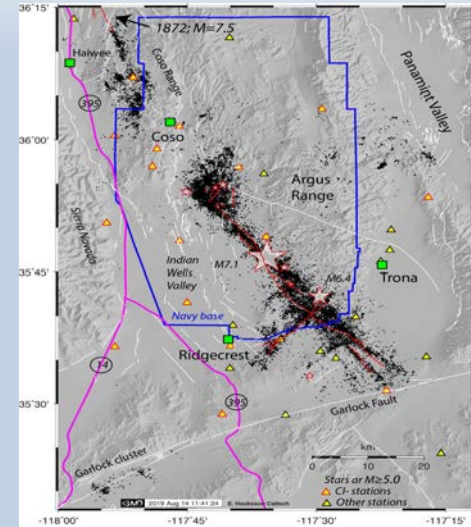
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Be Ready for Aftershocks!

Protect Yourself During Earthquakes!



EarthquakeCountry.org/step5



Ridgecrest M7.1

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Q&A

Please type your questions into the “Q&A” tool.

We will try to answer all questions, either in writing or via discussion “live”

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EarthquakeCountry.org/SaferAtHome

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2019 M7.1 Ridgecrest earthquake
Photo: Katherine Kendrick, USGS

After the Quake

Understanding Aftershocks

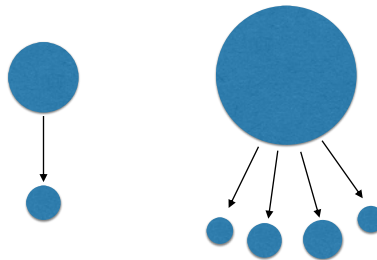


Dr. Morgan Page
U.S. Geological Survey
Pasadena CA

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How scientists model aftershocks (like epidemics!)

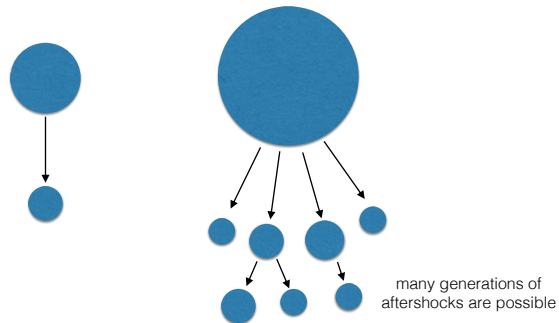
All earthquakes potentially trigger aftershocks, but big earthquakes trigger more



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How scientists model aftershocks (like epidemics!)

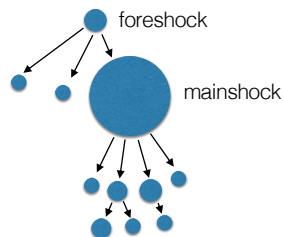
All earthquakes potentially trigger aftershocks, but big earthquakes trigger more



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How scientists model aftershocks (like epidemics!)

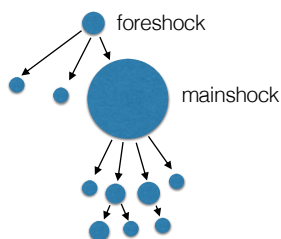
There is a small chance (~5%) that an earthquake will trigger an aftershock bigger than itself



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How scientists model aftershocks (like epidemics!)

There is a small chance (~5%) that an earthquake will trigger an aftershock bigger than itself



A foreshock is just a mainshock whose aftershock is bigger than itself

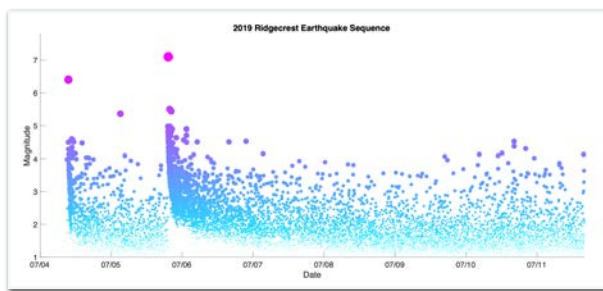
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Graphic: NYTimes, Data: USGS

2019 Ridgecrest Earthquake Sequence

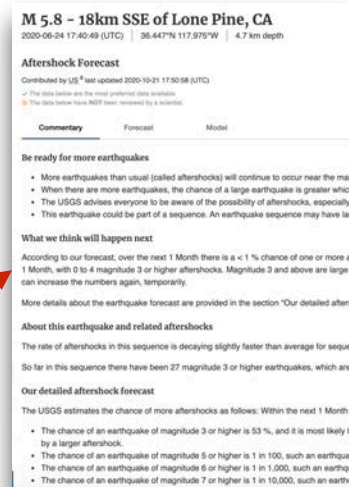
M6.4 preceded the M7.1 by 34 hours



- ★ Aftershocks become less numerous as time passes
- ★ Most aftershocks are close to the mainshock rupture area
- ★ Even late in the sequence, big aftershocks are possible

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The USGS issues aftershocks forecasts after all M5+ earthquakes in the US



available at earthquake.usgs.gov

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Is Evacuation Necessary?

How Do you Know if You Need to Go?



Glen Granholm
Vice President
Safe-T-Proof



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Is it Safe?

**THE POWER IS
OUT**

**I CAN'T SEE A
DARN THING!**



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Cripple Wall Foundation Collapse



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Look for Cracks



Should you get out?

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Vulnerable Buildings



Courtesy of JK Nakata, US Geological Survey

1989 Loma Prieta

6 of 7 collapsed buildings were four story corner apartments with first story parking



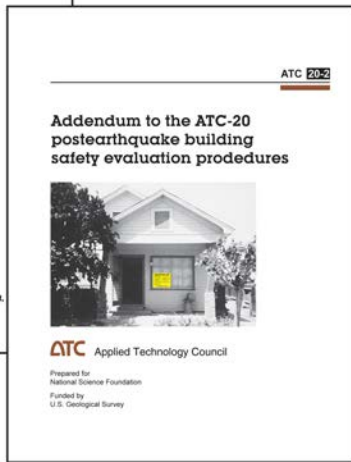
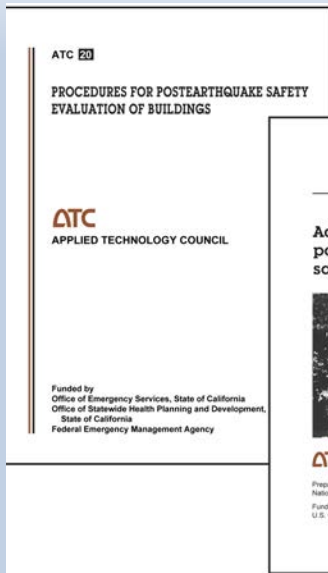
Courtesy of Jonathon Nourak

1994 Northridge

200 weak story buildings suffered damage or collapsed

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ATC Training-Tagging Your Building



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Tsunamis: Are You in the Zone?

When to Evacuate, and Where to Go



Yvette LaDuke

Tsunami Planning Coordinator

California Governor's Office of
Emergency Services



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What is a Tsunami?

Origin:

Japanese

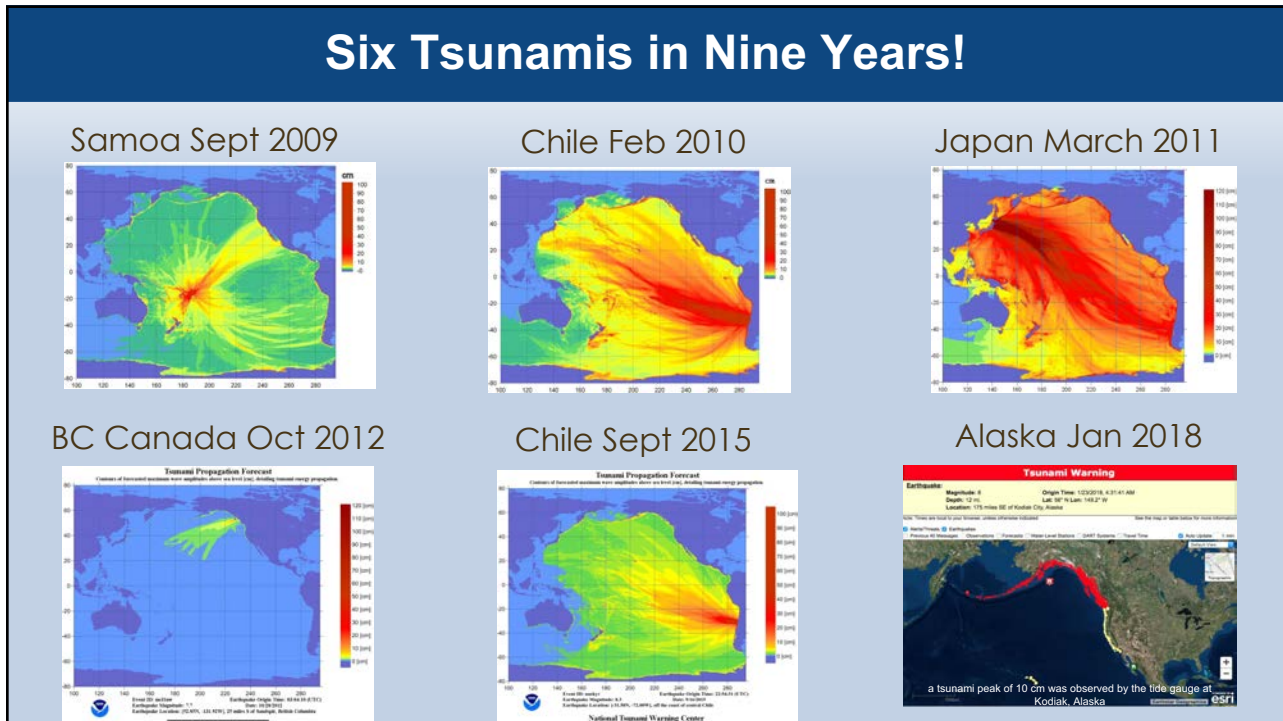
Tsu = Harbor

Nami = Wave



- A series of large ocean waves produced especially by submarine earth movement or volcanic eruption.
- Cannot be Surfed – No Face & Usually Debris-Filled

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Where Are You?

- Do you live, work or play in a Tsunami Zone? (tsunami.ca.gov)
- Do you know what to do if you are near the ocean and you feel strong shaking?

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Tsunami Hazard Signs



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Public Evacuation

Official Tsunami Warning
 Warnings are issued due to the imminent or expected threat of a tsunami typically called when forecasted tsunami amplitudes are equal to or greater than 1m (3ft). If you receive a tsunami warning:
 1. MOVE to higher ground or inland beyond the Tsunami Hazard Zone.
 2. SEEK further information from local radio, social media, or television stations.
 3. FOLLOW directions from emergency personnel. DO NOT CALL 911.

Get connected
 City of Hermosa Beach
www.hermosabeach.gov
 Twitter: @hermosabchcity
 Facebook: CityofHermosaBeach
 Register for South Bay Alerts (911 feed):
 Text "ALERTSB" to 988777

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Local Tsunami Threat

Natural Warning Signs

- **Feel** – Strong Earth Shaking
- **See** – Water Receding, Exposing Sea Floor
- **Hear** – Loud Ocean Roar



If one or more natural warning signs occurs – go immediately to high ground or inland and stay there.

You may only have **minutes** before a tsunami arrives!

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Earthquakes Near the Ocean



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What Should I Do?

- Be Informed
- Be Prepared
- **Sign-up for Local Emergency Notifications**
- Listen to Instructions from Local Emergency Responders
- Walk the Evacuation Route if Possible (practice walking route)
- Last Resort: If You Cannot Evacuate the Area, Go to the Fourth or Higher Floor of a Sturdy Concrete/Steel Building
- If You Are Outside the Tsunami Hazard Zone – Take No Action / Stay put

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More Information – TsunamiZone.Org

The screenshot displays the TsunamiZone.org website interface. At the top, there is a navigation bar with links for Home, TsunamiZone Regions, Other Languages, Contact Us, Search, and Login. Below this is a banner image of a person running on a beach with a tsunami wave in the background. The main content area is titled "REGISTER YOUR TSUNAMI PREPAREDNESS ACTIVITIES" and includes links for "ESPAÑOL" and "FRANÇAIS". It provides instructions for first-time registrants and those who have registered in the past. A "BENEFITS" section lists advantages of registration, such as being counted as a participant and receiving updates. The bottom of the page shows registration forms with fields for "Who are you registering?" and "Enter your e-mail address:".

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Helping the Injured After Earthquakes



Scott O’Connell
Regional Disaster Officer
American Red Cross
Central California Region



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First things first

Who is the most important person on this call?

YOU ARE

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First steps

- Get medical help for serious injuries.
Call 9-1-1 if available
- Do not move seriously injured persons unless they are in immediate danger of further injury.



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First Aid

- Check your first aid kit for detailed instructions on first aid measures (or install the Red Cross First Aid App if you have service).
- If a person is bleeding, put direct pressure on the wound. Use clean gauze or cloth, if available.



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Hands only CPR

- If a person has no pulse, begin [Hands Only CPR](#) (cardiopulmonary resuscitation).

**BE READY TO
SAVE A LIFE**
with
Hands-Only CPR

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American Red Cross Trainings

- Take a Red Cross first aid and CPR training course.
- Take a disaster preparedness class
- Donate Blood
- Download our Emergency App



www.redcross.org

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Know Your Neighbors

- Work with your neighbors to identify who has skills and resources that will be useful in an emergency.
- Learn who may need special attention (children, elderly, disabled, etc).



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Take CERT Training

- Check with your city or county to see if there is a Community Emergency Response Team (CERT) in your area.
- If not, ask how to start one.



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Neighborhood Programs

- Learn about neighborhood preparedness programs such as:
 - Ready Your LA Neighborhood
 - Map Your Neighborhood
 - Neighborfest



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How to Prevent Further Injuries and Damage

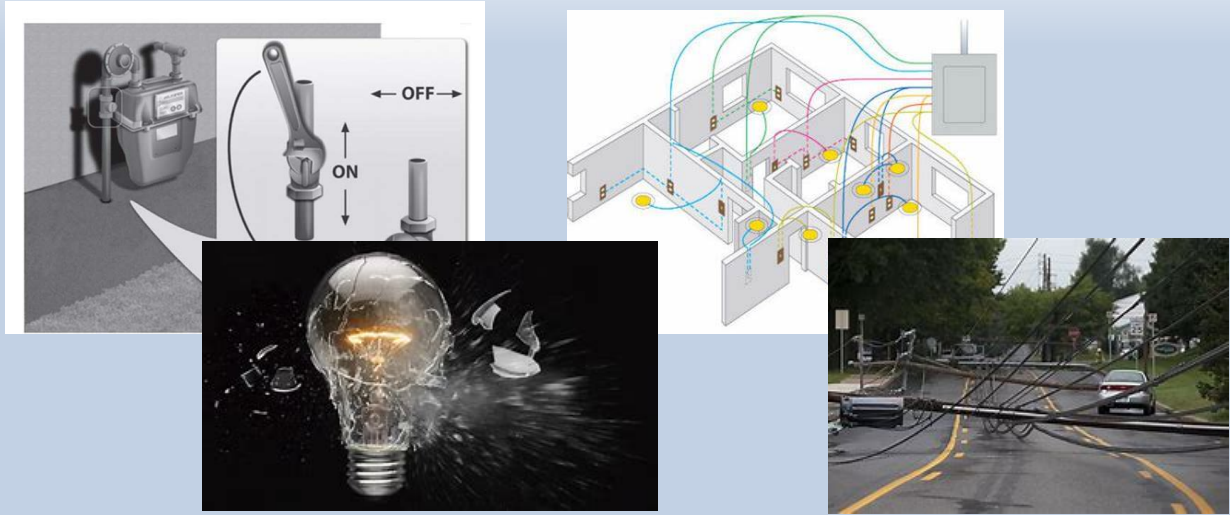


Glen Granholm
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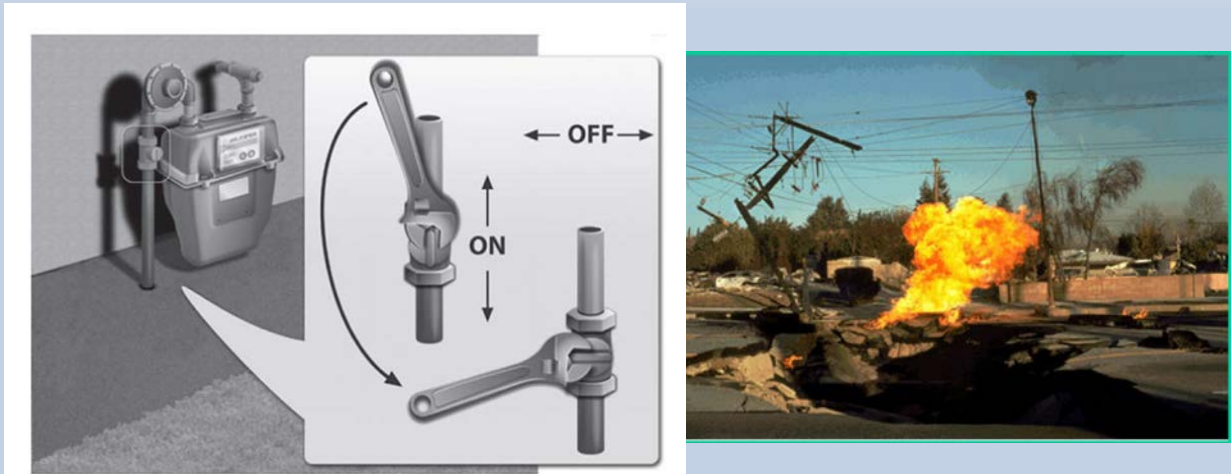
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Preventing Further Injuries and Damage



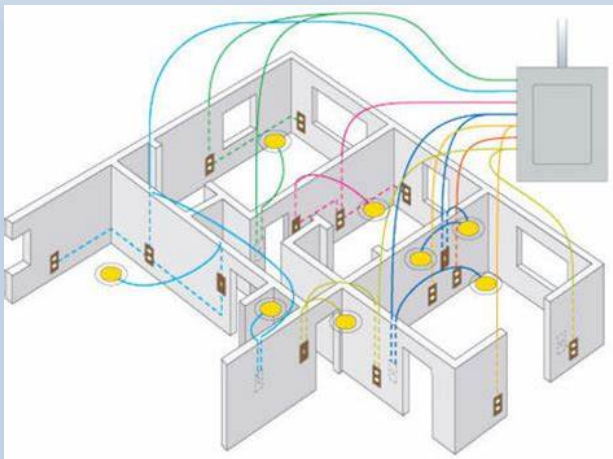
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Most People Have Gas



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Electrical Issues



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Electrical Issues



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Electrical Issues



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Dancing Fridge



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Fallen and Spilled Items



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Safe-T-Proof SeismoLatch



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Fallen and Spilled Items



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Damaged Chimneys, Walls, etc.



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Emergency Financial First Aid Kit

- Build a Kit
 - Emergency Financial First Aid Kit (EFFAK)
 - Store the kit
 - Maintain the Kit

ready.gov/financial-preparedness



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- Step 5 – Drop, Cover, and Hold On: September 30
- Great ShakeOut Earthquake Drills** **October 15**
- Step 6 – Improve Safety: October 28
- Step 7 – Reconnect & Restore: Mid-November

EarthquakeCountry.org/SaferAtHome

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ECA's Safer at Home Webinar Series

Step 6: Improve Safety (After Earthquakes)



Thank you!



Please take our survey:

surveymonkey.com/r/XNVKR2V

Questions?

info@earthquakecountry.org

**Look for the Survey (now) and Webinar Recording (next week) at
EarthquakeCountry.org/SaferAtHome**

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