



Volcanoes

A Fact Sheet prepared by the National Telecommunications Safety Panel

Introduction

Volcanic dangers include not only an eruption of a mountain and associated lava flows, but also ash fall and debris flows. There are about 550 volcanoes on earth that have erupted in historic times. Such volcanoes are considered to be geologically active. There are an equivalent number of dormant volcanoes that have not erupted in historic time, but have erupted in the past 10,000 years. Both dormant and "active" volcanoes have the potential to erupt again. On any given day, there are about ten volcanoes that are actively erupting.

Eruptions are highly variable in size and explosiveness. Small eruptions are more frequent than larger eruptions. It takes a greater amount of time to build up the necessary gas pressures needed for the larger eruptions. The global frequency of small eruptions, producing 0.001 to .01 cubic kilometers of volcanic material, is once every few months, whereas the frequency of very large eruptions, producing thousands of cubic kilometers of ash, is about once every 100,000 years. The last truly giant eruption on earth occurred at the Toba volcano on Sumatra 74,000 years ago. It produced ~2,800 cubic kilometers of ash, more than 2000 times the amount generated by the 1980 eruption of Mt. St. Helens!

If you are near a mountain range, be familiar with the following:

Before a volcanic eruption:

- Plan ahead. Have emergency supplies, food and water stored.
- Plan an evacuation route away from rivers or streams that may carry mud or debris flow.
- Keep a battery-operated radio available at all times.
- If there is an eruption predicted, monitor the radio or TV for evacuation information. Follow the advice given by authorities.

After a volcanic eruption:

- Do not approach the eruption area.
- Be prepared to stay indoors and avoid downwind areas if ash fall is predicted.
- Evacuate if advised to do so by authorities.

- Be aware of stream and river channels when evacuating.
- Move toward higher ground if mudflows are approaching.
- Follow the evacuation signs posted along roads and highways.
- Follow your company disaster response procedures.

If there is ash fall in your area:

- Protect your lungs. People who have respiratory conditions such as asthma, bronchitis, emphysema and other chronic lung and heart diseases should be particularly careful to avoid breathing ash. If ash is present:
 - ▶ Stay inside. Close doors, windows and dampers. Place damp towels at door thresholds and other draft sources.
 - ▶ Those most at risk should limit outdoor activities. Keep children and pets indoors.
 - ▶ If you have asthma or another respiratory condition – or have a child with asthma – pay attention to symptoms such as wheezing and coughing, or more severe symptoms such as chest pain or tightness, shortness of breath and severe fatigue. Stay indoors and follow your asthma management plan. Contact your doctor if you have trouble breathing.
 - ▶ Replace disposable air and furnace filters or clean permanent filters frequently.

Personal Protection Equipment to consider based on severity of eruption and ash:

- When outside, wear a single-use (disposable) facemask. Remember that these masks may not fit small faces properly. (Note: Masks may make breathing more difficult for people with respiratory conditions.) Masks to consider are 3M 8210 or other disposable (one time use) masks.
- If you wear contact lenses, protect your eyes by wearing glasses or protective goggles or by removing your contacts.

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- Wear goggles if eyes are exposed to ash.
- Remove outdoor clothing before entering a building or wear disposable clothing and remove clothing before entering a building.

Additional Safety precautions

- If you find ash in your drinking water, use an alternate source of drinking water such as purchased bottled water.
- Put stoppers in the tops of your drain pipes.
- Protect dust-sensitive electronics.
- Keep roofs free of ash in excess of 4 inches.
- Wash vegetables from the garden or food that may have come in contact with ash before eating.
- Minimize travel — ash may be harmful to your vehicle.
- Frequently change oil and air filters in your automobile and operating equipment.

Additional Information:

U.S. Geological Survey

<http://volcanoes.usgs.gov/ash/>

Red Cross

http://www.redcross.org/static/file_cont254_lang0_121.pdf

Center for Disease Control and Prevention

<http://www.bt.cdc.gov/disasters/volcanoes/>