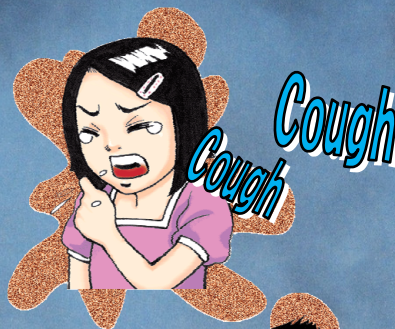



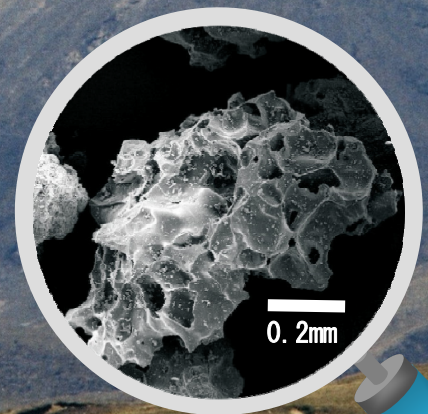
# Protect Yourself from Volcanic Ash

Volcanic eruptions often generate ash plumes, which are something like smoke from a chimney, rising high into the atmosphere. Ash plumes contain a large number of volcanic ash particles which spread to large areas downwind from a vent.

Volcanic ash causes relatively few serious health problems, but may cause asthma symptoms and irritation to eyes for some people. Accordingly, we recommend you protect yourself from volcanic ash by wearing goggles and masks.



**Micrograph of ash particles**   
Volcanic ash is composed of fine particles of fragmented volcanic rock. The sharp and crystalline structure of ash particles cause them to scratch and irritate eyes and lungs.



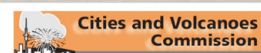
## Information for parents

This leaflet is a brief summary of two pamphlets entitled “The health hazards of volcanic ash –a guide for the public–” and “Guidelines on preparedness before, during and after ashfall”, which have been prepared by the International Volcanic Health Hazard Network (IVHHN), IAVCEI’s Cities and Volcanoes Commission, GNS Science and the United States Geological Survey (USGS). If you would like to have the original pamphlets, please visit the IVHHN website.

Photo: GNS Science, NIED;

Illustration: Tatsuya Hozoin;

Design: Yasuhiro Ishimine



For further information about the health effects of volcanic emissions, please visit the IVHHN website:

<http://www.ivhhn.org>

## Wear goggles

- \* Do not rub eyes; instead, wash them with clean water if ash particles get into the eyes.
- \* Wear corrective glasses instead of contact lenses.

The presence of ash particles in an eye may make it painful, itchy or bloodshot. Sticky discharge and tears are also common symptoms. **Acute conjunctivitis** caused by scratches in the front of eyes due to ash particles leads to redness, burning of the eyes, and photosensitivity.



## Keep volcanic ash out of buildings

- \* Stay indoors to avoid unnecessary exposure to ash and keep all doors and windows closed when ash is in the air.
- \* Remove outdoor clothing before entering a building so as not to bring in ash into clean areas.

Place damp towels or tape at door thresholds and other draft sources. Lightly water down ash deposits before they are removed by shoveling.



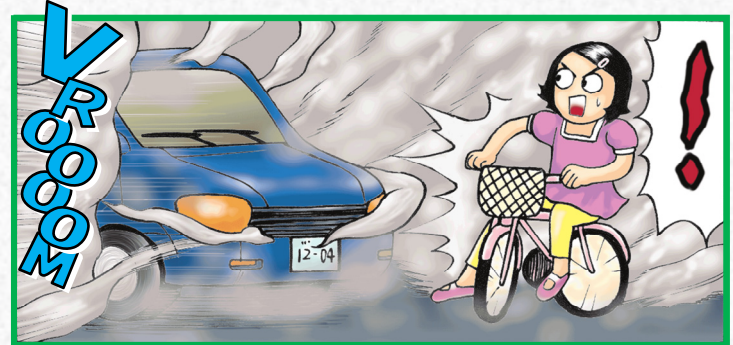
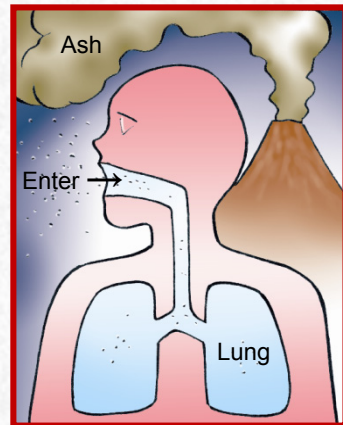
## Put on a mask

- \* Wear a dust mask before going outdoors or starting to clean.
- \* Avoid strenuous play or running when ash is in the air, since this leads to heavier breathing and draws small particles more deeply into the lungs.

Ash particles are so fine that they are breathed deep into the lungs. With high exposure, people may experience chest discomfort and increased coughing. Common symptoms include a runny nose, increased production of sputum, and sore throat.

People with **asthma** or **bronchitis** may suffer bouts of coughing, tightness of the chest and wheezing. People with **severe heart problems** need to be aware of the risk of exposure to ash.

If no mask is available, cover your nose and mouth with a fabric mask improvised from handkerchief or cloth. Dampening the fabric with water will improve its effectiveness.



## Beware of accidents

The reduction in visibility from airborne ash may cause accidents. This danger is compounded by ash covering roads. Not only are road markings covered up, but thin ash layers are **very slippery, reducing traction**. Thick deposits of ash may make roads impassable.

## Protect your skin

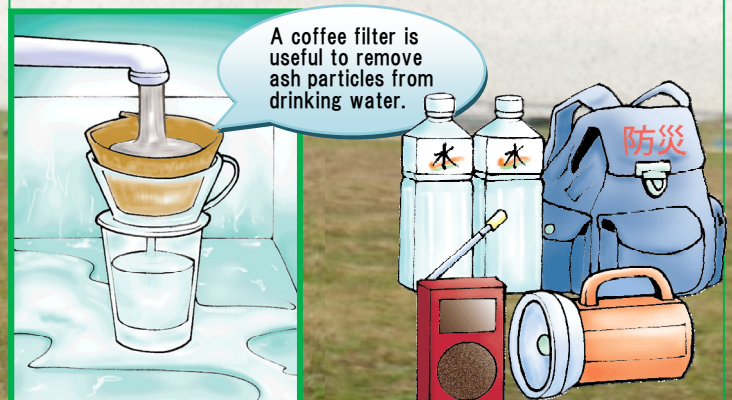
Volcanic ash can cause skin irritation for some people. Symptoms include itching and reddening of the skin and secondary infections due to scratching.

## Prepare for water shortages and power cuts

- \* Stock essential items before an ashfall.
- \* Use water sparingly.

Ashfall can cause contamination of water, damage of water supply equipment, and power cuts. Keep enough drinking **water** (one gallon, or 3-4 litres, per person per day), a battery-operated **radio**, and **torches (flashlights)** in your home. Even if water supplies are available, try to use water sparingly because there is likely to be extra water demand for clean-up, resulting in water shortages.

If there is ash in your water, let it settle and then use the clear water. It is usually safe to drink water contaminated with ash, but it is better to **filter off** the ash particles before drinking. Ash increases the chlorine requirement in disinfected water which can be **microbiologically unsafe** to drink.



Goggles

Dust Mask

Long sleeve shirt & pants