

## Emergency Water Sources

After a disaster, it is possible that water supplies will be temporarily cut off or become contaminated. Because you must have water to survive, it is important to know how to locate and purify drinking water to make it safe.

Because water is so important to human survival, never ration it. Drink at least 2 litres per day, as long as supplies last, and look for alternative sources.

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### Water sources

**In the home:** Melt ice cubes, and use water from the hot-water tank, the toilet tank (not the bowl) and water pipes.

**Hot water tank:** Turn off the power that heats it, and let the tank cool. Then place a container underneath and open the drain valve at the bottom of the tank. Don't turn the tank on again until water services are restored.

**Toilet tank:** The water in the tank (not the bowl) is safe to drink unless chemical treatments have been added.

**Water pipes:** Release air pressure into the plumbing system by turning on the highest faucet in the house. Then drain the water from the lowest faucet.

**Water beds:** Avoid water from water beds as a source for drinking water. Pesticidal chemicals are in the plastic casing of the bed and chemicals have probably been added to the water to prevent the growth of algae, fungi, and bacteria. The water is safe only for hand-washing and laundering.

**Outside the home:** Rain water, spring water, and water from streams, river, lakes, and coiled garden hoses can be used after it is purified. Avoid water with floating material, an odor or a dark colour. Use saltwater only if you distill it first.

## **Purifying water**

Note: Water that local officials report has been contaminated with toxic chemicals or radioactive materials cannot be purified using home decontamination methods.

Boiling and chemicals are two ways to purify water. Any water that is obtained from sources outside the home or water that does not appear clear should be sterilized. Non-sterilized water may be contaminated with the parasite Giardia.

**Straining water:** Straining water containing sediment or floating material through a cloth or paper filter before beginning the purification process.

**Heat sterilization:** Boiling water is the preferred method of purification because disease-causing microorganisms cannot survive the intense heat. Bring water to a rolling boil for 10 minutes. Pour the water back and forth from one clean container to another to improve the taste. Adding a pinch of salt could also help.

**Chemical sterilization:** In some situations, boiling may not be an option. The alternative is to treat the water chemically. Plain household chlorine bleach may be used. Be sure the label states that hypochlorite is the only active ingredient. Bleach containing soap or fragrances is not acceptable. With an eye dropper, add 8 drops of bleach per litre of water (16 if the water is cloudy), stir and let stand. After 30 minutes the water should taste and smell of chlorine. At this time it can be used. If the taste and smell (and appearance in the case of cloudy water) has not changed, add another dose and let stand. If after one half hour the water does not have a chlorine smell, do not use it.

**Purification tablets:** Purification tablets release chlorine or iodine. They are inexpensive and available at most sporting goods stores and some drugstores. Follow the package directions. Usually one tablet is enough for one quart of water. Double the dose for cloudy water.

### **More rigorous purification methods**

While the three methods described above will remove only microbes from water, the following two purification methods will remove other contaminants. Distillation will remove microbes, heavy metals, salts, most other chemicals, and radioactive dust and dirt, called radioactive fallout. Filtering will also remove radioactive fallout. (Water itself cannot become radioactive, but it can be contaminated by radioactive fallout. It is unsafe to drink water that contains radioactive fallout.)

**Distillation:** Distillation involves boiling water and then collecting the vapor that condenses back to water. The condensed vapor will not include salt and other impurities. To distill, fill a pot halfway with water. Tie a cup to the handle on the pot's lid so that the cup will hang right-side-up when the lid is upside-down (make sure the cup is not dangling into the water) and boil the water for 20 minutes. The water that drips from the lid into the cup is distilled.

To make a fallout filter, punch holes in the bottom of a large bucket, and put a layer of gravel in the bucket about 1-1/2 inches high. Cover the gravel with a towel cut in a circle slightly larger than the bucket. Cover soil with a towel, place the filter over a large container, and pour contaminated water through. Then, disinfect the filtered water using one of the methods described above.

**Containers:** Store the water in a clean and sanitary glass or plastic container. Plastic containers are good because they are lightweight and unbreakable. Metal containers should be considered as a last resort because they may corrode and give water an unpleasant taste.