

## EMERGENCY DRINKING WATER TREATMENT

Where would you get water if none came out of your tap? Most people take good water for granted, but if an emergency disrupts your normal drinking water supply you may have to find your own. **If you drink unsafe water you will soon be spending most of your time and energy treating sick people, including yourself.** Water from ponds, lakes, streams, rainwater runoff from roofs, dirty snow, wells that have been flooded or damaged or municipal (city) water systems that have been damaged or polluted **MUST** be treated to make the water safe to drink.

Questionable water must be treated by boiling or through the use of chlorine or iodine products that you may have in your home. If the water has gasoline, oil, antifreeze, soap, detergent, pesticides or other poisonous chemicals in it, you cannot drink it at all. You will have to find another water source.

To make water safe to drink you must first remove as much of the solid stuff from it as you can. You can pour the water through a coffee filter, or several layers of clean cloth, like a towel or t-shirt. You can also strain the water through a bucket with small holes in the bottom. Put a foot of compressed clean dry grass or straw or six inches of clean sand inside and press it down so that the water cannot flow around it, but has to flow **through** it. This will remove most of the solid stuff so you can more safely treat your water. Change the grass or sand at least every other day.

**BOILING WATER** If you have fuel then water for drinking, cooking and washing dishes can be boiled. This will kill all harmful bacteria, viruses and other microorganisms that can make you sick. Any food container that won't melt can be used, but large cooking pots work best. **All water should be brought to a rolling boil (lots of breaking bubbles) for at least one minute.** (High altitude: For every one thousand feet above sea level you are at, add one minute to the boiling time.) If you are going to drink the water, let it cool first. The water will taste "flat" so it may taste better if you pour the water from one clean container into another, or shake it vigorously to put some air into it. Keep the water in clean containers or it will become contaminated and need to be boiled again before you can drink it.

**CHLORINE** If you have plain, **unscented, uncolored** laundry bleach you can use it to disinfect drinking water. For every gallon of **clear** water add eight drops of bleach, stir well and wait thirty minutes before drinking. If the water is **cloudy** or **cold** then double the amount of bleach (16 drops) added to the water. After the thirty minutes are up you should be able to faintly smell the bleach in the water. If not, add eight more drops, stir and wait another fifteen minutes.

If you have a swimming pool, hot tub, or jacuzzi and have dry chlorine you may be able to use it to disinfect water. Read the chlorine container label carefully. **Calcium hypochlorite** should be the **only** active ingredient and nothing else. If so, make a disinfectant solution by mixing one-half teaspoon of the dry chlorine into 2-1/2 quarts of clear water until it is dissolved. Don't drink it, but use one cup of this solution to disinfect five gallons of **clear** water. If the water is **cloudy** or **cold**, use two cups in five gallons. Stir well and let sit for thirty minutes before using. When the time is up, the water should smell faintly of chlorine. If it doesn't, add another cup of solution, stir and wait fifteen minutes.

If you don't like the smell or taste of the chlorine let the water sit open on the kitchen counter overnight or pour from one clean container into another until the smell is gone.

IODINE If you don't have bleach, but do have **tincture of iodine** you may use it to disinfect water. The label should say that it is "2% US Pharmacopoeia (USP) strength". Add eight drops of iodine to every quart of **clear** water, stir and wait fifteen minutes before using. If the water is **cloudy** or **cold**, add eight drops and wait **thirty** minutes before using.

**WARNING:** DON'T drink water treated with iodine if you are pregnant or have thyroid problems. Anyone with a **weak or suppressed immune system** should use **only** boiled water because they can get diseases that healthy people will not get from iodine or chlorine treated water. **Snow** should be melted first in clean containers before using it as a source of drinking water. If the snow is dirty, disinfect it using one of the methods mentioned above.

## **EMERGENCY TOILETS AND GARBAGE DISPOSAL**

What will you do if your toilet stops flushing and you can't get anyone to take your garbage away? If an emergency causes your toilets or garbage service to stop working you **MUST** find a way to safely dispose of the human waste (sewage) and garbage yourself. **If you don't, you will soon be spending most of your time and energy treating sick people, including yourself.**

### **The three most important things to do are:**

#1 – Bury or store all garbage and human waste **at least** 100 feet away from water wells or open water.

#2 - Keep flies, roaches and animals out of the sewage and garbage;

#3 - Wash or clean your hands whenever you handle something dirty and BEFORE you handle anything that you will be putting into your mouth or someone else's mouth.

TOILETS #1 - If the toilet bowl and seat in your home are still usable (not wrecked) scrub the bowl clean using one part of laundry bleach to ten parts of water (10:1). When clean, drain the bowl and dry it. Line the bowl with a plastic or paper bag. Line the inside of the first bag with a sturdy plastic bag and lay the toilet seat on it to keep it open. Use the toilet as you normally do. After every use, sprinkle the waste with the bleach/water solution mentioned above or cover it with a layer of sawdust, wood shavings, lime, dry dirt, grass clippings, etc. Limiting the liquids that go into the bowl will make it easier to change the bags. When the bag is full or you can't stand the smell anymore, carefully tie the top of the bag tightly closed, remove it and replace with another bag. Dispose of the waste using the instructions below.

#2 - If your toilet bowl is not usable, use a five gallon bucket, wooden box or some other container sturdy enough to sit on. Sit the seat from your toilet on the bucket or make one from layers of heavy cardboard glued together, two boards laid across the top with a gap between them or cut a seat from plywood. Line with bags as outlined in #1 above. Dispose of the full bags using the instructions below.

#3 - If the emergency will only last for a day or two, you can use "cat holes" outside. These are small, one-time personal use holes you dig in the ground and squat over. The hole should be deep enough to cover your waste at **least six inches deep** when filled. Do not do this any closer than **100 feet** from open water or water wells or the germs in the sewage will get into the water.

#4 - If the emergency will last more than a week and your toilet or bucket commode no longer will do the job you need to make a latrine. Use a shovel or post-hole diggers to dig a pit four to six feet deep and about one foot wide. Place a bucket, box, barrel or anything with a hole in it that you can sit on over the pit. Whatever you use **must** cover the pit tightly so that flies cannot get in while no one is using it. The seat and box must be cleaned regularly with the bleach water solution mentioned above and kept tightly covered when not in use. When the pit fills to within eighteen inches of the top, fill the hole in with clean dirt and mound it over. Cover the mound to keep animals from digging it up.

**DISPOSING OF WASTES:** All wastes must be buried **no closer than 100 feet** from the nearest open water or water well or the germs will get into the water. Buried wastes must be covered with at least eighteen inches of dirt and protected from animals digging it up.

GARBAGE is trash that has food or anything else in it that would make attract insects, rats and other animals. It should not be allowed to accumulate where these pests can get into it. If garbage service is expected to resume in a few days then dry garbage should be tightly sealed in bags or kept in tightly covered garbage cans. Liquid wastes that don't have a lot of fat in them can be poured out outside if kept **more than 100 feet** away from open bodies of water and water wells. Liquids that do have a lot of fat should be buried to prevent attracting flies and roaches.

If garbage service is out for more several weeks and you are unable to store it, then it should be buried. Garbage should be buried **no closer than 100 feet** from open water or water wells. Crush containers to make them smaller. Garbage must be covered by at least eighteen inches of dirt. If burial is not possible then it will have to be burned. To burn garbage you must use a metal barrel with holes in the bottom and a grate or screen over the top to act as a spark arrester to prevent wildfires. Only dry garbage should be burned. Wet garbage should be buried.