WATER USE AND STORAGE

Clean water is one of the most important things to have access to in an emergency.
If your water supplies begin to run low, remember:

- Never ration water!
- Drink the amount you need for today, and find more for tomorrow.
- Minimize the amount of water your body needs by reducing activity and staying cool if possible.
- Stay clam. You can find water almost anywhere if you think about where it is hiding.
- Use only water that has been disinfected for drinking, cooking and brushing teeth.

Water is essential for survival. Stocking water reserves and learning how to purify contaminated water should be among your top priorities in preparing for a disaster. At the very minimum, you should store a 3 day emergency supply of water for each member of your family. Since everyone's needs differ depending on age, physical condition, activity level, diet and climate, the amount of water you store may vary from established guidelines. As a general rule, you will need 2 quarts for drinking and 2 quarts for cleaning and bathing purposes per day, per person (or pet). When you consider that a person normally uses in excess of 140 gallons of water per day for drinking, bathing, laundry, dishes, watering lawns, etc., this isn't a lot of water! If you have the room to store more you probably will want to do so.

Think about storing water as a priority rather than an inconvenience. Water is relatively inexpensive to store and certainly not difficult to do - but certainly the time to store it is now. Water that we take for granted when things are normal, in an emergency becomes absolutely critical. This is an item you can't afford to overlook in your preparedness preparations. Studies show that if water is bacteria-free and is stored in clean containers it will stay safe for several years. It is a good idea, however, to periodically check your water for purity and taste. And every few years it's a good idea to change it. One of the things that affect the taste of water is it "going flat". This occurs because of the oxidation that takes place as it sits. You can improve the taste by pouring the water back and fourth between containers to aerate it or by beating it with a hand egg beater.

HOW TO PREPARE IN ADVANCE: store at least a three day supply of water for each member of your household in a dark, cool place.

- Purchase and store gallons of drinking water from your local grocer OR
- Collect the water from a safe supply (tap water, bottled, etc.)
    - Thoroughly washed containers such as 2 liter soft drink bottles are good. If you use two-liter soda pop bottles, you can store these under beds, in closet corners, behind the sofa, and many other places.
    - Seal water containers tightly, grab a sharpie and label with date.
    - Never use a container that previously contained toxic materials such as pesticides, solvents, chemicals, oil or antifreeze!
    - To economize many people are tempted to use empty milk jugs, but don't plan to store water in these for more than 3-4 months. They are bio-degradable and will break down within 6 months. Not only will you lose your water, but if they are stored near food or other items, they may damage them as well.

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WHAT TO DO IN AN EMERGENCY

You have several sources of water already in your home that can be tapped in an emergency.

- Your hot water heater (use a garden hose attached to bottom drain to empty in a controlled manner)
- Toilet tanks, (not bowl) don't use water from a tank if it contains colored disinfectant, it is poisonous
- Water pipes throughout the home (drain and capture in containers from lowest faucet point in the home, and this may be a hose spigot outside as opposed to a laundry sink or basement bathroom)
- Ice in the freezer
- Outside garden hoses
- Rain gutter downspouts during storm
- Fish tanks (yuck, but hey, it's you or them)
- Garden fountains
- If you're looking for water outside the home, well water is the preferred source of drinking water. If it is not available and river or lake water must be used, avoid sources containing floating material and water with a dark color or an odor. Generally, flowing water is better quality than stagnant water.

HOW TO TREAT WATER FOR SAFE USE: There are only a few ways to prepare water for consumption. First, you may have to **filter** the water, and then you must **purify** it.

Filter murky or colored water through clean cloths, coffee filters, pillow case covers, paper towels, or even a cotton ball plug in a kitchen funnel. If you can't filter it, then allow it to settle. It is better to both settle **and** filter if possible. After filtering until it is clear, or allowing all dirt and other particles to settle, draw off the clean and clear water for disinfection. Water prepared for disinfection should be stored only in clean, tightly covered, containers, not subject to corrosion.

Boiling and chemical treatment are two general methods used to effectively **disinfect** filtered and/or settled water.

- Boiling is the safest way to purify water. Bring the water to a rolling boil for 3-5 minutes. Let the water cool before drinking.
- You can also treat water with **liquid household bleach**, such as Clorox or Purex. Household bleach is typically between 5% and 6% chlorine. Avoid using bleaches that contain perfumes, dyes and other additives. Be sure to read the label on the bottle if in doubt.
    - Place the water in a clean container. Add the amount of bleach according to the table below:

Available Chlorine	Drops per Quart/Gallon of Clear Water	Drops per Liter of Clear Water
1%	10 per Quart - 40 per Gallon	10 per Liter
4-6%	2 per Quart - 8 per Gallon (1/8 teaspoon)	2 per Liter
7-10%	1 per Quart - 4 per Gallon	1 per Liter

- Mix thoroughly and allow to stand for at least 30 minutes before using. You should wait for up to 60 minutes if the water is cloudy or very cold.
- When ready for use, the water should have a slight chlorine odor. If not, repeat the dosage and allow the water to stand for an additional 15 minutes. If the treated water has too strong a chlorine taste, allow the water to stand exposed to the air for a few hours or pour it from one clean container to another several times.

- You can use **granular calcium hypochlorite** (spa or swimming pool sanitizer) to disinfect water. Add and dissolve one heaping teaspoon of high-test granular calcium hypochlorite (approximately ¼ ounce) for each two gallons of water, or 5 milliliters (approximately 7 grams) per 7.5 liters of water. The mixture will produce a stock chlorine solution of approximately 500 milligrams per liter, since the calcium hypochlorite has available chlorine equal to 70 percent of its weight. To disinfect water, add the chlorine solution in the ratio of one part of chlorine solution to each 100 parts of water to be treated. This is roughly equal to adding 1 pint (16 ounces) of stock chlorine to each 12.5 gallons of water or (approximately ½ liter to 50 liters of water) to be disinfected. To remove any objectionable chlorine odor, aerate the disinfected water by pouring it back and forth from one clean container to another.
- You can use **chlorine tablets** to disinfect filtered and settled water. Chlorine tablets containing the necessary dosage for drinking water disinfection can be purchased in a commercially prepared form. These tablets are available from drug and sporting goods stores and should be used as stated in the instructions. When instructions are not available, use one tablet for each quart or liter of water to be purified.
- You can use **tincture of iodine** to disinfect filtered and settled water. Common household iodine from the medicine chest or first aid kit may be used to disinfect water. Add five drops of 2 percent U.S. or your country's approved Pharmacopoeia tincture of iodine to each quart or liter of clear water. For cloudy water add ten drops and let the solution stand for at least 30 minutes.
- You can use **iodine tablets** to disinfect filtered and settled water. Purchase commercially prepared iodine tablets (like Potable Aqua) containing the necessary dosage for drinking water disinfection at drug and sporting goods stores. Use as stated in instructions. When instructions are not available, use one tablet for each quart or liter of filtered and settled water to be purified.

There are a vast number of hand operated filters available that filter, strain and disinfect all in one unit. Some of these operate by simply pouring in the initial water into the top container and waiting for gravity to do the job leaving water ready to use in the bottom container over a modest period of time. Yet, others are hand pump operated and perform "on demand" for near-immediate use. The prices for either of these filter systems run from $10 to $1,000.

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