

5 STEPS TO GATHERING YOUR WATER SUPPLY

Having a supply of clean water for your family in case of emergency is one of the most important aspects of preparedness. A healthy adult can only survive 3-5 days with out water. It is one of the easiest and cheapest products to obtain and store; **yet water is one of the hardest items to acquire in times of crisis.** Essential steps to successful water storage involve knowing how much you need, using proper storage containers, being prepared to purify your water should the need arise, and replacing stored water with fresh water on a regular basis.

A variety of water storage containers are available, ranging from 1.5 gallon containers to 55 gallon drums. Choose the type and size containers which best meet your family's needs.

1. STORE ENOUGH WATER

- Store at least a two week supply for each person in your family.
- Begin by storing one gallon per person, per day or 14 gallons per person. This is considered the minimum amount required and will **ONLY** meet drinking and basic hygiene needs.
- Supplement this with water to be used for toilet flushing, dishwashing and hygiene.
- Recommended total water storage: Two gallons per day per person. This allows water for drinking, hygiene, dishwashing, toilet water, etc.

2. STORING THE BULK OF YOUR WATER SUPPLY

- Use sanitized food grade polycarbonate containers. Look on the bottom of the container: #7 indicates the quality is excellent for water storage. The higher the number the better.
- Choose the container sizes which make lifting and storing easy for your family. Containers range from 1.5 gallons to 15 gallons.
- Include a 5 and 15 gallon container in storage to gather and transport water.
- Consider using a 55 gallon drum to store supplemental water used for hygiene, dishwashing and toilet water.
- Make sure to have a pump or siphon to remove water from drum as needed, and properly prepare the container before using. (see **How to purify water for storage** below)

3. STORING SUPPLEMENTARY WATER

- Commercially bottled water is an excellent source of additional water storage if stored in a dark place to extend shelf life.
- Two liter soda bottles make acceptable containers for additional water. Clean, sanitize and fill with water as you use them. Rotate water once each year.

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3. STORING SUPPLEMENTARY WATER (CONTINUED)

- Never** use empty milk jugs to store water. They are designed to be disposable, are bio-degradable and will break down.
- Never** place any water storage in direct sunlight. Rule of thumb – the darker the room the better.
- Never** store water in glass water containers as they may break and leave you with no water and a pile of broken glass.
- Never** store water in 5 gallon Mylar bags in a box. These leak and are easily chewed through by rodents.
- Never** use plastic water bottles with #1 on the bottom for long term storage. These are made of low grade plastic which leach into your water, causing contamination and distasteful water.

4. BE PREPARED TO PURIFY WATER

Utilize one or more of the methods below to clean and sanitize water:

- Strain water through a clean cloth or paper towel.
- Boil water in a large pot for at least 5 - 10 minutes. This is your best option.
- If boiling is not possible, add household bleach to water. Use 1/8 teaspoon per gallon; if water is cloudy use ¼ teaspoon. Stir and let stand for 30 minutes.
- Use 2% tincture of iodine from your medicine cabinet. Add 20 drops per gallon; 40 drops if the water is cloudy. Let stand for 30 minutes.
- Water purification tablets are a safe and very simple solution.
- Commercial water purification systems can also be purchased. (i.e. camping water filters)
- To improve the taste of purified water, aerate by pouring back and forth several times between two containers.

5. MAINTAIN YOUR WATER SUPPLY

- Do rotate and use your water supply each year. If you don't want to rotate, make sure you have a good water filter and know how to use it.
- Water in polycarbonate #7 containers can be stored for up to two years in a garage.
- Water in polycarbonate #7 containers can be stored for up to five years in a cool, dark room.
- Water in soda bottles should be rotated once a year.
- Water in 55 gallon drums should be rotated once a year.

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WATER STORAGE GUIDELINES

HOW MUCH WATER?

For Drinking:

Store at least a two week supply of water. One gallon per person per day, or about fourteen gallons per person will meet **minimal** drinking, food preparation and hygiene needs. In hot environments the amount of water needed can double. Children, nursing mothers and ill people will need more water.

For Hygiene and Toilet Water:

One gallon per person per day does NOT include water for bathing, laundry, dishes, and toilet water. An additional one-half to one gallon of water is recommended to meet these needs. **Ideally store two gallons per person per day.**

Never Ration Water:

If your supplies begin to run low, drink the amount you need today and try to find more for tomorrow. Minimize the amount of water your body needs by reducing activity and staying cool. A clean button or pebble in your mouth decreases the sensation of thirst. If water is undrinkable, soak cloths in water, wring them out and place on the skin. The skin will absorb water.

HOW TO STORE WATER SAFELY

For Drinking and Daily Hygiene:

Store water in portable, food grade containers to ensure your family will have the best tasting, safest drinking water. Common sizes available are 1.5 gallon, 2.5 gallon, 5 gallon and 15 gallon containers. Many water storage containers are made of certain types of low grade plastic which slowly leach into the water. While this is a slow process, accelerated by exposure to sunlight, water can become distasteful and contaminated over time. Look for polycarbonate containers with #7 on the bottom, indicating a safe, food grade material. The higher the number the safer the material.

Two-liter pop bottles are acceptable containers for water storage and cost nothing. Clean them properly and fill them with water as you empty them. You will need to rotate this water once a year as these types of bottles are usually medium grade plastic and do leach.

Never use empty milk jugs to store water. They are designed to be disposable, and are bio-degradable and will break down. Whatever is stored in a container is absorbed into the walls of the container. Rinsing repeatedly or even scrubbing doesn't necessarily remove the contaminants. However, when another liquid like water is introduced into the container and stored, the original liquids migrate from the walls of that container into the new liquid, contaminating it. Using empty milk jugs is dangerous because it is a perfect environment for bacteria to grow. This can happen even if the water has been treated properly.

Commercially packaged water is inexpensive and readily available. If freshly packaged and stored in a cool, dark place, it should last several years. Check the sell by date on the package to ensure it has not already been sitting on the shelf awhile. Check frequently to be sure the container has not leaked.

For Hygiene and Toilet Water:

Supplemental water, used for toilet water, dish washing, bathing, etc. can be stored in a 55 gallon water drum. Remember – if your water is not running, toilets will not flush unless the tank is manually refilled with water. Sanitation is preserved when, what seems like a small issue, can be easily dealt with by proper preparation. Fifty-five gallon drums do tend to leach, so are not recommended for storing drinking water unless the water is rotated once a year. Be sure to purchase a siphon or pump to remove and use water from barrel.

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HOW TO STORE WATER SAFELY (CONTINUED)

To Transport Water:

Use a couple of different sizes of water storage containers as different situations may require variations of use. If you are sheltering in place your 5 gallon containers for drinking and 55 gallon drum for supplemental water work well. If you should you need to transport water should your normal water source is disrupted, such as after an earthquake, hurricane, etc., you may be relying on a secondary water source such as a water truck, stream, etc. for refills. Bear in mind water weighs approximately 8 lbs. per gallon. A fifty-five gallon drum is going to weigh about 440 lbs. While smaller containers of 1 to 5 gallons hold too little water and require too many refill trips, a couple of 15 gallon containers are a more practical size to fill and can easily be put into a wheelbarrow or child's wagon and transported. In case of evacuation, one, five and fifteen gallon containers are good options. Consider the room available in your car, as well as your capability for lifting and carrying the container.

Swimming Pool Water:

Your swimming pool is a good source of back up water. To ensure it's always in tip top condition, keep the water treated and the cover on. The maintenance of the free chlorine residual will prevent establishment of any microorganisms. The maintenance level should be kept about 3-5ppm free chlorine. Pool water should be used as toilet water or non-drinking water.

HOW TO PURIFY WATER FOR STORAGE

New polycarbonate containers should be sterile when purchased. We recommend you rinse them with tap water a few times; then fill to the brim with the water your family typically drinks and seal.

When using a 55 gallon container you will need to remove the plastic taste from the container to make the water more palatable. Add about 2/3 cup of baking soda to the container. Fill it full of water, leaving the bung (stopper) off to let the warm air escape, and let it sit for a couple of hours. Next, rinse the inside thoroughly and drain completely. Repeat this process once more. When you are ready to fill it with water, remember that most water hoses have contaminants that give water a foul taste (they are not necessarily harmful, they just don't taste good!). Try to obtain an FDA approved hose if possible. The purest water should be used for storage, preferably, the water your family drinks every day. Be careful to keep the entire area as sanitary as possible. After filling with water and purifying it for storage, seal your container tightly, label with the date, and then store your container in the coolest, darkest place possible. Inside the garage or on a shady side of your home are possible storage spots. Use one of the following methods to purify your water:

Chlorine bleach will kill microorganisms. Use only plain bleach, no scents or additives. Add ½ teaspoon per 5 gallons of water. Two tablespoons + ½ teaspoon of chlorine will purify 55 gallons. Add the bleach before the container is ½ full, and stir it around to mix. It should smell of bleach. (If the bleach is a year old, double the amount of bleach. Bleach two or more years old should not be used.) Water treated in this way should remain palatable for a year or more. Check the container every 3 to 6 months for undesirable appearances or tastes. These are not harmful, but if present it is best to change or re-treat the water before storing it again since it has been re-exposed it to contamination from the air by opening the container.

Iodine from the medicine chest or first aid kit may be used to disinfect water. Add ten drops of 2 percent U.S.P. tincture of iodine to each gallon of water. This method is not recommended for pregnant or nursing women or people with thyroid problems.

Ion or Aerobic Oxygen is probably the easiest long-term choice for treating water. Add a 2 ounce bottle to 55 gallons of drinking water. It is a non-toxic, natural product with chlorine that adds so much oxygen to the water that harmful bacteria cannot grow in it. Water treated with this method can stay pure for up to 5 years. If it is stored properly, and in the coolest, darkest place possible, you should not need to change the water and re-treat for 4-5 years.

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HOW TO PURIFY CONTAMINATED WATER IN AN EMERGENCY

Don't take chances. Purify any water if you are not absolutely sure it is clean and safe to drink. First, let any suspended particles settle to the bottom, or strain them through layers of paper towels or clean cloth. No method of purification is perfect, but listed below are several options. Use one or more of the following ways to purify water:

Boiling is the safest method of purifying water. Bring water to a rolling boil for 5 to 10 minutes, keeping in mind that some water will evaporate. Let the water cool before drinking. Boiled water will taste better if you put oxygen back into it by pouring it back and forth between two containers. This will also improve the taste of stored water.

Chlorine bleach will kill microorganisms. Add two drops of bleach per quart of water (4 drops if the water is cloudy), stir and let stand for 30 minutes. If the water does not taste and smell of chlorine at that point, add another dose and let stand another 15 minutes. (If the bleach is a year old, double the amount of bleach. Bleach two or more years old should not be used.) If the treated water has too strong a chlorine taste, it can be made more pleasing by allowing the water to stand exposed to the air for a few hours, or by pouring it from one clean container to another several times.

Iodine from the medicine chest or first aid kit may be used to disinfect water. Add five drops of 2 percent U.S.P. tincture of iodine to each quart of clear water. For cloudy water add ten drops and let the solution stand for at least 30 minutes. This method is not recommended for pregnant or nursing women or people with thyroid problems.

Ion or Aerobic Oxygen is an option for purifying water. It is very effective in killing all harmful bacteria without any of the harmful effects associated with chlorine or iodine. Follow the directions on the bottle. Although it is expensive compared to bleach or iodine, water is ready to drink only 2-3 minutes after being treated.

Water filters are also an excellent choice for purifying water. There are many different prices and options that filter out varying degrees of bacteria and contaminants. Follow the directions given for the best results.

Purification tablets release chlorine or iodine. Follow the package directions. Usually one tablet is enough for one quart of water. Double the dose for cloudy water.

ALTERNATE SOURCES OF WATER IN AN EMERGENCY

In addition to water storage tanks, there are a few other sources of water to consider. Fresh fruits and vegetables have high water content. Water packed fruits and vegetables are also a great source. Liquids in the refrigerator, such as ice cubes, milk and juices can and should be used first in the event of a natural disaster. Also any stored juices, sodas, etc. The storage tank of your water heater, and the storage tank of your toilet (not the bowl, and only if the water is not chemically treated) will also provide a small amount of water. It is also possible to drain the pipes in your home to obtain some additional water. If no alternative is available, think of ponds, streams, and rainwater as possible sources of water that would need to be treated. Pool and spa water is an excellent source of water for washing or bathing. Because of the possibility of contamination, and the fact that high amounts of many chemicals used in pools can make us ill, it should be purified before drinking.

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