

# Water, Water, Everywhere: Long Term Water Storage

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Perhaps the only thing more important than food in a long-term emergency is water. Even the food you do have probably needs water to be cooked and eaten – especially dried beans and grains. Seriously, have you ever tried to bite into a dried bean? What is even more concerning is that water can be “bad” without anyone ever knowing it until it is too late. Crystal clear water can have dangerous bacteria growing in it, [chemical run-off](#), high levels of lead, mercury, or even arsenic!

Even if you store perfectly good water, storing it in the wrong way will mean that when you really need it, you will find yourself drinking poison rather than water. Just as critical as knowing how to store water, is knowing how not to store water.

## What NOT to Use

- **Non-food-grade plastic.** While some people would say that all plastic is questionable, for long-term storage, certainly non-food-grade plastic is definitely out. The plastic containers can leech dangerous chemicals into anything you store in them, degrade over time, and often are so thin that rodents, bugs, and other pests have no trouble finding their way into the container.
- **Food grade plastic which has previously stored things other than food.** While you may be able to get great cheap or free barrels through Freecycle, Craig’s List, or scouting what is laying around your neighborhood, better to find another use for them besides food or water unless you know with absolute certainty what was in them before. Any kind of chemical (yes – including cleaners) could soak into the plastic and then soak right back out again into your long-term water storage.
- **Food grade plastic which previously stored fruit, juice, syrup, or milk.** Right about now, you are probably thinking – I know, I can use old milk jugs

and juice bottles! Yes, they are plastic. Yes, they are food grade. But the sugars in fruit and milk are impossible to completely remove from the plastic, and can easily start your own petri dish of bacteria over time. I am sure you will be able to think of another use for these (or at least recycle them), but water storage is not the thing.

- **Any kind of cardboard.** These easily break, soak up unwanted materials, or leak.
- **Anything else contaminated.** While you might think if you just wash it well enough then it will be fine, don't take chances with your water – it is just too important! Other than glass, or stainless steel, which can be sterilized by boiling in hot water for at least 20 minutes, it is better to be safe than sorry.

### **How Much to Store**

How much water you need will largely depend on a variety of factors:

- How many people are in your family
- The presence of water locally
- Average rainfall for your area
- If you have pets or other animals you will need to care for
- Whether or not any family members have special medical conditions
- How much activity you will be doing
- The temperature of your environment

FEMA recommends that you store at least one gallon of water, per person, per day. Consider this an absolute base-line though, as many of the above considerations could up your family water needs considerably. If you live in a desert area, with little local water, women in your family who may be pregnant or nursing, children, and a couple pets, you will want to triple that amount, or more.

### **Storage Options**

Even if you are not sure how much you will eventually need, it is best to start somewhere and store what you can. One easy way to do this is just to buy a few cases of bottled water and store them away from heat and light (which can cause the plastic to leech chemicals into the water). Beyond that, you can start a more aggressive plan to provide clean water to your family in the event of an emergency.

- **Plastic.** As noted above, there are many plastics you should not even consider. That being said, there is growing research that plastics in general are less than ideal – especially those that contain the chemical BPA, or phthalates. Reducing our use of plastic across the board is a good idea. However, the reason that plastics have become so ubiquitous is that they have some unique

properties and advantages. They are lighter than glass, less likely to break, and are easy to produce. If you do decide to go the plastic route, make sure that you are using clean, food-grade plastic, and follow appropriate rotation procedures as enumerated below. And just like the bottled water, make sure to store in a climate-controlled environment without direct sun exposure. If you can afford it, your best bet is to purchase plastic tanks specifically designed for water storage. These can even come in very large sizes that can hold many gallons of water, but obviously these will be difficult, if not impossible, to transport if you need to leave your home in a hurry. Store containers away from any fuels or chemicals as the vapors from these items can penetrate plastic over time.

- **Glass.** Glass is easy to come by, easy to sterilize, and does not pose the same risk of leeching chemicals into the water. This is if you are using food-grade glass of course. Lead crystal glass can leach lead into the water over time. The downsides to glass are that it is heavy, breaks easily, and needs to be protected from light. In a pinch though, it can be a good way to start stocking up on water. If you have limited storage space, it also has the advantage of being able to be stored near gasoline, etc. since it is impermeable. Boil the glass jars in water for 20 minutes or more and dry completely before use. Ideally, cushion the jars by wrapping in foam, paper, or even just putting them in a cardboard box, to reduce the likelihood of breakage.
- **Stainless Steel.** An alternative to glass or plastic is stainless steel. It is impermeable and does not contain harmful chemicals like glass, but is more lightweight. Since it is opaque, rather than transparent like glass, you also need to be less concerned about storing it away from any light source. It is also easy to sterilize, and does not break easily. The downside is that you may need to be concerned about whether or not your water was treated with chlorine, since chlorine can corrode steel over time. You can solve this problem by looking for steel drums that are lined with a protective coating. Of course, always make sure that your stainless steel containers are food grade.

### **Rotating Water Supplies**

How often you need to rotate your water supplies will depend largely on how well you are able to store them. If you are using any kind of plastic containers, or if the containers are not in a somewhat temperature-controlled space or exposed to light from time to time, do not store the water in them for more than 6 months.

In ideal storage conditions (sterilized stainless steel drums with clean water in a temperature-controlled environment) you may be able to store water for up to three years before it will need to be rotated.

Ideally, do not use the water you are rotating out for drinking water. A container should be used within a short period of time after being opened; so drinking a 50-gallon drum of water in time will be a challenge. Instead, use this water as “gray” water for watering plants, washing and cleaning, or even filling up the kiddie pool in the summer.

## **Long Term Solutions**

In any extended emergency, you will need to find other ways to obtain and treat water, such as a pond, lake, well, or even through rain collection. To give you time to do this, and in order to have water on hand for getting out of dodge if need be, make sure you have a water storage plan in place to provide at least a couple weeks of water for your family. You will be glad you did!