

March 25, 2013 Blog Water – Cheryl Storrs

Water, Water Everywhere and Lots of Drops To Drink



Something most of us **take for granted is water**. We never have to do more than turn on the tap, so what happens when you can no longer do that? **Where will you get more water?**

If you know that a disaster is headed your way that could threaten your water supply then fill every container you can find with water for drinking. Fill up all your bathtubs, buckets, washing machine, a child's pool in the yard and whatever else

you might have.

Toilet water or the water in the back of the tank is NOT safe to drink...filter first. Another source is your water heaters. Note: If you're having to use a water heater as a source for water make sure and turn off any gas valves or electricity connected to the tank to avoid fires.

Rain Water

Rain water is relatively safe to collect but it is sporadic. You can have a rain barrel designed to collect rainwater or buckets outside.



Snow or Ice

NEVER put snow or ice inside your mouth to melt. It will dehydrate you and can cause hypothermia. Always melt the snow or ice in a container first and then drink. If you have a plastic bag of some sort, place the snow in the bag and hang it in the sun to melt. If you are worried that the snow is dirty, simply boil for 1 to 2 minutes. Do not collect or drink pink snow. The pink color in snow is caused by bacteria. By the way, you might want to avoid yellow snow also...if you know what I mean!

Ground Water:

Ground water is associated with wells and if constructed and maintained properly, wells are almost always safe for drinking. I would trust a well long before drinking out of a river.

Lakes, reservoirs and rivers are classified as surface water and are usually contaminated with all manner of chemicals and microorganisms



Purifying and Storing Water for Emergency Preparedness

It is important to understand that a person can go three weeks without food, and **ONLY** three days without water. When it comes to storage for disaster situations, water should always take precedence.

How Much is Enough?

A person's water intake depends on many factors...body weight, climate and day to day activity. Every day you lose water through exercise, working, sweating, or urinating. The general recommended daily intake of water for women is 91 ounces, and for men is 125 ounces. That amount would increase if you do more strenuous activities that cause you to sweat. Children, nursing mothers and sick people need even more than the recommended amounts. Store enough water for cooking, washing your body, or your clothes, flushing the toilet, watering the garden or taking care of pets. Let no water go to waste!!

We recommend that you store 2-3 gallons per person per day.

What is Safe to Store my Water in?

No matter what you store your water in, make sure it is cleaned thoroughly with soapy water and then sanitize it. To sanitize, use 1 tsp of non-scented chlorine bleach to one quart of water. Pour it in your container and shake to sanitize all areas then rinse **thoroughly** with clean water.

- 55 gallon drums that are approved for water storage.
- 30 gallon drums
- 5 gallon square container or a collapsible 5 gallon water container
- Stackable water bricks that can easily stack up to the ceiling



If you are preparing your own water storage containers verses buying them:



Home canning jars that have been filled with boiling water and sealed.

Other than sealed glass jars, the safest way to store water in smaller quantities is to use two-liter plastic soda bottles. Do not use old fruit juice bottles and milk jugs. They store fruit sugars and milk protein that **can't** be removed. They can also store bacteria in the plastic which will make the water unsafe to drink.

Water Filtration and Purification:

It is important to know that a water filter and a water purifier are **not** the same thing. Filters remove particles and sediment and some remove bacteria while purifiers take out bacteria and viruses.



Pre- filter: When you are filtering water, it is a good idea to remove as many large particles from the water as possible to prolong the life of your filter system. If you can't find clear water, strain the water through a bandana, cheese cloth, panty hose or just a piece of cloth/fabric. If available, coffee filters are inexpensive and work great. Another alternative is to let the water stand overnight so the particles settle to the bottom and then pour off the clean water and dump the waste.

The most popular way of purifying water by far is boiling. This kills all living things. According to the Wilderness Medical Society, water temperatures above 160° F (70° C) kill all pathogens within 30 minutes and above 185° F (85° C) within a few minutes. Be safe and boil at a rolling boil for at least 2 minutes. This method takes a lot of time and also a lot of fuel depending on the amount of water.

Pasteurizing

Luckily, not all of the organisms found in water are harmful when ingested. Significantly less heat is needed to inactivate harmful microbes than is necessary to bring water to a boil. Inactivation of these microbes actually starts as low as 5°C (41°F) but requires a significant amount of time to kill harmful pathogens. The consensus is that regular pasteurization requires heating of water to 65°C (149°F) for 5 minutes to kill 99.99% of harmful organisms, to include Giardia, cryptosporidium, endameba, the eggs of worms, cholera, enterotoxogenic strains of E. Coli, salmonella, causative organisms for typhoid, shigella, Hepatitis A, and rotavirus. This doesn't require as much fuel as sterilization, but requires a Thermometer, **WAPI** (Water Pasteurization Indicator) or test kit.

Ceramic Filters



Store bought filters are excellent, but be sure to carefully read what they filter out. One pricey but excellent filter that has been used in Africa safely for a long time is the British Berkefeld System. A few others are Berkey Water Filters, Katadyn Water Filters, or Aquamira.

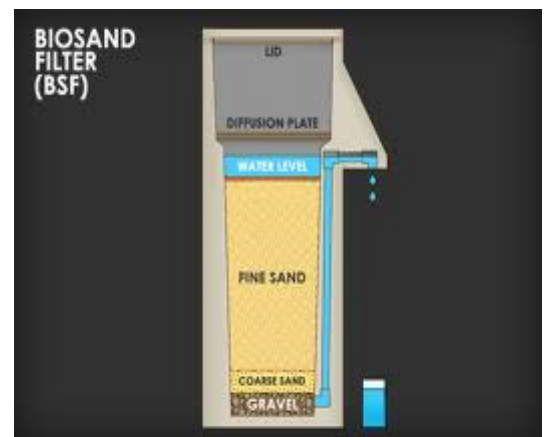
You should also know that ceramic filters only filter organic contaminants for sedimentary water unless they are combined with an activated charcoal filter to filter out chemicals and odors. This shouldn't be a problem, unless the water runs a risk of being contaminated by a nuclear plant, farmers who use pesticides, or you live near any chemical waste plants. So do your homework and know what's in or around your water sources.

Bio Sand Filter

This is often used in third world countries and has saved a lot of lives. This method is good for filtering out sediment in water and other organisms, but know that you still need to **BOIL** the water after it is filtered.

Chemical Purification

Typically there are two ways, iodine and bleach. Both can be unsafe to your health. You can buy purification tablets, but read the directions carefully and make sure not to use them after expired, they become ineffective. If you purify your water with iodine, make sure to only store the water in dark bottles in dark, cool places. Iodine is sensitive to light. While this works, some people can be allergic to iodine so the alternate method would be chlorine bleach. For a 2% iodine tincture, add 5 drops to every quart of water if it is clean. If it is foggy add 10 drops.



Bleach is one of those household chemicals that loses its activity over time. Temperature is the primary factor affecting how long bleach remains active. So, when you buy a bottle of bleach, it has a shelf life. The bleach will be highly effective for around 6 months and fine for home use for around 9 months.

Sawyer Filter Technology



Check out the article on the Point One and watch the video:

**SAWYER SQUEEZE FILTER WINS
BACKPACKER 2012 EDITOR'S
CHOICE AWARD!**

<http://www.sawyer.com/awards.html>



With the technology derived from kidney dialysis, Sawyer worked with a fiber manufacturer to actually improve the hollow fiber membrane technology. In order to improve both the filtration rates and longevity of the filter, they needed something even more precise and rugged. The fiber composition had to deliver exactly 0.1 & 0.02 micron filtration 100% of the time to ensure no bacteria would get through, and the membranes had to be sturdy enough to withstand backwashing which allows the filter to be cleaning and reused. This makes it **impossible** for harmful bacteria, protozoa, or cysts like E. coli, Giardia, Vibrio cholerae and Salmonella typhi (which cause Cholera and Typhoid) to pass through the Sawyer PointONE™ biological filter. At 7 log (99.99999%) the filter attains the highest level of filtration available today.



If viruses are an issue the Point ZeroTWO Purifier (0.02 micron absolute pores), the first and thus far only portable purification device to physically remove viruses, which it does at a >5.5 log (99.9997%) rate, exceeding EPA and NSF recommendations.

All Sawyer products can be purchased through PreparedNest. Contact Cheryl and Greg at hello@PreparedNest.com for more information.

Dangers of UN-purified water:

- Cholera and typhoid:
- Dysentery: severe diarrhea, bloody stools, fever
- Flukes: Lives in stagnant water. If ingested it will infect your blood, live as parasites and cause disease.
- Leeches: If swallowed the can and will attach themselves in your throat or nasal passage. Then they will suck the blood, cause a wound and move onto another area. The wound can become infected quickly.
- Giardia: Entering the water through fecal matter. Giardia is a parasite that attaches to the intestines of humans and animals. Symptoms are diarrhea, abdominal cramping, nausea, weight loss.
- Cryptosporidium: Spread through infected fecal matter. Symptoms include severe headaches, low fever, abdominal pain, diarrhea, nausea, vomiting.
- Hepatitis A: Symptoms are inflamed liver, weakness, anorexia, nausea, jaundice, vomiting. Severe cases may result in liver damage or death.
- E.Coli: vomiting, diarrhea, dehydration, fever, abdominal pain

Thanks to The American Preppers Network for some information.