

Water Storage Before Disaster Strikes

Use directions provided by your local or state public health agency. In the case where your local or state public health agency does not have information, follow the recommendations below.

What kinds of containers are recommended to store water in?

Make sure the water storage container you plan to use is of food grade quality, such as 2-liter soda bottles, with tight-fitting screw-cap lids. Milk containers are not recommended because they do not seal well.

Should water be treated before storing it?

If your local water is treated commercially by a water treatment utility, you do not have to treat the water before storing it. Treating commercially-treated water with bleach is superfluous and not necessary. Doing so does not increase storage life. It is important to change and replace stored water every six months or more frequently.

If your local water is not treated commercially by a water treatment facility, that is, if your water comes from a public well or other public, non-treated system, follow instructions about water storage provided by your public health agency or water provider. They may recommend treating it with a small amount of liquid household bleach. Still, it is important to change and replace stored water every six months or more frequently.

If your local water comes from a private well or other private source, consult with your local public health agency about recommendations regarding storage of water. Some water sources have contaminants (minerals or parasites) that can not be neutralized by treatment with liquid household chlorine bleach. Only your local public health agency should make recommendations about whether your local water can be safely stored, for how long, and how to treat it.

Can I use bottled water?

If you plan to use commercially prepared "spring" or "drinking" water, keep the water in its original sealed container. Change and replace the water at least once a year. Once opened, use it and do not store it further.

Food Supplies in Case of Disaster

How long can food supplies be stored?

To judge how long you can store food supplies, look for an “expiration date” or “best if used by” date on the product. If you can not find a date on the product, then the general recommendation is to store food products for six months and then replace them.

Some households find it helpful to pull food products for their regular meals from their disaster supplies kit and replace them immediately on an ongoing basis, so the food supplies are always fresh.

What kinds of food supplies are recommended to store in case of a disaster?

Try to avoid foods that are high in fat and protein, and don't stock salty foods, since they will make you thirsty. Familiar foods can lift morale and give a feeling of security in time of stress. Also, canned foods won't require cooking, water or special preparation. Take into account your family's unique needs and tastes. Try to include foods that they will enjoy and that are also high in calories and nutrition.

Store supplies of non-perishable foods and water in a handy place. You need to have these items packed and ready in case there is no time to gather food from the kitchen when disaster strikes. Sufficient supplies to last several days to a week are recommended.

Select foods that require no refrigeration, preparation or cooking, and little or no water. Foods that are compact and lightweight are easy to store and carry.

Try to eat salt-free crackers, whole grain cereals and canned food with high liquid content.

Recommended foods include:

- Ready-to-eat canned meats, fruits and vegetables. (Be sure to include a manual can opener)
- Canned juices, milk and soup (if powdered, store extra water).
- High energy foods, such as peanut butter, jelly, crackers, granola bars and trail mix.
- Comfort foods, such as hard candy, sweetened cereals, candy bars and cookies.
- Instant coffee, tea bags.
- Foods for infants, elderly persons or persons on special diets, if necessary.
- Compressed food bars. They store well, are lightweight, taste good and are nutritious.

- Trail mix. It is available as a prepackaged product or you can assemble it on your own.
- Dried foods. They can be nutritious and satisfying, but some have a lot of salt content, which promotes thirst. Read the label.
- Freeze-dried foods. They are tasty and lightweight, but will need water for reconstitution.
- Instant Meals. Cups of noodles or cups of soup are a good addition, although they need water for reconstitution.
- Snack-sized canned goods. Good because they generally have pull-top lids or twist-open keys.
- Prepackaged beverages. Those in foil packets and foil-lined boxes are suitable because they are tightly sealed and will keep for a long time.

Food Options to Avoid:

- Commercially dehydrated foods. They can require a great deal of water for reconstitution and extra effort in preparation.
- Bottled foods. They are generally too heavy and bulky, and break easily.
- Meal-sized canned foods. They are usually bulky and heavy.
- Whole grains, beans, pasta. Preparation could be complicated under the circumstances of a disaster.

What is the basis for the Red Cross recommendation to store supplies to last several days to a week? Red Cross recommendations to have food, water, and other emergency supplies on hand are not new, and are considered reasonable in case of any disaster. Our recommendations are to have supplies to last several days to a week. Most reasonable people would not consider such quantities of supplies as a "stockpile" or "hoarding."

Some families may choose to store supplies to last several weeks or more. Certainly, if they wish to do so, they may. It is always wise to have sufficient food and water supplies on hand in case access to such supplies may be disrupted by a disaster.

Food and Water in an Emergency

If an earthquake, hurricane, winter storm or other disaster strikes your community, you might not have access to food, water and electricity for days, or even weeks. By taking some time now to store emergency food and water supplies, you can provide for your entire family. This brochure was developed by the Federal Emergency Management Agency in cooperation with the American Red Cross and the U.S. Department of Agriculture.

Having an ample supply of clean water is a top priority in an emergency. A normally active person needs to drink at least two quarts of water each day. Hot environments can double that amount. Children, nursing mothers and ill people will need even more. You will also need water for food preparation and hygiene. Store a total of at least one gallon per person, per day. You should store at least a two-week supply of water for each member of your family.

If supplies run low, never ration water. Drink the amount you need today, and try to find more for tomorrow. You can minimize the amount of water your body needs by reducing activity and staying cool.

Water Supplies

How to Store Water

Store your water in thoroughly washed plastic, glass, fiberglass or enamel-lined metal containers. Never use a container that has held toxic substances. Plastic containers, such as soft drink bottles, are best. You can also purchase food-grade plastic buckets or drums.

Seal water containers tightly, label them and store in a cool, dark place. Rotate water every six months.

Emergency Outdoor Water Sources

If you need to find water outside your home, you can use these sources. Be sure to treat the water according to the instructions on page 3 before drinking it.

- Rainwater
- Streams, rivers and other moving bodies of water
- Ponds and lakes
- Natural springs

Avoid water with floating material, an odor or dark color. Use saltwater only if you distill it first. You should not drink flood water.

Hidden Water Sources in Your Home

If a disaster catches you without a stored supply of clean water, you can use the

water in your hot-water tank, pipes and ice cubes. As a last resort, you can use water in the reservoir tank of your toilet (not the bowl).

Do you know the location of your incoming water valve? You'll need to shut it off to stop contaminated water from entering your home if you hear reports of broken water or sewage lines.

To use the water in your pipes, let air into the plumbing by turning on the faucet in your house at the highest level. A small amount of water will trickle out. Then obtain water from the lowest faucet in the house.

To use the water in your hot-water tank, be sure the electricity or gas is off, and open the drain at the bottom of the tank. Start the water flowing by turning off the water intake valve and turning on a hot-water faucet. Do not turn on the gas or electricity when the tank is empty.

Three Ways to Treat Water

In addition to having a bad odor and taste, contaminated water can contain microorganisms that cause diseases such as dysentery, typhoid and hepatitis. You should treat all water of uncertain purity before using it for drinking, food preparation or hygiene.

There are many ways to treat water. None is perfect. Often the best solution is a combination of methods.

Two easy treatment methods are outlined below. These measures will kill most microbes but will not remove other contaminants such as heavy metals, salts and most other chemicals. Before treating, let any suspended particles settle to the bottom, or strain them through layers of paper towel or clean cloth.

Boiling: Boiling is the safest method of treating water. Bring water to a rolling boil for 3-5 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 the water back and forth between two clean containers. This will also improve the taste of stored water.

Disinfection: You can use household liquid bleach to kill microorganisms. Use only regular household liquid bleach that contains 5.25 percent sodium hypochlorite. Do not use scented bleaches, colorsafe bleaches or bleaches with added cleaners.

Add 16 drops of bleach per gallon of water, stir and let stand for 30 minutes. If the water does not have a slight bleach odor, repeat the dosage and let stand another 15 minutes.

The only agent used to treat water should be household liquid bleach. Other chemicals, such as iodine or water treatment products sold in camping or surplus stores that do not contain 5.25 percent sodium hypochlorite as the only active ingredient, are not recommended and should not be used.

While the two methods described above will kill most microbes in water, distillation will remove microbes that resist these methods, and heavy metals, salts and most other chemicals.

Distillation: Distillation involves boiling water and then collecting the vapor that condenses back to water. The condensed vapor will not include salt and other impurities. To distill, fill a pot halfway with water. Tie a cup to the handle on the pot's lid so that the cup will hang right-side-up when the lid is upside-down (make sure the cup is not dangling into the water) and boil the water for 20 minutes. The water that drips from the lid into the cup is distilled.

Food Supplies

When Food Supplies Are Low

If activity is reduced, healthy people can survive on half their usual food intake for an extended period and without any food for many days. Food, unlike water, may be rationed safely, except for children and pregnant women.

If your water supply is limited, try to avoid foods that are high in fat and protein, and don't stock salty foods, since they will make you thirsty. Try to eat salt-free crackers, whole grain cereals and canned foods with high liquid content.

You don't need to go out and buy unfamiliar foods to prepare an emergency food supply. You can use the canned foods, dry mixes and other staples on your cupboard shelves. In fact, familiar foods are important. They can lift morale and give a feeling of security in time of stress. Also, canned foods won't require cooking, water or special preparation. Following are recommended short-term food storage plans.

Special Considerations

As you stock food, take into account your family's unique needs and tastes. Try to include foods that they will enjoy and that are also high in calories and nutrition. Foods that require no refrigeration, preparation or cooking are best.

Individuals with special diets and allergies will need particular attention, as will babies, toddlers and elderly people. Nursing mothers may need liquid formula, in case they are unable to nurse. Canned dietetic foods, juices and soups may be helpful for ill or elderly people.

Make sure you have a manual can opener and disposable utensils. And don't forget nonperishable foods for your pets.

How to Cook if the Power Goes Out

or emergency cooking you can use a fireplace, or a charcoal grill or camp stove can be used outdoors. You can also heat food with candle warmers, chafing dishes and fondue pots. Canned food can be eaten right out of the can. If you heat it in the can, be sure to open the can and remove the label first.

Short-Term Food Supplies

Even though it is unlikely that an emergency would cut off your food supply for two weeks, you should prepare a supply that will last that long.

The easiest way to develop a two-week stockpile is to increase the amount of basic foods you normally keep on your shelves.

Storage Tips

- Keep food in a dry, cool spot - a dark area if possible.
- Keep food covered at all times.
- Open food boxes or cans care-fully so that you can close them tightly after each use.
- Wrap cookies and crackers in plastic bags, and keep them in tight containers.
- Empty opened packages of sugar, dried fruits and nuts into screw-top jars or air-tight cans to protect them from pests.
- Inspect all food for signs of spoilage before use.
- Use foods before they go bad, and replace them with fresh supplies, dated with ink or marker. Place new items at the back of the storage area and older ones in front.

Nutrition Tips

- During and right after a disaster, it will be vital that you maintain your strength. So remember:
- Eat at least one well-balanced meal each day.
- Drink enough liquid to enable your body to function properly (two quarts a day).
- Take in enough calories to enable you to do any necessary work.
- Include vitamin, mineral and protein supplements in your stockpile to assure adequate nutrition.

Shelf-life of Foods for Storage

Here are some general guidelines for rotating common emergency foods.

Use within six months:

- Powdered milk (boxed)
- Dried fruit (in metal container)
- Dry, crisp crackers (in metal container)
- Potatoes

Use within one year:

- Canned condensed meat and vegetable soups
- Canned fruits, fruit juices and vegetables
- Ready-to-eat cereals and uncooked instant cereals (in metal containers)
- Peanut butter
- Jelly
- Hard candy and canned nuts
- Vitamin C

May be stored indefinitely (in proper containers and conditions):

- Wheat
- Vegetable oils
- Dried corn
- Baking powder
- Soybeans
- Instant coffee, tea and cocoa
- Salt
- Noncarbonated soft drinks
- White rice
- Bouillon products
- Dry pasta
- Powdered milk (in nitrogen-packed cans)

Disaster Supplies

It's 2:00 a.m. and a flash flood forces you to evacuate your home-fast. There's no time to gather food from the kitchen, fill bottles with water, grab a first-aid kit from the closet and snatch a flashlight and a portable radio from the bedroom. You need to have these items packed and ready in one place before disaster strikes.

Pack at least a three-day supply of food and water, and store it in a handy place. Choose foods that are easy to carry, nutritious and ready-to-eat. In addition, pack these emergency items:

- Medical supplies and first aid manual
- Hygiene supplies
- Portable radio, flashlights and extra batteries
- Shovel and other useful tools
- Household liquid bleach to treat drinking water § Money and matches in a waterproof container
- Fire extinguisher
- Blanket and extra clothing
- Infant and small children's needs (if appropriate)
- Manual can opener

If the Electricity Goes Off . . .

FIRST, use perishable food and foods from the refrigerator.

THEN, use the foods from the freezer. To minimize the number of times you open the freezer door, post a list of freezer contents on it. In a well-filled, well-insulated freezer, foods will usually still have ice crystals in their centers (meaning foods are safe to eat) for at least three days.

FINALLY, begin to use non-perishable foods and staples.