Food and Water in an Emergency

FEMA

American Red Cross

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.

Emergency Food Supplies

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

You may not need to go out and buy foods to prepare an emergency food supply. You can use the canned goods, dry mixes and other staples on your cupboard shelves. Be sure to check expiration dates and follow the practice of first-in, first-out.

Preparing an Emergency Food Supply

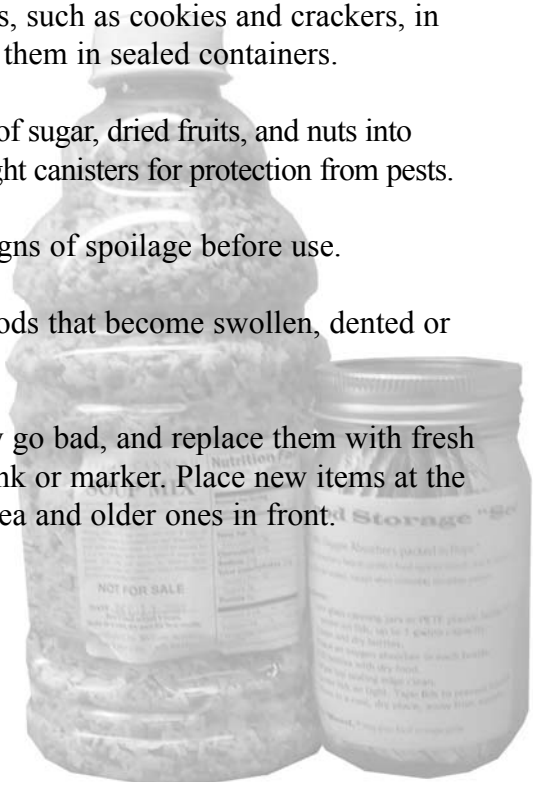
As you stock food, take into account your family's unique needs and tastes. Familiar foods are important. They lift morale and give a feeling of security in times of stress. Try to include foods that they will enjoy and that are also high in calories and nutrition. Foods that require no refrigeration, water, special preparation or cooking are best.

Individuals with special diets and allergies will need particular attention, as will babies, toddlers and the elderly. 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. Don't forget nonperishable foods for your pets.

Storage Tips

- Keep food in a dry, cool spot—a dark area if possible.
- Open food boxes and other re-sealable containers carefully so that you can close them tightly after each use.
- Wrap perishable foods, such as cookies and crackers, in plastic bags and keep them in sealed containers.
- Empty open packages of sugar, dried fruits, and nuts into screw-top jars or air-tight canisters for protection from pests.
- Inspect all food for signs of spoilage before use.
- Throw out canned goods that become swollen, dented or corroded.
- 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.



Shelf-life of Foods for Storage

The following provides some general guidelines for replacement of common emergency foods.

Use within six months:

- Powdered milk - ***boxed***
- Dried fruit
- Dry, crisp crackers
- Potatoes

Use within one year, or before the date indicated on the label:

- Canned condensed meat and vegetable soups
- Canned fruits, fruit juices and vegetables
- Ready-to-eat cereals and uncooked instant cereals
- Peanut butter
- Jelly
- Hard candy and canned nuts
- Vitamins

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***

If the Electricity Goes Off...

FIRST...

Use perishable food from the refrigerator, pantry, garden, etc.

THEN...

Use the foods from the freezer. To limit 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 two days. Check to make sure the seal on your freezer door is still in good condition.

FINALLY...

Begin to use non-perishable foods and staples.

How to Cook if the Power Goes Out

For emergency cooking indoors, you can use a fireplace. A charcoal grill or camp stove can be used outdoors. You can keep cooked food hot by using candle warmers, chafing dishes and fondue pots. Use only approved devices for warming food. 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 before heating. Always make sure to extinguish open flames before leaving the room.

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, don't eat salty foods, since they will make you thirsty. Instead, eat salt-free crackers, whole grain cereals and canned foods with high liquid content.

Nutrition Tips

During and after a disaster, it is vital that you maintain your strength. Remember the following:

- Eat at least one well-balanced meal each day.
- Drink enough liquid to enable your body to function properly (two quarts or a half gallon per day).
- Take in enough calories to enable you to do any necessary work.
- Include vitamin, mineral, and protein supplements in your stockpile to ensure adequate nutrition.

Emergency Water Supplies

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 (half gallon) of water each day. People in hot environments, children, nursing mothers and ill people will require even more.

You will also need water for food preparation and hygiene. Store at least one gallon per person, per day. Consider storing at least a two-week supply of water for each member of your family. If you are unable to store this quantity, store as much as you can.

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.

Prepare and Store an Emergency Supply of Water

To prepare the safest and most reliable emergency supply of water, it is recommended that you purchase commercially bottled water. Keep bottled water in its original container, and do not open it until you need to use it.

Store bottled water in the original sealed container, and observe the expiration or "use by" date.

If You Are Preparing Your Own Containers of Water...

It is recommended to purchase food-grade water storage containers from surplus or camping supplies stores to use for water storage.

If you decide to re-use storage containers, choose two-liter plastic soft drink bottles – not plastic jugs or cardboard containers that have had milk or fruit juice in them. The reason is that milk protein and fruit sugars cannot be adequately removed from these containers and provide an environment for bacterial growth when water is stored in them. Cardboard containers leak easily and

are not designed for long-term storage of liquids. Also, do not use glass containers, because they are heavy and may break.

Preparing Containers

- Thoroughly clean the bottles with dishwashing soap and water and rinse completely so there is no residual soap.

- Additionally, for plastic soft drink bottles, sanitize the bottles by adding a solution of 1 teaspoon of non-scented liquid household chlorine bleach to a quart (1/4 gallon) of water. Swish the sanitizing solution in the bottle so that it touches all surfaces. After sanitizing the bottle, thoroughly rinse out the sanitizing solution with clean water.

Filling Water Containers

- Fill the bottle to the top with regular tap water. (If your water utility company treats your tap water with chlorine, you do not need to add anything else to the water to keep it clean.) If the water you are using comes from a well or water source that is not treated with chlorine, add two drops of non-scented liquid household chlorine bleach to each gallon of water.

- Tightly close the container using the original cap. Be careful not to contaminate the cap by touching the inside of it with your fingers. Write the date on the outside of the container so that you know when you filled it. Store in a cool, dark place.

- Replace the water every six months if not using commercially bottled water.

Hidden Water Sources in Your Home

Safe water sources in your home include the water in your hot-water tank, pipes and ice cubes. You **should not** use water from toilet flush tanks or bowls, radiators, waterbeds or swimming pools/spas.

You will need to protect the water sources already in your home from contamination if you hear reports of broken water or sewage lines, or if local officials advise you of a problem. To shut off incoming water, locate the main valve and turn it to the closed position. Be sure you and other family members know beforehand how to perform this important procedure.

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

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 at the tank and turning on a hot-water faucet. Refill the tank before turning the gas or electricity back on. If the gas is turned off, a professional will be needed to turn it back on.

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 the next page 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.

Ways to Treat Water

The instructions below are for treating water of uncertain quality in rare emergency situations in the absence of instructions from local authorities when no other reliable clean water source is available and you have used all of your stored water. If you store enough water in advance, you will not need to treat water using these or other methods.

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

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

Boiling or chlorination will kill most microorganisms 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, clean cloth or coffee filter.

Boiling

Boiling is the safest method of treating water. In a large pot or kettle, bring water to a rolling boil for 1 full minute, 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.

Chlorination

You can use household liquid bleach to kill microorganisms. Use only regular household liquid bleach that contains 5.25 to 6.0 percent sodium hypochlorite. Do not use scented bleaches, colorsafe bleaches or bleaches with added cleaners. Because the potency of bleach diminishes with time, use bleach from a newly opened or unopened bottle.

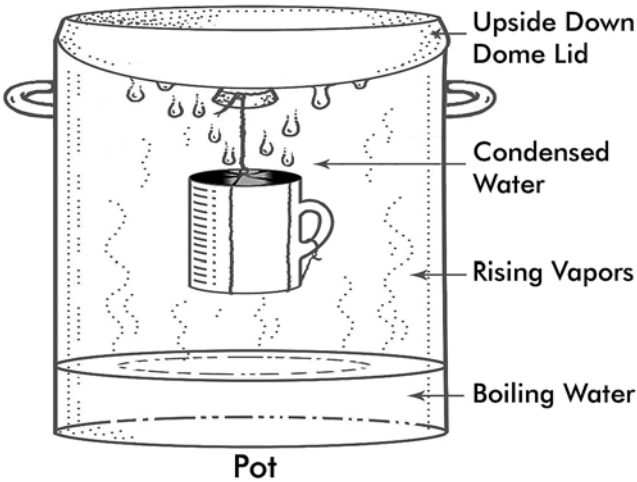
Add 16 drops (1/8 teaspoon) of bleach per gallon of water, stir and let stand for 30 minutes. The water should have a slight bleach odor. If it doesn't, then repeat the dosage and let stand another 15 minutes. If it still does not smell of bleach, discard it and find another source of water.

Other chemicals, such as iodine or water treatment products (sold in camping or surplus stores) that do not contain 5.25 to 6.0 percent sodium hypochlorite as the only active ingredient, are not recommended and should not be used.

Distillation

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

Distillation involves boiling water and then collecting the vapor that condenses back to water. The condensed vapor will not include salt or most 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. (See illustration.)



Disaster Supplies Kit

In the event you need to evacuate at a moment's notice and take essentials with you, you probably will not have the opportunity to shop or search for the supplies you and your family will need. Every household should assemble a disaster supplies kit and keep it up-to-date.

A disaster supplies kit is a collection of basic items a family would probably need to stay safe and be more comfortable during and after a disaster. Disaster supplies kit items should be stored in a portable container(s) near, or as close as possible to, the exit door. Review the contents of your kit at least once per year or as your family needs change. Also, consider having emergency supplies in each vehicle and at your place of employment.

The following should be included in your basic disaster supplies kit:

- Three-day supply of nonperishable food and manual can opener.
- Three-day supply of water (one gallon of water per person, per day).
- Portable, battery-powered radio or television and extra batteries.
- Flashlight and extra batteries.
- First aid kit and manual.
- Sanitation and hygiene items (hand sanitizer, moist towelettes and toilet paper).
- Matches in waterproof container.
- Whistle.
- Extra clothing and blankets.
- Kitchen accessories and cooking utensils.
- Photocopies of identification and credit cards.
- Cash and coins.
- Special needs items such as prescription medications, eyeglasses, contact lens solution, and hearing aid batteries.
- Items for infants, such as formula, diapers, bottles and pacifiers.
- Tools, pet supplies, a map of the local area and other items to meet your unique family needs.

Learn More

The Federal Emergency Management Agency's Community and Family Preparedness Program and American Red Cross Community Disaster Education are nationwide efforts to help people prepare for disasters of all types.

For more information, please contact your local emergency management office or American Red Cross chapter. This booklet and the preparedness materials listed below are online at www.fema.gov and www.redcross.org. Other preparedness materials are available at these sites, as well as at www.ready.gov.

These publications are also available by calling FEMA at 1-800-480-2520, or writing:

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