

Food and Water



Storing Food and Water

Storing Food

Even though it is unlikely that an emergency would cut off your food supply for two weeks, consider maintaining a supply in your home 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. Check expiration dates frequently and follow the practice of first-in, first-out.

Pack at least a three-day supply of nonperishable food and water in your Disaster Supplies Kit. You need to have these items packed and ready in case there is no time to gather food from the kitchen when disaster strikes. Include both compact, lightweight items like dehydrated foods, which are easy to carry if you must evacuate, and canned foods like fruit, juices, and vegetables that supply a source of water.

Choose foods that require no refrigeration, preparation, or cooking. If you must heat food, pack a can of cooking fuel, such as used for camping. Do not pack gasoline, kerosene, or propane.

Familiar foods can lift morale and help people feel secure in time of stress. Try to include foods that everyone will enjoy. Look for foods high in calories, protein, carbohydrates, vitamins, and minerals. Look for canned foods with high liquid content in case water is scarce.

Specifically, consider packing:

- Ready-to-eat canned meats, fruits, and vegetables.
- Canned juice, milk, and soup.
- High-energy foods, such as peanut butter, jelly, salt-free crackers, and energy bars.
- Trail mix (prepackaged or homemade).
- Comfort foods, such as hard candy, sweetened cereals, candy bars, and cookies.
- Instant coffee, tea bags.
- Compressed food bars. They store well, are lightweight, taste good, and are nutritious.
- Dried foods. They can be nutritious and satisfying, but may contain a lot of salt, which promotes thirst. If salt is a problem, used dried fruit, like raisins.
- Freeze-dried foods. They are tasty and lightweight, but will need water for reconstitution.
- Whole-grain cereals (oatmeal, granola, multi-grain).
- Instant meals. Cups of noodles or cups of soup are a good addition, although they need water for reconstitution and may contain a lot of salt.
- Snack-sized canned goods, which generally have pull-top lids or twist-open keys.
- Prepackaged beverages. Those in foil packets and foil-lined boxes are sealed and will keep for a long time if the seal is not broken.

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- Foods for infants, elderly persons, or persons on special diets.
- Nonperishable foods for pets and other animals.

When selecting foods, keep in mind that:

- Salty foods are usually not a good choice because they will make you thirsty and drinking water may be in short supply.
- If your water supply is limited, you should avoid eating foods that are high in fat and protein, even if they are part of your emergency supply, because they require more water for the body to metabolize.
- Commercially dehydrated foods often require a lot of water for reconstitution and effort to prepare.
- Food packaged in glass bottles and jars is usually heavy and bulky, and the glass can easily break.
- Meal-sized canned foods are usually heavy and bulky, but they can be useful because they contain water.
- Whole grains, beans, and dried pasta require water and cooking time for preparation that could be difficult in a disaster situation.

If your electricity goes off and you lose refrigeration:

- First, use perishable food from the refrigerator.
- Then, use the food 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 two days.
- Finally, begin to use nonperishable foods and staples.

Storing Water

Having an ample supply of clean water is a top priority in an emergency. The following guidelines will help you ensure that members of your household have sufficient water in an emergency situation:

- Keep at least a three-day supply of water, that is, a minimum of three gallons per person. It is strongly recommended that you store more if possible. Each person should have one-half gallon per day for drinking and one-half gallon for cooking and sanitation. A normally active person needs to drink at least one-half gallon of water each day. Hot environments and intense physical activity can double that amount. Children, nursing mothers, and ill people will also need more. Be sure to include drinking and clean-up water for your pets. The amount needed will depend on their sizes and the conditions. Remember that pets often drink more water than usual when under stress.
- 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.

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- Store your three-day supply in a handy place. You need to have water packed and ready in case there is no time to fill water bottles when disaster strikes.

If you are preparing your own containers of water

Follow the directions below for selecting, cleaning, and filling the containers with water:

- It is recommended that you purchase food-grade, water-storage containers from surplus or camping supplies stores to use for water storage.
- If you chose to use your own storage containers, chose two-liter, plastic soda bottles—not plastic jugs or cardboard containers that have had milk or fruit juice in them. 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.
- Do not use glass containers because they can break and are heavy.
- Do not use cardboard containers, because they can leak easily. These containers are not designed for long-term storage of liquids.
- If storing water in plastic soda bottles or food-grade, water-storage containers, follow these steps:
 - Thoroughly clean them with dishwashing soap and water, and rinse them completely so there is no residual soap.
 - Sanitize them and their caps by adding a solution of 1 teaspoon of non-scented liquid household chlorine bleach to a quart of water. Swish the sanitizing solution in the containers and caps so that it touches all interior surfaces. After sanitizing the containers and caps, thoroughly rinse out the sanitizing solution with clean water.
- To fill water containers:
 - Fill them to the top with regular tap water. If the tap water has been commercially treated from a water utility 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 the water.
 - Tightly close the containers using the original caps. Be careful not to contaminate the caps by touching the inside of them with your fingers.
 - Place a date on the outside of the containers so that you know when you filled them. Store them in a cool, dark place.
- Replace the water every six months if not using commercially bottled water.

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Guidelines to Drinking Water Safety

- You can drink water from the community water system unless you have been told or have reason to suspect it has become contaminated.
- Listen to a local radio or television station for announcements from appropriate authorities about the safety of drinking water. Follow their directions.
- If the water is contaminated:
 - Use your emergency supply of water.
 - Purchase bottled water, if necessary, until you are certain that your water supply is safe.
 - Consider all water from wells, cisterns, and other delivery systems in the disaster area to be unsafe until tested.
 - Water from melted ice cubes made before the disaster occurred is generally safe to drink.
 - Water from undamaged hot water tanks and water pipes is generally safe to drink. Turn off the main water valve before draining water from these sources.
 - Bottled juices and the liquid from canned fruits and vegetables are another source of water.
- If you need to find drinking water outside your home, you can use rainwater; streams, rivers, and other moving bodies of water; ponds and lakes; and natural springs. If you question its purity, be sure to treat the water first. (See below.) Avoid water with floating material, an odor, or a dark color. Use saltwater only if you distill it first. Do NOT drink floodwater.

Treating Water

Treat water for drinking, cooking, and bathing only if it is of questionable quality.

There are several ways to treat water—but none is perfect. Often, the best solution is a combination of methods.

- Boiling is the safest method of treating water. Strain water through a clean cloth to remove bulk impurities. Bring water to a rolling boil for about one full minute. 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.
- Household liquid bleach can kill microorganisms in water. Use chlorine bleach from a freshly opened bottle. Use only regular household liquid bleach that contains approximately 5.25 to 6.0 percent sodium hypochlorite. Do not use scented bleaches, color-safe bleaches, or bleaches with added cleaners. Add 16 drops of fresh, chlorine bleach per gallon of water, stir, and let stand for 30 minutes. If the water has a slight scent of chlorine, you can use it. If it does not, re-treat the water with an additional 16 drops of bleach, stir, and let stand for 30 minutes. If the water has a slight scent of chlorine, you can use it. If not,

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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 for use in post-disaster situations and should not be used.

- Distilling removes salt and other solid impurities from water. Distillation involves boiling water and then collecting the vapor that condenses back to water. The condensed vapor will not include salt or other solid impurities. A relatively simple, although inefficient, way to distill water in an emergency is to suspend a cup over boiling water. One way to do this is to:
 - Make a cradle for the cup with string. Fasten the middle of the length of string to the cup handle with a knot, then wrap the string around the cup as if it were a parcel, finishing with a knot in the middle of the mouth of the cup. A longer piece of string, perhaps three feet or so, will make the task easier.
 - With the excess string, tie the cup to the lid handle so the cup will hang rightside up when the lid is upside down.
 - Choose the tallest pot possible and fill it with water to the point just below where the cup will hang, so the cup will not touch the water.
 - Put the lid upside down on the pot so that the cup is suspended by the string above the water. Boil the water. Make sure that the ends of the string are in the pot and not hanging over the side where they could catch on fire. The water that drips from the lid into the cup is distilled. It will take quite a while to collect even a moderate amount of water. Be careful that the pot does not boil dry.



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Keeping Refrigerated Food Safe if the Power Goes Out

The loss of power from high wind, fire, flood, or even a traffic accident can be sudden. Without power to run your refrigerator and freezer, the safety of your food could be a concern.

Be prepared for an emergency by keeping on hand items that do not require refrigeration, such as shelf-stable food, boxed or canned milk, and canned goods.

Make sure you have pre-prepared baby formula for infants, if needed. Remember to use these items in the order you bought them and replace them from time to time.

Knowing ways for keeping food safe when the power goes out will help reduce the worry about what is safe to eat and minimize the potential loss of food.

The following information will help you make the right decisions for keeping your family safe:

- Always keep your refrigerator at or below 40° F (4° C). Keep your freezer at or below 0° F (-18°C). An appliance thermometer can tell you if your refrigerator and freezer are at the proper temperatures.
- If the power goes out, keep the refrigerator and freezer doors closed as much as possible to maintain the cold temperatures. An unopened refrigerator will keep food safely cold for about four hours. A full freezer will stay sufficiently cold for about 48 hours (24 hours if it is half full) if it is unopened.
- If your freezer is not full, keep items close together—this helps the food stay cold longer.
- Keep frozen meat and poultry items on the lowest (coldest) shelf of the freezer, and separated from other food so that thawing meat or poultry juices will not contaminate the other food.
- Obtain dry or block ice to keep your refrigerator as cold as possible if the power is going to be out for a prolonged period of time.
- If you are not sure a particular food is cold enough, take its temperature with the food thermometer. Discard any perishable foods (such as meat, poultry, fish, eggs, and leftovers) that have been above 40° F (4° C) for two hours or more, and any food that has an unusual odor, color, or texture, or feels warm to the touch.
- Be sure to discard any fully cooked items in either the freezer or the refrigerator that have come in contact with raw meat juices.
- Remember, you cannot rely solely on appearance or odor. Never taste food to determine its safety. Some foods may look and smell fine, but if they have been at room temperature too long, bacteria that cause food-borne illness can begin to grow very rapidly. Some types of bacteria produce toxins that are not destroyed by cooking.

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If previously frozen food is partially or completely thawed when the power comes back on:

- You can safely refreeze it if it contains ice crystals or is at 40° F (4° C) or below. You will have to evaluate each item separately.
- Partially thawed food can be refrozen safely, but refreezing may reduce the quality of some food.
- Raw meats and poultry from the freezer can be refrozen without too much quality loss.
- Prepared food, vegetables, and fruits can be refrozen, but there may be some quality loss.
- Fruit juices can be refrozen safely without much quality loss, but frozen fruit will become mushy.

Food from the refrigerator and freezer are not safe outdoors, even in cold weather or snow because:

- Frozen food can thaw if it is exposed to the sun's rays.
- Refrigerated food may become too warm and food-borne bacteria could grow.
- The outdoor temperature could vary hour by hour, and the temperature outdoors would not be satisfactory to protect both refrigerated and frozen foods at the same time. For example, if the outdoor temperature is 25° F (-4° C), it is too cold for refrigerated food and too warm for frozen food.
- Perishable items would be exposed to unsanitary conditions and to animals that may be attracted to the food. Animals are not clean and may harbor disease. Never use food that has come in contact with an animal. Instead of putting food outdoors, consider taking advantage of the cold by making ice. Fill buckets, empty milk cartons, or cans with water and leave them outside to freeze. Then put the homemade ice in your refrigerator and freezer or coolers.



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Food and Water Exposed to Floodwater, Fire, and Chemicals

Consider what you can do ahead of time to keep your food safe in an emergency. For example, if you live in a location that could be affected by a flood, plan your food storage so that your appliances and food shelves will be safely out of the way of floodwater. And remember to store pet food where it will be safe from possible contamination by floodwater.

After a flood, you should:

- Wear gloves, boots, and a long-sleeved shirt and long pants when cleaning up.
- Discard all food or drinking water that came in contact with floodwater, including canned goods. It is impossible to know if containers were damaged and the seal compromised.
- Discard wooden spoons, plastic utensils, and baby bottle nipples and pacifiers if they have been covered by floodwater. There is no way to safely clean them.
- Disinfect metal pans and utensils that have been covered by floodwater by boiling them in clean or properly treated water for 10 minutes.

After a fire, you should:

- Throw out food and water exposed to fire because they may have been damaged by the heat, smoke, and fumes of the fire and by the chemicals used to fight the fire.
- Throw out food and water in cans or jars even if they appear to be undamaged, because the heat from a fire can activate spoilage bacteria and make the food and water unsafe.
- Throw out any raw food or food in permeable packaging—cardboard, plastic wrap, screw-topped jars and bottles, etc., even if it was stored in the refrigerator.
- Throw out any food that has an off-flavor or odor when it is prepared.

Toxic gases released from burning materials are very dangerous. These gases can kill; they can also contaminate food and water. Food and water stored in refrigerators or freezers can also become contaminated by gases. The refrigerator seal is not airtight and gases can get inside.

If food or water has been exposed to toxic chemicals, throw it away. The chemicals cannot be washed off the food. This includes food stored at room temperature, such as fruits and vegetables, as well as food in permeable containers like cardboard and screw-topped jars and bottles, even if it is in the refrigerator. Canned goods are the only foods that can be safely kept after exposure to chemicals and then only if the unopened cans are washed with a dishwashing detergent and then immersed in a bleach solution (1 teaspoon of bleach per quart of water).

If cookware and utensils have been exposed to toxic chemicals, wash them with dishwashing detergent and then immerse them in a bleach solution (1 teaspoon of bleach per quart of water).



