



During extended power outages, adequate nutrition is still important. Put together nutritious meals, even when access to refrigeration or electric appliances is unavailable for days or weeks.

### Try To Keep a Normal Routine

Continue to eat at regular times, choose nutritious foods that cover a variety of food groups, and include a mixture of colors.

### Use Portable Equipment Safely

Camping, gas, or outdoor grills are useful for preparing meals when the power is out. Be sure to use these safely.

### Meal Planning Without Electricity

Visit [MyPlate.gov](https://www.myplate.gov) and use the model to help plan meals based on food groups. Also, see meal ideas below that do not require power.

### Eat Perishables First

If the power is not returning for several hours or days, plan to eat perishable foods first and non-perishable foods later. Refer to power outage materials to learn how long foods can be stored and how to use ice packs and coolers to extend the time foods can remain at safe temperatures.

### Use Clean Water

Wash hands before preparing food and wash fresh fruits and vegetables before eating. During a power outage, drinking water should still be available. But if it is not, use bottles or jugs of water.

### Cook Small To Avoid Leftovers

When refrigerators and freezers are not working, plan to cook in small batches, as leftovers cannot be saved unless power returns soon after making a recipe.

Avoid opening multiple containers of canned or bottled foods, as many of these foods become perishable once opened.



## Learn Which Foods Can Safely Remain Unrefrigerated

For example, fresh, uncut fruits and vegetables can be stored at room temperature. Once cut, their leftovers need to be refrigerated.

If internet access is available, visit [foodsafety.gov](https://www.foodsafety.gov) or download the FoodKeeper app for full lists.

## Breakfast Ideas

- **Dry cereal and milk with canned peaches.** Use milk within 4 hours of power outage or use powdered or ultra-high temperature milk, which needs to be refrigerated after opening.
- **Yogurt and fresh berries with granola.** Use yogurt within 4 hours of when the power goes out. Wash berries with water before eating.
- **Avocado bread with applesauce.** Top whole-grain bread with sliced avocados and black pepper; serve with canned applesauce.
- **Bagel and banana.** Spread peanut butter on a whole-grain bagel and top with sliced bananas.

## Lunch Ideas

- **Salad and sandwich.** Open and drain a can of chickpeas. Mash with avocado, onion, and dry spices. Serve on bread or crackers.
- **Tuna and crackers.** Drain canned or foil-packed tuna and eat with whole-grain crackers.
- **Cold taco salad.** Drain canned chicken, black beans, and corn. Mix with bottled salsa and serve with tortillas or tortilla chips.
- **Easy lunch box.** Munch on cheese sticks, whole-grain crackers, sliced bell pepper with shelf-stable ranch dressing cups, and raisins.

## Dinner Ideas

- **Deli sandwich wraps and fresh fruit.** Add deli meat, cheese, veggies, and condiments to tortillas. Use deli meats, cheeses, and opened, refrigerated condiments within 4 hours of a power outage.
- **Asian-inspired bulgur salad.** Requires boiling water. Cook the bulgur by pouring boiling water over it and letting it sit for 15 minutes. Mix in chopped almonds, canned apricots, chicken or beans, and chow mein noodles. Top with rice wine vinegar and oil.
- **Cobb salad or eggless option.** Add drained canned chicken, avocado slices, sliced tomato, and pre-cooked bacon bits to a plate of lettuce. Serve with whole-wheat crackers. If hardboiled eggs are available, add them to the salad. Remember to wash all produce before eating.
- **Picnic plate.** Eat picnic-style with pieces of summer sausage, cheese, olives, nuts, pieces of dark chocolate, pita bread, snap peas, and mandarin oranges. Once packages are opened, use sausage, cheese, and olives within 4 hours of when the power goes out. Remember to wash all produce before eating.

## Snack Ideas

- **Celery and apple slices with peanut butter.** Remember to wash all produce before eating.
- **Grapes and jerky.** Remember to wash all produce before eating.
- **Trail mix of dried fruit, nuts, and dry cereal.**
- **Tortilla chips and packaged salsa.**

## Call Your Local Office

Contact your local Illinois Extension office with your food safety questions: [go.illinois.edu/FindILExtension](https://go.illinois.edu/FindILExtension).

## References

- [Preparing Food Without Power](#), University of Minnesota Extension.
- [Preparing Food During Power Outages](#), North Dakota State University Extension.
- [Hurricane Preparedness: Meal and Menu Planning](#), University of Florida.

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# Disasters and Food Safety

## Food Safety After Floods



Flood waters may include sewage, debris, agricultural or industrial chemicals, downed power lines, household, medical, and industrial waste, disease-causing bacteria and other microorganisms, and other contaminants that can lead to illness or harm.

Flooding can affect food safety, so follow steps to keep the family safe before and after flooding. According to the Illinois Department of Natural Resources, 90% of all declared disasters in Illinois are floods.

### Prepare for Flooding

Flooding may cause power outages or difficult travel. If flooding is expected, put together a three-day water and food supply, including one gallon of water per person per day and ready-to-eat, non-perishable foods.

Keep water in food-grade containers. Avoid storing water in containers such as laundry pails or cleaning buckets that are not food-safe. Store food and water in water-resistant containers, such as heavy plastic totes.

If food or water is not needed during a storm, keep them in a cool, dark place in case of a future flood. Once per year, check product date labels and replenish supplies if needed.

Pack soap for handwashing and a 60% alcohol-based hand sanitizer or wipes. If clean water is unavailable, use hand sanitizer.

### Food Safety After Flooding

When it is safe to return home, sort through food to determine which foods can be kept after disinfecting and which should be thrown out.

#### Food to Throw Out After Flooding

Discard food and drink items that were exposed to flood waters and NOT in waterproof containers, such as:

- Screw caps, like bottled water and bottled juice
- Snap lids, like those often used to store flour, sugar, and other pantry ingredients
- Pull tops, such as some canned beans, meat, or fruit
- Crimped caps, such as beer and some juice and soda brands
- Drinks in cardboard containers, such as milk or juice

Throw out damaged canned foods that are swollen, leaking, punctured, rusted heavily, crushed, or dented and cannot be stacked without falling over.



### **Food to Keep After Flooding**

Keep undamaged, commercially prepared food and drink in waterproof packaging, such as all-metal cans, and “retort pouches,” such as seafood pouches. Disinfect these packages before opening and eating.

### **Disinfecting Food and Drink Packages**

- Remove the labels, if possible.
- Brush or wipe away any dirt from the packaging.
- Thoroughly wash packaging with soap and water — preferably hot water.
- Rinse with water that is safe for drinking.
- Sanitize by immersion: place containers in water and boil for 2 minutes, or use a chemical sanitizer by combining 1 cup of regular, unscented household bleach with 5 gallons of water and soaking containers for 15 minutes.
- Air dry all items for at least 1 hour before opening or storing.
- If labels were removed, write the contents and dates on the container. Include sell-by, use-by, and best-by dates on the date label.

### **Is Water Safe to Drink After Flooding?**

Bottled water exposed to flood waters is likely not safe to drink. Lids and seals on most individual bottles and gallon containers are not waterproof. Instead, disinfect water before drinking or using it for cooking.

### **Can You Disinfect Water?**

Check with the local health department to see if disinfecting water is appropriate. Local agencies may have certain requirements.

Otherwise, allow cloudy water to settle, draw off the clear water, and choose one of these steps to disinfect:

#### **Boiling** — kills most organisms

- Boil water for 1 minute and let cool.
- Store cooled water in clean containers with covers.

#### **Bleach Disinfecting** — kills some organisms, but not all

- Add  $\frac{1}{8}$  teaspoon of regular, unscented household bleach to each 1 gallon of water.
- Stir well and let stand for 30 minutes before using.
- Store in clean containers with covers.

## Cleaning and Sanitizing After Flooding

After a flood or water emergency, kitchen equipment must be cleaned and sanitized before use.

Throw out any porous kitchen items that cannot be thoroughly sanitized:

- Wooden utensils, dishes, and cutting boards
- Plastic utensils, plates, and cups

Sanitize small equipment, such as pots and pans:

- Wash with soap and clean water.
- Rinse with clean water.
- Sanitize by boiling or immersing for 15 minutes in a solution of 1 tablespoon of regular, unscented household bleach per 1 gallon of water.
- Let all equipment air dry.

## Clean and Sanitize Kitchen Surfaces

- Wash with soap and clean water.
- Rinse with clean water.
- Add 2 tablespoons of regular, unscented household bleach per 1 gallon of water to a spray bottle or bucket.
- Spray the bleach and water mixture on the surface or apply with a wet cloth.
- Let all equipment and surfaces air dry. Bleach requires a contact time of at least 1 minute to be effective.
- Remember to label any sanitizer solution in spray bottles or buckets. Bleach solutions should be made fresh each day.

## Kitchen Appliances After a Flood

Work with an appliance technician or electrician before turning on ovens, refrigerators, or other electronic appliances.

Depending on the damage, they may recommend replacing certain parts or the equipment entirely.

## Call Your Local Office

Contact your local Illinois Extension office with your food safety questions: [go.illinois.edu/FindILExtension](https://go.illinois.edu/FindILExtension).

## References

- [Keep Food and Water Safe After a Disaster or Emergency](#), Centers for Disease Control and Prevention
- [Floodwater After a Disaster or Emergency](#), Centers for Disease Control and Prevention
- [Build a Kit](#), Ready.Gov
- [Food and Water Safety During Power Outages and Floods](#), U.S. Food and Drug Administration
- [Cleaning Up the Kitchen After a Natural Disaster](#), Oklahoma State University
- [How To Salvage Flood-Damaged Appliances](#), North Carolina State Extension
- [The National Flood Insurance Program](#), Illinois Department of Natural Resources
- [Flood Preparedness and Response](#), Occupational Safety and Health Administration
- [Emergency Food and Water Supplies](#), Texas A&M AgriLife Extension

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## Make Your Own Bleach Sanitizer



Make disinfecting cleaner at home if unable to find it at the store. Use it to sanitize surfaces such as tables, counters, floors, doorknobs, toilets, showers, faucets, and sinks.

### Supplies Needed \*

- 1 quart or 4 cups of room-temperature water
- 1 teaspoon household bleach per quart of water
- Small bucket or spray bottle
- Masking tape
- Ink pen
- Rubber cleaning gloves
- Cleaning rag or towel

\* NOTE: The recipe for this bleach sanitizer is specifically for disaster cleanup.

### How To Make Bleach Sanitizer at Home

- Place a bucket or spray bottle on a flat surface.
- Add water to the bucket or spray bottle.
- Carefully pour the correct amount of regular, unscented household bleach into the container. If using a spray bottle, consider using a funnel to pour the bleach into the bottle safely.
- Label the sanitizer. With the ink pen, write “sanitizer” or “bleach cleaner” on the masking tape and attach the tape to the bucket or spray bottle containing the bleach mixture.

When cleaning up mold, use a solution of 1 cup of bleach per gallon of water for sanitizing purposes.

When cleaning toys or non-porous household items, if they’ve come in contact with flood water, sanitize them using 1 tablespoon of bleach per 5 gallons of water.



## Using the Sanitizer

- Clean all surfaces that need sanitizing with soapy water BEFORE using sanitizer on that surface. Food particles, soiled or sticky surfaces, and other contamination can deactivate the bleach in your sanitizer.
- Put on rubber cleaning gloves. The gloves help protect hands since bleach is irritating to the skin.
- Sanitize the surfaces:
  - From a spray bottle: Spray sanitizer directly onto the pre-cleaned surfaces.
  - From a bucket: Dip a clean cloth into sanitizer and lightly wring out the excess before applying it to surfaces.
- Allow sanitizer to air dry.

## Call Your Local Office

Contact your local Illinois Extension office with your food safety questions: [go.illinois.edu/FindILExtension](https://go.illinois.edu/FindILExtension).

## References

- [When and How to Clean and Disinfect Your Home](#), Centers for Disease Control and Prevention.

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# Disasters and Food Safety

## How to Build an Emergency Food Supply



Access to safe food is a major concern in any emergency or natural disaster. When preparing an emergency food supply, remember these helpful tips to help reduce stress and ensure families have access to safe and healthful foods.

### How Much Food Do I Need?

Plan to store enough food for each household member for 14-30 days. This can be as easy as increasing the number of staples and non-perishable foods usually on hand.

If household members typically eat certain meals away from home, such as a child eating school lunch or a spouse eating out on their lunch break, include them in the food supply list.

### Be Intentional When Selecting Items for Emergency Food Supply

- Non-perishable items that can be stored safely at room temperature
- Meat and other perishable items that can be frozen
- Foods high in nutrient value and low in sodium and added sugar. Be sure they are high in vitamins, minerals, healthy fats, and complex carbohydrates
- Foods that make great leftovers
- Foods from all five food groups and in different forms: canned, frozen, fresh, and dried
- Foods that fit the special diets, allergies, or medical family needs
- Favorite family food
- Infant formula and baby food, if needed
- Food for pets
- Manual can opener, disposable utensils, paper products, and plastic containers
- Foods are labeled and put away for emergency use only

Keep supplies fresh by rotating non-perishable staple items. Keep a list of staple foods on shelves and in the freezer. Indicate the amount available, date purchased, date opened, and use-by date, and replace the date if known.

### Storage Tips

Keep non-perishable items in a cool, dry location. Canned foods should be stored between 50 and 70 degrees. Store canned goods away from sunlight, damp areas, or spots near vents, pipes, or furnaces to avoid temperature fluctuations. Place open packages of sugar, flour, dried fruits, and nuts in airtight containers.

Keep supplies fresh by rotating non-perishable staple items. Date items with a marker to see easily which items should be used first or discarded.

When opening packages, do so carefully so the packaging can be resealed and tightly closed after use.

## My Prepared Pantry Includes

Frozen Foods	# On hand	Dried Foods	# On hand	Canned Foods	# On hand	Other	# On hand

### Emergency Foods

Pack emergency food pantry with these foods:

#### Protein

- Canned meats and fish like chicken, tuna, and salmon
- Dried or canned beans, peas and lentils
- Nut butter
- Nuts and seeds
- Eggs
- Fresh meats and fish that can be frozen
- Dried meat

#### Fruits

- Canned fruits packed in juice
- Dried fruit
- Frozen fruit
- Fresh fruit with a longer shelf-life, like apples and citrus

#### Vegetables

- Canned vegetables low in sodium
- Frozen vegetables
- Fresh vegetables with a longer shelf-life, like beets, carrots, onions, potatoes, and winter squash

### Call Your Local Office

Contact your local Illinois Extension office with your food safety questions: [go.illinois.edu/FindILExtension](https://go.illinois.edu/FindILExtension).

### References

- [Food and Water in an Emergency](#), FEMA
- [Disasters and Emergencies](#), Ready.Gov
- [Preparing an Emergency Food Supply](#), Short Term Food Storage, University of Georgia
- [Cold Storage Conditions](#), University of Maine Extension

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Disasters such as home fires happen to 2 million Americans each year, with almost half caused by cooking equipment. After a fire, cleaning up the kitchen and determining what to keep and what to toss can be an added stress. For the most part, saving and re-using food is not a safe practice. Learn more about preventing, handling, and cleaning up after kitchen fires.

### Kitchen Fire Prevention

- Never leave food that is boiling, broiling, frying, or grilling unattended. Set a timer to check on food frequently when baking, roasting, and simmering. Unattended cooking is the number one cause of cooking fires.
- After cooking, ensure the stove or oven is turned off. Unplug small appliances when not in use.
- Use a dry oven mitt or potholder, rather than a towel, to remove food from the oven and stove. Towels can easily fall onto heat and ignite.
- Do not use the oven as storage. Preheating an oven filled with storage containers could easily lead to a fire.
- Avoid storing pots, pans, plastic, paper, and cloth above the stove. Items can easily fall onto the stove and catch fire, and individuals can quickly be burned if reaching for an item when the stove is on.
- Roll up long sleeves when cooking to prevent them from catching fire.
- Turn the pot and pan handles towards the back of the stove.
- Maintain a kid-free and pet-free zone three feet around the oven or stove to prevent accidental burns and to keep flammable items out of the area.
- Clean up spills on cooking surfaces to prevent the buildup of grease and potential fires.
- If the oven has been used recently, ensure the appliance is completely cool before cleaning.
- Store household cleaners away from the stove, oven, and other kitchen heat sources.
- Keep baking soda easily accessible in case of a grease fire. Keep baking sheets or lids for pots and pans close by to smother a fire quickly.
- Know where the kitchen fire extinguisher is located, what type it is, and how to use it.
- Install battery-powered smoke detectors on each house level and in the garage, and test twice a year.



## Toaster Safety

- Keep the appliance unplugged when not in use. If the toaster is located near something flammable, it can spark a fire whether the lever is up or down.
- Clean the toaster regularly. Crumbs that accumulate in the bottom of the toaster can spark a fire.
- Do not force thick foods into a toaster. This may cause the food to get stuck in the toaster, burn, and ignite a fire.

## Microwave Safety

Read manufacturer labels to learn if items are oven or microwave-safe or resistant to other heat sources.

Do NOT use in microwave:

- Aluminum foil
- Twist ties
- Metal cookware, including utensils, bowls, pans, and measuring cups
- Recycled paper products, such as napkins and paper towels. They may contain minute metal flecks that can spark.

## Oven Safety

- To prevent flames, put a baking sheet under foods high in fat or likely to drip.
- Use the correct oven settings. Accidentally turning on broil rather than bake may lead to burning food and a potential fire.
- Use thermal-shock-resistant glass in the oven. To avoid the risk of thermal shock, which can cause glass to shatter, do not store glassware in the oven and always preheat the oven before cooking food in glassware.
- Parchment paper is heat-resistant and oven-safe. Another option is a silicone baking mat.
- When in doubt, always look for cookware or material explicitly labeled oven safe.

Do NOT use in the oven:

- Plastics
- Wax paper is not heat-resistant and may catch fire.
- Paper products: paper towels, plates, or bowls
- Wet or damp potholders, oven mitts, or towels. Wet material transfers heat quicker than dry material and can cause a burn.

## Tips for Frying Safely

- Heat oil slowly to temperature.
- If the oil smells or starts to smoke, it is getting too hot. Turn off the burner and remove the pan from the heat.
- Smoke point: Most cooking oils reach their smoke point between 350 to 450 F.
- Flash point: The point where most cooking oils start creating flammable vapors is 600 F.

## Deep Fat Frying and Fire Prevention

- Read the directions of the deep fryer before use.
- Always keep the fire extinguisher close.
- Keep direct flames away from oil; oil is highly flammable.
- Keep water away from oil when deep-fat frying. Water vaporizes instantly, changing to super-heated steam.
- Remove ice crystals from frozen food, and pat thawed or fresh food dry before placing it in a deep fryer.
- Avoid overcrowding in the fryer. This can cause uneven cooking and overflow of oil.
- When deep frying a turkey, the bird should be 12 pounds or less.
- Always fry a turkey outdoors in a safe location.
- Never use plastic when deep frying. It can easily melt.
- Never leave a deep fryer unattended.

## Putting Out a Kitchen Fire

- Stovetop fire: Wear an oven mitt and slide a lid or baking sheet over the pan to smother flames. Turn off the burner, and leave the pan covered until it completely cools.
- Oven fire: Keep the oven door closed and turn off the heat. If flames do not go out, call the fire department. Do not open the oven door until the fire is completely out.
- Microwave fire: Keep the microwave door closed. Turn off and unplug the appliance. Opening the door of an oven or microwave feeds oxygen to the fire.
- Grease fire: Use salt or baking soda to extinguish small grease fires. Do not pour water on a grease fire.
- Using a fire extinguisher: Stay 4 to 6 feet back and spray directly at the base of the fire. Standing too close while spraying the extinguisher can cause fire to spread up the wall behind the stove.

## Kitchen Clean-Up After a Fire

Contact the fire department to assess the severity of the fire.

- When in doubt, throw it out: Discard food that has been near a fire or exposed to heat, smoke, fumes, extinguishing chemicals, or water.

- Cans, bottles, and jars: Heat from a fire can cause food spoilage in cans and jars. Exposure to extreme heat may also split or rupture jars and canned food. Throw these out.
- Food stored on shelves, counters, and cabinets: After possible exposure to heat or toxic fumes, discard any food, spices, and extracts packaged in cardboard, plastic wrap, aluminum foil, paper, cloth, screw-topped jars, or storage canisters.
- Food stored in the refrigerator and freezer: Refrigerator and freezer seals are not airtight, and toxic fumes from the fire can get inside.
- Food containers: Chemicals used to fight fires cannot be washed off exposed food or food containers.
- Canned food and cookware, such as pots and pans, can be decontaminated: Wash in hot, soapy water. Mix and submerge for 15 minutes in a mixture of 1 tablespoon of regular, unscented household bleach per 1 gallon of water.
- Clean countertops and kitchen surfaces: Use hot, soapy water to wash down surfaces. Rinse and sanitize using 1 tablespoon of regular, unscented household bleach per 1 gallon of water. Allow the surface to air dry with a contact time of at least 1 minute.

## Call Your Local Office

Contact your local Illinois Extension office with your food safety questions: [go.illinois.edu/FindILExtension](https://go.illinois.edu/FindILExtension).

## References

- [Is Food Safe After a Fire?](#), Michigan State University Extension.
- [Cooking Safety](#), National Fire Protection Association.
- [Deep Fat Frying and Food Safety](#), U.S. Department of Agriculture.
- [Fires and Food Safety](#), U.S. Department of Agriculture.
- [Keep Your Food Safe During Emergencies: Power Outage, Floods & Fires](#), U.S. Department of Agriculture.
- [Kitchen Companion: Your Food Safe Handbook](#), U.S. Department of Agriculture.

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# Disasters and Food Safety

## Kitchen Fire Extinguishers



Fire! Where's the fire extinguisher? Knowing where a fire extinguisher is and how to use it is essential for food and kitchen safety. Be prepared by purchasing the right type of extinguisher and knowing how to store, use, and inspect it properly.

### Types

The type of fire an extinguisher can put out is based on a letter system, as seen in the table below.

Multipurpose fire extinguishers may be labeled with a combination of letters such as B-C or A-B-C. Common household extinguishers are labeled 'ABC.'

Most kitchen fires involve grease. A fire extinguisher with only a class A label will not work on a grease fire. Make sure fire extinguishers for the kitchen are labeled with B or K.

All fire extinguishers should have a seal that indicates an independent testing laboratory has tested them. Often, the seal is a UL label.

Type of Fire Extinguisher	Best Used For	Use In
A	Cloth, wood, and paper	Homes and businesses
B	Combustible and flammable liquids, such as grease, oil, and oil-based paints	Homes and businesses
C	Plugged-in electrical equipment, such as appliances and tools	Homes and businesses
D	Flammable metals	Factories
K	Vegetable oils, animal oils, and fats in cooking appliances	Commercial kitchens, restaurants, cafeterias, and catering businesses

Source: [usfa.fema.gov](https://usfa.fema.gov), U.S. Fire Administration.



## Extinguisher Size

Choose a fire extinguisher that is large enough for a small fire but not heavy. For home use, a 5-pound fire extinguisher is generally recommended.

## Installation and Storage

Install fire extinguishers close to exits, and keep them at least 30 feet from the stove, if possible.

Do not store your fire extinguisher in a cabinet or a hard-to-reach place in the kitchen. In an emergency, it should be easy to grab.

## Using a Fire Extinguisher

- (P) Pull the pin.
- (A) Aim the nozzle low towards the base of the fire, standing at least 6 feet from the fire.
- (S) Squeeze the lever slowly and hold it.
- (S) Sweep the nozzle from side to side while moving toward the fire.

If the fire does not go out immediately, leave the area. Call the fire department anytime you need to use a fire extinguisher.

## Call Your Local Office

Contact your local Illinois Extension office with your food safety questions: [go.illinois.edu/FindILExtension](https://go.illinois.edu/FindILExtension).

## Resources

- [Cooking Safety](#), National Fire Protection Association.
- [Choosing and Using a Fire Extinguisher](#), U.S. Fire Administration.

## Monthly Inspection

Inspect the fire extinguisher once a month.

- Check the extinguisher's pressure gauge to ensure it's still in a safe operating range.
- Inspect the hoses and nozzles for physical damage and check for rust or dents. Clean the outside to remove dust or grease.
- Lift the extinguisher to make sure it is full. If it is light, it may leak.
- Shake chemical extinguishers monthly to prevent the chemicals within from solidifying and settling. Read the label on the extinguisher.
- Check the label or attached tag for an expiration date. According to National Fire Protection Association standards, rechargeable fire extinguishers are good for 6 years, and disposable fire extinguishers are good for 12 years.

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# Disasters and Food Safety

## Power Outages



Long-term power outages lasting hours to weeks can be much more inconvenient than short-term outages lasting seconds or minutes. Knowing what to do with perishable foods is important when long-term outages happen.

### How Long Has the Power Been Out?

Sometimes, power outages happen while away from home, such as at work or on vacation.

When power comes back on, refrigerators and freezers will work to cool everything down again.

While power was out, food may have been at unsafe temperatures long enough to spoil or allow harmful bacteria and microorganisms to grow.

To help detect if the power was off for a long time, try this tip from University of Nebraska Extension:

“Store an ice cube or two in a sealed plastic bag or small container in the freezer; a sealed bag or container is important so the ice cube doesn’t

evaporate and disappear. If the ice cube has melted down from its original shape, you’ll know the power was off for an extended period.”

A melted ice cube means power has been out long enough that throwing out all the food is the safest option.

### Thermometers

Invest in refrigerator and freezer thermometers to help you identify food temperatures during a power outage.

- Freezer temperature should be at or below 0 F.
- Refrigerator temperature should be at or below 40 F.

### Refrigerators

During a power outage, refrigerated foods are safe for up to 4 hours. Remember to keep the refrigerator door closed as much as possible.

At the start of a power outage, plan to use perishable foods before they become unsafe. Plan your next meal around these foods and share with a neighbor.

After 4 hours, throw out perishable foods, such as raw meat, milk, and leftovers.

### Freezers

During a power outage, foods in a half-full freezer are safe for up to 24 hours. Remember to keep the freezer door closed as much as possible, like the refrigerator. Food can stay safe for up to 48 hours if the freezer is full.

### Refreezing

Once the power returns, foods with ice crystals or at 40 F or colder can be refrozen. Be aware that the food quality may go down during this slight thaw and refreeze.

### Using Ice in Freezers and Refrigerators

If available, add bags of ice, ice packs, or ice blocks to refrigerators and freezers to keep foods cold longer.

Group foods close together, but keep raw meat separate from other foods.



## Keep Foods at Safe Temperatures Longer

- Move perishable refrigerated foods, such as milk and raw meat, to the freezer.
- Group refrigerated foods together.
- If a refrigerator or freezer has door storage, move foods into the body of the fridge or freezer where it is colder.
- Use coolers with lids and ice, ice packs, or ice blocks to store foods.

## When Power Returns

Check the temperature on the thermometer in refrigerators and freezers.

- If freezer thermometers read 40 F or colder, the food is safe and may be refrozen.
- If refrigerator thermometers read 40 F or warmer, and power has been out for 4 hours or more, throw out all perishable foods.

If there is NOT a thermometer:

- Feel for ice crystals on freezer packages or place a food thermometer — not a freezer thermometer

## References

- [What To Do With Perishable Food During a Power Outage](#), University of Nebraska-Lincoln.
- [Food and Water Safety During Power Outages and Floods](#), U.S. Food and Drug Administration.
- [Keep Your Food Safe During Emergencies: Power Outages, Floods & Fires](#), U.S. Department of Agriculture.
- [Food Safety During a Power Outage](#), FoodSafety.gov.

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— between packages to see that foods are 40 F or colder. In these cases, foods are safe to refreeze.

- Perishable foods, such as milk, juice, and meats that are above 40 F for 2 hours or more, should be thrown out.

## Power Outages in Winter

When power goes out in winter, do not place perishable food outside. Outside air temperatures may not be cold enough to keep foods at safe temperatures, and as the sun moves throughout the day, it can heat up previously shaded areas.

Avoid sticking food in snow, as this can expose the food to dirt, microorganisms, and animals, which can contaminate the food. Do not use snow to fill coolers, refrigerators, or freezers. This can also expose food to contamination.

If the outage is expected to be short, keep food in the refrigerator and freezer using ice, ice packs, or ice blocks. Remember, full freezers can keep food safe for around 48 hours.

## Insurance

A homeowner's insurance policy may cover and reimburse the cost of food lost during an outage.



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Boil-water advisories are public announcements by local water authorities advising the public to boil their tap water for drinking and other human consumption uses to protect public health from waterborne infectious agents that could be, or are known to be, present in drinking water.

### **During a Boil Order or Advisory**

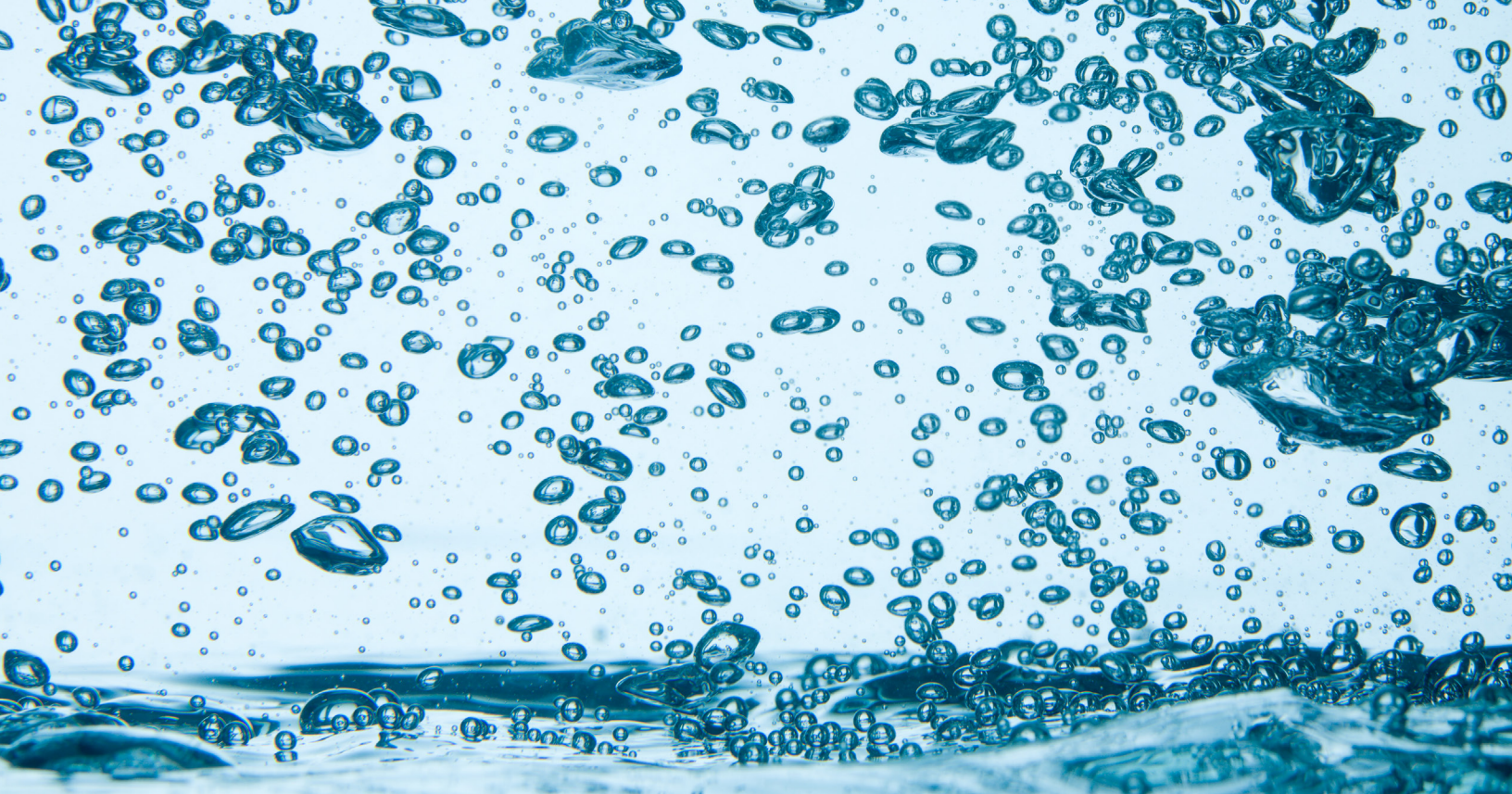
Once hearing the local area is impacted by a boil order or boil water advisory, begin using bottled water or boiled tap water.

This includes using water for drinking, cooking, washing dishes, cleaning surfaces, brushing teeth, bathing, and providing water to pets.

- Boil tap water even if it is filtered.
- Do not use water from any appliances, such as ice and water from a refrigerator.
- Use disposable plates, cups, and utensils, if available.

If you typically use powdered formula for infants:

- For child safety, breastfeed infants or offer ready-to-use formula.
- If only powdered formula is available, prepare it with bottled or boiled water.
- Do not prepare powdered formula with untreated tap water during a boil order.



## Steps to Boil Water

- Bring water to a full, rolling boil for 1 minute.
- Allow boiled water to cool before using to avoid burns.

## Washing Dishes

Household dishwashers are safe to use if the water reaches a final rinse temperature of at least 150 F or if the dishwasher has a sanitizing cycle.

To wash dishes by hand:

- Wash dishes in hot water.
- In a separate container, add 1 teaspoon of regular, unscented household bleach to 1 gallon of room-temperature water.
- Add washed and rinsed dishes to the bleach-water solution for at least 1 minute.
- Let the dishes air dry completely before using.

Eating off dishware that has been sanitized with diluted bleach is safe. Do not add extra bleach.

## Call Your Local Office

Contact your local Illinois Extension office with your food safety questions: [go.illinois.edu/FindILExtension](https://go.illinois.edu/FindILExtension).

## References

- [Boil Water Advisory](#), Centers for Disease Control and Prevention.
- [Disaster Planning: Infant and Child Feeding](#), Centers for Disease Control and Prevention.
- [Guidance for Industry: Use of Water by Food Manufacturers in Areas Subject to a Boil-Water Advisory](#), U.S. Food and Drug Administration.

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# Disasters and Food Safety

## Clean and Sanitize the Kitchen



Cleaning and sanitizing the kitchen are essential steps in preventing foodborne illness. It is important to remember that not every appliance should be cleaned in the same way.

Always follow the manufacturer's instructions for cleaning and sanitizing equipment; however, below are general guidelines for cleaning and sanitizing various food contact surfaces and equipment.

### Wash

Wash dishes, utensils, and other surfaces that touch food, such as refrigerator drawers, with hot, soapy water. Rinse with clean, drinkable water.

### Sanitize

Mix 1 cup of regular, unscented household bleach with 5 gallons of water, or use 1 tablespoon of regular, unscented household bleach for every 1 gallon of water.

Wear rubber gloves to avoid skin irritation. Water should not be hot as this can weaken the bleach.

To sanitize pans, dishes, glassware, and utensils, submerge items in a bleach solution for 15 minutes or in boiling water.

For sanitizing metal utensils, silverware, and pots and pans, submerge items in boiling water for 10 minutes. Using a bleach solution may cause the metal to darken.

Using a cloth, wipe the countertops and outer surfaces of kitchen appliances with a bleach mixture and let them air dry.

### Food Storage Containers

Do not put storage containers in the dishwasher unless the product is marked dishwasher safe. If no instructions for cleaning are listed, wash in warm, soapy water, paying attention to crevasses and indentations where food can get stuck. Rinse thoroughly and air dry completely before storing.

### Cloths and Potholders

Laundry dishcloths and potholders on the hot cycle in the washer and dryer to destroy harmful bacteria.

### Inspect Cookware

Discard bowls, cups, cutting boards, or utensils made of soft, porous material, such as wood or plastic, that have come in contact with flood water. These items absorb water and may be unsafe to use.

### Removing Mold

Hard plastic, glass, and metal that have mold can be cleaned with warm water and soap. To remove mold from kitchen cabinets or hard, non-porous surfaces, scrub with detergent and water, then dry thoroughly.

Sanitize hard surfaces such as countertops, flatware, stoves, sinks, plates, and tools with 1 cup of regular, unscented household bleach per 1 gallon of water. If surfaces are rough, scrub with a stiff brush, rinse surfaces with clean water, and air dry.

### Oven

Before cleaning an oven, make sure it is cool and no pots or pans are inside. Follow manufacturer instructions.

Oven cleaners made for a cold oven are more potent than those made for a hot oven. Pay close attention to the recommendations on cleaners. Additionally, do not use oven cleaners on self-cleaning ovens, as this may damage the oven's surface.

Another method for cleaning an oven is placing ½ cup of household ammonia in a bowl and then put it in a cool, closed oven overnight or for at least 4 hours.

After 4 hours, remove and wash racks in warm, soapy water to remove burned-on food. Wash the oven walls and doors with a mixture of ½ cup ammonia and 1-quart warm water. Wipe down the oven walls and doors.

Finally, wash the oven walls and doors with warm, soapy water, then rinse and wipe dry.



## Microwave

Follow manufacturer instructions. Do not use oven cleaner, steel wool, or abrasive cleaners in a microwave.

To remove caked-on food, heat one of these options in the microwave in a microwave-safe dish until the mixture boils:

- 6 tablespoons baking soda with 1 cup water
- ½ cup lemon juice with 1 cup water

Leave the mixture in the microwave with the door closed until it cools. Remove the mixture and wipe the microwave with a cloth or paper towel.

## Kitchen Sink and Disposal

Wash and disinfect the kitchen sink once or twice a week with either a disinfectant cleaner or a mixture of 1 tablespoon of regular, unscented household bleach per 1 gallon of water. Sanitize drains and disposals monthly by pouring 1 tablespoon of bleach in 1 quart of water down the drain. Wash sink strainers weekly.

## Coffeemakers

Follow manufacturer instructions.

General recommendations:

- Decalcify the machine by adding 4 cups of vinegar to the reservoir, letting it stand for 30 minutes, and then running it through the unit.
- Follow up by running two to three cycles of fresh water. Clean every 40 to 80 cycles or once a month.

## Sponges

Kitchen sponges can contain harmful bacteria and carry viruses; however, there are safe, effective ways to clean:

- Bleach soak: Use ¾ cup of regular, unscented household bleach for every 1 gallon of water, and soak sponges for 5 minutes. Rinse thoroughly. Let air dry before using.
- Dishwasher: Ideally, the dishwasher should reach 155 F and include a heated dry cycle.
- Microwave: Wet the sponge and microwave it for 2 minutes. Heating a dry sponge can cause a fire, so make sure the sponge is completely wet. Let air dry before using.
- Do not microwave metallic padded kitchen sponges. If planning to reuse them, run them through the dishwasher.

## Cleaning a Refrigerator or Freezer

Wash shelves, drawers, and other removable parts by hand with hot, soapy water. When cleaning the refrigerator or freezer, store perishable food temporarily in a cooler to prevent harmful bacteria from growing. Discard spoiled or questionable food.

- Shelves, drawers, and other removable parts: Using a cloth, sanitize with 1 tablespoon of regular, unscented household bleach mixed with 1 gallon of water. Let air dry.
- Doors and interior: Mix 2 teaspoons of baking soda with 1 quart of water. Wash doors and interior of refrigerator and freezer. Rinse with a bleach solution.
- Leave the door open for 15 minutes to allow air drying before refilling the refrigerator.

## Refrigerator Odors

Try one of these options to get rid of lingering odors:

- Wipe down the appliance with a 1:1 ratio of vinegar and water to destroy mildew.
- Stuff appliances with old rolled newspapers and leave them closed for several days before cleaning them with vinegar and water.
- Place a large, shallow container of fresh coffee grounds or baking soda on the bottom of the appliance.
- Soak a cotton swab in vanilla and place it inside the refrigerator or freezer with the door closed for 24 hours.

## Dishwasher Odors

Follow specific manufacturer instructions. Below are suggestions from the Whirlpool® and Kenmore® appliance companies for removing odors from a dishwasher using vinegar and baking soda:

- Clean the filter at the bottom of the dishwasher for food, debris, glass, or other obstructions.
- Pour 2 cups of white vinegar into a glass measuring cup and place it upright on the dishwasher's lower rack. Do not add detergent. Run a normal cycle with heated dry-off.
- After the cycle is complete, sprinkle 1 cup baking soda in the dishwasher and run again on a hot water cycle.

Additional Option: If available, use the home dishwasher sanitizing cycle to clean non-porous materials such as acrylic or glass.

## Call Your Local Office

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## References

- [Kitchen Appliances](#), American Cleaning Institute.
- [Water, Sanitation, and Hygiene](#), Centers for Disease Control and Prevention.
- [Flood](#), North Dakota State University.
- [Dishwashing sponges and brushes: Consumer practices and bacterial growth and survival](#), International Journal of Food Microbiology, 337.
- [Clean the Germiest Home Items](#), National Sanitation Foundation.
- [Cleaning Your Electric Stove Clean & Healthy Housing](#), Mississippi State University Extension Service.
- [Disinfecting Dishes, Cookware and Utensils Safety Guidelines After A Disaster](#), University of Wisconsin Extension.
- [Food Safety and Inspection Service](#), United States Department of Agriculture.
- [Mold Cleanup in Your Home](#), United States Environmental Protection Agency.

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