

Appendix

This is the Appendix for "Talking About Disaster: Guide for Standard Messages." If you clicked on a link from the electronic version of the Guide to get to specific information about an issue, the content is in this appendix. Scroll through the appendix or use the 'find' feature of Adobe Acrobat Reader (Ctrl-F) to find the specific subject that brought you to this section.

Smoke Alarms

If you have a fire, smoke alarms can cut nearly in half your risk of dying in a fire. Smoke alarms sense abnormal amounts of smoke or invisible combustion gases in the air. They can detect both smoldering and flaming fires. National Fire Protection Association 72, the National Fire Alarm Code, now requires in new homes hard-wired, interconnected smoke alarms with battery back-up on every level of the home, outside each sleeping area, and inside each bedroom. It also requires that alarms be wired together so that if one sounds, they all sound.

- **If smoke alarms are not already in place, at a minimum install them on every level of the home and outside each sleeping area.** If a fire occurs inside a bedroom, dangerous gases can cause heavier sleep. Smoke alarms inside bedrooms will be more likely to wake you.
- **To prevent nuisance alarms, vacuum cobwebs and dust from your smoke alarms monthly. Never** disable a smoke alarm, even if you experience nuisance alarms while cooking or showering. Clean the smoke alarm following the manufacturer's instructions and, if possible, relocate it away from the kitchen or bathroom. If nuisance alarms are a persistent problem, look for a different type of smoke alarm.
- **Use the test button to test your smoke alarms monthly.** The test feature tests all electronic functions and is safer than testing with a controlled fire (matches, lighters, cigarettes). If the smoke alarm manufacturer's instructions permit the use of an aerosol smoke product for testing the smoke alarm, and you prefer that method, choose one that has been listed (examined and tested to appropriate product safety standards) by a third-party product testing laboratory, and use it in accordance with the product instructions.
- **If you have battery-powered smoke alarms, replace the batteries at least once a year.** (Replace the batteries in your carbon monoxide (CO) alarms at the same time you replace your smoke alarm batteries.) Some agencies recommend that you replace batteries when the time changes from standard to daylight savings each spring and then back again in the fall. "Change your clock, change your batteries." Replacing batteries this often certainly will not hurt; however, data show that fresh batteries will last at least a year, so more frequent replacement is not necessary unless the smoke alarm begins to chirp. Also, Arizona, Hawaii, the eastern portion of Indiana, Puerto Rico, American Samoa, and Guam do not use daylight savings time. Pick an easy-to-remember anniversary, such as your birthday or a national holiday, as the day to change the batteries each year.

- **Replace your smoke alarms every 10 years.** This is the recommendation of the National Fire Protection Association and the U.S. Consumer Product Safety Commission. Smoke alarms become less sensitive over time.
 - **Be sure to install smoke alarms in areas where pets are and in other buildings that house animals.**
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Carbon Monoxide Alarms

Every home should have properly installed and maintained carbon monoxide (CO) alarms. CO alarms can help detect CO, a colorless, odorless gas produced by burning any fuel. Exposure to high levels of CO can cause death. The initial symptoms of CO poisoning are similar to the flu and include dizziness, fatigue, headache, nausea, and irregular breathing.

- Install battery-operated CO alarms or plug-in CO alarms with battery back-up in your home, according to the manufacturer's installation instructions. CO alarms should be certified to the requirements of the latest safety standards for CO alarms (UL 2034, IAS 6-96, or CSA 6.19.01). It is especially important to have a CO alarm near sleeping areas.
- Test and maintain your CO alarms according to the manufacturer's instructions.

Because of the risk of CO poisoning, never operate unvented fuel-burning appliances in any closed room or where people are sleeping. CO poisoning from fuel-burning appliances kills people in the United States each year.

CO can leak from faulty furnaces or fuel-fired heaters or can be trapped inside a home by a blocked chimney or flue. Burning charcoal inside a home produces CO. Running an automobile engine in an attached garage can cause CO to enter a home and so can running a portable generator if it is near windows, doors, or vents, even if it is outdoors.

Never use gas appliances such as ranges, ovens, or clothes dryers for heating your home. **Never** use a portable generator in an enclosed or partially enclosed space, including in your home or in a garage, basement, crawl space, or other partially enclosed area, even with ventilation. Locate a generator outdoors and away from doors, windows, and vents that could allow CO to come indoors. Generators can produce high levels of deadly CO very quickly. (See [Portable Generators](#).)

Fire Extinguishers

- **Consider having one or more working fire extinguishers in your home.** An extinguisher rated “A-B-C” is recommended for home use. Many fire extinguisher models are designed for one-time use and cannot be recharged.
 - **Get training from the fire department or a fire extinguisher manufacturer on how to use your fire extinguisher.** Fire extinguishers from various manufacturers operate in different ways. Unless you know how to use your extinguisher, you may not be able to use it effectively, or it could place you in greater danger. There is no time to read directions during an emergency. Only adults should handle and use extinguishers.
 - **Install extinguishers high on the wall, near an exit, and away from heat sources.** Extinguishers should be easily accessible to adults trained to use them, and kept away from children's curious hands. Heat may make the contents less effective or cause the extinguisher to lose its charge more quickly.
 - **If you try to use a fire extinguisher on a fire and the fire does not immediately die down, drop the extinguisher and get out.** Most portable extinguishers empty in 8 to 10 seconds. After some residential fires, people have been found dead with fire extinguishers near them or in their arms.
 - **Look at your fire extinguisher to ensure that it is properly charged.** Fire extinguishers will not work properly if they are not properly charged. Use the gauge or test button to check that there is proper pressure. Follow the manufacturer's instructions for replacing or recharging fire extinguishers. If the unit is low on pressure, damaged, or corroded, replace it or have it professionally serviced.
 - **Before you begin to fight a fire with a fire extinguisher, be sure that:**
 - Everyone has left or is leaving the home.
 - The fire department has been called.
 - The fire is small and not spreading.
 - Your back is to an exit you can use quickly.
 - There is not much smoke in the room.
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Arc-Fault Circuit Interrupters (AFCIs)

Consider installing AFCIs in your home's electrical panel box. AFCIs (arc-fault circuit interrupters) are new devices now required by the National Electrical Code® for bedrooms in new construction. They detect abnormal arcing in a circuit (which can cause overheating and lead to an electrical fire) and de-energize the circuit when an arc fault is detected. (AFCIs should not be confused with ground-fault circuit interrupters—GFCIs—which address shock, not fire, hazards.)

Home Fire Sprinkler Systems

- **Consider installing an automatic fire sprinkler system in your home.** Although smoke alarms are essential in every household, they are designed to detect, not control, a fire. Home fire sprinklers complement the alarms' work, providing a way to fight flames immediately. In less time than it would take the fire department to arrive on the scene, home fire sprinklers can prevent a fire from spreading and even extinguish a fire. A sprinkler system can decrease the chance that deadly smoke and gases will reach your family. In addition, sprinkler systems can put out fire when you are away from home, and if they are connected to an alarm system, may notify the fire department in your absence.
 - **To ensure sprinkler system reliability, be sure to use a qualified installer who adheres to National Fire Protection Association (NFPA) codes and standards and local fire safety regulations.**
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Portable Generators

Portable generators are useful when temporary or remote electric power is needed, but they also can be hazardous. The primary hazards to avoid when using a generator are carbon monoxide (CO) poisoning from the toxic engine exhaust, electric shock or electrocution, and fire. Every year, people die in incidents related to portable generator use.

Carbon Monoxide Hazard

Never use a portable generator in an enclosed or partially enclosed space. Portable generators can produce high levels of CO very quickly. When you use a portable generator, remember that you cannot smell or see CO. Even if you cannot smell exhaust fumes, you may still be exposed to CO. If you start to feel sick, dizzy, or weak while using a portable generator, get to fresh air **right away**. Alert others in the home or in the vicinity to get to fresh air. **Do not delay**. The CO from portable generators can rapidly lead to full incapacitation and death.

If you experience serious symptoms, get medical attention immediately. Inform medical staff that CO poisoning is suspected. If you experienced symptoms while indoors, have someone call the fire department to determine when it is safe to reenter the building.

Follow these safety tips to protect against CO poisoning:

- **Never** use a portable generator indoors, including in homes, garages, basements, crawl spaces, and other enclosed or partially enclosed areas, even with ventilation. Opening doors and windows or using fans will not prevent CO buildup.
- Follow the instructions that come with your portable generator. Locate the unit **outdoors** and away from doors, windows, and vents that could allow CO to come indoors.

Electrical Hazards

Follow these tips to protect against electrical hazards:

- Keep the portable generator dry and do not use it in rain or wet conditions. To protect it from moisture, operate it on a dry surface under an open, canopy-like structure. Dry your hands if they are wet before touching the generator.
- Plug appliances directly into the portable generator. Or, use a heavy-duty, outdoor-rated extension cord that is rated (in watts or amps) at least equal to the sum of the connected

appliance loads. Check that the entire cord is free of cuts or tears and that the plug has all three prongs, especially a grounding pin.

- **Never** try to power the home wiring by plugging the portable generator into a wall outlet, a practice known as “backfeeding” This is an extremely dangerous practice that presents an electrocution risk to utility workers and neighbors served by the same utility transformer. It also bypasses some of the built-in household circuit protection devices.
- If you must connect a portable generator to the home wiring to power appliances, have a qualified electrician install the appropriate equipment in accordance with local electrical codes. Or, check with your utility company to see if it can install an appropriate power transfer switch.
- For power outages, permanently installed stationary generators are better suited for providing backup power to a home. Even a properly connected portable generator can become overloaded. This may result in overheating or stressing the generator components, possibly leading to a generator failure.

Fire Hazards

Follow these tips to protect against fire hazards:

- Never store fuel for your portable generator in the home. Gasoline, propane, kerosene, and other flammable liquids should be stored outside of living areas in properly labeled, non-glass, safety containers. Do not store them near a fuel-burning appliance, such as a natural gas water heater in a garage. If the fuel is spilled or the container is not sealed properly, invisible vapors from the fuel can travel along the ground and can be ignited by the appliance’s pilot light or by arcs from electric switches in the appliance.
- Before refueling a portable generator, turn it off and let it cool down. Gasoline spilled on hot engine parts could ignite.

Tips for Preparing Your Disaster Supplies Kits

Keep items in separate airtight plastic bags. This will help protect them from damage or spoiling.

- **Observe the expiration or “use by” date on stored food and water. If you have prepared you own containers of water, replace them every six months** to ensure freshness.
- **Rethink your kit and family needs at least once a year.** Replace batteries, update medicines, clothes, etc.
- **Ask your physician or pharmacist about storing prescription medications.** You may find that the best solution is to gradually acquire a reserve by refilling prescriptions a little early, but always using those on hand first to avoid having the expiration dates lapse. Be sure they are stored to meet instructions on the label. It may be difficult to obtain prescription medications during a disaster because stores may be closed or supplies may be limited. Keep copies of essential prescriptions with you at all times.
- **Use easy-to-carry containers** for the supplies you would most likely need for an evacuation. Label them clearly. Think about using:
 - Large trash container with handles and a cover
 - Camping backpack

- Duffel bag
 - Cargo container that fits on the roof of your vehicle
 - Insulated cooler that protects stored items in hot climates
 - **Store water separately** to prevent damage from leakage.
 - **Always keep your cell phone with you**, if you have one. Do not pack it in the kit. Consider getting an extra cell phone battery to keep with your Disaster Supplies Kit.
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Emergency Supplies for Your Vehicle

In addition to basic vehicle safety items—properly inflated spare tire, wheel wrench, jack, jumper cables, tool kit, flashlight and extra batteries, reflective triangle, signal flares, duct tape—you should always keep a first aid kit (see [First Aid Kit](#)) and emergency supplies appropriate to the season in your vehicle. During winter in cold climates, make sure your vehicle has items such as a windshield scraper and snow brush, salt, sand, shovel, tire chains, and warm clothing.

Also recommended for the vehicle that members of the household would use to evacuate are a sleeping bag or blankets for each person, a tube tent, a compass, a shovel, and several rolls of quarters for public telephones and vending machines.

First Aid Kit

Assemble a first aid kit to include in your Disaster Supplies Kit and one for each vehicle. Include:

- First aid manual
- Sterile adhesive bandages in assorted sizes
- Safety pins in assorted sizes
- Cleansing agent/soap
- Antiseptic
- Latex gloves (2 pairs)
- Sunscreen
- 2-inch and 4-inch sterile gauze pads (4 to 6 each)
- Triangular bandages (3)
- 2-inch and 3-inch sterile roll bandages (3 rolls each)
- Scissors
- Tweezers
- Needle
- Moistened towelettes
- Thermometer
- Tongue depressor blades (2)
- Tube of petroleum jelly or other lubricant

- Nonprescription drugs, including aspirin and nonaspirin pain reliever, antidiarrhea medication, antacid, laxative, vitamins

Note: Remember to include prescription drugs in a Disaster Supplies Kit. Because the storage requirements of prescription drugs vary, some may have to be added to the kit at the last minute. You may want to pin or tape a note to the outside of your kit container reminding you to take along prescription drugs if you have to evacuate.

Foods to Stock at Home and in Your Disaster Supplies Kit

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, use 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.
- 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.

(See [Keeping Refrigerated Food Safe If the Power Goes Out.](#))

(See [Food and Water Exposed to Floodwater, Fire, and Chemicals.](#))

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.**
 - **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.
 - **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.
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Drinking Water Safety

Listen to a local radio or television station for announcements from appropriate authorities about the safety of drinking water. Follow their directions.

- **You can drink water from the community water system unless you have been told or have reason to suspect it has become contaminated.**
- **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, 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.
- **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. You can start by fastening the middle of the length of string to the cup handle with a knot, then wrapping 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.

(See [Food and Water Exposed to Floodwater, Fire, and Chemicals](#).)

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. (See [Tips for Preparing Your Disaster Supplies Kits](#).) 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.

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.

Food and Water Exposed to Floodwater, Fire, and Chemicals

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.**

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 do not forget to store pet food where it will be safe from possible contamination by floodwater.

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).

What to Do if Evacuation Is Necessary Because of a Storm

If you are advised to evacuate or if you think it is appropriate to evacuate, you should:

- **Leave as soon as possible, preferably in daylight.** Avoid flooded roads and watch for washed-out bridges. Evacuation will probably take longer than expected. Give yourself plenty of time.
 - **Secure your home by unplugging appliances and turning off the electricity and the main water valve.** This will reduce potential damage to your appliances from power surges and to your home.
 - **Tell someone outside the storm area where you are going**—(the out-of-town contact you identified in your Family Disaster Plan). Relatives and friends will be concerned about your safety. Letting someone know your travel plans will help relieve their fear and anxiety.
 - **If time permits and you live in an identified surge zone or area prone to flooding, move furniture to a higher floor.** Moving valuable furnishings helps reduce the potential for damage.
 - **Bring your Disaster Supplies Kit, including warm protective clothing.** People frequently arrive at shelters or hotels with nothing. Having these items with you will make you more comfortable. While shelters provide a safe place to stay and food, specialty items for infants and individuals on restricted diets may not be available. It may be several days before permission is given by local authorities to reenter an evacuated area.
 - **Lock your home and leave.** There may be individuals evacuating after you, or returning before you. Police may be busy with storm-related emergencies and not able to patrol neighborhoods as usual.
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What to Do When There Is Flooding

If you are outdoors, you should:

- **Stay out of areas subject to flooding.** Dips, low spots, canyons, washes, etc. can become filled with water.
- **Climb to high ground and stay there.** Move away from dangerous floodwater.
- **If you come upon a flowing stream where water is above your ankles, stop, turn around, and go another way.** Never try to walk, swim, or drive through swift water. Most flood fatalities are caused by people attempting to drive through water, or people playing in high water. If it is moving swiftly, even water six inches (15 centimeters) deep can sweep you off your feet.

If you are driving, you should:

- **Avoid already flooded areas and areas subject to sudden flooding.** Do not attempt to cross flowing streams. Most flood fatalities are caused by people

- attempting to drive through water or by people playing in high water. The depth of water is not always obvious. The roadbed may be washed out under the water, and you could be stranded or trapped. Also, standing water may be electrically charged from underground or downed power lines. Rapidly rising water may stall the engine, engulf the vehicle and its occupants, and sweep them away. Look out for flooding at highway dips, bridges, and low areas. Two feet (0.6 meters) of water will carry away most vehicles, including SUVs and pickup trucks.
- **Stay away from underpasses.** Underpasses can fill rapidly with water, while the adjacent roadway remains clear. Driving into an underpass can quickly put you in five to six feet (1.5 to 1.8 meters) of water.
 - **Turn around and find another route if you come upon rapidly rising water.** Move to higher ground away from rivers, streams, creeks, and storm drains. If your route is blocked by floodwater or barricades, find another route. Barricades are put up by local officials to protect people from unsafe roads. Driving around them can be a serious risk.
 - **Abandon your vehicle immediately and climb to higher ground if the vehicle becomes surrounded by water or the engine stalls, and if you can safely get out.** When a vehicle stalls in the water, the water's momentum is transferred to the car. The lateral force of a foot (0.3 meter) of water moving at 10 miles (16 kilometers) per hour is about 500 pounds (227 kilograms) on the average vehicle. The greatest effect is buoyancy—for every foot (0.3 meter) that water rises up the side of a car, it displaces 1,500 pounds (680 kilograms) of the car's weight. So, two feet (0.6 meter) of water moving at 10 miles (16 kilometers) per hour will float virtually any car, SUV, or pickup truck. Use caution when abandoning your vehicle, and look for an opportunity to move away quickly and safely to higher ground.
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“Wind Safe” Room

A “wind safe” room is a reinforced area of a home designed to withstand severe windstorms. While basements offer some protection from damaging winds, the level of protection can be increased greatly by building a reinforced shelter area in a basement, or constructing a shelter in an above-ground room such as an interior closet or a small study room.

An effective “wind safe” room must be strong enough to survive extreme wind speeds and the impact of airborne debris, sufficiently affordable to appeal to homeowners, and accessible quickly in the event a severe storm approaches. “Wind safe” rooms are easiest to install when a home is being built; however, they can also be added to many existing homes. A variety of options exists for homes with basements, homes built on a “slab-on-grade” foundation, and homes with a “crawl-space” foundation. Typical costs range from \$2,000 for a simple “lean-to” shelter in a new-home basement, to \$6,000 or more for an above-ground, steel-sheathing shelter.

Get more information from the Federal Emergency Management Agency (FEMA) about building a “wind safe” room. Also for more information, check out the Institute for Business and Home Safety at www.ibhs.org.

Detailed construction plans and information related to safe rooms can be found at <http://www.fema.gov/mit/saferoom/>.

How to Shelter-in-Place (*Chemical Incident*)

Shelter-in-place applies to several types of terrorist attacks, but details will vary. For example, you would use duct tape and plastic sheeting to seal an internal room against chemical agents. For sheltering against radiation dispersed by a radiological dispersion device (RDD or “dirty bomb”) or radioactive fallout particles after a nuclear explosion, you would normally prefer a basement shelter to a higher floor; duct tape and plastic would help keep radioactive dust out, but primary protection from radioactive particles would be achieved by applying the principles of mass, distance, and time. (See [Factors for Protection From Radioactive Fallout](#).)

If officials advise people in a specific area to **shelter-in-place because of a short-term chemical release**, households should have the following in the shelter-in-place room:

- Plastic sheeting pre-cut to fit room openings. (Cut the plastic a minimum of 6 inches wider than each opening. The thickness of the plastic should be 4 to 6 millimeters or greater.)
- Duct tape, scissors, and modeling clay. (The thickness of the duct tape should be 10 millimeters or greater.)

A shelter-in-place room should be an interior room, preferably one without windows, that you can seal to block out air that may be contaminated by the short-term release of hazardous chemical agents. The room should be above the ground-level floor. In the case of a chemical threat, an above-ground location is preferable because some agents are heavier than air and may seep into basements even if the windows are closed.

Guidelines for sheltering-in-place are based on the need to shelter for only a few hours—more than sufficient time for a short-term release of airborne agents to dissipate. Ten square feet of floor space per person will provide sufficient air to prevent carbon dioxide build-up for up to five hours, assuming each person is resting and breathing at a normal rate.

During a Chemical Attack

The following are guidelines for what you should do in a chemical attack.

If you are instructed to remain in your home or office building, you should:

- Close and lock all windows and exterior doors.
- Turn off all ventilation, including furnaces, air conditioners, vents, and fans.

Talking About Disaster: Guide for Standard Messages

Produced by the National Disaster Education Coalition, Washington, D.C.

- Seek shelter in an internal room and take your Disaster Supplies Kit. Be sure you have a working battery-powered radio.
- Seal the room with duct tape, plastic sheeting, and modeling clay. Use duct tape with a minimum thickness of 10 millimeters and pre-cut plastic sheeting with a thickness of 4 to 6 millimeters or greater to seal all cracks around doors, windows, and vents, and all wall plugs, switch plates, and cables. If necessary, use modeling clay to seal around pipes and to seal off drains or other such openings.
- If you are told there is danger of explosion, close the window shades, blinds, or curtains.
- Call your emergency contact. Ideally your room will have a hard-wired telephone. Cellular telephone service may be overwhelmed or damaged during an emergency. You will need a working phone if you have to report a life-threatening emergency.
- Keep listening to your radio or television until you are told all is safe or you are told to evacuate. Local officials may call for evacuation in specific areas at greatest risk in your community.

At home:

- Close the fireplace damper.
- Bring your pets with you, and be sure to bring additional food and water for them.

If you are caught in an unprotected area, you should:

- Move away immediately.
- Get upwind of the contaminated area.
- Find shelter as quickly as possible.

Using HEPA Filters

HEPA filters may be useful in **biological attacks**. If you have a central heating and cooling system in your home with a HEPA filter, leave it on if it is running or turn the fan on if it is not running. Moving the air in the home through the filter will help remove the agents from the air. If you have a portable HEPA filter, take it with you to the internal room where you are seeking shelter and turn it on.

If you are in an apartment or office building that has a modern central heating and cooling system, the system's filtration should provide a relatively safe level of protection from outside biological contaminants.

HEPA filters will not filter chemical agents.

(See Terrorism.)

Factors for Protection From Radioactive Fallout

The three factors for protecting oneself from radioactive fallout are **distance, shielding, and time**.

- **Distance**—the more distance between you and the fallout particles, the better. An underground area, such as a home or office building basement, offers more protection than the first floor of a building. A floor near the middle of a high-rise may be better, depending on what is nearby at that level on which significant fallout particles would collect. Flat roofs collect fallout particles, so the top floor is not a good choice, nor is a floor adjacent to a neighboring flat roof.
- **Shielding**—the heavier and denser the shielding materials—thick walls, concrete, bricks, books, and earth—between you and the fallout particles, the better.
- **Time**—fallout radiation loses its intensity fairly rapidly. In time, you will be able to leave the fallout shelter. Radioactive fallout poses the greatest threat to people during the first two weeks, after which time it has declined to only about one percent of its initial radiation level.

Remember that any protection, however temporary, is better than none at all; and the more shielding, distance, and time you can take advantage of, the better.

Taking Protective Measures

Before a Nuclear Explosion

To prepare for a nuclear explosion, you should:

- Modify your Disaster Supplies Kit so it is adequate for up to two weeks.
- Find out from officials if any public buildings in your community have been designated as fallout shelters. If none have been designated, make your own list of potential fallout shelters near your home, workplace, and school. These places would include basements or the windowless center area of middle floors in high-rise buildings, as well as subways and tunnels.
- If you live in an apartment building or high-rise, talk to the manager about the safest place in the building for sheltering and about providing for building occupants until it is safe to go out.

Taking shelter before a nuclear explosion is absolutely necessary. There are two kinds of shelters—blast and fallout.

- **Blast shelters** are specifically constructed to offer some protection against blast pressure, initial radiation, heat, and fire; but even a blast shelter could not withstand a direct hit from a nuclear explosion.
- **Fallout shelters** do not need to be specially constructed for protecting against fallout. They can be any protected space, provided that the walls and roof are thick and dense enough to absorb the radiation given off by fallout particles.

(See Terrorism.)

Emergency Sanitation

In many shelters during an emergency, people will need to use improvised, emergency toilets if the water supply has been cut off. These kinds of toilets consist of any watertight container with a snug-fitting cover.

- Use a garbage container, pail, or bucket.
 - If the container is small, keep a large container (also with a cover) available for waste disposal.
 - If possible, line both containers with plastic bags.
 - Every time the emergency toilet is used, pour or sprinkle a small amount of regular household disinfectant, such as creosol or chlorine bleach, into the container to reduce odors and germs.
 - After each use, replace the lid.
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How to Recognize and Treat Heat Exhaustion and Heatstroke

Heatstroke

The signs of heatstroke in a person are hot, red skin; changes in consciousness; rapid, weak pulse; and rapid, shallow breathing. A person experiencing heatstroke can have a very high body temperature—sometimes as high as 105°F (41° C). If the person was sweating from heavy work or exercise, the skin may be wet; otherwise, it will feel dry.

Heatstroke is a life-threatening situation. If you suspect someone is suffering from heatstroke, call 9-1-1 or your local emergency number immediately. Move the person to a cooler place. Quickly cool the person's body—immerse it in a cool bath or wrap it in wet sheets and fan it. Watch for signs of breathing problems. Keep the person lying down and continue to cool the body any way you can. If the person refuses water, is vomiting, or exhibits changes in the level of consciousness, do not give him or her anything to eat or drink.

Do not give liquids that contain alcohol or caffeine because they can cause further dehydration, making conditions worse.

Heat Exhaustion

The signs of heat exhaustion in a person are cool, moist, pale, or flushed skin; heavy sweating; headache; nausea or vomiting; dizziness; and exhaustion. A person experiencing heat exhaustion may have a normal body temperature, or it is likely to be rising.

If you suspect someone is suffering from heat exhaustion, move the person to a cooler place. Remove or loosen tight clothing and apply cool, wet cloths, such as towels or sheets dipped in water. If the person is conscious, give him or her cool water to drink. Make sure the person drinks slowly. Give a half glass of cool water every 15 minutes. Let the person rest in a comfortable position, and watch carefully for changes in his or her condition.

Do not give liquids that contain alcohol or caffeine because they can cause further dehydration, making conditions worse.

Heat Cramps

Heat cramps are muscle spasms that are caused by excessive sweating that results in a deficiency of salt. Although not as serious as heat exhaustion or heatstroke, heat cramps sometimes precede them. **If someone is suffering from heat cramps, move the person to a cooler place** and have him or her rest in a comfortable position. Lightly stretch the affected muscle and replenish fluids. Give a half glass of cool water every 15 minutes.

Do not give liquids that contain alcohol or caffeine because they can cause further dehydration, making conditions worse.

Frostbite and Hypothermia

Frostbite is a severe reaction to exposure to cold that can cause permanent harm to people. Symptoms of frostbite are a loss of feeling and a white or pale appearance in fingers, toes, nose, or earlobes.

Hypothermia is a condition brought on when a person's body temperature drops to 3° below its normal temperature. On average, a person would begin to suffer hypothermia if his or her temperature dropped to 96° F (35.6° C). Symptoms of hypothermia include uncontrollable shivering, slow speech, memory lapses, frequent stumbling, drowsiness, and exhaustion. Hypothermia is not always fatal, but those who survive it are likely to suffer lasting kidney, liver, and pancreas problems.

If frostbite or hypothermia is suspected, begin warming the person slowly and seek immediate medical assistance. Warm the person's trunk first. You can hug the person to use your own body heat to help warm him or her. Arms and legs should be warmed last because stimulation of the limbs can drive cold blood toward the heart and lead to cardiac arrest. Put the person in dry clothing and wrap his or her entire body in a blanket. Never give anything with alcohol or caffeine in it to a person who is suffering from frostbite or hypothermia. Caffeine, a stimulant, can cause the heart to beat faster and hasten the effect the cold has on the body. Alcohol, a depressant, can slow the heart and also hasten the ill effects of the cold.

First Aid Kit for Pets

A fully equipped household first aid kit contains almost all of the supplies you may need for your pets. A simple first aid kit for your pets should include these additional items in a waterproof container:

- Latex (or hypoallergenic material) gloves
- Gauze sponges (a variety of sizes)
- Gauze roll, 2-inch width
- Material to make a splint
- Adhesive tape, hypoallergenic
- Non-adherent sterile pads
- Small scissors
- Grooming clippers or safety razor
- Nylon leash
- Towel
- Muzzle
- Compact emergency “blanket” (available in the camping department of many stores)
- Water-based sterile lubricant
- Hydrogen peroxide (3 percent)
- Rubbing alcohol;
- Topical antibiotic ointment
- Epsom salts
- Baby-dose syringe or eye dropper
- Sterile eye lubricant
- Sterile saline wash
- Diphenhydramine, if approved by your veterinarian
- Glucose paste or syrup
- Styptic powder or pencil
- Plastic card (such as old credit card) to scrape away stingers
- List of emergency phone numbers including those for your pet’s veterinarian, an after-hours emergency veterinary hospital, and the National Animal Poison Control Center (1-888-426-4435)
- Petroleum jelly
- Penlight
- Clean cloth
- Needle-nose pliers

For a complete list of items for your pet first aid kit and detailed information on how to provide first aid for your pets, consult *Pet First Aid* by Barbara Mammato, DVM, MPH, a handbook sponsored by the American Red Cross and The Humane Society of the United States.