

# Shelter



**T**aking shelter is often a critical element in protecting yourself and your household in times of disaster. Sheltering can take several forms. In-place sheltering is appropriate when conditions require that you seek protection in your home, place of employment, or other location where you are located when disaster strikes. In-place sheltering may either be short-term, such as going to a safe room for a fairly short period while a tornado warning is in effect or while a chemical cloud passes. It may also be longer-term, as when you stay in your home for several days without electricity or water services following a winter storm. We also use the term “shelter” for Mass Care facilities that provide a place to stay along with food and water to people who evacuate following a disaster.

The appropriate steps to take in preparing for and implementing short-term

in-place sheltering depend entirely on the emergency situation. For instance, during a tornado warning you should go to an underground room, if such a room is available. During a chemical release, on the other hand, you should seek shelter in a room above ground level. Because of these differences, short-term in-place shelter is described in the chapters dealing with specific hazards. See the chapters on “Thunderstorms” and “Hazardous Materials Incidents” for more information. The remainder of this chapter describes steps you should take to prepare for long-term in-place sheltering and for staying in a mass care shelter if you evacuate.

## Long-term in-place sheltering

Sometimes disasters make it unsafe for people to leave their residence. Winter storms, floods, and landslides may temporarily isolate individual family members and make it necessary for each household to take care of its own needs until the disaster abates. Your

household should be prepared to be self-sufficient for three days when utilities and access to outside supplies of food and water are disrupted.

1. Stay in your shelter until local authorities say it’s okay to leave. The length of your stay can range from a few hours to two weeks.

2. Unless you are alone, maintain a 24-hour communications and safety watch. Take turns listening for radio broadcasts and monitor

your tone-alert NOAA Weather Radio. Watch for fires.

3. Assemble an emergency toilet, if necessary.

- Use a garbage container, pail or bucket with a snug-fitting cover. If the

*Be sure everyone in your household knows where to find shelter from all hazards that effect your area.*

container is small, use a larger container with a cover for waste disposal. Line both containers with plastic bags.

- After each use, pour or sprinkle a small amount of regular household disinfectant, such as chlorine bleach, into the container to reduce odors and germs.

### Managing water supplies

Water is critical for survival. Plan to have about one gallon of water per person per day for drinking, cooking and personal hygiene. You may need more for medical emergencies.

1. Allow people to drink according to their need. The average person should drink at least two quarts of water or other liquids per day, but many people need more. This will depend on age, physical activity, physical condition and time of year.
2. Never ration water unless ordered to do so by authorities. Drink the amount you need today and try to find more for tomorrow. Under no circumstances should a person drink less than one quart of water each day. You can minimize the amount of water your body needs by reducing activity and staying cool.
3. Drink water that you know is not contaminated first. If necessary, suspicious water, such as cloudy water from regular faucets or muddy water from streams or ponds, can be used after it has been treated. If water treatment is not possible, put off drinking suspi-

*The average person should drink between two and two-and-one-half quarts of liquids per day, but many people need more.*

cious water as long as possible, but do not become dehydrated.

4. In addition to stored water, other sources include:
  - Melted ice cubes.
  - Water drained from the water heater faucet, if the water heater has not been damaged.
  - Water dipped from the flush tanks (not the bowls) of home toilets. Bowl water can be used for pets.
  - Liquids from canned goods such as fruit and vegetable juices.

5. Carbonated beverages do not meet drinking-water requirements. Caffeinated drinks and alcohol dehydrate the body, which increases the need for drinking water.

6. If water pipes are damaged or if local authorities advise you, turn off the main water valves to prevent water from draining away in case the water main breaks.

- The pipes will be full of water when the main valve is closed.
  - To use this water, turn on the faucet at the highest point in your house (which lets air into the system).
  - Then draw water, as needed, from the lowest point in your house, either a faucet or the hot water tank.
7. Unsafe water sources include:
    - Radiators.
    - Hot water boilers (home heating system).
    - Water beds (fungicides added to the water or chemicals in the vinyl may make water unsafe to use).
    - Swimming pools and spas (chemitoo

conals used in them to kill germs are concentrated for safe drinking, but can be used for personal hygiene, cleaning and related uses).

### Water treatment

Treat all water of uncertain purity before using it for drinking, food washing or preparation, washing dishes, brushing teeth or making ice. In addition to having a bad odor and taste, contaminated water can contain microorganisms that cause diseases such as dysentery, cholera, typhoid and hepatitis.

There are many ways to treat water. None is perfect. Often the best solution is a combination of methods. Before treating, let any suspended particles settle to the bottom, or strain them through coffee filters or layers of clean cloth.

Following are four treatment methods. The first three methods—boiling, chlorination and water treatment tablets—will kill microbes but will not remove other contaminants such as heavy metals, salts, most other chemicals and radioactive fallout. The final method—distillation—will remove microbes as well as most other contaminants, including radioactive fallout.

**Boiling** is the safest method of treating water.

- Boiling water kills harmful bacteria and parasites. Bringing water to a rolling boil for 1 minute will kill most organisms. Let the water cool before drinking.
- Boiled water will taste better if you put oxygen back into it by pouring it back and forth between two containers. This will also improve the taste of stored water.

**Chlorination** uses liquid chlorine bleach to kill microorganisms such as bacteria.

- Use regular household liquid bleach (4 to 6 percent sodium hypochlorite) that contains no soap or scents. Some containers warn, “Not For Personal Use.” You can disregard these warnings if the label states sodium hypochlorite as the only active ingredient and if you use only the small quantities mentioned in these instructions.
- Add 16 drops of unscented bleach per gallon of water, stir and let stand for 30 minutes. If the water does not taste and smell of chlorine at that point, add another dose and let stand another 15 minutes. This treatment will not kill parasitic organisms.
- If you do not have a dropper, use a spoon and a square-ended strip of paper or thin cloth about 1/4 inch by 2 inches. Put the strip in the spoon with an end hanging down about 1/2 inch below the scoop of the spoon. Place bleach in the spoon and carefully tip it. Drops the size of those from a medicine dropper will drip off the end of the strip.

### Water treatment “purification” tablets

release chlorine or iodine. They are inexpensive and available at most sporting goods stores and some drugstores. Follow the package directions carefully. *NOTE:* People with chronic or undiagnosed liver or kidney disease may be adversely affected by iodized tablets and may experience worsened health problems as a result of ingestion. Iodized tablets are safe for healthy, physically fit adults and should be used only if you lack the supplies for boiling, chlorination and distillation.

**Distillation** involves boiling water and collecting the vapor that condenses back to water. The condensed vapor may include salt or other impurities.

- Fill a pot halfway with water.
- Tie a cup to the handle on the pot’s lid so that the cup hangs right side up

when the lid is upside-down (make sure the cup is not dangling into the water).

- Boil for 20 minutes. The water that drips from the lid into the cup is distilled.

### Managing food supplies

1. It is important to be sanitary when storing, handling and eating food.
  - Keep food in covered containers.
  - Keep cooking and eating utensils clean.
  - Keep garbage in closed containers and dispose outside. Bury garbage, if necessary. Avoid letting garbage accumulate inside, both for fire and sanitation reasons.
  - Keep hands clean. Wash frequently with soap and water that has been boiled or disinfected. Be sure to wash:
    - Before preparing or eating food.
    - After toilet use.
    - After participating in flood cleanup activities.
    - After handling articles contaminated with floodwater or sewage.
2. Carefully ration food for everyone except children and pregnant women. Most people can remain relatively healthy with about half as much food as usual and can survive without any food for several days.
3. Try to avoid foods high in fat and protein, since they will make you thirsty. Try to eat salt-free crackers, whole grain cereals and canned foods with high liquid content.
4. For emergency cooking, heat food with candle warmers, chafing dishes and fondue pots, or use a fireplace. Charcoal grills and camp stoves are for outdoor use only.
5. Commercially canned food can be eaten out of the can without warming. Before heating food in a can, remove the label, thoroughly wash the can, and then disinfect them with a solution consisting of one cup of bleach in five gallons of water, and open before heating. Re-label your cans, including expiration date, with a marker.
  - Do not eat foods from cans that are swollen, dented or corroded even though the product may look safe to eat.
  - Do not eat any food that looks or smells abnormal, even if the can looks normal.
  - Discard any food not in a waterproof container if there is any chance that it has come into contact with contaminated floodwater.
  - Food containers with screw-caps, snap-lids, crimped caps (soda pop bottles), twist caps, flip tops, snap-open, and home canned foods should be discarded if they have come into contact with floodwater because they cannot be disinfected. For infants, use **only** pre-prepared canned baby formula. Do not use powdered formulas with treated water.
6. Your refrigerator will keep foods cool for about four hours without power if it is left unopened. Add block or dry ice to your refrigerator if the electricity will be off longer than four hours.
 

Thawed food usually can be eaten if it is still “refrigerator cold,” or re-frozen if it still contains ice crystals. To be safe, remember, “When in doubt, throw it out.” Discard any food that has been at room temperature for two hours or more, and any food that has an unusual odor, color, or texture.

If you are without power for a long period:

- Ask friends to store your frozen foods in their freezers if they have electricity.
- Inquire if freezer space is available in a store, church, school, or commercial freezer that has electrical service.
- Use dry ice, if available. Twenty-five pounds of dry ice will keep a ten-cubic-foot freezer below freezing for 3-4 days. Use care when handling dry ice, and wear dry, heavy gloves to avoid injury.

## Staying in a mass care shelter

The American Red Cross and Salvation Army, assisted by community and other disaster relief groups, work with local authorities to set up public shelters in schools, municipal buildings and churches. While they often provide water, food, medicine and basic sanitary facilities, you

should plan to have your own supplies as well—especially water. See the “Emergency Planning and Disaster Supplies” chapter for more details.

1. Cooperate with shelter managers and others staying in the shelter. Living with many people in a confined space can be difficult and challenging.
2. Restrict smoking to designated areas that are well-ventilated. Ensure that smoking materials are disposed of safely.
3. If you go to an emergency shelter, remember that alcoholic beverages and weapons are prohibited in shelters. Pets, except for service animals, are also not allowed in public shelters. See “Animals in Disaster” chapter or contact your local humane society for additional information.