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A Health Guide for the Public in Disaster Planning and Recovery

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Important Phone Numbers

As we have seen in recent emergency situations (hurricane, winter storms, floods, or other disasters), you may be unable to obtain needed resources for some period of time following an event, even from government agencies. You may not have access to food, water, and electricity for days, or even weeks.



By taking a little time now to prepare, you can provide stored emergency food and water supplies for your entire family. You should be prepared to go without any assistance for **at least 48 – 72 hours**.

This guide also contains information on what to do for some other emergency events. Please take some time to read through this guide and begin preparations for you and your family.



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Record Your Personal Important Info here

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Flood in Wheeling area 2005 following back to back hurricanes



In leaving the contaminated area, do NOT ride on public transportation (bus, subway, etc) as you will carry the contamination with you and expose others.

If you are advised to shelter in place (at home, office, etc)



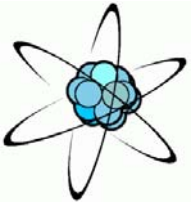
you should close all doors and windows. Turn off heaters and air conditioner units that bring in fresh air from outside. Close fireplace dampers. Go to an inner room and listen to the radio for emergency response guidance.

If you are advised to evacuate, follow the directions from emergency officials and if immediately available, take a flashlight, portable radio, batteries, essential medicines, and cash/credit cards.

Ice Storm Damage



RADIOLOGICAL EVENT



Radiation is a form of energy that is all around us. Different types of radiation exist, some of which have more energy than others and some of which cause more harm to people than others. Radiation comes from both man-made sources such as x-ray machines and from natural sources such as the sun, outer space and uranium in the soil.

A terrorist could use radioactive material in various ways that would include using explosives to scatter radioactive material (called a dirty bomb) to bombing or destroying a nuclear facility. In these events, it would be possible to contaminate food and water supplies with the fallout.

The most likely method that a terrorist would use would be the detonation of a dirty bomb. While there would be signs of an explosion, you cannot see or smell radiation. There is no need to panic, as anyone who actually survived the explosion would have several hours to evacuate. It would take several hours to accumulate enough radiation from a “dirty bomb” to cause you to get radiation sickness or cancer.



Radioactive material is much more dangerous if it gets inside your body by eating, drinking, or through an open wound. Therefore, you should avoid eating, drinking, smoking, licking your lips, and touching your face after such an event until such time as you have left the contaminated area and you have been properly decontaminated by experts.

FAMILY DISASTER SUPPLY KIT

Pack at least a three-day supply of food and water, and store it in a portable container and in a handy place (see the food and water sections of this manual for additional info).

Choose foods that are easy to carry, nutritious and ready-to-eat. In addition, pack these emergency items:

- Medical supplies and first aid manual, and this booklet
- Hygiene supplies
- Portable radio, flashlights and extra batteries
- Shovel and other useful tools
- Money and matches in a waterproof container
- Fire extinguisher
- Blanket and extra clothing
- Infant and small children's needs (if appropriate)



PREPARATION FOR SHELTERS

SHELTERS SHOULD BE A REFUGE OF LAST RESORT

Choose 2 or 3 shelters closest to you but do not report to a shelter until it is officially opened. The media will announce shelter openings. Shelter openings depend upon storm direction, intensity, and other factors. Some shelters fill up quicker than others.

Tell a friend or relative where you are going.

Consider volunteering at the shelter.

SUGGESTED ITEMS TO BRING

- Bedding
- Beach or lounge chair
- Medications (prescription and over the counter). Include vitamin, mineral, and protein supplements in your stockpile to assure adequate nutrition.
- Medical alert tags
- Clothing and personal care items
- Flashlight/batteries
- First Aid Kit



- Identification, insurance, and other valuable papers
- Cash, traveler's checks
- Books, games
- Infant care items
- Drinking water, snacks, and a 24 hour supply of non-perishable food.



Pets, firearms, and alcoholic beverages are not allowed in shelters.

PLAN AHEAD FOR YOUR PET.

DO NOT LEAVE PETS AT HOME

MAKE arrangements with a friend outside the area or for care contact:

- Pet friendly hotels and motels
- Veterinarians
- Kennels



Make sure:

- Vaccinations are up to date
- Collar has ID tag and a leash
- Carrier is large enough so pet can stand, sit, and turn around
- PROVIDE food, bottled water and medications for at least a week and a photo of pet with family member to reclaim in case it is lost

If the Attack Occurs Outdoors: Birds and other small animals would very quickly be overcome by a poison gas, so if birds and insects are dropping from the sky, this is an indication of a possible chemical attack. The most important thing to do is to get a physical barrier between you and the toxic cloud. Get indoors quickly – into a building or a car. Shut all

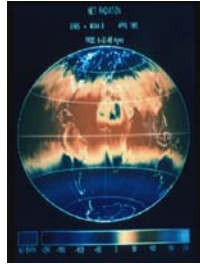


doors and windows and turn off the air conditioner or heater. Plug any air drafts (under doors, etc.). **Call 911 and notify authorities that a hazardous gas may be present.** The wind should carry the toxic cloud away within a relatively short amount of time. **Stay indoors, and turn on the television or radio for news.** Authorities will notify you if you need to evacuate or when it is safe to go outside. If you are at home, put your clothes in a plastic bag and take a shower to remove any contamination to which you may have been exposed.

CHEMICAL EVENT

SIGNS OF A CHEMICAL EVENT

Many chemicals cannot be seen or smelled. Observe the following rule of thumb: If a single person is on the ground choking or seizing, this individual is probably having a medical emergency. However, if several people are down, coughing, vomiting or seizing, they are reacting to the presence of a toxic substance. **Leave the area immediately, call 911, and tell the dispatcher a hazardous gas may be present.**



WHAT YOU SHOULD DO DURING A CHEMICAL EVENT

If the Attack Occurs Indoors: Exit the building immediately. Avoid puddles of liquid. Once outside, **if you were directly exposed to a toxic substance, discarding your modesty and shedding your clothes could save your life.** Taking off your outer clothing can remove roughly 80% of the contaminant. Look for a nearby fountain, pool or other source of water to quickly and thoroughly rinse any skin that may have been exposed. Water alone is an effective decontaminant. Try to remain calm. Rescuers will give medical treatment to the most seriously injured persons first.

HEALTH CARE PRECAUTIONS AFTER AN EMERGENCY

DURING CLEAN-UP EFFORTS

Following a disaster, special precautions should be taken to protect your health. You should focus on controlling injuries and illnesses that may cause disease outbreaks.

Ways to prevent injuries and illness include:

- Never walk or drive into moving water if you do not know how deep it is.
- Before beginning any cleanup activities **make sure electricity and gas are turned off** to the structure. Always follow utility company instructions for restoring gas and electrical services. Do **not** turn the power back on until electrical equipment has been inspected by a qualified electrician. **NEVER HANDLE A DOWNED POWER LINE!**
- A small portable generator can be used to power a single freezer, well pump or other appliance by plugging an extension cord directly into the generator. Any time that a generator serves loads through the permanent wiring system of the building, a suitable transfer switch must be used to prevent energizing the power lines and accidentally electrocuting utility workers.
- **NEVER** bring gasoline/diesel generators, pumps, pressure washers, grills, or lanterns, indoors (this includes garages and basements) or use them near windows or doorways. These items release carbon monoxide which is colorless, odorless, and deadly! (Symptoms of carbon monoxide include headache, dizziness, weakness, nausea and confusion. People who are sleeping or who have been drinking alcohol can die before ever having symptoms).



- Flood water often contains extremely high levels of bacteria. Frequent hand washing with soap and clean water will help prevent illness. If soap and water are not available, use an alcohol-base hand sanitizer.
- Flood water often contains hazardous materials from dislodged or damaged drums, pipes, and equipment. Limit your contact with flood water whenever possible.
- As you are cleaning, make sure you pace yourself and do not tire yourself out. Work during cooler times of the day and watch for signs of heat stroke (dizziness, fainting, cramping).
- Wear protective clothing such as heavy footwear, rubber gloves, goggles, dust masks, and long sleeves. Wear rubber boots and insulated clothes when working in water that is cooler than 75 degrees.
- Before entering any building that has been flooded, check its foundation for cracks that could indicate shifting and make sure the surface you are about to stand on is stable.
- Use teams of 2 to lift heavy (more than 50 lbs) or bulky objects to avoid back strain.
- Do not take small children to clean-up sites. It is usually impossible to provide adequate supervision to prevent potentially serious or life-threatening injuries to youngsters.
- When using cleaning supplies, never combine them as it may create a mixture with deadly toxic fumes.
- Always make sure the area where you are using heavy duty cleaning solutions is well ventilated to keep from being overcome by fumes.
- Use extreme caution around overhead power lines when working with ladders.



Symptoms of mold exposure:

- Stuffy nose
- Irritated eyes
- Wheezing or difficulty in breathing
- Skin rashes
- Mold infections in the lungs of people with weakened immune systems or chronic lung disorders

Those at greatest risk from mold exposure are:

- Infants and children
- Elderly
- People with asthma, allergies and other respiratory conditions
- People with weakened immune systems

Ways to protect yourself during clean up:

- Wear glasses/goggles
- Wear rubber boots and gloves
- Wear outer clothing (long sleeves and pants) that can be easily removed and laundered or discarded
- Decrease foot traffic
- Avoid dry sweeping
- Cover moldy objects when removing them
- Wear an N-95 dust mask

FLOOD WATER AND TETANUS

Tetanus, also known as “lockjaw”, is a disease of the nerves caused by bacteria in a contaminated wound.

- The tetanus bacteria is commonly found in soil.
- It enters the body through any opening, from a slight scratch to a severe wound.
- It can cause painful spasms of all muscles, convulsions and even death.

Remember: Exposure to flood water alone is not a reason to receive a tetanus vaccine.

Who should get Td (tetanus/diphtheria) vaccine?

- Persons lacking a complete primary series of tetanus and diphtheria vaccines.
 - Persons who have not had a booster of Td in the last 10 years.
 - Persons who have a severe or dirty wound if more than 5 years have elapsed since their last Td booster.
-

FLOOD WATER AND MOLD GROWTH

Excess moisture and standing water contribute to mold growth. This is especially true after flooding. You can control mold growth by:

- Disposing of contaminated absorbent materials (clothing, carpeting, stuffed furniture, drywall, insulation, etc.)
- Clean and sanitize all washable surfaces
- Dry the premises with use of wet/dry vacs, fans, dehumidifiers. This process needs to begin within 24 to 48 hours after the flood waters recede
- Have heating/air conditioning systems inspected prior to use.

- Comply with all boil water orders for public water supplies.
- Make sure food and water supplies are safe for consumption. Eating or drinking contaminated products can cause varying degrees of symptoms such as nausea, vomiting, and diarrhea. If you experience these symptoms, it is important to drink plenty of safe fluids to keep from getting dehydrated and to seek medical attention.
- Lime is often applied to mud after flood waters recede to help control breeding of flies and odors. Extreme caution should be used when applying the lime as it can cause chemical burns to the skin. Lime often causes burns on the feet and legs of children and animals that come into contact with it after it has been applied. It is recommended that straw be placed on top of the lime in areas where there will be foot traffic.



FOOD

PREPARING AN EMERGENCY STOCKPILE

If activity is reduced, healthy people can survive on half their usual food intake for an extended period and without any food for many days. Food, unlike water, may be rationed safely, except for children and pregnant women.

If your water supply is limited, try to avoid foods that are high in fat and protein, and don't stock salty foods, since they will make you thirsty. Try to eat salt-free crackers, whole grain cereals, and canned foods with high liquid content.

You don't need to go out and buy unfamiliar foods to prepare an emergency food supply. You can use the canned foods, dry mixes, and other staples on your cupboard shelves. In fact, familiar foods are important. They can lift morale and give a feeling of security in time of stress. Also, canned foods won't require cooking, water or special preparation. Following are recommended short-term and long-term food storage plans.

NUTRITION TIPS

In a crisis, it will be vital that you maintain your strength. So remember:

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

Permanently attached rugs or carpeting with padding cannot be cleaned in place.

- Clothing - Wash all washable fabrics with hot water and soap or detergent. Dry thoroughly in the open air and sunshine or in an automatic clothes dryer. Professional cleaning or use of a laundromat is preferred, if possible.



- Child Toys and Beds - If a child's beds, toys, cribs, playpens and playthings can be *cleaned and disinfected*, they can be saved.

However, discard all toys which are absorbent and not easily cleaned and disinfected.*



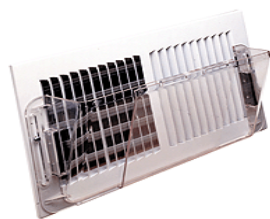
- Cooking and Eating Utensils - Cracked or chipped utensils that are not easily cleanable must be discarded. As long as utensils can be *cleaned and disinfected* they can be saved.*
- Appliances - Refrigerators, stoves, and similar appliances that contain insulation (polyfoam, rock wool, fiberglass) cannot be readily cleaned and disinfected in the insulated areas. Those that appear to be salvageable should be checked by a serviceman before being put back into use.



***Cleaning and disinfecting means:** Wash in hot soapy water, then rinse with clean water and disinfect by contact (submersion if possible) for at least one minute with a solution of one tablespoon of bleach per one gallon of water, allowing item to completely dry prior to use.

water, both basement and house. This should be done before the surfaces dry, if possible.

- Scrub all surfaces using soap or detergent and clean water (preferably hot). Surfaces that are absorbent such as drywall, plaster, and insulation cannot be adequately cleaned and must be removed and discarded. Remove the material to a level at least 12 inches above the high water mark.
- Disinfect washable surfaces with a solution of laundry bleach (4 tablespoons of laundry bleach per one gallon of clean water).
- Help the drying process by using wet/dry vacs, fans, air conditioners or dehumidifiers. This will aid in the prevention of mold growth.
- Have the building's heating/air conditioning system professionally inspected prior to turning it on. Professional cleaning of the system may be necessary to remove flood sediment, and mold spores.
- Clothing and some furniture and household furnishings can be salvaged, but discard whatever cannot be cleaned and dried.
- Furniture - Most solid wood, metal or plastic furniture can be salvaged for use. First brush off all dirt and loose material. Then *clean and disinfect*. Dry thoroughly, preferably in open air and sunshine.
- Mattresses and Stuffed Furniture - These items cannot be readily cleaned and disinfected; they should be destroyed.
- Curtains and Draperies - Wash with hot water and soap or detergent. Dry thoroughly in open air and sunshine where possible. Professional cleaning is preferred.
- Rugs - Flush with clean water while they are still on the floor. Shampoo with water and soap, then rinse and dry, preferably in open air and sunshine. If possible, have the rugs cleaned by a reliable rug cleaning firm.



STORAGE TIPS

- Keep food in the driest and coolest spot in the house-- not above 70 degrees Fahrenheit and not below freezing and dark if possible.
- Keep food covered at all times.
- To protect boxed foods from pests and extend their shelf life, store the boxes in tightly closed cans or metal containers.
- Open food boxes or cans carefully so that you can close them tightly after each use.
- Empty opened packages of sugar, dried fruits, and nuts into screw-top jars or air-tight cans to protect them from pests.
- Store wheat, corn, and beans in sealed cans or plastic buckets.
- Buy powdered milk in nitrogen-packed cans.
- Leave salt and vitamin C in their original packages.
- Rotate your food supply. Use foods before they go bad, and replace them with fresh supplies, dated with ink or marker. Place new items at the back of the storage area and older ones in front.
- Your emergency food supply should be of the highest quality possible. Inspect your reserves every other month to make sure there are no broken seals or dented containers.
- Inspect all food containers for signs of spoilage before use.



WHAT TO DO WITH YOUR FOOD WHEN THE ELECTRICITY GOES OFF

First, use perishable food and foods from the refrigerator. If the temperature of perishable foods rises above 41° F for more than 4 hours, it should be discarded.

Foods in the freezer will remain frozen up to 24 hrs. if the freezer door is not opened. 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 three days. If no more than 24 hours has passed and if the food is still partially frozen, it should be safe to refreeze. If frozen foods have thawed and have been stored at temperatures above 41° F for less than 4 hours, they should be safe if used immediately. However, if they have completely thawed and have been above 41° F for more than 4 hours, they should be discarded.



FINALLY, begin to use non-perishable foods and staples.

HOW TO COOK WHEN THE POWER GOES OUT

For emergency cooking you can use a fireplace, or a charcoal grill or camp stove outdoors only (due to the chance of carbon monoxide poisoning). You can also heat food with candle warmers, chafing dishes, and fondue pots. Canned food can be eaten right out of the can. If you heat it in the can, be sure to open the can and remove the label first.



CLEAN UP AFTER FLOODING

Disease producing bacteria are often carried by flood water. These bacteria can remain alive and dangerous for long periods of time on items covered or exposed to flood water. Any cleanup that uses water should be done with water from a source that is potable. You may need to disinfect the water supply before beginning the clean up process (see pgs 16-20). Other Health Care Precautions that you should consider can be found on pages 3-5.



After the flood waters have receded:

- Before beginning any cleanup activities **make sure electricity and gas is turned off** to the structure. Follow the instructions of the utility companies relative to restoration of gas and electrical services. Do not turn the power back on until electrical equipment has been inspected by a qualified electrician. **NEVER HANDLE A DOWNED POWER LINE!**
- Before entering any house or building that has been flooded, check for foundation cracks or shifting of the house on the foundation.
- You are responsible for the clean up of your property. All material that is to be disposed of should be piled at the curb or right-of-way for your property. Bulk waste removal will not be done from private property.
- If you are physically unable to perform the clean-up of your property, you should seek the help of local church or civic organizations.
- Drain or pump water out of flooded basements. (Do not pump out basements too soon after flood water has receded; the water soaked ground could cause the collapse of basement walls.)
- Hose down all floors, walls, and ceilings with clean

chlorine is completely gone. Then, run water from all of the faucets or fixtures until there is no chlorine odor. [Use care that you do not discharge all of the chlorine water into or on top of your septic systems to avoid overloading the disposal system.] (If water supply does not have a pump, use a bucket or bailer to remove the water from the water supply.)

- g. Call your local health department to request that samples be collected before any water is used. There is no charge for water samples that are taken from water systems impacted by a disaster during disaster recovery.
- h. Disinfection of a water supply that is not properly protected will not ensure its safety. Immediate steps should be taken to abandon or reconstruct such supplies so that they will be protected against any further contamination. Contact your health department for information on how to properly protect a water supply.

REMEMBER - THIS PROCESS OF DISINFECTION IS ONLY TEMPORARY. ONLY WATER IN THE SUPPLY AT TIME OF TREATMENT IS DISINFECTED. FRESH WATER ENTERING INTO THE SUPPLY MAY BE CONTAMINATED.

SHELF LIFE OF FOODS FOR STORAGE

Here are some general guidelines for rotating common emergency foods.

Use within six months:

- Powdered milk (boxed)
- Dried fruit (in metal container)
- Dry, crisp crackers (in metal container)
- Potatoes



Use within one year:

- Canned condensed meat and vegetable soups
- Canned fruits, fruit juices, and vegetables
- Ready-to-eat cereals and uncooked instant cereals (in metal containers)
- Peanut butter
- Jelly
- Hard candy, chocolate bars, and canned nuts



May be stored indefinitely (in proper containers and conditions):

- Wheat
- Vegetable oils
- Corn
- Baking powder
- Soybeans
- Instant coffee, tea
- Vitamin C *
- Cocoa
- Salt
- Noncarbonated soft drinks
- White rice
- Bouillon products
- Dry pasta
- Powdered milk (in nitrogen-packed cans)



* Rotate every two years

SHORT TERM FOOD SUPPLIES

It is unlikely that an emergency would cut off your food supply for two weeks, however, you should prepare a supply that will last that long. A two-week supply can relieve a great deal of inconvenience and uncertainty until services are restored. The easiest way to develop a two-week stockpile is to increase the amount of basic foods you normally keep on your shelves. Remember to compensate for the amount you eat from other sources (such as restaurants) during an average two-week period.

You may already have a two-week supply of food on hand. Keeping it fresh is simple. Just rotate your supply once or twice a year.

Special Considerations to Keep in Mind

- As you stock food, take into account your family's unique needs and tastes. Try to include foods that they will enjoy and that are also high in calories and nutrition. Foods that require no refrigeration, preparation or cooking are best.
- Individuals with special diets and allergies will need particular attention, as will babies, toddlers, and the elderly. Nursing mothers may need liquid formula, in case they are unable to nurse. Canned dietetic foods, juices, and soups may be helpful for the ill or elderly.
- Make sure you have a hand operated can opener and disposable utensils. Don't forget nonperishable foods for your pets.



water supplies:

- Use commercial laundry bleach containing 5 ¼% available chlorine. The label on the container will indicate the percentage of available chlorine in the bleach.
- Prepare a 5 gallon batch of disinfectant by pouring 1 gallon of the laundry bleach into 4 gallons of water.

Once the flood water has receded:

- a. Remove any debris from water supply (for cisterns and spring houses, this may require completely emptying the reservoir to clean out mud, etc).
- b. Pour one half (2 ½ gallons) of the disinfectant batch into the well, spring, cistern or reservoir. (If there is not a pump on the water supply, pour the entire batch of disinfectant into the water supply.)
- c. Start pump; hose down the inside of the well, the cistern/spring house walls with the bleach water. A brand new mop may be used on the wall of the cistern/spring house to aid in cleaning.
- d. Open ALL taps (faucets) until water from each one has a distinct chlorine odor. If the supply has a hand pump, pump the water to waste until water coming from pump spout has a distinct chlorine odor.
- e. Pour remaining batch of disinfectant into well, spring or cistern and allow the solution to remain in the water supply for 12 to 24 hours. **Do not use the water supply during this time period!**
- f. Pump the supply to waste by running the water out through a garden hose. Do this until the odor of



radioactive dust and dirt, called radioactive fallout. Filtering will also remove radioactive fallout. (Water itself cannot become radioactive, but it can be contaminated by radioactive fallout. It is unsafe to drink water that contains radioactive fallout.)

Distillation involves boiling water and then collecting the vapor that condenses back to water. The condensed vapor will not include salt and other impurities. You will need a fairly large pot with its lid. The lid will be used upside down on the pot. To distill water, fill the 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 on the pot (make sure the cup is not dangling into the water). Boil the water for 20 minutes. The water that drips from the lid into the cup is distilled.

To make a fallout filter, punch holes in the bottom of a large bucket, and put a layer of gravel in the bucket about 1-1/2 inches high. Cover the gravel with a towel cut in a circle slightly larger than the bucket. Cover towel with 4 to 6 inches uncontaminated soil and then place another piece of towel over the soil. Place the filter over a large container, and pour contaminated water through. Then, disinfect the filtered water using one of the methods described above. Change the soil in your filter after every 50 quarts of water.

DISINFECTING A PRIVATE WATER SUPPLY AFFECTED BY FLOODING

Flooded private wells, springs, cisterns, pumps, and pipes need to be tested and disinfected after flood waters recede. Using contaminated water for drinking, washing dishes, brushing teeth, washing and preparing food, and making ice may lead to serious illness or even death.

The following procedures may be used to disinfect private

LONG TERM FOOD SUPPLIES

Build up your everyday stock of canned goods until you have a two-week to one-month surplus. Rotate it periodically to maintain a supply of common foods that will not require special preparation, water or cooking. From a sporting or camping equipment store, buy commercially packaged, freeze-dried or air-dried foods. Although costly, this will be your best form of stored meat, so buy accordingly. Buy a supply of the bulk staples in the following list. Stock the following amounts **per person, per month**:

- Wheat--20 pounds
- Powdered Milk(for babies and infants)*-- 20 pounds
- Corn--20 pounds
- Iodized Salt--1 pound
- Soybeans--10 pounds
- Vitamin C**--15 grams

* Buy in nitrogen-packed cans

** Rotate every two years



These staples offer a limited menu, but you can supplement them with commercially packed air-dried or freeze-dried foods and supermarket goods. Rice, popcorn, and varieties of beans are nutritious and long-lasting. The more supplements you include, the more expensive your stockpile will be. If these staples comprise your entire menu, you must eat all of them together to stay healthy.

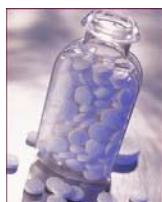
If you have wheat, corn, and beans in your long term food stores, it is suggested that you also have the means to prepare these goods for consumption. Needed equipment can be obtained from health food stores. A vast amount of information on preparation can be found on the internet. All of this needed equipment and info should be obtained in advance and placed in storage with the food supplies.

FOOD CONTAMINATION

The indiscriminate use of food, household products, medicines, and cosmetics that have been exposed to contamination may pose a threat to your health. Such items should be immediately destroyed in a manner approved by your local health department. You should listen to public service announcements for directions on how to dispose of food contaminated by chemical spills or radiological fallout after an event.

The following may help guide you in handling food supplies that have been contaminated by exposure to flood water.

- All fresh fruits and vegetables exposed should be destroyed.
- Fruits and vegetables in home gardens should be destroyed.
- Foods such as cereals, bakery goods, dried fruits, flour, frozen foods, sugar, salt, and similar foods in paper or plastic containers or wrapping should be destroyed.
- All meats, including fresh, dried, and frozen should be destroyed.
- All home canned food products should be destroyed.
- Household products, medicines, and cosmetics in containers with screw caps should be destroyed.



- 1.) Boiling is the safest method of purifying water. Bring water to a rolling boil for 1 minute, keeping in mind that



some water will evaporate. Let the water cool before drinking. Boiled water will taste better if you put oxygen back into it by pouring it back and forth between two clean containers. This will also improve the taste of stored water.

- 2.) Chlorination uses liquid chlorine bleach to kill microorganisms. Add two drops of bleach per quart of water (four drops if the water is cloudy), 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. 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.
- 3.) Purification tablets release chlorine or iodine. They are inexpensive and available at most sporting goods stores and some drugstores. Follow the package directions. Usually one tablet is enough for one quart of water. Double the dose for cloudy water.

MORE RIGOROUS PURIFICATION METHODS

While the three methods just described will remove only microbes from water, the following two purification methods will remove other contaminants. Distillation will remove microbes, heavy metals, salts, most other chemicals, and

be discolored with rust.

Do you know the location of your incoming water valve? You'll need to shut it off to stop contaminated water from entering your home if you hear reports of broken water or sewage lines.

Emergency Outdoor Water Sources

If you need to seek water outside your home, you can use these sources, but purify the water before drinking it.

- Rainwater, streams, rivers, and other moving bodies of water
- Ponds and lakes
- Natural springs
- Avoid water with floating material, an odor or dark color. Use saltwater only if you distill it first (described later).



Three Easy Ways to Purify Water

In addition to having a bad odor and taste, contaminated water can contain microorganisms that cause diseases such as dysentery, cholera, typhoid, and hepatitis. You should therefore purify all water of uncertain purity before using it for drinking, food preparation or hygiene.

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

The following measures will kill microbes, but will not remove other contaminants such as heavy metals, salts, most other chemicals, and radioactive fallout.



At your own risk, you may salvage commercially canned foods (in hermetically sealed containers) that remain airtight (free from severe dents, split seams or leaks) by removing the labels, washing the containers in water containing a detergent, rinsing in clear water, and submerging in a solution containing laundry bleach. (Two tablespoons of laundry bleach per gallon of water will be sufficient.) This solution should be freshly prepared frequently during the washing process. The containers should be rinsed in cool water from a safe source. Re-label the containers as to contents for future use.

WATER



WATER: THE ABSOLUTE NECESSITY

Stocking water reserves and learning how to purify contaminated water should be among your top priorities in preparing for an emergency. You should store at least a two-week supply of water for each member of your family. Everyone's needs will differ, depending upon age, physical condition, activity, diet, and climate. A normally active

person needs to drink at least two quarts of water each day. Hot environments can double that amount. Children, nursing mothers, and ill people will need more. You will need additional water for food preparation and hygiene. Store a total of at least one gallon per person, per day.

If your supplies begin to run low, remember: Never ration water. Drink the amount you need today, and try to find more for tomorrow. You can minimize the amount of water your body needs by reducing activity and staying cool.

How to Store Emergency Water Supplies

You can store your water in thoroughly washed plastic, glass, fiberglass or enamel-lined metal containers. Never use a container that has held toxic substances, because tiny amounts may remain in the container's pores. Sound plastic containers, such as soft drink bottles, are best. You can also purchase food-grade plastic buckets or drums.

Before storing your water, treat it with a preservative, such as chlorine bleach, to prevent the growth of microorganisms. Use unscented liquid bleach that contains 5.25 percent sodium hypochlorite and no soap. Some containers warn, "Not For Personal Use." You can disregard these warnings if the label states sodium hypochlorite is the only active ingredient and if you use only the small quantities in these instructions. Add four drops of bleach per quart of water

(or two scant teaspoons per 10 gallons), and stir. Seal your water containers tightly, label them, and store them in a cool, dark place.



Commercially bottled water can be stored for 2 years without any affect to quality or taste. Water that has been bottled at home should be replaced every 6 months.

Hidden Water Sources in Your Home

If a disaster catches you without a stored supply of clean water, you can use water in your hot-water tank, in your plumbing, and in ice cubes. As a last resort, you can use water in the reservoir tank of your toilet (not the bowl), but purify it first (described later).

Water beds hold up to 400 gallons, but some water beds contain toxic chemicals that are not fully removed by many purifiers. If you designate a water bed in your home as an emergency resource, drain it yearly, and refill it with fresh water containing two ounces of bleach per 120 gallons. It is recommended that this water be used for bathing but not for consumption.



To use the water in your pipes, let air into the plumbing by turning on the highest faucet in your house and draining the water from the lowest one. If the water supply was contaminated, you will need to boil/disinfect and possibly filter the water before using it.

To use the water in your hot-water tank, be sure the electricity or gas is off, and open the drain at the bottom of the tank. Start the water flowing by turning off the water intake valve and turning on a hot-water faucet. Do not turn on the gas or electricity when the tank is empty. Water may