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WATER STORAGE

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Our abundant domestic water supply is generally of little concern. However, situations might occur where the supply of safe water is interrupted. Interruptions could be for only short periods of time or natural disasters such as earthquakes could occur which would result in an inadequate or contaminated water supply for days. An emergency water supply is recommended in every household to meet these situations.

AMOUNT OF WATER FOR STORAGE

Only short-term supply of water can be stored in most homes. Recommendations for the amount of water to be stored vary from one-half gallon to 1 gallon per day, per person, for food preparation and drinking purposes only. The Department of Defense, Office of Civil Defense, states that a quart of water or other fluid a day will sustain life, but humans would be much more comfortable, especially in warm weather, with an allowance of a gallon per day. An additional $\frac{1}{2}$ to 1 gallon per day is recommended for washing, tooth brushing, and dish washing.

The amount of water for consumption might be reduced somewhat, depending on the total juices, soups, other drinks, and high moisture foods which are available. Other sources of water available in emergency situations are the water heater, water softener containers, and the water storage area of the toilet.

CONTAINERS FOR WATER STORAGE

Many types of containers are available for water storage. The most commonly used containers are glass, plastic, and metal.

- **Glass:** Glass provides a fairly effective container for storage but is easily broken and heavier than plastic. Glass is non-permeable to vapors and gases; however, water in glass containers should not be stored near gasoline, kerosene, pesticides, or similar substances.

- **Plastic:** Plastic jugs are frequently used for water storage. These containers are light weight and fairly sturdy. There are many types of plastic containers manufactured. Generally polyethylene type plastics are safe for storing water. Some, however, are not recommended for food storage because harmful chemicals could leach into the food. Most plastics used in waterbeds are not approved food storage plastics. Plastic containers which have previously been used for food storage or which are being advertised as food storage products will be safe. Plastic jugs with secure lids, which have contained milk or other edible substances are safe for water storage, however, it is essential that the milk bottles be very thoroughly washed to remove the fat traces. Some light-weight gallon containers might split at the seams and leak. Chlorine bleach bottles may be a food approved plastic, but contain an anti-static agent which prevents accumulation of dust during storage and are thus not recommended. Since plastic is permeable to certain vapors, water stored in plastic should not be near gasoline, kerosene, pesticides, or similar substances. It is advisable to store plastic water containers away from direct sunlight.

- **Metal:** Some metals, such as stainless steel, can successfully be used for water storage. A metal water storage container should be resistant to rust. A metallic taste can be picked up by the stored water in some types of metal containers. Water stored in metal containers should not be treated, prior to storage, with chlorine since the chlorine compound is corrosive to most metals.

TREATMENT FOR STORED WATER

Water which is to be stored for long periods of time should be sanitized or disinfected. Be sure to use the best quality water possible for storage. Water from a system with a state division of health “approved” rating is recommended. Likewise, the containers should be clean.

- **Heat Treatment:** One effective way to store water is in clean canning jars. Fill clean fruit jars with water, leaving 1 inch of head space at the top of the jars. Place unused, clean lids and screw bands and process the water in a boiling water bath as fruit is processed. Quart jars should be processed 20 minutes, 2 quart jars for 25 minutes.

- **Chlorine Treatment:** Liquid chlorine bleach can be used to disinfect water for long-term storage. One gallon can be treated by the addition of ¼ teaspoon of liquid chlorine bleach containing 4 to 6 percent sodium hypochlorite. (Most bleaches contain 5.25 percent.) This is equivalent to 16 drops of liquid chlorine bleach.

Closure of water containers should be secure. Stored water should be checked occasionally. If any changes, such as cloudiness or an odor are noted, replace the water and treat as before.

EMERGENCY DISINFECTION OF WATER

Some emergency situations could occur where the only water which is available is contaminated by disease-causing organisms. In this case, the same procedures can be used as for treatment of stored water as follows:

- **Heat Treatment:** Boiling is the most preferred method. This heat treatment requires water to be boiled in a vigorous rolling boil for 5 minutes. Taste may be improved by pouring the boiled water back and forth from one clean container to another several times to incorporate air.

- **Chemical Treatment:** Chemical treatment is less desirable than heat treatment because the effectiveness is dependent on several variables such as: (1) the amount of organic matter in the water, (3) water temperature, and (4) the length of time after the chemical is added until it is used.

- **Chlorine Treatment:** Clear water can be treated with ¼ teaspoon (16 drops) of liquid chlorine bleach per gallon. Mix the water and allow it to stand for 30 minutes before using. If water is cloudy to the appearance, chemical treatment is not recommended. A slight chlorine odor should be detectable in the water. If not, repeat the treatment and let stand an additional 15 minutes before using. Use fresh bleach.

- **Water Purification Tablets:** Different types of tablets are available for water purification purposes. Be sure to follow the manufacturer’s directions for treatment and allow sufficient time for the chemical to work before using. Check the label for expiration date, since the tablets can become ineffective with time. Most tablets have a storage life of approximately 2–5 years unopened.

- **Commercial Water Treatment Units:** Many extravagant claims are made by some water filter manufacturers concerning their ability to purify water. According to the Utah State Division of Health, concerning the effectiveness of their use, the following is quoted:

“In the emergency situation, neither these nor any other presently known home-use device can be relied upon to produce safe drinking water from any or all contaminated waters. A home-use device which may reduce one aspect of water contamination may have to effect on a different type of hazard in the same water.”

CONTAMINATION BY RADIOACTIVITY AND CHEMICALS

No effective way for decontamination of water which contains radioactive or chemical fallout is available for home use. This decontamination should be supervised by the local or state health officers.

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