FCS3-530

Water is the Liquid of Life

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Water is truly the liquid of life. Often, we don't think about the many ways it affects our lives. We use water each day for things like drinking, cooking, cleaning, manufacturing, irrigation, transportation, power generation, and recreation. We must understand our part in protecting our water supplies. It is also important for us to know how water affects our lives and wellness.

Almost three-fourths of the world is covered with water, which may lead you to think we have plenty of usable water. Actually, less than 1 percent of the water on earth is in a place and form that we can use. Almost 97 percent of the earth's water is salt water. This salt water is found in oceans, seas, salt lakes, and rivers. That leaves only 3 percent fresh water on the earth. Most of this fresh water is frozen in the polar ice caps.

Water's Role in Our Health

The human body is approximately 65 percent water. This water performs a lot of functions that are critical to staying healthy. While we can live for a long time without food, we can survive only a few days without water or some other liquid to hydrate our bodies. Water is important in many of the body's activities. These activities include:

- *Transport*—Blood, which is 83 percent water, is our body's transportation system for nutrients, hormones, enzymes, oxygen, and other life-sustaining materials to our cells. Blood also carries waste products to organs for removal.
- *Lubrication*—Water is present in the mucous linings of organs and the fluids between internal organs. These fluids make movement easier and reduce friction within the body. Water also lubricates joints, making it easier for bones to slide and move.
- *Digestion*—In the digestive tract, water is present in mucus and in salivary juices, which help break down certain foods and transport food through the digestive system.
- *Temperature control*—It's important for good health that the body's temperature stay within a narrow range. Water changes temperature slowly, so the water in our bodies is able to store heat and help regulate temperature. Water also helps regulate body temperature through perspiration. Heat leaves our bodies as we sweat, and the water evaporates off the skin. People can lose up to a pint of water each day through perspiration.
- *Chemical reactions*—Within our bodies, many chemical reactions take place, and some of them involve water. For example, water plays an important role in the digestion of protein and carbohydrates. Water also helps build hormones and enzymes that control reactions in the body.
- *Waste removal*—Our bodies produce wastes in many ways. Water plays a key role in removing them through our kidneys and large intestines. Wastes also leave our bodies through perspiration and the air we exhale.

Reaching a Balance

Each day the human body strives to maintain a balance as it takes in and loses water. Thirst is the main trigger that reminds us that our bodies may need fluid. When intake and output of fluids are unbalanced, we'll notice a change within our bodies. Over time, we will become dehydrated if we lose more fluid than we take in. Likewise, we retain fluid or make more frequent trips to the bathroom when we take in more fluid than we need. Medications and diseases also affect fluid intake and the body's water balance.

Through the years, the amount of water or fluid the body needs to work properly has been debated. In general, adults need six to eight cups of water each day, but this can vary depending on body size, amount of physical activity, age, overall health, and climate. Certain groups of people, including older adults, athletes, and those who work outdoors, may need different amounts of fluid than the average person.

Older people may not feel as thirsty as they once did, so they may drink less fluids. This can contribute to dehydration. Aging is also associated with decreased kidney function, reduced muscle mass, and lower amounts of water in the body. These factors contribute to dehydration that can lead to hospitalization for older people. Fortunately, drinking water throughout the day can help reduce this risk.

Athletes also need to pay particular attention to how much fluid they take in. Loss of body fluids can affect performance. The water in the body is also important for controlling athletes' body temperature and cooling working muscles. It is recommended to increase your fluid intake before, during, and after physical activity. More intense levels of physical activity require more rehydration. These same ideas are true for people who spend a lot of time outside in warmer climates and who perform jobs and manual labor outside, especially during the summer months.

Our Sources of Water

The water we need each day to maintain our health comes from a number of sources, including the beverages we drink. Water, fruit juices, and milk are all good sources of fluid, as are decaffeinated and unsweetened beverages.

Beverages containing caffeine (i.e., certain types of soft drinks, coffee, and tea) can result in fluid loss when we take in too much of it. Beverages that contain alcohol also result in fluid loss.

In choosing what we drink, consider needs for calories and nutrients as well as our need for fluids. Water is more readily absorbed by the body than other beverages, but it can also pass through the body more quickly. Milk, 100 percent fruit and vegetable juices, and other nutritious beverages may provide nutrients we need as well as fluid for hydration.

The foods we eat can supply an important part of the water we need. This is especially true with a diet high in fresh fruits and vegetables. Table 1 lists a few common fruits and vegetables and their water content as a percentage of their total weight. Most of the items listed are more than 90 percent water! Meat, fish, and poultry items are often one-half to two-thirds water by weight. Even grain products can be up to one-third water.

Table 1. Water content of common produce.

Fruit or Vegetable	Percent Water (by weight)
Apple	84
Banana	74
Broccoli	91
Carrots	87
Celery	95
Cucumber	96
Grapefruit	91
Iceberg Lettuce	96
Orange	87
Strawberries	92
Tomato (red)	94
Watermelon	92

Source: Bowes & Church's Food Values of Portions Commonly Used, 20th Edition, 2013.

The Water We Drink

In general, there are two types of water available for our use: bottled water that we purchase or water that comes from the tap. We must make sure our household water supply is safe—not only because we drink water, but because many foods are prepared using water. For example, coffee we have with breakfast may use water from our tap. Tap water can come from many different sources. For the majority of Americans, tap water comes from a public water system. However, some residents in rural areas still depend on a private water system like a well or cistern.

Public Water Systems

There are 435 public water systems in Kentucky. Approximately 95 percent of Kentuckians have access to public drinking water. A public water system is one that supplies piped water to at least 25 people or has 15 service connections for at least 60 days per year. These systems are regulated through the Kentucky Division of Water. Public water systems must follow guidelines. Standards, referred to as primary drinking water standards, set legal limits on over 90 contaminants in drinking water. These standards have been developed to protect human health. If you'd like to learn more about the purpose of drinking water standards and how they are set, contact the Kentucky Division of Water.

Private Water Systems

About 5 percent of the people in Kentucky use a private source of drinking water, including wells, springs, and cisterns. For the most part, private water supplies are unregulated. The main exception is that drinking water wells must be drilled by a certified installer. These installers must follow set guidelines. In addition, individual well owners must also develop and follow a plan for their well that will protect groundwater. For private water supplies, testing of water quality is not regulated. Homeowners are responsible for their water quality. Whether you are using a spring, cistern, well, or some other water source, you should have your water tested at least once a year. To learn more, contact your county health department to find out if it offers a water testing service.

Bottled Water

Consumer demand for bottled water continues. Many consumers believe that bottled water is safer than other drinking water, but some people say it isn't. Consumers do need to know a few facts about bottled water. Like other beverages, bottled water is regulated through the Food and Drug Administration (FDA). Definitions have been established for terms relating to bottled water, and strict standards are in place for how these terms are to be used on labels. The FDA has also established quality standards for bottled water.

Water Wellness

Consumers can take action to help keep water supplies safe. Use the following tips to make sure activities in and around your home protect water resources:

- Handle chemicals and cleaning products with care. Use the least amount possible and make sure leftover products are properly stored or disposed of.
- Get a soil test before using fertilizers on your lawn or garden and use pesticides sparingly. Research shows that homeowners use 10 times more fertilizer and pesticides per acre than farmers apply to farm fields.
- Keep your motor vehicle in good working condition to prevent fluid leaks. Make sure used automotive fluids like oil and antifreeze are recycled or properly disposed of.
- Limit the erosion of soil from your property by maintaining good plant cover. Prevent bare spots in the lawn and landscape.
- Always conserve water inside and outside the home, which helps ensure that we will have enough water when we need it.

Doing Our Part

By following a few simple guidelines, we can protect and conserve our water resources, which will improve our personal wellness and the wellness of our environment. The impact water has on our daily lives is often taken for granted. We must always remember how important water is to our wellness. It truly is the liquid of life!

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