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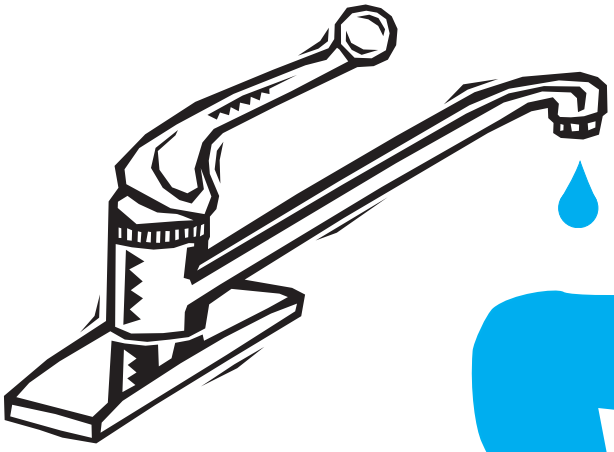

WATER: Important for Life

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Water makes up approximately two-thirds of the body's weight and approximately 75 percent of the brain's weight. Nearly 4 percent of the water in the body is lost through the skin, lungs and through urine and stools each day. This water loss must be replaced continually by beverage and food consumption. Sweating causes greater water loss and increases the need to consume more fluids.

Water loss resulting in as little as 1 percent decrease in body weight is called dehydration. Dehydration will reduce the body's ability to perform physically and mentally. Infants and children can quickly become dehydrated; therefore, it is critical they consume adequate fluids. Water is so important to well-being that you can only live a few days without it.

Why Is Water So Important?

It makes up a large part of the body and plays a role in nearly every function of the body:

- Water is essential for the body to cool itself. The inability of the body to cool itself will result in heat cramps, heat exhaustion or a heat stroke.
- Water is needed for digesting, absorbing and transporting nutrients.
- Water is a lubricant for joints and cushions vital organs and tissues. It is important for healthy mucus membranes in the lining of the mouth, lungs, nose and intestines.
- Water helps prevent constipation (and possibly reduce the risk of colon cancer) by adding bulk to feces and moving it through the colon faster. Getting enough fluid is critical with a high-fiber diet to keep the bowels functioning properly.
- Water is critical for health because it carries waste products from cells so the waste can be excreted from the body.

Heat Cramps, Heat Exhaustion and Heat Stroke

Heat cramps usually occur when profuse (or heavy sweating) causes a loss of body salt. The cramps occur in muscles usually in the abdomen and the extremities. They consist of a contraction of the muscle for one to three minutes, and they move down the muscle from one group of muscles to another. These contractions cause excruciating pain. Heat cramps may be a complication of heat exhaustion but may appear alone without other symptoms of dehydration. The key to preventing heat cramps is to drink enough water. Avoid salt tablets because they may increase water loss and increase the risk of heat-related problems.

The symptoms of **heat exhaustion** are headache; rapid pulse; weakness; a pale, cool, moist skin; and fatigue. If left untreated, it may lead to a heat stroke.

A **heat stroke** is serious and often life-threatening. When a heat stroke occurs, the body generally stops sweating, causing the body temperature to rise dangerously high. Other symptoms include dizziness, increased weakness, delirium, and hot, dry skin. A heat stroke can lead to death.

How Much Water Do You Need?

The average male needs approximately 12 cups of water per day, and the average female needs approximately nine cups. The following are factors that increase the amount of fluid you need:

- exercise
- high temperature
- low humidity
- high altitude
- high-fiber diet
- increased fluid losses as a result of diarrhea or vomiting
- caffeine or alcohol consumption (Alcohol and caffeine are diuretics which means they cause water loss and could increase the risk of dehydration.)

What Are Good Water Sources?

Water is important. However, many foods are primarily water and help meet your total water needs. Therefore, eating a well-balanced diet will help meet water needs. The following foods are almost all water:

- fruit and vegetable juices
- milk
- soup
- prepared gelatin

Many foods that are called "solid" also contain high levels of water.

- Many fruits and vegetables are over 80 percent water.
- Prepared grain products may be up to 30 percent water.
- Protein rich foods such as meat, fish and poultry may contain as much as two-thirds of their weight in water.

Can You Rely on Thirst To Meet Your Water Needs?

Thirst tells us we need water, but some experts believe the thirst mechanism cannot be relied upon to meet our water needs. They believe that by the time someone is thirsty, slight dehydration has already occurred. Mild dehydration occurs with as little as 1 percent loss of body weight.

Are There Guidelines To Help Meet Fluid Needs During Exercise?

Fluid replacement guidelines for exercise were developed by the American College of Sports Medicine. While these were developed for athletes, they can serve as a guide for preventing dehydration and heat-related problems.

- Twenty-four hours before exercise, consume a nutritionally balanced diet and drink plenty of fluids.
- Two hours before exercise, drink about two cups of fluid.
- During exercise, drink cool (40 to 50 degrees F) fluids at a rate of four to eight ounces every 15 to 20 minutes.
- For exercise lasting less than one hour, water is adequate for maintaining body fluid levels (hydration) and for replacing fluids lost during the exercise (rehydration).
- For exercise lasting longer than one hour, fluids that contain 4 percent to 8 percent carbohydrates and/or electrolytes may help improve hydration and performance.
- After exercise, drink 16 to 20 ounces of fluids for every pound lost during the exercise. Sodium may promote more rapid recovery, but it is not necessary if sodium is sufficiently available from food. Avoid salt tablets because they may increase water loss through the kidneys and increase the risk of heat-related problems.

Who is most likely to become dehydrated?

Children, especially infants. A few hours of frequent vomiting or diarrhea in anyone, but particularly in children, requires medical attention due to the possibility of dehydration. Fever will overheat the body resulting in additional water loss. Children and infants need to be offered water frequently, especially if they are sick or their environment is overheated.

The elderly. The sense of thirst in the elderly may not be sufficient to cause them to drink enough water to replace losses. In addition, the elderly may consciously limit water intake because going to the bathroom often is not convenient for them. But sufficient water is important; and at home or in the nursing home, the water glass should not be empty or out of reach.

Chronic disease sufferers. Chronic disease and medications may increase water need. Sometimes an elderly person's failing kidneys or a child's immature kidneys are less able to

concentrate waste products in urine, requiring more water to stay in balance. In rare instances, water must be restricted because of kidney disease. A doctor will advise you when this is necessary.

Physically active workers and athletes. Any physically active person, especially in hot, humid conditions, needs adequate water to maintain physical performance and avoid heat cramps, heat exhaustion or heat stroke. Lack of water, above all nutrients, has the ability to hinder performance and lead to serious complications.

Simple Self-Tests for Dehydration

How can you tell if you are becoming dehydrated?

- The color and odor of urine are simple tests for signs of dehydration. The urine should be pale yellow and should not have a strong odor.
- Another test is body weight. It requires weighing yourself before and after an activity or event. Every pound of weight loss represents the loss of two cups of water.

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