

## Water

Water is essential for all energy production in the body. Water is also used for temperature regulation and waste elimination and is essential to cell processes. An inadequate supply of water can result in up to a 30% reduction of energy. Between 50% and 70% of the body weight is water. Insufficient water in the body results in a decrease of blood volume thereby reducing the overall oxygen transport ability of the blood to properly supply the muscles during exercise. Since blood is used to regulate body temperature, inadequate cooling of the body occurs. The heart rate increases as the cardiovascular system is stressed and overheating occurs leading to possible heat stroke or heat exhaustion. We can survive without other nutrients for several weeks. However, we can only survive without water for about one week. Water is used to emulsify solutions within the body and transport them to the various tissues including the transport of waste byproducts.

Thirst is not an accurate measure of the body's water requirement. Age and environment alter the thirst mechanism. Therefore, a quantitative schedule must be utilized to adequately hydrate the body. Two hours prior to exercising in a hot environment, the participant should consume 2-3 cups of water and another 1-2 cups about 15 minutes before exercising. During exercise, about 4 ounces of water should be consumed every 15 minutes to replace water lost through sweat and maintain blood volume. As a guide for each pound of body weight lost through sweating while exercising, drink two 8oz. glasses of water. A loss of only two-percent of body weight through sweating can bring on the onset of dehydration. Adults should drink about 2 1/2 quarts of water per day.

Early signs of dehydration include dizziness, fatigue, headache, and loss of appetite. Advanced dehydration is manifested by rapid pulse, shortness of breath, deep yellow urine, blurred vision and hearing loss.

Cold water is absorbed into the body from the stomach faster than warm water. Recent studies suggest that drinks containing up to 10% sugar are almost as readily absorbed from the stomach. These sugary drinks have been shown to improve endurance in events lasting 2 to 3 hours. However, for fat burning purposes, consumption of sugary drinks will provide carbohydrate energy to the exercising muscles and possibly stave off fat metabolism for use as energy.

Therefore, if your intent is performance, then consume sports drinks. However, if the purpose of the exercise session is to burn fat, then drink water only. The glycogen stores in the muscles will run out in about 20 minutes and the body will be forced to metabolize stored fat for continued energy.

Consumption of salt in excess of recommended dietary requirements draws water out of the cells thereby impairing cellular function. Salt depletion may occur during endurance type exercises and when consuming water only. Salt tablets are not recommended because they draw water out of the body and into the stomach. In cold weather, urine production is increased therefore it is just as important to properly hydrate in cold weather environments as it is in hot weather.

