

Sports Nutrition Handout

Fluids and Hydration

Water is perhaps the nutrient most critical to athletic performance, as well as safety. One function of water is to regulate body temperature. Exercising muscles can generate heat at a rate of 100 times that of inactive muscles. Without adequate water for sweating and muscle cooling, the body would soon overheat. Water also serves as an essential component in the body's production of energy. A fluid loss of 2% of body weight can impair performance. Without proper hydration maintenance, fluid losses of more than 6% of body weight can occur within an hour or two of exercise in the heat.

Guidelines for Maintaining Hydration

The following guidelines will help maintain adequate hydration during training or competition:

- Drink 16-20 ounces of fluid two hours prior to activity.
- Drink 8-16 ounces of fluid approximately 15 minutes prior to activity.
- Drink at least 4-8 ounces of fluid every 15-20 minutes during strenuous activity.
- Weigh in before and after activity. Drink about 20 ounces of fluid for every pound lost. (Thirst is not an accurate indicator of replenishment needs). Urine color is another way of determining if rehydration has been accomplished. Dark urine means that it is too concentrated, and more fluid needs to be consumed.
- Fluids used should be cool (~50-70 degrees F) to help lower body temperature and empty from the stomach rapidly.
- Avoid beverages containing alcohol, because their diuretic effect can lead to dehydration. Individual response to caffeine-containing drinks varies; those who normally ingest caffeine may tolerate it better, but will generally need more to realize any potential ergogenic benefits. Carbonated beverages may cause GI discomfort.
- Water is generally a satisfactory choice. Sports drinks can be used if they contain no more than 8% carbohydrate, and a small amount of electrolytes. Sports drinks can be beneficial for activities lasting about 60 minutes or more.
- Weight should return to within two pounds of beginning weight before resuming activity.

Electrolytes can generally be replenished during the next meal. During long, strenuous bouts of activity in the heat, however (particularly those lasting ≥ 3 hours), electrolytes can be lost in amounts sufficient to cause muscle cramps. Fluids with small amounts of electrolytes (e.g. most sports drinks) can be advantageous under these circumstances.

