

Hydration Guidelines for Athletes

Hydration Issues

- Athletes can lose fluids faster than they can replace them, making physical activity a dehydrating endeavor.
- The human system can adapt to consuming more fluids with practice. Ideally, therefore, athletes will practice the same hydration strategies during training as those followed during competition.
- During physical activity, water is lost as sweat to provide necessary evaporative cooling from the exercise-associated heat creation and environmental heat and humidity. Electrolytes, primarily sodium chloride (salt), are lost with sweat, and blood sugar drops rapidly.
- Athletes who begin exercise in a well-hydrated state and have established well-practiced hydration habits during exercise will have a performance advantage over those who do not.
- Drinking an excessive volume of fluid that increases body weight, particularly if the fluid contains no salt, increases the risk of developing hyponatremia, a high-risk condition.

Hydration Goals

- Because athletes can lose fluids faster than they can be replaced, athletes in all sports should have a well-practiced hydration plan to diminish the degree of underhydration so that athletic performance is not compromised.
- Because water, electrolytes, and sugar are rapidly lowered during physical activity, athletes should consume fluids that contain electrolytes (salt) and sugar. Put simply, you have to replace everything you lose to keep muscle and neurological function normal. Water, by itself, is typically not sufficient.
- There are many different beverages that contain different amounts and types of sugars and electrolytes. The general recommendation is for a 6 to 7 percent carbohydrate solution and 100 to 200 milligrams per cup of sodium, but because there may be small individual variations in tolerance, athletes should find a hydration beverage that works well for them.
- Athletes should make every attempt to be in an optimally hydrated state *before* physical activity is initiated. One indicator of good hydration is clear or light-colored urine. Starting exercise in a poorly hydrated state will doom the athlete to poor performance.
- Athletes should consume sufficient fluid during physical activity to match the fluid lost in sweat. It is difficult for athletes to understand how much fluid has been lost during physical activity and are typically motivated to drink when they become thirsty. Thirst, however, occurs when the athlete has already lost approximately 1.5 liters of water (~1 to 2 percent of body weight), making it a poor indicator of when to drink. Because sweat losses exceed the ability to replace and absorb fluids, waiting for thirst to occur dooms the athlete to dehydration.

- High heat and humidity increase the sweat rate, mandating a larger volume of fluid consumption with greater frequency of intake. This must be practiced in advance; athletes who suddenly attempt to drink larger volumes of fluid without adapting to it are likely to experience GI distress.
- Allowing body weight to lower by greater than 2 percent is likely to compromise performance. Taking weight before and after exercise while monitoring the amount of fluid consumed during exercise in different environmental conditions is a good strategy for understanding if the right amounts of fluids have been consumed (1 lb of body weight equals 16 oz of fluid).
- After exercise, the athlete is still losing fluid and should immediately initiate a rehydration protocol with a sports beverage. It typically takes 20 to 24 ounces of fluid recovery for every pound lost during exercise, therefore, the fluid amount consumed should be sufficient to recover the weight lost (16 oz/lb) plus the fluid that is continuing to be lost.