



Fluid First – Hydration in Sports- Parsons, 2005

By Dallas Parsons, RD/Sport Dietitian, 2005

Why is hydration important?

- To maintain good blood volume, cardiac output and delivery of oxygen to working muscles
- To generate muscle contractions, decrease risk of muscle cramps
- To regulate core body temperature
- To eliminate waste

How do I know if I am dehydrated?

- Unexplained increase in heart rate
- Increased perceived exertion (exercise feels harder than it should)
- Small amounts of dark yellow urine
- Thirst
- Light-headedness, headaches
- Muscle cramps

Is it possible to over-hydrate?

Yes, it is possible to drink too much water. An athlete exercising for extended periods in warm temperatures and only replacing sweat losses with water may develop a low serum sodium level. This condition is known as hyponatremia and is very dangerous because it can cause headaches, disorientation and even death. Athletes exercising for extended periods in warm climates should use a sports drink that provides sodium, or talk to a sport dietitian about their hydration practice.

How can I monitor my hydration status?

A simple way to estimate your fluid losses is to compare your body weight before and after exercise.

Here is what you do:

- Weigh yourself before and after training. It is best if you can weigh yourself naked, but if that is not possible, then weigh yourself in the exact same clothing before and after. Empty your bladder before you weigh yourself.
- Subtract your “after” weight from your “before” weight. If you have lost more than 2 lbs, then you need to drink more fluids during training sessions.

How much fluid should I drink?

- **Before exercise:** All athletes should begin exercise well hydrated. To ensure adequate pre-exercise hydration, athletes should drink 2-2.5 cups (500-600mL) of fluid 2 hours before exercise. If tolerated, drink ½ -1 cup (125-250mL) 10 to 20 minutes before exercise.
 - **During exercise:** The goal is to balance fluid intakes with sweat and urine losses. Specific recommendations for individual athletes depend on body mass, sweat rate, environment and tolerance. A guideline to start with is ½ - 1 cup fluid every 20 minutes. In hot conditions, it could go as high as 2 cups every 20 minutes. Aim to drink fluids on a consistent schedule. Do not rely on your thirst sensation.
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- **After exercise:** Re-hydration is critical to recovery. It is recommended that athletes drink 3 cups (750mL) of fluid for every pound of body weight lost during exercise. Re-hydration should be completed within 2 hours of finishing exercise.

Should I drink a sports drink?

Sports drinks have been researched extensively and generally provide an excellent alternative to plain water for hard working athletes. During intense aerobic exercise, the body's preferred source of fuel is carbohydrate (rather than fat or protein) due to the efficiency of energy transfer to fatigued muscles. The majority of sports drinks are formulated to deliver carbohydrates, electrolytes and fluids in such a way that will minimize stomach upset and maximize intestinal absorption. When compared with water, the flavor of sports drinks typically entices athletes to drink more, thus aiding the hydration process.

Take home message:

- Dehydration will impair physical and mental performance.
- Weigh yourself before and after training to learn how much fluid you typically lose during exercise. This will help you develop a good hydration plan.
- Greater sweat losses occur in warm environments. Athletes should re-hydrate with a fluid that includes salt.

Practical Steps

- Always carry fluid with you or know where to find it (convenience stores, water fountains, public washrooms).
 - Drink by schedule (set a watch timer), not by thirst.
 - Monitor urine frequency and color (aim for pale yellow).
 - Estimate your sweat rate by weighing yourself before & after exercise.
 - Put more water in your mouth than over your head.
 - Start exercise well hydrated and keep your stomach comfortably full.
 - Drink 3 cups of fluid for every pound of body weight loss after exercise.
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