

AVOIDING HEAT ILLNESSES

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Teaching young athletes about good nutrition is equally as important as teaching them the skills of any game. Inadequate nutrition, which includes water consumption, can cause an athlete's performance to decline. Dehydration can quickly impair the performance of any athlete, no matter how well conditioned, as well as increase the risk of heat illness. Athletes can lose a large amount of water as sweat during a workout and must replace fluid loss in order to prevent dehydration. Even mild dehydration reduces an individual's endurance and performance significantly as well as increasing the likelihood of heat-related illnesses.

High temperatures increase the rate of perspiration. Increased humidity is also a concern as the air is already filled with moisture, which makes it difficult for sweat on our skin to evaporate, thus reducing the body's ability to cool itself efficiently. Unfortunately, this also can increase the internal or core body temperature to dangerous levels. Other factors can increase the rate of fluid loss. Avoiding these risk factors can help minimize dehydration or heat illnesses:

- Excessive clothing, padding or taping and increased intensity and/or duration of exercise.
- Competing in environmental conditions to which the athlete is unaccustomed.
- Intense levels of bright sunshine. Try to rest in shaded, cool areas during intense exercise periods. Try to practice or exercise during early morning vs. noon. Remember to use sunscreen.
- Failure to consume fluids every 15-20 mins during practice and before exercise. Athletes must drink fluids even if they do not feel thirsty. A key point for prevention of dehydration is pre-hydration!

Your body is composed of about 60% water and much of that water is located inside lean muscle tissue. Water is essential to our bodies because it regulates the processes and chemical reactions of every living cell. To have proper hydration, the fluid lost in our bodies must not be greater than the amount of fluid consumed. Normal perspiration, respiration, and excretions can cause up to half a gallon of water loss daily. During prolonged physical activity, an athlete can lose between 2 and 4 quarts of sweat (6-8 lbs. of body weight) in only one hour! A water loss of only 5% body weight can reduce the work capacity of muscles by 20-30%! Our bodies can only absorb about 1 quart of fluid per hour, so it is absolutely necessary for athletes to consume fluids before, during, and after exercise to replace lost body fluid and avoid dehydration. It is a good idea to drink 17-20 oz. of water at least 2-3 hrs before games or exercise and another 7-10 oz. of fluid 10-20 mins. before events. Drink often during exercise, at least 7-10 oz. every 10-15 minutes. After exercise, you should drink at least 20 oz. per pound of weight loss within 2-4 hrs of the exertional activity.

Dehydration can happen to anyone! One of the first symptoms of dehydration is fatigue and irritability. There are basically 3 levels of heat illness, which can progress in any order: heat cramps, heat exhaustion, and heat stroke. Heat stroke is the most serious condition and can cause the athlete to collapse and suffer coma or death.

Symptoms of Heat Cramps

Muscle cramps
 Whole Body Cramps

Symptoms of Heat Exhaustion

Headache; Irritability
 Thirst; Dry mouth; Dizziness;
 Weakness; Nausea; Vomiting;
 Rapid pulse; rapid respirations;
 Flushed skin/decreased sweating

Symptoms of Heat Stroke

High body temperature;
 nausea/vomiting; confusion/
 disorientation/decreased
 of consciousness; coma

Working our muscles causes body heat to rise quickly during physical activity. Fluids in our bodies help maintain core body temperatures, so as body heat increases, our bodies compensate by sweating. For both children and adults, the main water loss during exercise is through sweating. However, dehydration in children will increase their core body temperature at a faster rate than adults. Our bodies are not able to cool properly when dehydration occurs. When excessive body fluid is lost and not replaced, the body temperature increases and heat exhaustion and/or heat stroke may occur. Death may occur as a result of heat stroke.

THIRST IS NOT A GOOD INDICATOR OF DEHYDRATION! By the time we feel thirsty, the body has already lost 2% of body weight in fluid and early stages of dehydration have begun. A good indicator of the body's hydration status is the color and amount of urine excreted. Urine should be clear or light colored and in large quantities with urination occurring throughout the day. Dark, concentrated, small amounts of urine can be a sign of dehydration. Body weight loss during exercise is another indication of the amount of fluids lost.

Athletes can feel exhausted after training sessions and competitions. Failure to properly recover will leave individuals below their best performance level. Some tips to return your body systems to its pre-exercise state include:

- Cool-down exercise can help reduce feelings of stiffness after strenuous exercise and is especially important if the next competition event is only a few hours away. Stretching the major muscle groups after exercise will also help.
- Your muscles need to have quick restoration of carbohydrate fuel reserves immediately after exercise, so it is important to eat and drink carbohydrate-rich foods. Examples include pretzels, fresh fruits, energy bars, and sports drinks.
- **REPLACE BODY FLUIDS LOST FROM SWEATING!!** It is important to drink appropriate fluids (water, sports drinks) at least an hour before exercise, during exercise, and after exercise. Alcoholic and caffeinated beverages can have a diuretic effect that can make dehydration worse, thus you need to avoid them.

High carbohydrate snacks are recommended to satisfy the energy needs of athletes. Carbohydrates, especially complex ones, are more helpful than protein to help fuel the body since they're easily digested and quickly convert to glucose, which is stored in muscles as glycogen for ongoing energy delivery. Most nutritionists agree that complex carbohydrates are a better choice since they provide a longer lasting source of energy than the simple carbohydrates (sugars) that provide a quick increase in blood sugar levels but can leave an individual feeling listless later. Above normal levels of stored muscle glycogen can help delay the onset of fatigue while helping athletes perform at their highest levels. Water helps with hydration but also helps to store glycogen more effectively. In a recent study by the American Dietetic Association and the American College of Sports Medicine, it is suggested that athletes should have 60-65% of their diet consist of complex carbohydrates. Examples of healthy, high carbohydrate snacks include:

- Whole grain cereal with low fat or skim milk; Whole grain breads/pasta
- Low fat fruit flavored yogurt; Animal or graham crackers and a box of raisins
- Peanut butter on whole wheat toast with ½ apple
- Lean meat on pita bread with ½ cup orange juice
- Vegetables and fruits
- Low fat frozen yogurt and 100% grape juice
- Oatmeal raisin cookie and low fat milk
- Low fat pudding, bagel and apple juice