



SPORTS MEDICINE

Texas Children's Hospital West Campus

Heat, humidity and hydration

As your child begins a training program, be sure he or she stays adequately hydrated. Here are some practical ways of monitoring hydration and dietary tips to improve fluid balance.

Monitoring

Bodies are about 65% water, and any quick change in weight is because of changes in fluid balance. Monitoring weight before and after exercise is a practical and quick way of monitoring fluid loss during activity. This is known as a "sweat rate." Losing one pound during exercise is equal to a 16 ounce fluid loss, or about the size of an average water bottle.

Another quick way to assess hydration is the color of urine. In general, urine should be the color of pale lemonade. If urine looks like apple juice, chances are you are dehydrated. According to the American College of Sports Medicine, the goal of drinking before, during and after exercise is to prevent weight loss of greater than 2% of total body weight during physical activity. Being well hydrated can actually improve an athlete's performance.

Improving fluid balance

Fluids come from two main sources -- fluids you drink and fluids you eat. The best hydration beverage is water, and if the duration of exercise is under an hour, plain water is preferred. Sports drinks are appropriate for exercise greater than an hour and during hard training.

Sports drinks provide carbohydrates and electrolytes, and because of the flavoring, children will often drink more of these beverages than necessary to maintain hydration. Sports drinks can be used before, during and after exercise, but have little value in the lunch box or at meal times. Milk and water are the best meal time options.

Also, consider that fruits and vegetables are great sources of fluid as most contain about 90% water. Milk and yogurt are approximately 85% water, and choosing these types of foods can help with hydration as well.

Activities

- Have your child estimate how much fluid is consumed in a gulp of water to estimate how many gulps of fluid they will need to take in during training.
- Set up a water station with cups or water bottles along the training route to practice drinking while exercising.
- During the training program, have your child keep a daily log journal tracking his or her fluid intake to ensure proper hydration.

Daily fluid intake log

Name	Day	Amount of liquid consumed in a day	Comments

Prevention of heat injury

- Drink one to two cups of water two to three hours before exercise.
- Stay in the shade as much as possible when not competing.
- The best fluid to drink during competition is the fluid you have been using during training.
- Drink the minimum of one to two cups of water about every 20-30 minutes during competition.
- The colder the water, the faster it is absorbed.
- Drink even when not thirsty. Thirst will underestimate how much fluid is needed.
- DO NOT TAKE SALT TABLETS. They are unnecessary and may be dangerous.
- Wear loose fitting clothing (i.e., cotton blend/light colored).
- Do not drink sodas, caffeinated or carbonated drinks or fruit juices during exercise.
- Water is the best drink unless the exercise is continuous and greater than an hour.
- Start conditioning slowly and before the actual summer practice or training session begins.
- It takes 10-14 days of heat exposure (15 to 30 minutes in the heat) for your body to acclimate to the heat.

Heat injury

Heat injury encompasses a wide range of effects on the body from too much heat and/or humidity and not enough hydration during physical activity. If not treated, this condition can become very serious.

Early warning signs of heat injury:

- Goosebumps on chest and upper arms
- Headache
- Unsteadiness or dizziness
- Nausea

- Muscle spasms or cramps
- Muscle fatigue
- Profuse sweating

If your child experiences these warning signs, he or she should stop physical activity, begin oral rehydration in a cool, shaded environment and consult a trainer or a physician.

Late signs of heat injury:

- Confusion
- Exhaustion
- Unconsciousness
- Dry skin
- Rising body temperature
- Vomiting

At this stage, the athlete is in extreme danger. A doctor should be consulted immediately and emergency measures begun. Emergency medical services (EMS) should be called for transportation to an Emergency Center. Remember that the effects of competing in hot weather are additive. This means that one is more likely to develop heat illness on the second or third day of competition if attention is not paid to drinking the necessary amounts of fluid during the first two days of competition.



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