

RECOMMENDATIONS FOR HYDRATION TO PREVENT HEAT-RELATED ILLNESS

Types of Sports Drinks

Fluid Replacers

- Examples: Water, Gatorade, Powerade, 10K, Quickkick, Max
- These non-water carbohydrate containing drinks are absorbed quickly and typically are used for activities lasting more than an hour.

Carbohydrate loaders

- Examples: Gatorlode, Exceed High, Carboplex, etc.
- These drinks replace more muscle glycogen to enhance greater endurance.
- They should be used after ultra-endurance events to increase muscle glycogen resynthesis after exercise.

Nutrition Supplements

- Examples: Chocolate milk, Gatorpro, Exceed Sports, Ultra Energy, etc.
- These supplements are fortified with vitamins and minerals and they help athletes maintain a balanced diet.
- They help restore muscle glycogen stores after exercise.
- They provide extra calories for athletes beyond a proper balanced diet.

What Not to Drink

- Drinks with carbohydrate (CHO) concentrations of greater than eight percent can cause upset stomach due to high carbohydrate load and delay water absorption.
- Fruit juices, CHO gels, sodas, and sports drinks that have a CHO greater than six to eight percent are not recommended during exercise as sole beverages.
- Beverages containing caffeine will effect hydration since urine production will increase compared to non-caffeinated beverages.
- Carbonated beverages are found to cause decreased voluntary fluid intake.
- Alcoholic beverages are inappropriate for high school athletes.

Hydration Tips and Fluid Guidelines

- Drink according to a schedule based on individual fluid needs.
- Drink before, during and after practices and games.
- Drink 17-20 ounces of water or sports drinks with six to eight percent CHO, two to three hours before exercise.
- Drink 7-10 ounces of water or sport drink 10 to 20 minutes before exercise.
- Drink early – By the time you're thirsty, you're already dehydrated.
- In general, every 10-20 minutes drink at least 7-10 ounces of water or sports drink to maintain hydration, and remember to drink beyond your thirst.
- Drink fluids based on the amount of sweat and urine loss.
- Within two hours, drink enough to replace any weight loss from exercise.
- Drink approximately 20-24 ounces of sports drink per pound of weight loss.
- Dehydration usually occurs with a weight loss of two percent of body weight or more.

What to Drink During Exercise

- If exercise lasts more than 50 minutes, a sports drink should be provided during the session.
- The carbohydrate concentration in the ideal fluid replacement solution should be in the range of six to eight percent CHO
- During events when a high rate of fluid intake is necessary to sustain hydration, sports drinks with less than seven percent CHO should be used to optimize fluid delivery. These sports drinks have a faster gastric emptying rate and fluid absorption rate, thus aid in hydration.
- Sports drinks with a CHO content of 10 percent have a slow gastric emptying rate and should be avoided during exercise.
- Fluids with salts (sodium chloride, potassium chloride) are beneficial to increasing thirst and voluntary fluid intake as well as offsetting the small amount of salts lost with water.

- Salts should never be added to drinks, and salt tablets should be avoided, because they lead to slower gastric absorption.
- Cool beverages at temperatures between 50 to 59 degrees Fahrenheit are recommended for best results with fluid replacement.

Dehydration, Its Effects on Performance, and Its Relationship to Heat Illness

- Dehydration can affect an athlete's performance in less than an hour of exercise. Sooner if the athlete begins the session dehydrated.
- Dehydration of just one to two percent of body weight (only 1.5-3 lbs., for a 150-pound athlete) can negatively influence performance.
- Dehydration of greater than three percent of body weight increases an athlete's risk of heat illness (heat cramps, heat exhaustion, heat stroke).
- High body fat athletes can have a harder time with exercise and can become dehydrated faster than lower body fat athletes working out under the same environmental conditions.
- Poor acclimatization to heat or lower fitness levels can greatly contribute to an athlete's dehydration problems. This is important with the first practices of year, especially in the summer.
- Certain medications or fevers can greatly affect an athlete's hydration status.
- Environmental temperature and humidity both contribute to dehydration and heat illnesses.
- Clothing, such as dark, bulky, or rubber protective equipment can drastically increase the chance of heat illness and dehydration.
- Wet bulb globe temperature measurements should be taken 10-15 minutes before practice, and the results should be used with a heat index to determine if practices or contests should be started, modified or stopped.
- A Heat Index chart should come from a reputable source like the National Oceanic and Atmospheric Association, or National Athletic Trainers Association.
- A relative humidity of greater than 40 percent and a temperature of 90 degrees Fahrenheit are likely to cause heat illness, extreme caution should be used.
- A relative humidity of 80 percent and a temperature of 84 degrees Fahrenheit are likely to cause heat illness, extreme caution should be used.
- A relative humidity of 80 percent and 90 degrees Fahrenheit are likely to cause heat stroke and these conditions are considered dangerous.

<http://www.weather.gov/om/heat/heatindex.shtml>