RECOMMENDATIONS FOR HYDRATION TO PREVENT HEAT-RELATED ILLNESS

**Types of Sports Drinks**

**Fluid Replacers**
- Examples: Water, Gatorade, Powerade, 10K, Quickick, 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