



# MONTHLY NEWSLETTER

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## 9+ Preventing Heat Illness

Athletes exercising in a hot, humid environment can encounter various forms of heat illness including heat cramps, heat syncope, heat exhaustion, and heatstroke.

### Heat Syncope

Heat syncope (or heat collapse) is the result of rapid physical fatigue while exercising in the heat. It is usually caused by not being acclimated to exercising in the heat. Generally, athletes will experience dizziness, fainting, or nausea. Athletes who present with heat syncope should be placed in a cool environment and should drink large quantities of fluids.

### Heat Cramps

Heat cramps are painful muscle spasms that occur when an athlete has lost an excessive amount of water and electrolytes (sodium, magnesium, chloride, potassium, and calcium). Cramps commonly occur in the calf, abdomen, hamstrings, and quadriceps, although any muscle group can be involved. Replacing sodium, chloride, potassium, magnesium, calcium, and water can help to prevent cramps. One important way to replace electrolytes is by having athletes eat plenty of fruits and vegetables and consuming sports drinks such as Gatorade or Powerade. Athletes experiencing muscle cramps should drink large quantities of water and should gently stretch the muscle while massaging the area with ice. These athletes should not return to practice on the same day because cramping will most likely reoccur.

### Heat Exhaustion

Heat exhaustion is the result of inadequate replacement of fluids and exercising in the heat when in poor physical condition. Athletes experiencing heat exhaustion may collapse, profusely sweat, have pale skin, and have an elevated temperature (102 F). Other signs of heat exhaustion include dizziness, light-headedness, hyperventilation, rapid pulse, and a decrease in physical performance. Victims of heat exhaustion should be placed in a cool environment and given large quantities of water. Some may even need to be taken to the hospital for intravenous fluids if their symptoms are extremely severe.

### Heatstroke

Heatstroke is an extremely serious and life-threatening emergency and can occur suddenly without warning. Athletes experiencing a heatstroke may suddenly collapse and lose consciousness. Victims may have flushed, hot skin with minimal sweating, shallow breathing, a rapid, strong pulse and a core temperature of 106 F. If the victim's body temperature is not lowered within 45 minutes, he or she is at a higher risk of death. Every possible effort should be made to lowering the victim's body temperature without fully immersing the individual in cold water. These victims should be stripped down and cooled by sponging them with cold water and by fanning with cool air. People suffering from heatstroke should be transported immediately to the Emergency Room in whatever vehicle is available.

### Acclimatization

One of the most important ways to prevent heat-related illnesses is to gradually acclimate athletes to the heat and humidity. Ideally, athletes should report to preseason conditioning practices somewhat acclimated to exercising in the heat. However, the coach should be aware that acclimatization should be progressed over a 7 to 10 day period. Conditioning and practices should begin well before the start of the season. Workouts should be carefully planned for morning and/or late afternoon to avoid the hottest part of the day (10AM - 5PM). The first workouts should start out at low intensity and should be of short duration. Workouts can be

gradually progressed in duration and intensity as athletes become accustomed to exercising in hot, humid conditions. If practices are being conducted twice a day, coaches should allow a minimum of three hours following mealtime to allow food, fluids, nutrients, and electrolytes to move into the small intestine and bloodstream before the next workout.

### **Clothing**

The clothing that athletes wear during workouts can also have a great effect on avoiding heat stress. Clothing should be of light material and light color. When practices are conducted on extremely hot and humid days, clothing should be limited to shorts and white t-shirts if possible. Preseason conditioning for football teams should begin with the minimal amount of equipment. Initially, practices can begin in shorts, light colored net jerseys, and helmets. Instead of beginning the first practice in full pads, progress the athlete to helmets, followed by helmets and shoulder pads, then to helmet, shoulder and thigh pads with shorts, and finally to full gear.

### **Dehydration**

Dehydration is a major concern when exercising in hot, humid weather. The signs and symptoms of dehydration include thirst, general discomfort, irritability, headache, weakness, dizziness, nausea, cramps, vomiting, and decreased performance. Dehydration is the result of sweating, inadequate fluid intake, vomiting, diarrhea, alcohol, and ingestion of fluids containing caffeine (i.e. soft drinks, coffee, and tea). During exercise, athletes should avoid fruit juices, carbohydrate gels, sodas, carbonated drinks, and other fluids with a high carbohydrate content due to the risk of stomach problems.

### **Rehydration and Fluid Guidelines**

Two to three hours before exercising, athletes should consume 17-20 oz. of water or a sports drink (i.e. Gatorade or Powerade). Athletes should also drink another 7-10 oz. 10-20 minutes before exercising. While exercising, athletes should be allowed to drink at least 7-10 oz. of water or sports drink every 10-20 minutes. Athletes should be encouraged to drink early even when they are not thirsty and should be encouraged to drink beyond their thirst. If an athlete is thirsty, then he or she is already dehydrated. Within two hours following exercise, an athlete should drink enough fluids to replace any weight loss during the workout. For every pound of weight loss an athlete should drink 20-24 oz. of a sports drink. Water and sports drinks should be readily available at practices and it is recommended that the temperature of these beverages be between 50 -59 F.

### **Diet**

Athletes who are participating in practices and workouts during hot, humid conditions should also be very cautious of the foods they eat. Their diets should include plenty of fresh fruit and vegetables. Such foods contain essential electrolytes (potassium, magnesium, chloride, calcium, and sodium), which help to prevent dehydration and excessive water loss. Some athletes may find it useful to increase their sodium intake by lightly salting their foods. This will help athletes retain water and will increase their thirst so that they drink more fluids. However, this practice should not be used if the athlete has high blood pressure and should also be discontinued once the athlete has become acclimated to the environmental conditions. Athletes should also avoid foods with a high fat content (i.e. fast foods and fried foods) in order to avoid upset stomach and other gastrointestinal problems.