

# AthletiHINTS



**AthletiCare**

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## Warm weather exercise

### Introduction

As the temperature and humidity rise, so does the incidence of heat-related illnesses to which anyone is susceptible. When exercising outside, an individual's body temperature begins to rise due to the combination of increased air temperature and increased metabolism, while high humidity prevents the body's cooling mechanism, evaporation of perspiration, from working effectively.

If you intend to exercise outside this summer, please take precautions to avoid heat-related illnesses and be aware of the signs and treatment of the following conditions.

### Heat Cramps

Heat cramps are involuntary muscle spasms caused by dehydration, electrolyte loss and inadequate blood flow to muscles. They usually occur in the quadriceps, hamstrings and calves.

When heat cramps occur, discontinue activity, slowly stretch the affected area and drink cool water. When the spasms subside, activity can be resumed. If the spasms do not improve within five minutes, they may be caused by another injury. See a physician.

### Heat Exhaustion

Heat exhaustion is a shock-like condition that occurs when excessive sweating causes dehydration and electrolyte loss. A person with heat exhaustion may have a headache, nausea, dizziness, chills, fatigue and extreme thirst. Signs of heat exhaustion are:

- pale, cool and clammy skin
- a rapid, weak pulse
- loss of coordination

- dilated pupils
- profuse sweating (most important)

Take the following steps when signs of heat exhaustion occur:

- rest in a cool, shaded area
- drink cool water
- apply ice to the neck, back or stomach to help cool the body
- monitor breathing and heart rate; rescue breathing or CPR may be necessary
- if the condition does not improve (or worsens), call 9-1-1.

Activity may **not** be resumed the same day and not until fluid loss is replaced.

### Heatstroke

Heatstroke is a life-threatening condition in which the body stops sweating and body temperature rises dangerously high. It occurs when the body's temperature control center malfunctions due to dehydration. A person with heatstroke may feel extremely hot, nauseated, confused, irritable and fatigued. Signs of heatstroke are:

- hot, dry, flushed skin (most important)
- very high body temperature (>103° F)
- lack of sweat
- rapid pulse
- rapid breathing
- constricted pupils
- vomiting or diarrhea
- seizures, unconsciousness, cardiac arrest (possibly)

*Over*

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**Frappier Acceleration**  
Sports Training

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Take the following steps when signs of heat exhaustion occur:

- call 9-1-1
- rest in a cool, shaded area
- remove excess clothing
- cool the body with cool, wet towels or by pouring cool water over the individual
- apply ice packs to the armpits, neck, back, stomach and groin
- monitor breathing and heart rate; rescue breathing or CPR may be necessary
- drink cool water

Activity may not be resumed until a physician's release is obtained.

## Prevention

Simple steps can be taken to prevent heat-related illnesses. When exercising in high heat and humidity, rest for 10 minutes every hour and change wet clothes frequently. Exercise in the evening or early morning if possible. Wear light-colored clothing.

If you are out of shape, working out extremely hard or heavily-muscled, take a water break every 15 to 20 minutes. Most importantly, replace body fluids and electrolytes lost through sweat by eating a healthy diet and drinking plenty of water.

## Fluid replacement for exercise in heat

Second only to spinal injuries, heat causes more deaths in high school/college football than any other factor. The number of heat-related injuries are common in summer and early fall sports. Most of these injuries can be avoided by following some simple guidelines when beginning workouts:

- All athletes should weigh themselves before and after practice. A loss of more than 2 percent of body weight between workouts is a sign of dehydration, which compromises physical performance. Losses greater than 3 percent body weight increase an athlete's risk of heat illness.

- Some athletes sweat more than others. These athletes need to consume more fluids than those who sweat less. Athletes who sweat heavily may need electrolyte replacement. Salt is abundant in the normal diet. The addition of calcium and potassium may be necessary. Milk and dairy products and green leafy vegetables are excellent calcium sources. Fruits (bananas, apricots and dates) are excellent sources of potassium.

- Athletes need to pre-hydrate before exercise and re-hydrate during and after exercise. Athletes should consume about 20 ounces of fluid two to three hours before exercise. Most should be during meals and rest. During exercise, they should re-hydrate every 10 to 15 minutes with eight to 10 ounces of fluid and continue to re-hydrate after practice until body weight is within one percent of pre-exercise norms.

- Sports drinks do little during exercise but may help after exercise. The electrolytes and carbohydrates they contain do little to help the athlete except in intense, sustained training (more than one hour). After exercise, these drinks may be beneficial in performance recovery. Sports drinks, fruit juice, and CHO gels should contain six percent sugar or less. Greater concentrations may delay fluid absorption, thus increasing dehydration. Soda, alcohol and caffeine should be avoided altogether when dehydration is a factor.

- Children are not small adults. Children use more energy during exercise but have less blood/plasma volume to absorb and dissipate heat. Smaller skin area and fewer sweat glands further delay evaporation and cooling. Childhood fat also affects heat dissipation; fat acts as insulation. Overweight or obese athletes need to be closely monitored in the heat.