Hot Weather Guidelines for Athletic Practice

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The Contra Costa County Office of Education and Contra Costa Health Services have created the following guidelines for parents and coaches to increase the safety and performance of children who play sports in hot weather.

People suffer heat-related illness when the body's temperature control system is overloaded. The body normally cools itself by sweating. But under some conditions, sweating just isn't enough. In such cases, a person's body temperature rises rapidly. Very high body temperatures may damage the brain or other vital organs. Several factors affect the body's ability to cool itself during extremely hot weather. When the humidity is high, sweat will not evaporate as quickly, preventing the body from releasing heat quickly.

Children sweat less than adults, making it harder for them to cool off. Therefore, children who play sports or are physically active in hot weather can be at risk for heat illnesses. In addition, dehydration also puts children at risk for more dangerous heat illnesses.

Heat Related Terms

Heat Wave: More than 48 hours of high heat (90 degrees or higher) and high humidity (80 percent relative humidity) are expected.

Heat Index: A number in degrees Fahrenheit that tells how hot it really feels with the heat and humidity. Exposure to full sunshine can increase the heat index by 15 degrees F. Temperature and heat index readings for individual locations may be found at www.weather.com.

Heat Illness: A person's natural cooling system may begin to fail, allowing internal heat to build up to dangerous levels. The result may be heat illness, which can come in the form of heat cramps, heat exhaustion, or heatstroke.

Heat Illnesses

Heat Cramps: Brought on by exercise and the resulting loss of sodium and moisture.

* Muscle pains or spasms (usually in the abdomen, arms or legs)

Treatment:

* Stop all activity and sit in a cool place
* Drink clear juice or a sports beverage
* Do not return to strenuous activity for a few hours after the cramps subside
* Seek medical attention if cramps do not subside in 1 hour

Heat Exhaustion: A moderate heat illness that develops after several days of exposure to high temperatures and inadequate replacement of fluids. The skin may be cool and moist, the pulse rate will be fast and weak, and breathing will be fast and shallow.

The warning signs of heat exhaustion are:

* Heavy Sweating
* Muscle cramps
* Weakness
* Headache
* Fainting
* Paleness
* Tiredness
* Dizziness
* Nausea/vomiting

Treatment:

* Drink cool, nonalcoholic beverages
* Rest
* Take a cool shower, bath or sponge bath
* Seek an air-conditioned environment
* Wear lightweight clothing

Heat Stroke: The most serious heat-related illness. It occurs when the body becomes unable to control its temperature. Heat stroke can cause death or permanent disability if emergency treatment is not provided.

The warning signs of a heat stroke vary, but may include the following:

* An extremely high body temperature (above 103° F)
* Red, hot, and dry skin (no sweating)
* Rapid, strong pulse
* Dizziness
* Confusion
* Throbbing headache
* Nausea
* Unconsciousness

Treatment:

Heat stroke can be a life-threatening emergency. Have someone call for immediate medical assistance while you begin cooling the victim. Do the following:

* Get the victim to a shady area
* Cool the victim rapidly, using whatever methods you can; Apply ice packs in the armpits, groin and neck areas, place the victim in a tub of cool water, place the person in a cool shower, spray the victim with cool water from a garden hose, sponge the person with cool water or wrap the victim in cool, wet sheet and fan them vigorously
* Monitor body temperature and continue cooling efforts until the body temperature drops to 101-102° F
* If emergency medical personnel are delayed, call the hospital emergency room for further instructions
* Do not give the victim alcohol to drink
* Get medical assistance as soon as possible

Guidelines for Fluid Replacement for Athletes

The effects of dehydration include decreased athletic performance and an increased risk of heat illness. Athletes should not lose more than 3% of body weight as a result of one training session. Athletes should be educated in the process of hydrating themselves as a 24 hour a day practice, and should begin every athletic activity well hydrated.

Signs and Symptoms of Dehydration:

- ☐ Thirst
- ☐ Irritability
- ☐ Headache
- ☐ Weakness
- ☐ Dizziness
- ☐ Cramps
- ☐ Nausea
- ☐ Decreased performance

What to drink during exercise include:

- ☐ WATER
- ☐ Carbohydrate drinks with 6-8% carbs (Gatorade) if exercise greater than 45 min (if carb concentration is greater than 6-8% absorption rate will be decreased
- ☐ Cool beverages at 50-59°F recommended, if beverage is too cold the absorption rate will be decreased

What not to drink includes:

- ☐ Fruit juice, carbohydrate gels, sodas, carbonated sport drinks
- ☐ >8% Carbohydrate level drinks
- ☐ Drinks with caffeine, alcohol, or carbonation

Hydration tips:

- ☐ By the time you are thirsty, you are already dehydrated
- ☐ Drink before, during and after games
- ☐ Avoid soft drinks and juice during play, high carbs may cause stomach problems
- ☐ Urine should be light yellow or clear and odorless

Fluid guidelines:

- ☐ 2-3 hours before exercise drink 17-20 oz of water/sports drink
- ☐ 10-20 min before exercise drink 7-10 oz of water/sports drink
- ☐ Continue drinking water or sports drinks throughout exercise (generally 7-10 oz every 10-20 min)
- ☐ Within 2 hours after exercise drink enough fluid to replace lost fluids during exercise

Prevention of Heat Illnesses

The best management of heat related illness is PREVENTION.

- ☐ Ensure the athlete is well hydrated prior to the start of any and all activity.
- ☐ Allow frequent periods of rest and hydration during activity.
- ☐ Allow unrestricted fluid replacement; encourage fluids before, during and after activity.
- ☐ Weigh athletes before and after activity to monitor body water loss from the activity and to insure adequate rehydration has occurred prior to next session.
- ☐ Gradually increase activity in the heat over a period of 7-10 days to allow adequate acclimatization.
- ☐ Wear light-weight and light-colored clothing.
- ☐ Protect against sun exposure, i.e., use sun screen.
- ☐ Schedule activities at the coolest time of day.
- ☐ Routinely perform mandatory temperature and humidity treadings on playing surfaces (indoor/outdoor).
- ☐ Routinely monitor changing weather conditions with close attention to temperature and humidity on playing surfaces (indoor/outdoor).
- ☐ Strongly consider postponing or canceling for extreme heat and humidity conditions.

Activity should be altered and / or eliminated based on the Heat Index as follows:

Under 95 degrees Heat Index **"Green Flag"**	***All Sports** > Provide ample amounts of water. This means that water should always be available at regular intervals and athletes should be able to take in as much water as they desire. > Optional water breaks approximately every 30 - 45 minutes for approximately 10 minutes duration. > Ice-down towels for cooling. > Watch / monitor athletes carefully for necessary action.
95 degrees to 99 degrees Heat Index **"Yellow Flag"**	***All Sports** > Provide ample amounts of water. This means that water should always be available at regular intervals and athletes should be able to take in as much water as they desire. > Optional water breaks approximately every 30 - 45 minutes for approximately 10 minutes duration. > Ice-down towels for cooling. > Watch / monitor athletes carefully for necessary action. ***Contact Sports** > Helmets and other possible equipment removed if not involved in contact or necessary for safety. > Reduce time of outside activity. **RECOMMENDATION:** Practice should not exceed 2-1/2 hours. Consider moving practice to morning or later in the day. > Re-check temperature and heat index approximately every 30 minutes to monitor for increased risks.
100 degrees to 105 degrees Heat Index **"Red Flag"**	***All Sports** > Provide ample amounts of water. This means that water should always be available at regular intervals and athletes should be able to take in as much water as they desire. > Optional water breaks approximately every 30 - 45 minutes for approximately 10 minutes duration. > Ice-down towels for cooling. > Watch / monitor athletes carefully for necessary action. > Alter uniforms by removing items where feasible. > Allow for changes to dry T-shirts and shorts. > Reduce time of outside activity as well as indoor activity if air conditioning is not available. **RECOMMENDATION:** Practice length should be 2 hours or less. Consider moving practice to morning or later in the day. Limited conditioning. ***Contact Sports and Activities With Additional Equipment** > Helmets and other possible equipment removed if not involved in contact or necessary for safety. **RECOMMENDATION:** Football wears helmets, t-shirts and shorts. > Re-check temperature and heat index approximately every 30 minutes for increased risks.
Above 105 degrees Heat Index **"Black Flag"**	***All Sports** Stop all outside activity in practice and / or play and stop all inside activity if air conditioning is unavailable.

Information courtesy of Orange County Department of Education and Orange County Health Care Agency