MHYSC
Avoiding/Preventing Heat Related Injuries Policy

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There are some simple guidelines which have been prepared by the American College of Sports Medicine (ACSM) when it comes to running activities in a hot and/or humid environment. The goal in participating in hot weather is to avoid fluid loss from the body or dehydration. Water not only accounts for some 98% of our body composition, but functions to help deliver oxygen to working muscles, and keeps the body from overheating during strenuous activity.

Hard working muscles generate heat which is dissipated through the act of sweating.

Evaporation of sweat on the skin allows the body to get rid of this heat and cool it off. In looking at the objectives for advising officials and participates about this subject it seems that the following categories are areas requiring attention:

1. To educate athletes and event officials about the most common forms of environmental illness including predisposing conditions, warning signs, susceptibility and incidence reduction.
2. To advise officials of their legal responsibilities and potential liability with regard to event safety and injury prevention
3. To recommend that officials consult local weather archives and plan games at times likely to be of low environmental stress to minimize detrimental effects on athletes.
4. To encourage officials to warn athletes about environmental stress on game \ practice day and the implications for heat and cold illness.
5. To inform officials of preventive actions that may reduce debilitation and environmental illness.
6. To describe the personnel, equipment, and supplies necessary to reduce and treat cases of collapse and environmental illness.

To this end, after review of the available literature and after consultation of various medical authorities and officials it was felt that the following recommendations are some key guidelines for soccer participation in the heat:

Avoid dehydration and make sure you pre-hydrate
a. Don’t wait till you feel thirsty because the body will not be able to tell you in time that you are dehydrated, here are some practical recommendations:
b. 2 hours before exercise, drink at least 16 oz or 500 ml (an average bottle of water)
c. 1 hour before exercise, drink at least 08 oz or 250 ml (half an average bottle of water
d. During the exercise, drink at least 4 to 8 oz every 15 - 20 minutes
e. Immediately after the exercise, drink at least 16 oz or 500 ml of water or an electrolyte f. Drink

1 hour after a training session or game consider drinking 16 oz or 500 ml of skim milk or chocolate milk for protein and muscle repair.

1. As a rule of thumb, you should drink at least 500 ml for every 20 lbs of body weight, therefore, someone weighing 140 lbs needs to drink at least 3500 ml of fluid per day if training or playing that day.
2. Drinking carbohydrate and electrolyte fluids may be beneficial in avoiding heat trauma.
3. Wearing light breathable clothing is advised.
4. Officials should be very cautious in authorizing games and practices in environments where the temperature plus humidity combined are 35 C and over. They should inquire of the participants to ensure pre-event hydration; medication use and susceptibility to heat injury (prior occurrence). Also unlimited substitution is recommended during games as is frequent fluid breaks and fluid availability on both sides of the field.
5. Warning flags could be posted on the field as follows:

1. **Green** - proceed with caution heat stress possible
2. **Amber** - moderate risk to heat stress
3. **Red** - high risk to potential heat stress

If used they should be posted at locations easily seen by participants, support staff, medical staff and spectators. The other issue to consider is, and you may be asking yourself at this point, what are the risk factors which could predispose a soccer player to heat injury.

Listed below are the major risk factors but this is by no means an exhaustive list:

1. Not being acclimatized
2. Unfit
3. Hypohydration
4. Hyper hydration
5. Use of a variety of medications or supplements
6. Persons with persistent, disabling mental illness
7. Certain medical conditions (cardiac, lung)

How can you tell if one of your soccer players is experiencing heat injury?
Below is a list of the early warning signs to look for and again this is not an exhaustive list:

1. Flushed face
2. Hyperventilation or shortness of breath
3. Headache
4. Dizziness
5. Tingling arms
6. Goosebumps (hair on arms standing on end)
7. Chilliness
8. Poor coordination
9. Confusion, agitation, uncooperativeness

A preseason or pre-event conditioning program, when combined with an 8 - 14-day period of acclimatization, may further reduce the risk of heat injury.

There are 3 main types of heat injury identified in the medical literature:

1. **Heat Cramps** - these are the mildest form of heat trauma and are commonly related to low body sodium and chloride levels.

a. **Signs & Symptoms include** - weakness, muscle cramps, collapse with low blood pressure.

b. **Treatment** - is aimed at replacing the salt loss and can be oral or by intravenous if vomiting is a problem. Having athletes put a little extra salt on their food the day before and day of game can be a helpful way to avoid this condition.

2. **Heat Exhaustion** - this is a more severe medical event as follows.

   a. **Signs & Symptoms include** - weakness, irritability, collapse, unable to sweat adequately to promote body cooling, my proceed in the more ominous heat stroke and a fine rash is often present.
   b. **Treatment** - remove athletes to a cooler environment, use ice baths, fans.

3. **Heat Stroke** - THIS IS A MEDICAL EMERGENCY - it is due to a failure of the heat-controlling mechanism. It may occur merely as a result of exposure to heat.

   a. **Signs & Symptoms include** - mental confusion, headache, poor coordination, delirium, convulsions and death. The body temperature may be 106 F or 40.5 C or higher, the skin is usually hot and dry as the sweating mechanism has failed.
   b. **Treatment** - Call 911 and transport to a local Hospital. Rapid cooling is the goal using wet towels, spray mist, sponge baths and removal from the heat. This condition could cause the athlete to go into shock and coma may follow so immediate medical attention is required.

Reference:

- American College of Sports Medicine POSITION STAND
- Exercise and Fluid Replacement, Medicine & Science in Sports & Exercise, 2007

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