

Emergency Planning for Heat Illness

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In eight of the past ten summers, at least one high school football player lost his life because of heat stroke.¹ It's a tragic occurrence that can devastate a family, a team and an entire community. With players reporting for practice at one of the hottest times of the year, there are many factors that need to be considered to properly safeguard athletes from the heat.

Proper emergency preparedness protects athletes from the dangers that come along with warm weather and is a critical step that sports professionals, such as athletic trainers, coaches and athletic directors, must address on an annual basis.

The most important concept is acclimation. Simply put, acclimation is the body's ability to adapt to the heat so it can cool itself efficiently. The process of acclimation can take anywhere from 10-14 days depending on the athlete's level of conditioning at the start of practice. There may be exceptions, but many athletes are not physiologically prepared to deal with the environmental stress preseason practice puts on their bodies. There must be a period of acclimation built into the first two weeks of practice to address this risk.² Athletes and parents must be educated about the importance of acclimation.

A PLAN FOR PREVENTING HEAT ILLNESS

- Hold meetings with prospective players and their parents to discuss preparation for preseason practices.
- Distribute pre-season conditioning programs.
- Recommend that athletes start with 15-20 minutes of continuous exercise outside, and add 5-10 minutes each day in the weeks immediately before practice.³
- Integrate the uniform in stages – over the course of a week, move from helmets-only to helmets and shoulder pads and finally to the full uniform.² (Football uniforms can amplify heat stress and create dangerous environments for heat illness.)
- Create a practice schedule that minimizes the risk of heat illness by avoiding the mid-day heat. Practices should increase slowly in intensity and duration.

RISK FACTORS: UNIFORMS, POOR HYDRATION HABITS

Heat illness often occurs when an athlete produces body heat faster than it can be lost. The goal of sports professionals is to take steps that minimize the risk of heat illness. This can be done by creating opportunities to shield athletes from excessive heat. Uniforms should be introduced slowly to the acclimation period. A study conducted by Penn State and Kansas State Universities showed that practice uniforms doubled insulation and a full-regulation game uniform tripled insulation, cutting sweat evaporation (the major avenue of heat loss for athletes) by two-thirds.³

According to a research study conducted on a high school football team, as many as 70 percent of the team's players arrived at practice already significantly dehydrated.⁴ Dehydrated players are more susceptible to a rapid rise in body temperature, muscle cramps, and physical fatigue. Coaches and athletic trainers should require athletes to weigh-in and weigh-out of practice to record the amount of fluid loss as a way to help athletes modify their hydration practices during exercise. The cumulative effects of fluid loss can be dangerous to athletes, so sports professionals should make every effort to minimize that effect, ensure that fluid breaks are incorporated into the practice schedule at frequent intervals. Ideally, when athletes are sweating, they should replace fluid and electrolyte losses every 15-20 minutes. Sports drinks are preferred in these conditions for a number of reasons:

- The flavor and electrolytes in sports drinks maintain thirst and encourage drinking, helping athletes stay better hydrated.⁵
- Sodium and other electrolytes stimulate hydration and decrease the onset of muscles cramps.⁶
- The carbohydrates in sports drinks fuel working muscles, enabling athletes to go longer and harder.⁷

EMERGENCY PLANNING

Even with all of the education and preparation, athletes can still be susceptible to heat illnesses, such as exertional heat stroke. In the event of a heat emergency, it is important to understand the risks involved and have a plan of action in place. Before the start of the season, it is crucial to develop a plan to initiate immediate cooling and reduce the chances of permanent disability.⁸

During preseason meetings, athletic programs should develop an emergency plan that specifically delegates roles to each member of the team. The staff should designate individuals who will call EMS, who will direct EMS to the location of the emergency, who will act as first responders, and who will control the scene.

It is essential that sports professionals be vigilant in monitoring athletes, design an acclimation and practice plan, and develop an emergency action plan to ensure that each staff member understands his role. By practicing proper hydration and acclimation strategies, sports professionals can help athletes maximize their true athletic potential in a safe and winning environment.

For more information on supplements, please visit the SportsScience Center at www.gssiweb.org.

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