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Governance Brief

Preventing Catastrophic Heat Illness

A joint publication of CSBA and the California Interscholastic Federation (CIF)

Introduction

According to the Centers for Disease Control, heat illness during sports practice or competition is the leading cause of death or disability among U.S. high school athletes.¹ Today, over 90 percent of California high schools begin their fall semester in August, and athletic practices occur throughout the summer and fall—seasons that have produced extremely hot temperatures in California recently.

While heat illness is preventable, there are still tragic occurrences each year of “near-misses” that include emergency room visits and hospitalizations. With nearly 800,000 student athletes competing in school-based athletic programs in California, it is imperative that schools, districts, and county offices of education invest in education and training for administrators, coaches, teachers, parents, and students in order to keep students safe.

What is Heat Illness?

Exercise produces heat within the body and can increase an athlete’s body temperature. While the body normally cools itself by sweating, under some conditions, sweating just isn’t enough. Several factors affect the body’s ability to cool itself during extremely hot weather. For example, when humidity is high, sweat will not evaporate as quickly, preventing the body from releasing heat. Add to this other barriers to heat loss such as padding and equipment, and the temperature of the individual can rise rapidly and become dangerously high.

There are progressive steps in heat illness, leading to heat stroke:

- » **Heat stress:** Occurs when a strain is placed on the body as a result of hot weather.

In this brief you will find:

- » **Information about what heat illness is and the potential danger it poses to students athletes.**
- » **Preventative steps that schools, districts, and county offices of education can take to prevent heat illness.**
- » **Questions for boards to consider in order to keep students safe from heat illness.**

- » **Heat cramps:** Painful muscle spasms in the abdomen, arms, and/or legs following strenuous activity.
- » **Heat syncope:** Sudden dizziness or fainting experienced after exercising in the heat.
- » **Heat exhaustion:** A warning that the body is getting too hot. The person may be thirsty, giddy, weak, uncoordinated, nauseated, and may sweat profusely. The body temperature is usually normal, the pulse is normal or raised, and the skin is cold and clammy.
- » **Heat stroke:** Occurs when the body becomes unable to control its temperature and it rises above 104°F. The body’s temperature elevates rapidly, the sweating mechanism fails, and the body is unable to cool down. Within 10–15 minutes, body temperature may rise to 106°F or higher. Other symptoms may include confusion; combativeness; bizarre behavior; faintness;

staggering; strong, rapid pulse; dry, flushed skin; lack of sweating; possible delirium; or coma. Heat stroke is a serious medical condition that can cause death or permanent disability, so immediate medical attention is essential when symptoms are first detected.

Preventative Steps

Minimizing risk and reducing injuries of California's student athletes is a critical issue for board members, the CIF, and the 70,000 high school coaches in California. In 1996, the CIF founded a Sports Medicine Advisory Committee (CIF SMAC) of 20 of the most preeminent sports medicine physicians, certified athletic trainers, and health care providers in the state to enhance and promote policy decisions designed to minimize risks and reduce injuries, including the risk of heat illness.

Based on the recommendations of the CIF SMAC, the CIF has continued to adapt its safety protocols to reflect the most recent advances in sports medical science. Reducing risks and minimizing injuries of California's student-athletes has been and remains CIF's top priority. Boards can help prevent heat illness by ensuring that school staff, including coaches, have access to training on heat illness, and that emergency action plans are updated and include before-and after-school activities.

Heat Illness Prevention Training

School districts and county offices of education can work with partners, such as the CIF, to ensure that all coaches and other school staff have access to training on heat illness. Fortunately, offering such training is primarily about information and coordination, and does not have to place an undue burden on available resources.

Through the National Federation of State High Schools (NFHS), the CIF offers a free online course for coaches and other school staff designed to give the information needed to minimize the risk of heat stroke among athletes. The course presents seven fundamentals, which, when followed, will minimize heat-related illnesses of students.

1. Start Slow, Then Progress
2. Allow for Individual Conditioning
3. Adjust Intensity and Rest
4. Start Sessions Adequately Hydrated
5. Recognize Signs Early
6. Recognize More Serious Signs
7. Have an Emergency Action Plan

Upon successfully passing the class, the coaches are issued a certificate and added to a statewide database that eases school, district, and county office of education verification of completion. This free online class (along with others such as the CIF NFHS Concussion program) can be found on the NFHS website at <https://bit.ly/2FfhZeD>.

Assembly Bill 2800, California High School Coaching Education and Training Program: Heat Illness (Chu) requires high school coaches to be trained with a basic understanding of heat illness, and authorizes such training to be fulfilled through entities offering free, online, or other types of training courses. The free CIF NFHS class can fulfill this new requirement. The bill was signed into law by the Governor on June 1, 2018, and the requirements will take effect on January 1, 2019.

Emergency Action Plans

Education Code requires schools to update and forward a comprehensive safety plan to their district or county office of education for approval each year by March 1. The comprehensive safety plans must include procedures for dealing with emergencies, which are often referred to as Emergency Action Plans (EAP). Having districts and county offices of education verify that EAPs remain in place during before-and after-school activities can help to ensure student safety.

According to the CIF, 68 percent of California's 1.9 million 9th- through 12th-grade students participate in after-school activities on school campuses. Of the coaches who work with student athletes, almost three quarters—72 percent—are “walk-ons,” meaning they are not members of the school faculty. It is essential that schools ensure that these coaches, as well as those who are on the faculty, are aware of the EAP and know what to do when the campus may be empty and they are facing a situation where seconds can make the difference between life and death, such as when heat illness occurs.

To assist schools in bridging the planning gap, in 2015 the CIF mailed a nationally recognized EAP guide for athletics and other activities to all high schools, which should be a critical component of a school's comprehensive safety plan. This guide helps schools establish their after-school emergency procedures regardless of the venue: the gymnasium, theater, football stadium, or the softball field. More information about EAPs, including the guide, can be found on the CIF website at <https://bit.ly/2HOMc9G>.

Questions for Boards to Consider

1. Who in the district is ensuring that all coaches have met the minimum Education Code requirements?
2. Does each of our schools have an Emergency Action Plan that includes before- and after-school events?
3. How do our athletic directors make sure that all coaches, including walk-ons, know and understand the district expectations, including those under the Emergency Action Plan?
4. Do our schools have a Certified Athletic Trainer available at practice and competitions? If not, who is responsible for dealing with student injuries, emergencies, and treatment (both on and off campus)?
5. Do our schools have quick and easy access to ice tubs that can help in case of a heat illness emergency (these tubs can be as simple and inexpensive as a kiddie swimming pool with ice)?
6. Do our schools have adequate safe water available at all practice locations?

Additional Resources

- » CSBA Policies, available to GAMUT subscribers at gamutonline.net
 - › BP/AR 0450 — Comprehensive Safety Plan
 - › AR 3514 — Environmental Safety
 - › BP/AR 3516 — Emergencies and Disaster Preparedness Plan
 - › AR 3517 — Facilities Inspection
 - › BP/AR 4127, 4227, 4327 — Temporary Athletic Team Coaches
 - › BP 5141.3 — Health Examinations
 - › BP 5141.7 — Sun Safety
 - › BP/AR 6145.2 — Athletic Competition
- » CSBA Fact Sheet, “Drinking Water Access in Schools”: <https://bit.ly/2smHypy>
- » NFHS Heat Illness Prevention Free Online Class: <https://bit.ly/2FfhZeD>

- » CIF Heat Illness Prevention Information and Material: <https://bit.ly/2hgY7ki>
 - › Prevention of Heat Illness: <https://bit.ly/2HuAQnM>
 - › CIF Position Statement & Recommendations: <https://bit.ly/2IORVa7>
 - › NFHS Position on Heat Illness: <https://bit.ly/2Fgk3Db>
 - › ID and Treatment of Heat Illness: <https://bit.ly/2vLrpPz>
 - › Facts About Heat Stress and Athletic Participation: <https://bit.ly/2vN6fjN>
 - › 108°: Critical Response. Addresses the dangers of heat illness in high school sports through personal testimonies from families who have been affected and interviews with coaches, certified athletic trainers, kinesiologists, and other medical professionals: <https://bit.ly/2HOWzKG>
- » Centers for Disease Control and Prevention (CDC) Information on Heat-Related Illness: <https://bit.ly/2Fg3rLC>
- » TEDEd Video, “What Happens When You Get Heat Stroke?”: <https://bit.ly/2L5B06t>



1 Centers for Disease Control and Prevention. (2010). Heat illness among high school athletes—United States, 2005-2009. *Morbidity and Mortality Weekly Report*, 59(32). Retrieved from <https://bit.ly/2ITwP0V>