Which Organization Sets the Standard of Care for Heat Illness: NFHS, NATA, KSI?

Exertional heat stroke is a serious condition and one of the leading causes of death during the preseason of youth tackle football. And according to experts, it is 100% preventable when the correct guidelines are adopted and implemented.

But what are the correct standards of care and what organization sets these standards? The answer to this question is complicated and very much up in the air. The correct answer is whatever a court says the standard of care is in a particular state.

Defense attorneys will argue that absent specific legislation, youth football volunteers are held to a lower standard of care than school employees but generally should comply with their state's version of National Federation of State High School Associations (NFHS) guidelines. However, plaintiff attorneys will argue that the standard of care is the more aggressive policies published by the National Athletic Trainers' Association (NATA) and the Korey Stringer Institute (KSI). Quite a few state high school athletic associations have recently adopted some of the more stringent NATA and KSI position statements on heat acclimatization, including NJ, TX, CT, NC, and GA. KSI ranks the various state high school associations' compliance with their policies.

Flexibility is required when setting policies because of the varying climates in each region of the country and state, and each local organization has different resources. Regardless, youth tackle football organizations should, at a minimum, meet the policies or guidelines set by their state's version of NFHS and strive to meet the higher policies set by NATA and KSI if at all feasible

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Heat Syncope, Heat Cramps and Heat Exhaustion: Recognition, Causes, Treatment and Prevention

- **Heat Syncope:** Symptoms include fainting or feeling lightheaded due to blood pooling in the lower extremities, which reduces the heart's ability to provide enough circulation. A lack of heat acclimatization and poor conditioning are usually the causes of heat syncope . Treatment entails moving the athlete inside or into the shade. Athlete should lie down with legs raised 12 inches. This assists with returning more blood to the heart to normalize blood pressure. Full recovery usually occurs within hours and return to activity can resume when athlete is rehydrated and feels better.
- **Heat Cramps**: Painful muscle spasms, usually involving the calves, which are primarily caused by fatigue, dehydration, and loss of electrolytes through sweating. Treatment should consist of gentle stretching, ice applied to muscle, increased water and electrolyte consumption, and rest. Heat cramps can be prevented by proper hydration prior to, during, and after practice and by heat acclimatization. Athlete can return to play once cramps resolve.
- **Heat Exhaustion**: This is as an inability to continue to exercise in the heat from either weakness or exhaustion. Signs and symptoms are fatigue, dizziness, chills and rapid pulse. Heat exhaustion is caused by excessive fluid or electrolyte loss. Treatment includes moving athlete from hot environment to an air-conditioned room or shade and having the athlete lie on the ground with legs raised 12 inches, re-hydration, and by cooling with ice towels, misting fan, or cold water immersion. Recurrences can be prevented by proper hydration prior to, during, and after practice and by heat acclimatization. The athlete should not return to activity on the same day and recovery takes 24 to 48 hours

Recognizing Early Signs and Serious Signs of Exertional Heat Stroke

The public has been incorrectly taught in the past by authorities that athletes stop sweating during heat stroke and the athlete exhibits hot, dry skin. However, this is not always the case and the athlete is usually sweating at the time of collapse. Don't let this misconception prevent the diagnosis and prompt response to heat stroke. **70% of parents cannot identify the following signs and symptoms.**

- **Early Signs and Symptoms of Heat Stroke**: Headaches, dizziness, and nausea/vomiting with a rectal temperature of 104°F or lower. Treatment includes immediately moving athlete from hot environment to an air-conditioned room or shade, laying the athlete on the ground and raising legs by 12 inches, re-hydration and by cooling with ice towels, misting fan, or cold water immersion. Recurrences can be prevented by proper hydration prior to, during, and after practice and by heat acclimatization. The athlete should not return to practice without a written release from a medical doctor.
- **Serious Signs and Symptoms of Heat Stroke**– Central nervous system dysfunction such as clumsiness, stumbling, collapse, loss of consciousness, confusion, mood changes, aggressiveness, disorientation, seizure, coma or a rectal temperature of greater than 104° Athletes exhibiting these signs and symptoms should be considered to be suffering from exertional heat stroke and must be treated immediately to prevent major organ damage or death. Athlete should undergo a gradual return-to-play protocol under the supervision of a doctor and not return to play without a written release signed by a medical doctor. Any predisposing factors should also be identified and remedied prior to return to play.

Cool First and Transport Second in the Event Exertional Heat Stroke Is Suspected

Simultaneously Call EMS and Start Rapid Cooling on Site

Rapid cooling involves planning prior to the emergency so that necessary equipment and supplies are instantly available. Ice water baths are the preferred cooling technique and immersion tubs, a water source, and ice must be available with staff trained on rapid set up. It is not necessary to use an expensive tub; a Rubbermaid container of sufficient size or wading pool will work.

If an ice water bath is not available, apply ice packs to neck, armpits, and groin and rotate ice water-soaked towels to all other parts of the body.

In addition, a rectal thermistor (thermometer attached to a long flexible cord) is needed to properly measure rectal temperature during cold water immersion. If you don't have a rectal thermistor, but heat stroke is suspected based on the signs and symptoms, you should never delay immediate rapid cooling. For more detailed information, see How to Respond to an Exertional Heat Stroke Emergency.

Transportation to Hospital By EMS

Sports organizations should have a facility-specific written emergency action plan for coordination, access and evacuation by EMS, which includes a site map.

Immediate Whole-body Ice Immersion Has a 100% Survival Rate

According to NATA research, exertional heat stroke has a 100% survival rate when immediate cooling via cold-water immersion or whole-body dousing is started within 10 minutes of collapse. According to KSI, an athlete experiencing exertional heat stroke should be cooled to 102 within 30 minutes. Many individuals will start with temperatures of 106 to 110°F and will cool at the rate of 1 degree for every three minutes. Cooling can take up to 20 minutes.

For more details on how to properly set up cooling tubs for ice-water immersion, see Ice Water Immersion Best for Treating Heat Stroke and Practical Guidelines for Implementing Cold Water Immersion for an Exertional Heat Stroke Patient