PreK-12 Innovation Subcommittee

October 23, 2019
3:00 PM
Reed Hall (102 HOB)

Meeting Packet

Jose Oliva
Speaker

Ralph Massullo
Chair

Committee Meeting Notice

HOUSE OF REPRESENTATIVES

PreK-12 Innovation Subcommittee

Start Date and Time:	Wednesday, October 23, 2019 03:00 pm
End Date and Time:	Wednesday, October 23, 2019 05:00 pm
Location:	Reed Hall (102 HOB)
Duration:	2.00 hrs

Continuing discussion on health concerns for student athletes.
Presentations by OPPAGA and Dr. Kris D. Stowers, M.D.

NOTICE FINALIZED on 10/16/2019 4:13PM by Jones.Missy

OPPAGA

Prevention and Treatment of Exertional Heat Illness

Presentation to the House PreK-12 Innovation Subcommittee

Kirsten Harvey
Senior Policy Analyst

OPPAGA
Office of Program Policy Analysis and Government Accountability

OCTOBER 23, 2019

Overview

OPPAGA's research on the prevention and treatment of exertional heat illness included the following topics

1. Background Information
2. Florida's High School Requirements
3. Florida's Preparedness Practices
4. Florida Athletic Directors Survey Results

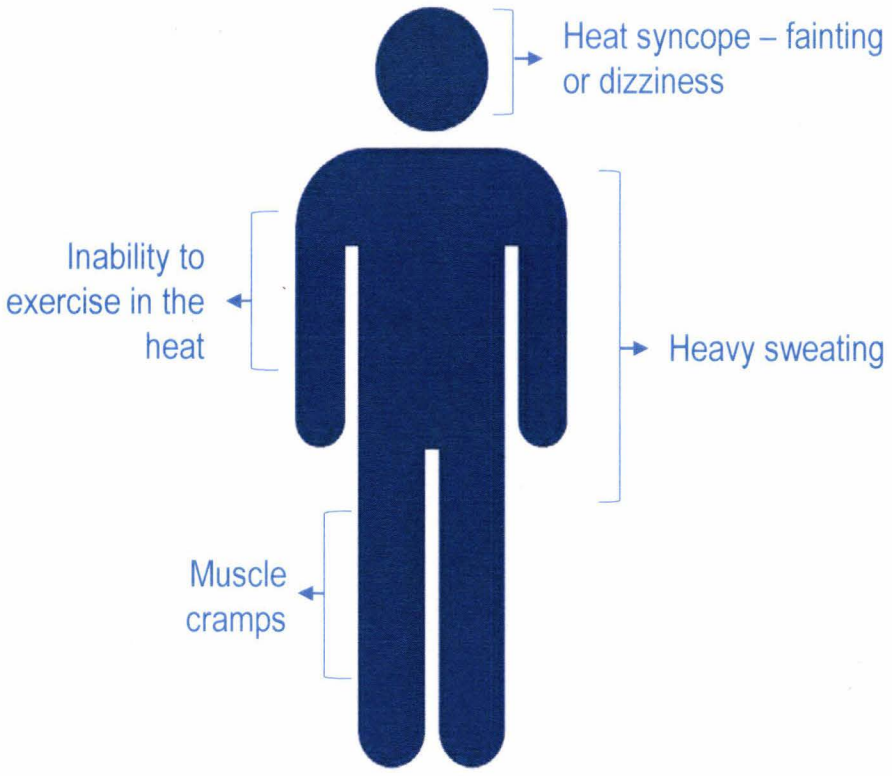
Background Information

Exertional Heat Illness

Exertional heat illness is associated with sustained high body temperature, resulting from dehydration, strenuous exercise, and environmental heat exposure

According to the Centers for Disease Control and Prevention, between 2005 and 2009, 9,237 high school athletes annually suffered time-loss heat illness nationwide

EHI Symptoms



Exertional Heat Stroke

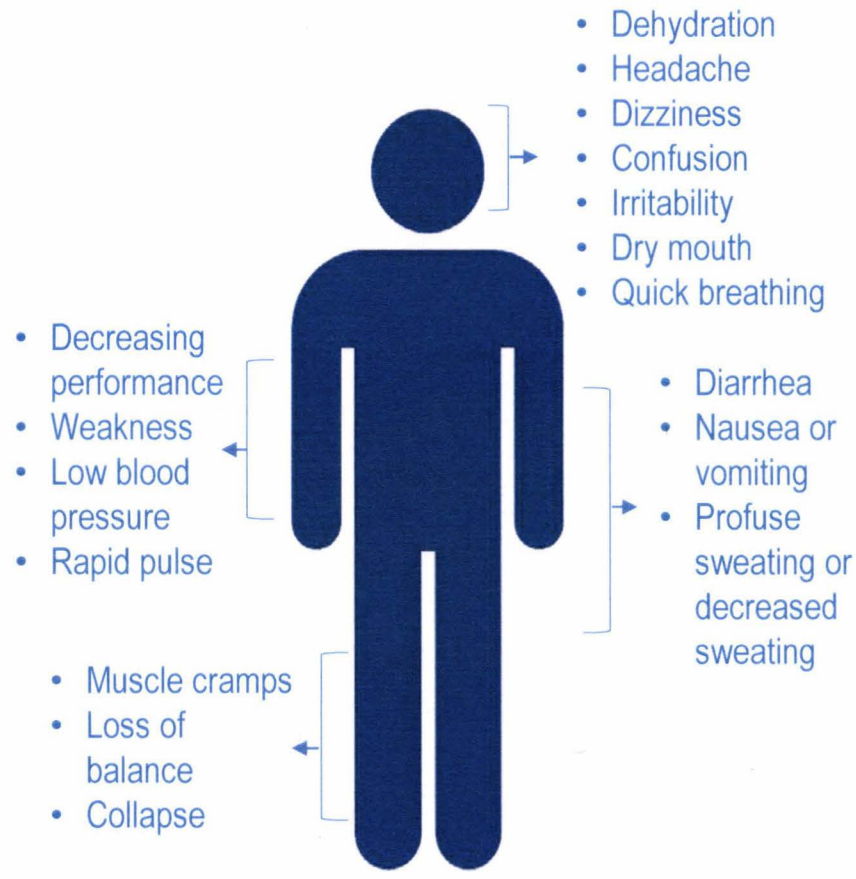
EHS is the most severe form of heat illness and occurs when the body's natural cooling system becomes overwhelmed

EHS can be diagnosed based on

- Central nervous system dysfunction
- High core body temperature greater than 104 ^{o} F

EHS can progress to multi-organ system failure and death unless promptly recognized and treated

EHS Symptoms



Best Practices for EHS Prevention

Preparation

Conduct an athlete physician-supervised, pre-participation medical screening assessment before the start of the season

Follow a heat acclimatization schedule; gradually acclimate athletes to heat over a 7 to 14-day preseason practice schedule

Measure environmental heat-stress conditions using the WetBulb Globe Temperature (WBGT) thermometer

Continual Cooling

Remove helmets during breaks

Incorporate rest breaks

Provide shade/cool areas

Encourage fluid consumption

Continue checking temperature

Best Practices for Treatment of EHS

Quickly cool the whole body to a temperature of 102 °F or below

Remove excess clothing and equipment

Assess rectal temperature at least once every 5-10 minutes

Immerse individual in a pool or tub of cold water and stir water while cooling, commonly called cold water immersion

After cooling, transport the individual to a medical facility

Florida's High School Requirements

Florida High School Athletic Association (FHSAA) Requirements

The FHSAA has EHI/EHS prevention requirements for member schools, which self-report adherence to the requirements

Coaches and athletes must annually review the National Federation of State High School Association's free education course on heat illness prevention

Schools must follow a heat acclimatization schedule for preseason practice

Schools must develop an Emergency Action Plan for managing serious and/or potentially life threatening injuries

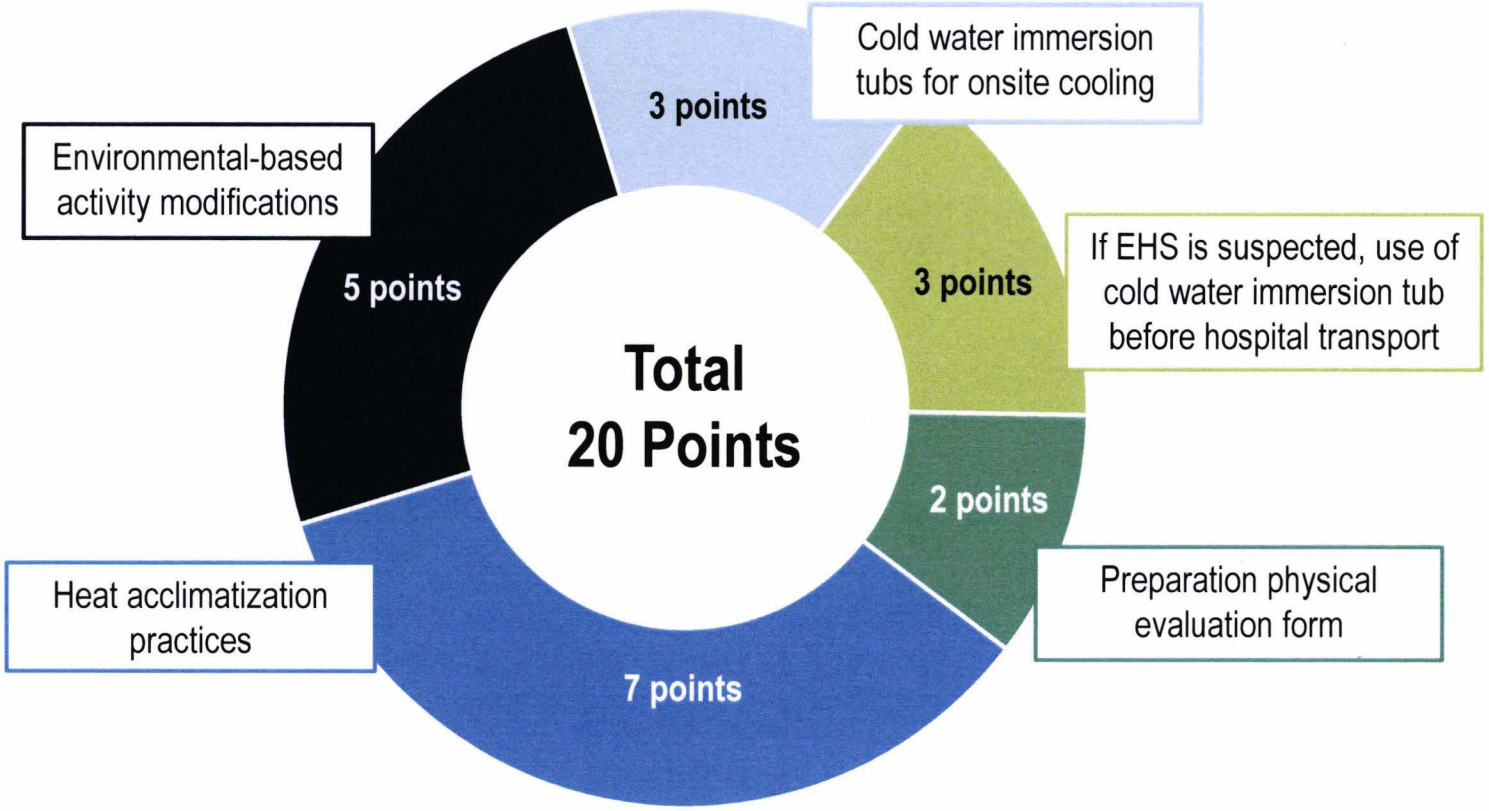
Students must undergo a preseason pre-participation physical evaluation

The FHSAA does not regulate the athletic activities of member schools held with their own students during the summer with the exception of football. However, some sports may practice outside of the academic school year

Florida's Preparedness Practices

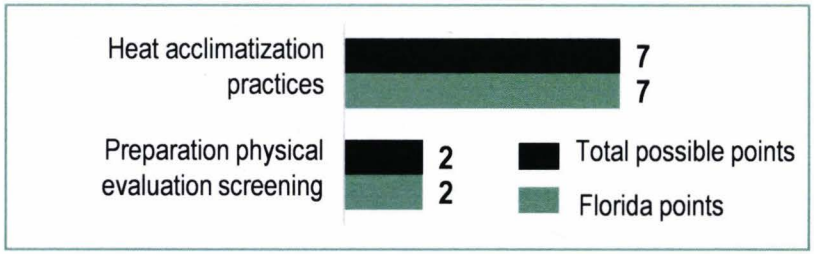
2018 Evaluation of States' EHS Preparedness Practices

The Korey Stringer Institute evaluated states' high schools' use of best practices for preventing and treating EHS in five areas

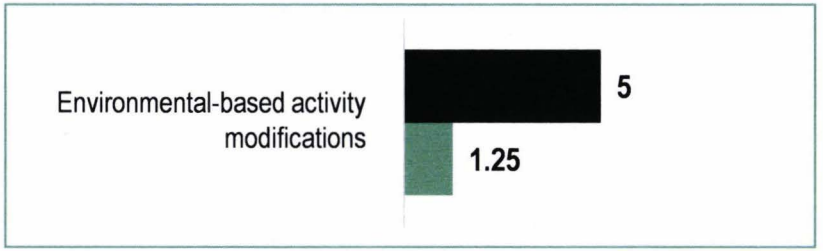


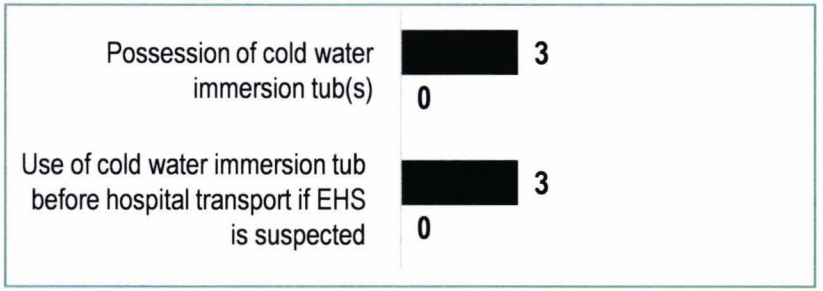
Florida High Schools EHS Preparedness

Areas in Which Florida Scored Highest



Areas in Which Florida Scored Lowest





Florida Athletic Directors Survey Results

Safety Protocols

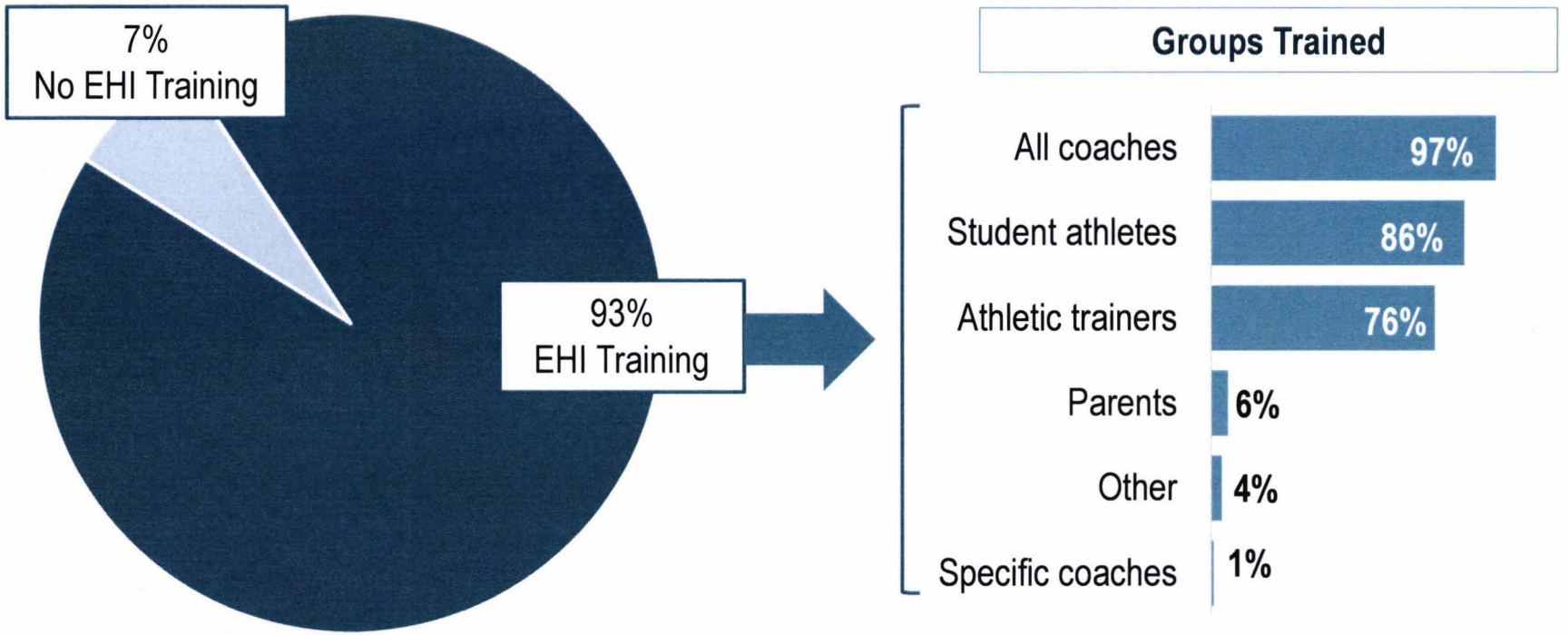
Most schools reported that they have protocols that address preventing and treating EHI

86% of schools reported that they have written **protocols** for the **prevention of EHI**

86% of schools reported that they have written **protocols** for the **treatment of EHI**

Training

Most schools reported that sports-related staff received training on EHI during the 2017-18 school year



Of the schools that reported that they received training, 95% said that they used the National Federation of State High School Associations' (NFSHA) video on heat illness prevention

Training Topics Covered

While almost all schools reported that their training covered EHI and EHS warning signs, fewer reported that their training covered treatment of heat stroke and cold immersion administration

Cold Water Immersion Tubs

Cold water immersion tubs are considered very effective in treating exertional heat stroke, and include self-cooling machines and substitutes that use ice as the cooling agent

- EHS has a **100% survival rate** when **immediate cooling** is initiated within 10 minutes of collapse
- 100 gallon or more CWI tubs allow for whole body ice water immersion
- This technique involves placing the athlete's trunk and limbs in cold water (35 ° to 59 ° F)
- The purpose is to lower the athlete's core body temperature to less than 102 ° F

Types of Tubs

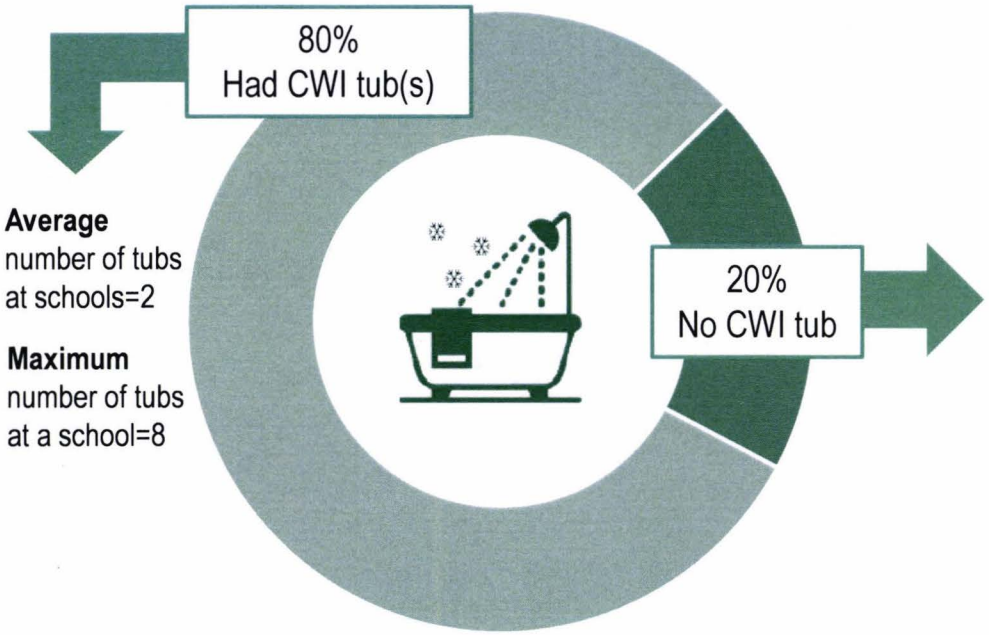
CWI Tub with Built-In Unit

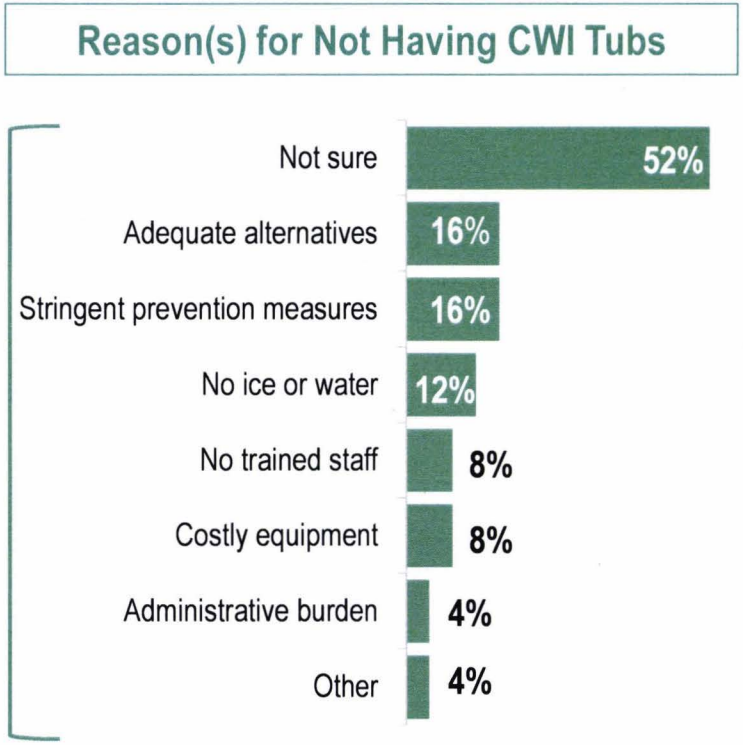
CWI Tub Substitute

Our survey asked a series of questions related to the availability and use of CWIs at schools

CWI Tub Availability

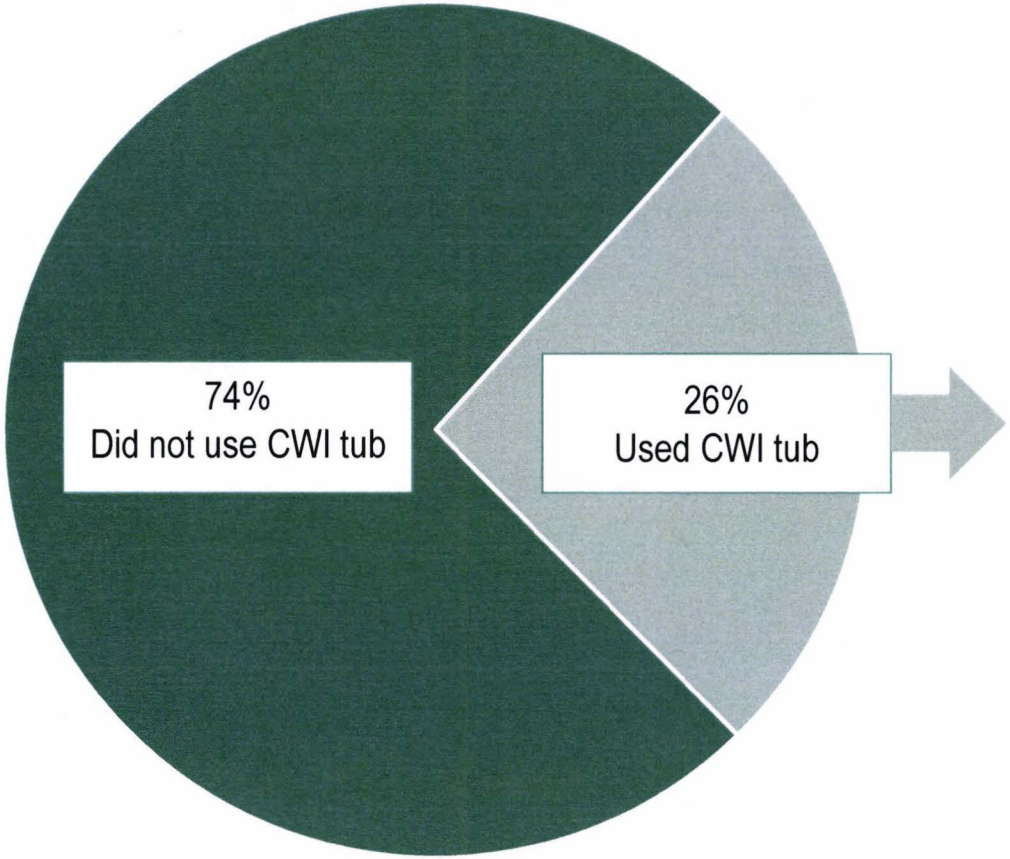
The vast majority of schools had one or more CWI tubs; others most often reported that they were not sure of the reason they did not have tubs





Treating EHI/EHS Using CWI Tubs

Approximately one-quarter (26%) of surveyed schools with a CWI tub reported using CWI tubs for EHI/EHS treatment during the 2017-18 school year



CWI Tub Uses for EHI or EHS Treatment

3	Average number of CWI tub uses per school
50	Maximum number of CWI tub uses at a school
28	Schools used a CWI tub more than once

Other Equipment and Supplies

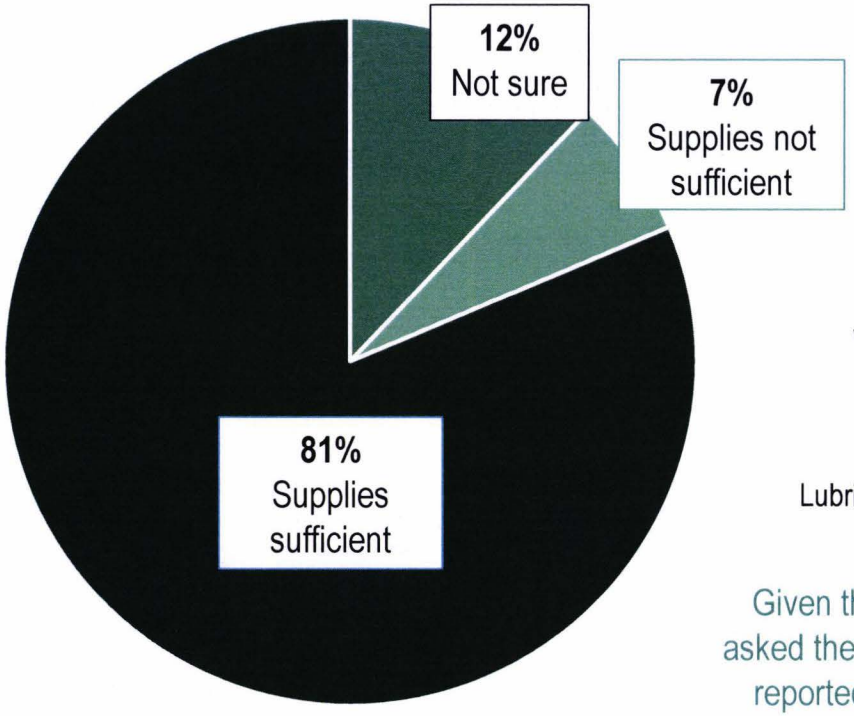
Several other types of equipment and supplies have been recognized as important to prevent and treat exertional heat illness

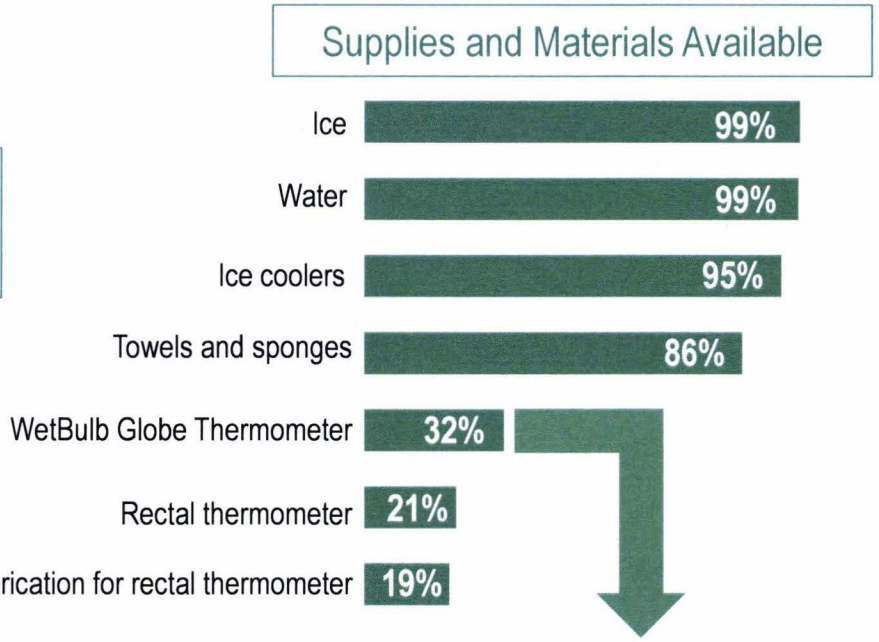
 WetBulb Globe Thermometer	→	Measures multiple metrics (ambient temperature, humidity, sun angle, wind, and cloud cover) and determines environmental heat levels for athletes
 Tents	→	Shelters athletes from radiant heat
 Rectal thermometer with lubricating gel	→	Assesses the core body temperature of athlete
 Ice and water	→	Used with tub, lowers the athlete's core body temperature
 Ice coolers	→	Stores ice during practice and games
 Towels/Sponges	→	Cools surface temperature of athletes

Our survey asked a series of questions related to the availability of this equipment at schools

Overall Availability of Supplies and Materials

Most schools reported that, overall, they believed their supplies were sufficient to prevent and treat exertional heat illness

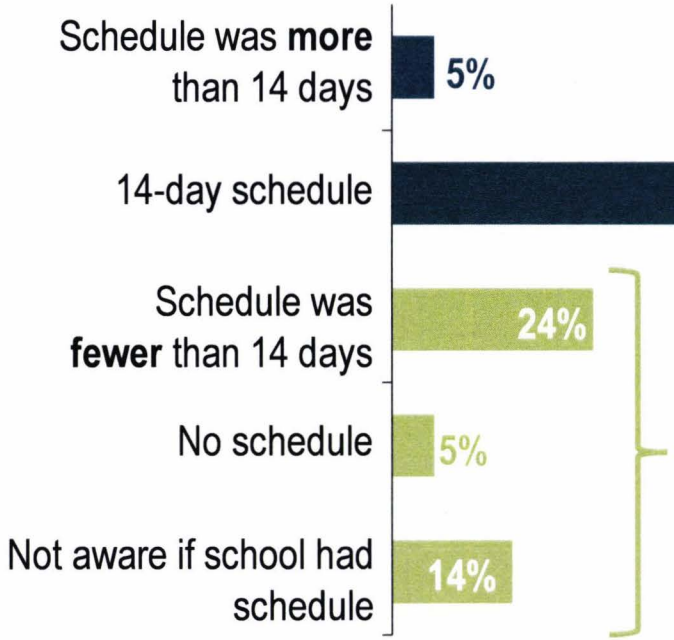




Given the importance of WBGT in the literature that we reviewed, we asked the reason why schools did not have them. Most often (47%) they reported using some other item instead, but 51% said that they were unsure or unaware of WBGTs. Few schools (8%) cited cost.

Heat Acclimatization Schedules

Although the FHSAA requires all member schools to use a 14-day, graduated heat acclimatization schedule, nearly one-third of schools reported that they did not meet this requirement, and 14% did not know if they had a schedule



43% of athletic directors reported acclimatization schedules that did not meet FHSAA requirements or they were not aware of their schedules

Prevalence of EHI and EHS for the 2017-2018 School Year

Over one-third (95 of 258) of schools that responded to our survey reported treating students for EHI during 2017-18 school year; no school reported student fatalities resulting from EHS

Schools are not required to report incidents of exertional heat illness or exertional heat stroke

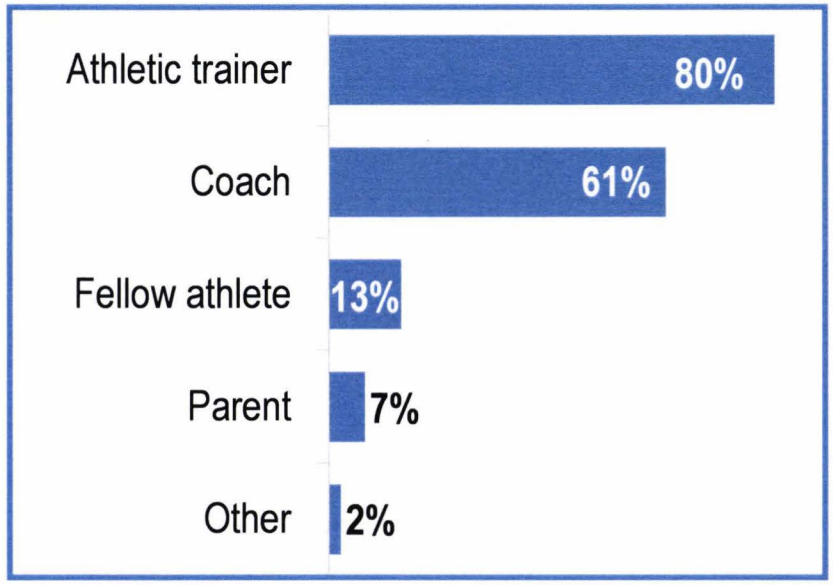
Incidents Schools Reported in Our Survey

461 students from 95 schools were treated for EHI

85%
of students were treated by school staff

18
students from 10 schools were treated for EHS

0
student fatalities from EHS



Questions?

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Summary of Findings

Best Practices

- **Florida ranks 14th** among states based on an independent assessment of its use of **nationally recognized best practices** for the prevention and treatment of EHS
- National experts recommend that schools take proactive steps to prevent exertional heat illness including
  - following a heat acclimatization schedule;
  - frequently measuring student athletes' temperatures;
  - incorporating rest breaks; and
  - encouraging fluid consumption
- National experts explain that **cold water immersion** is **necessary** for **EHS treatment**

Survey Results

- **Over 80%** of Florida schools that responded to OPPAGA's survey **have protocols** that address prevention and treatment of EHI and provide training to sports-related staff regarding the protocols
- **Eighty percent of** schools had one or more **cold water immersion tubs or substitute tubs** and believed that their schools had sufficient supplies and materials needed to prevent and treat EHI
- Of the 206 schools that reported having at least one cold tub, **53** (26%) reported **not receiving cold water immersion training**.
- **Forty-three** percent of athletic directors reported use of heat acclimatization schedules that did not meet state requirements. Of those, 14% did not know the length of their schools' schedules
- Athletic directors from about one-third (95 of 258) of schools that responded to our survey reported treating students for EHI during the 2017-18 school year; **no school reported student fatalities resulting from EHS**

Kris Stowers, M.D.

Florida High School Athletic Association

Sports Medicine Advisory Committee

October 23, 2019

Kris Stowers, MD

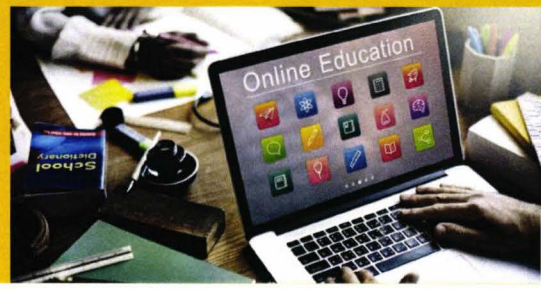
Brief Background

- Physician at Tallahassee Orthopedic Clinic and FSU, FAMU, and several high schools for over 30 years
- Served on the FHSAA Sports Medicine Advisory Committee (SMAC) for approximately 20 years
- SMAC meets 3 times per year to review edit FHSAA policies

Current Coaching Educational Requirements

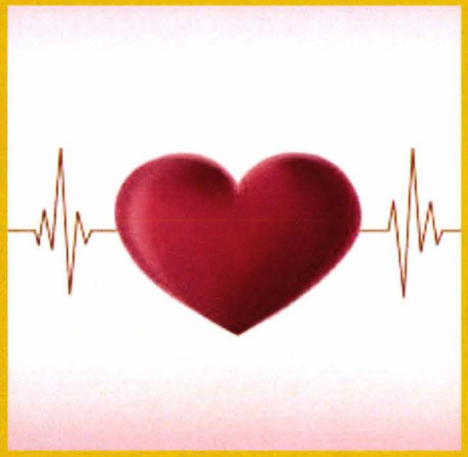
- **Free, required on-line courses on annual basis**
  - Sudden Cardiac Arrest
  - Concussion
  - Heat Illness
  - Required for Head Coaches, Paid Coaches, Student-Athletes

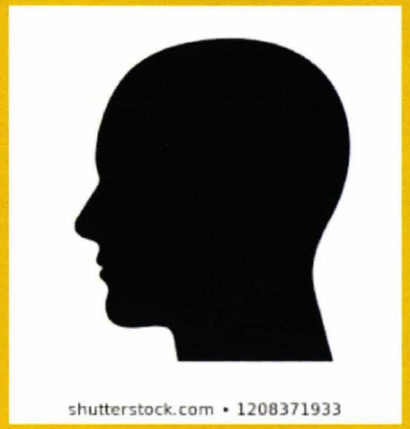
- **Concerns**
  - Inability to reach all coaches
  - High turnover of coaching personnel and athletic administrators
  - Too many coaching responsibilities for low pay

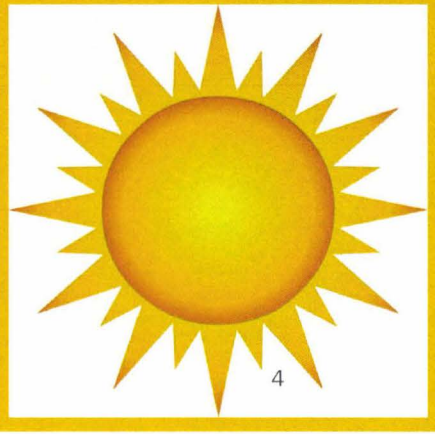


3 Specific Areas of Medical Care

- Heart
- Head
- Heat







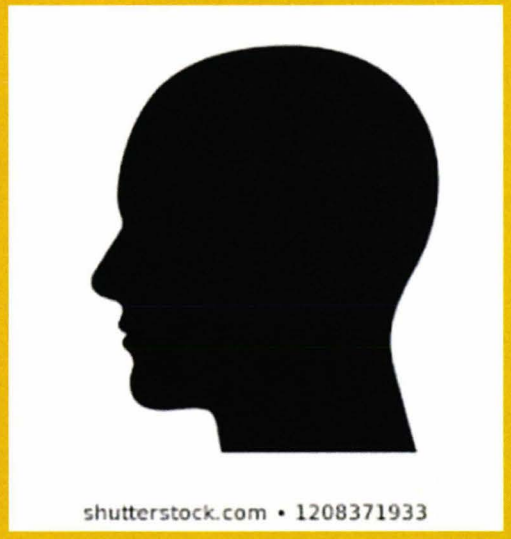
Recommendation #1

- **Heart**
  - Key prevention - physical examination
  - Rule out Hypertrophic Cardiomyopathy (HCM)
  - Treatment - Automated External Defibrillator (AED)
    - Within 1 minute of collapse
    - Available
    - Practice scenarios
    - Comprehensive Action Plan

GOAL – all high schools have multiple AEDs on campus

Recommendation #2

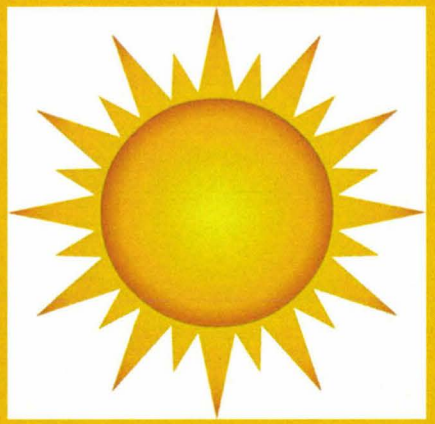
- **Head**
  - Variability in treatment and knowledge
  - Current policy
    - Provides a list of signs and symptoms
    - Stepwise approach to return to play
    - Available on FHSAA website



GOAL – trained personnel care for head injuries

Recommendation #3

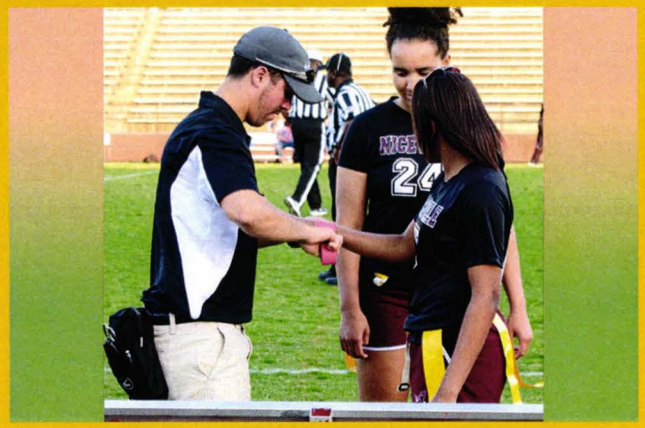
- **Heat**
  - Current Policy
    - Provides stepwise approach to mandatory acclimatization
    - Starts at the beginning of the sport season
    - Requires schools to create hydration policies
  - Important Facts
    - Heat Cramps
    - Heat Exhaustion
    - Heat Stroke
    - Comprehensive Action Plan



GOAL – all high schools have ice, tubs, cooling blankets, WBGT, fluid access (electrolytes)

Recommendation #4

- **Athletic Trainer at Every High School**
  - Medical professionals who are credentialed (national certification/state licensure)
  - Have the rapport with student-athletes (pre-season physicals, treatments, rehabilitation, medical referrals, game and practice coverage) on a daily basis



Highlighted High School Recommendations

- **AED required (multiple units)**
- **Emergency Action Plan (all sport sites)**
- **Rapid Cooling System Required**
- **Wet Bulb Globe Temperature (heat and humidity measurement)**
- **Electrolyte Availability**
- **Athletic Trainer**

THE ATHLETIC TRAINERS' ASSOCIATION OF FLORIDA