


# ORTHOPAEDICS FOR THE PRIMARY CARE PRACTITIONER & REHABILITATION THERAPIST

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13<sup>TH</sup> ANNUAL  
**ORTHOPAEDICS**  
FOR THE PRIMARY CARE PRACTITIONER  
& REHABILITATION THERAPIST  
THE SANDPEARL | CLEARWATER, FL  
July 23-25, 2021

# AGENDA

- Preparing for Emergencies
  - Before Giving Care
  - Emergency Action Plan
  - Exertional Heat Stroke (EHS)
  - Zachary Martin Act
  - FHSAA Policy
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# PREPARING FOR EMERGENCIES

By definition, emergencies are unexpected situations that require immediate attention.

But by expecting the unexpected and taking general steps to prepare, you can increase the likelihood of a positive outcome, should an emergency situation arise.



- KNOW YOUR STUDENTS
- KNOW EMERGENCY ACTION PLANS
- KNOW EMERGENCY VS. NON-EMERGENCY
- KNOW LOCATION OF FIRST AID KITS, SPINE BOARDS, AEDs, RECTAL THERMOMETERS, IMMERSION TUBS/COOLING ZONES
- MEDICAL TIME-OUTS

**BEFORE GIVING CARE**

- Recognizing that an emergency exists
- Activating EAP
- Providing care until EMS arrives

## YOUR ROLE IN THE EMS SYSTEM



## Emergency Action Plan Exertional Heat Stroke

**Purpose:** Establish emergency care procedure for the management and transportation of athletes experiencing a heat illness. The ATC will determine the severity of the illness and decide whether or not to activate EMS.

**Emergency Personnel:**

BPS Athletic Training room: Certified Athletic Trainers, athletic training students, team physicians (limited basis)  
Complex Training Room: Certified Athletic Trainers and athletic training students on-site for practice and games

**Emergency Communication:**

BPS Price Family Athletic Training Room 813-885-1673 ext 2255  
Eddie Bunton, Head Athletic Tr. 813-679-8724 (cell)  
Jen Galuski, Assistant Athletic Tr. 813-956-1003 (cell)  
Kyle Santo, Assistant Athletic Tr. 407-202-5584 (cell)  
Danyale McLean, Intern Athletic Tr. 937-479-1904 (cell)  
BPS Lead Security 813-267-1040

**Roles of First Responders:**

- 1) Perform a primary survey and assess responsiveness and vital signs
- 2) Move patient inside or to a shaded area, if possible
- 3) Evaluate patient's symptoms and obtain core body temperature via rectal thermometry
  - o If temperature is below 104°F, begin appropriate care for differential diagnosis
  - o If temperature is above 104°F, activate EMS and immediately remove extra layers of clothing and equipment and begin passive cooling via whole-body cold-water immersion
- 4) Continue monitoring core body temperature and vitals every five minutes
- 5) DO NOT transport until temperature is below 102°F
- 6) Once temperature is below 102°F, remove from cooling
- 7) Transport to hospital for follow-up lab tests and care
- 8) Follow functional progression for return to activity

## EMERGENCY ACTION PLAN

1. Every organization that sponsors athletic activity should have one
2. Should be venue specific
3. Practiced annually

- To provide appropriate care for athletes, one must be familiar with a large number of illnesses and conditions<sup>1</sup>
- Determine when emergency treatment is needed
- For the best outcome, correct and prompt emergency care is critical
- TIME IS NOT ON OUR SIDE

## EMERGENCY ACTION PLAN

- Heat illness(es) are inherent to physical activity and its incidence increases with rising ambient temperature and relative humidity<sup>2,3</sup>
  - Heat Cramps
  - Heat Syncope
  - Heat Exhaustion
  - Exertional Heat Stroke
  - Exertional Hyponatremia

## EXERTIONAL HEAT ILLNESS

- Most severe heat illness<sup>2,3</sup>
- Elevated core temperature<sup>2,3</sup>
  - $>40^{\circ}\text{C}$  ( $104^{\circ}\text{F}$ )
- Neuropsychiatric impairment<sup>2,3</sup>
  - Collapse, aggressiveness, irritability, confusion, seizures, altered consciousness
- The risks of morbidity and mortality increase the longer an individual's body temperature remains elevated, and are significantly reduced if body temperature is lowered promptly<sup>2,3</sup>

## EXERTIONAL HEAT STROKE

- Pre-participation physical<sup>2,3</sup>
- Acclimatization period 10-14 days<sup>2,3,4</sup>
- Monitor weather conditions
  - Wet-bulb temperature (WBGT) device
- Hydration<sup>2,3,4</sup>
  - Mandatory breaks, “cool zones”
- Education<sup>2,3,4</sup>
  - Coaches and Medical Staff
  - Athletes
- Appropriate medical care available
- Cold-water immersion tub, ice towels available
- Rectal thermometer
- Know your athletes

## PREVENTION

- CNS dysfunction<sup>5</sup>
  - Disorientation, confusion, dizziness, loss of balance, staggering, irritability, irrational or unusual behavior, collapse, loss of consciousness, coma
- Core body temperature<sup>5</sup>
  - Rectal temp above 104°F

**RECOGNITION**

- Cold-water immersion should be used due to superior cooling capacity<sup>5,6</sup>
- Cooling tubs should be set up prior to event<sup>5,6</sup>
- An individual with EHS should be cooled to 102°F within 30 minutes<sup>5,6</sup>
- If cooling is available on-site, the individual should be cooled prior to transportation to the hospital<sup>5,6</sup>

## TREATMENT

- “If you cool someone right away, on site, they don’t die. Period.” – Dr. Doug Casa, KSI, University of Connecticut<sup>7</sup>
- July 1, 2020 became law in State of Florida<sup>7,8</sup>
- Wet Bulb Globe Temperature (WBGT)
  - Measure of heat stress in direct sunlight
- When to measure WBGT

## ZACHARY MARTIN ACT

- Each member school must monitor heat stress<sup>7,8</sup>
- Cool zones must be available for each outdoor athletic contest, practice, workout or conditioning session<sup>7,8</sup>

## MONITORING HEAT STRESS

WBGT Reading	Level	Practice Hours	Activity and Break Guidelines	Fluids
Under 82.0	Green	Resume normal activities	Normal activities-Provide at least three separate rest breaks each hour of minimum duration of 3 minutes each during workout	Water or electrolyte drinks
82.0 – 86.9	Yellow	Use discretion for intense or prolonged exercise; watch at-risk players carefully	Provide at least three separate rest breaks each hour of a minimum of four minutes duration each	Water or electrolyte drinks
87.0 – 89.9	Orange	Maximum practice time is two hours	For Football: players restricted to helmet, shoulder pads, and shorts during practice. All protective equipment must be removed for conditioning activities. For all sports: Provide at least four separate rest breaks each hour of a minimum of four minutes each	Water or electrolyte drinks
90.0 – 92.0	Red	Maximum length of practice is one hour	No protective equipment may be worn during practice and there may be no conditioning activities. There must be 20-minutes of rest breaks provided during the hour of practice	Water or electrolyte drinks
Over 92.1	Black	No outdoor workouts	Cancel exercise; delay practices until a cooler WBGT reading occurs	Water or electrolyte drinks

## WET-BULB GLOBE TEMPERATURE

Temperature

Humidity

Wind Speed

Sun Angle

Cloud Cover

- 2021-22 FHSAA Handbook<sup>9</sup>
  - POLICY 41 EXERTIONAL HEAT ILLNESS
    - EDUCATION-requirement for coaches and student-athletes to watch educational videos annually
    - INTENT-require FHSAA member schools to follow a preseason acclimatization and recovery model
    - RATIONALE-recommendation of the National Federation of High School Association's (NFHS) Sports Medicine Advisory Committee (SMAC) and the National Athletic Trainers' Association's (NATA) Secondary School Committee

**FLORIDA HIGH SCHOOL ATHLETIC  
ASSOCIATION**



# ACCLIMATIZATION PERIOD

Primary focus is to provide an adjustment period to the intensity and duration of exercise and environmental conditions?

- Defined as the first 14 calendar days of a student-athletes' participation,, beginning with the first allowable practice in that sport or the first day an athlete begins official practice<sup>9</sup>
- Days 1-7 no more than one practice/day (not to exceed 3 hours)<sup>9</sup>
  - Days 1-6 a 1-hour walkthrough is allowed, however 1-hour recovery required in-between<sup>9</sup>
  - Football only these additional procedures apply; days 1-2 helmets only, days 3-5 helmets/shoulder pads, day 6 and beyond can utilize full gear and body-to-body contact is allowed<sup>9</sup>

## ACCLIMATIZATION PERIOD

- Beginning day 8 practice schedule must follow the 2-1-2-1 format<sup>9</sup>
  - On days that 2 practices allowed must be separated by at least 3 hours of recovery time between (either practice cannot exceed 3 hours and no more than 5 total hours)<sup>9</sup>
  - On days that 1 practice is allowed a 1-hour walk-through is allowed with 1-hour recovery in-between (practice not to exceed 3 hours)<sup>9</sup>
  - \*\*Weekly practice time cannot exceed 24 hours in total for days 8-14<sup>9</sup>
  - Cross Country: Individuals must participate in 10 practice sessions on 10 separate days<sup>9</sup>

## ACCLIMATIZATION PERIOD

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2. H.M. Binkley, J. Beckett, D.J. Casa, D.M. Kleiner, P.E. Plummer. National Athletic Trainers' Association Position Statement: Emergency Heat Illnesses. J Ath Train. 2002;37(3):329-343
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## WORKS CITED



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THANK YOU