



# Safety in High School Athletics

FHSAA  
SPORTS MEDICINE ADVISORY  
COMMITTEE

# Sports/Performance and Safety

▶ Top deadly risks associated with physical activity and high school activities include:

- ▶ Sudden Cardiac Arrest
- ▶ Exertional Heat Stroke
- ▶ Head Injury
- ▶ Asthma Episodes



# 2020 – Zachary Martin Act Sports Safety Legislation

- ▶ Heat Stroke Awareness
  - ▶ WBGT
  - ▶ Cold Water Immersion
- ▶ CPR and AED Emphasis
- ▶ Safety all Year Long



# Sudden Cardiac Arrest

▶ **Education:** All student-athletes and Coaches must complete the NFHS educational video on Sudden Cardiac Arrest prior to any participation in sports. Parents are strongly recommended to view the educational course as well.

▶ **Prevention:** Pre-Participation Physical Evaluation should be completed by a health care provider familiar with your student as well as the demands of physical activity (Sports/Performing Arts). Health care provider may suggest a cardiovascular assessment, which may include such diagnostic tests as electrocardiogram (EKG), echocardiogram (ECG) and/or cardio stress test.

- ▶ \*Mandatory for all Athletes in SCPS\*
- ▶ \*Highly recommended for Performing Arts and JROTC\*





# Sudden Cardiac Arrest

▶ State Law and FHSAA Policy requires schools to have an AED accessible and recommends coaches obtain training for CPR / AED use and application.

▶ Care:

- ▶ Early recognition: Trained coaches and student-athletes immediately recognize the emergency and activate EMS (911).
- ▶ CPR: Trained coaches and staff perform early CPR with emphasis on compressions.
- ▶ AED: AED locations and access; immediate usage of device.

# What can I do as a parent/guardian?

▶ Ensure your student has received a proper pre-participation exam and follow up testing, as directed by health care provider. Submit all paperwork to school (Athletes – Home Campus, Co-Curricular – Director/Sponsor).

- ▶ Be sure to pay attention to all medical history questions on the form and answer them appropriately.
- ▶ Don't be afraid to ask questions:
  - ▶ Does the school have an AED(s), and where are they located? **Yes, located at every event venue.**
  - ▶ Who is trained to use the AED? Are they present at practices and events? **Athletic Trainers, Coaches, and Directors. Yes.**



[Hagerty High School](#) / [Athletics](#) / Sports Medicine Staff

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# Hagerty HS

## Athletic Training Staff



HHS  
Medical  
Partners for  
Health Care



	Location	Building and Room #
1	Admin	3-119
2	Old Gym	4-105
3	Clinic Area	1-104
4	Athletic Office	1-116
5	Comp Gym	8-101G
	ATC Cart	
6	(Mobile)	8-101D
7	SB\BB Elec Rm	10-100A
8	Stadium Elec Rm	11-100A
9	Admin	7-100
10	Auditorium	9-100



# Hagerty AED Locations on Campus

# Exertional Heat Stroke

- ▶ Education: All student-athletes and Coaches must complete the NFHS educational video on exertional heat illness prior to any participation in sports. Parents it is strongly recommended that you view the educational course as well.
- ▶ Prevention: FHSAA Acclimatization policy (41), environmental monitoring (WBGT).
- ▶ Hydrate, fuel, rest and recover (work/rest ratio).
- ▶ Care: Cold water immersion (cool before transport).

# Exertional Heat Stroke

▶ Heat stroke occurs when the body can no longer cool itself down and the internal temperature becomes very dangerous.

- ▶ Heat stroke is a medical emergency (105 degrees)

▶ Florida is extremely vulnerable to dangerous conditions for our student-athletes

- ▶ High temperatures
- ▶ High humidity
- ▶ Intense sunshine
- ▶ Wet Bulb Globe Temp Chart



Reading	Permitted Activity
≤ 82.0	Normal activities.
82.1 - 87.0	Three (3) separate four (4) minute rest breaks per hour of activity.
87.1 – 90.0	Maximum two (2) hour activity time. Four (4) separate four (4) minute rest breaks per hour of activity. For football, student-athletes are restricted to helmet, shoulder pads and shorts during activity.
90.1 – 92.0	Maximum one (1) hour activity time. Five (5) separate four (4) minute rest breaks. No protective equipment permitted. No conditioning activities permitted.
≥ 92.1	No outdoor activities.

# Exertional Heat Stroke

## ▶ Prevention:

▶ State Law and FHSAA Policy: requires schools to monitor environmental conditions and make modifications to keep kids safe during activity.

- ▶ WBGT: Provides objective information about heat stress levels
- ▶ Cooling Zone: Includes a shaded area, a cold water tub

## ▶ Heat stroke is 100% survivable if:

- ▶ Cold Water Immersion is used in the first 10 minutes

Acclimatization: FHSAA policy guides coaches with gradual increases in preseason activity to the benefit of the participants.



# Exertional Heat Stroke

## What can I do as a parent/guardian?

- Ensure proper rest, nutrition and hydration: student-athletes should be encouraged to obtain at least 8 hours of sleep and maintain healthy hydration.
- Monitor urine color for Hydration and output.
- Weight in/out - for every pound lost, athlete should consume 16 oz fluids water and sport drink mixture
- Monitor acclimatization - ask questions of your student

	Good
	Good
	Fair
	Dehydrated
	Dehydrated
	Very Dehydrated
	Severe Dehydrated

# Exertional Heat Stroke

- ▶ When internal (core) body temperature exceeds 104 degrees the body may begin showing some advanced signs / symptoms of an emergency:
  - ▶ \*Irrational behavior    \*Irritability    \*Emotional instability
  - ▶ \*Altered Consciousness, Collapse, Coma    \*Dizziness
  - ▶ This is a medical emergency.\*\*\*\*
- ▶ Cold water immersion is the best practice treatment method - water 40% more effective than any other method. Cool first, then transport

# Heat Illness

## ▶ Parents/Guardians:

- ▶ Athletes struggling with the heat may have these symptoms:
- ▶ Symptoms of exertional heat illness include: (may vary)
  - ▶ Cramps, dizziness, headache, weakness/light headed, nausea/vomiting, behavioral changes such as confusion/disorientation, and unconsciousness
- ▶ Report any concerning signs and symptoms to coaches, director, athletic trainers and your family health care provider.
- ▶ Heat illness does not necessarily always precede heat stroke

# Hagerty High School – Cooling Zones



## FHSAA UPDATES // ZACHARY MARTIN ACT



### Automated External Defibrillators

The bill is cited as the "Zachary Martin Act" and requires each public school that is a member of the Florida High School Athletic Association (FHSA) to make its automated external defibrillator (AED) available on school grounds in a clearly marked, publicized location for each athletic contest, practice, workout, or conditioning session, including those outside of the school year.

### Heat Stress Monitoring, Hydration, and Cooling Zones

The bill specifies that the FHSAA must:

- Make training and resources available to each member school for the effective monitoring of heat stress;
- Require member schools to monitor heat stress and modify athletic activities based on heat stress guidelines, including making cooling zones available;
- Establish hydration guidelines, including appropriate introduction of electrolytes; and
- Require each school's emergency action plan to include a procedure for onsite cooling using cold-water immersion or equivalent means before transporting a student for exertional heat stroke.

The bill specifies that each athletic coach and sponsor of extracurricular activities involving outdoor practices or events must annually complete training in exertional heat illness identification, prevention, and response, including effective administration of cooling zones.

### HOW DO YOU MEASURE HEAT STRESS?

Heat Stress is measured using the ambient temperature, humidity, wind speed, sun angle, and cloud cover at the site of the athletic activity. The reading indicates the heat stress an individual would be exposed to. To measure heat stress, schools must use a **Wet Bulb Globe Thermometer (WBGT)** reading.

- At Hagerty High School, two Wet Bulb Globe Thermometers are available in the Athletic Training Room. A member of the ATC staff will provide an afternoon reading for practice planning / adjustment purposes. HHS will also continue the use of the DTN Weather Sentry app that the FHSAA has approved for WBGT data.

Heat Stress must be measured for all outdoor school-sponsored athletic activities. This includes for all contests, practices, conditioning sessions, and workouts. It is the coach's responsibility to make sure we are in compliance, along with support from the ATC Staff and the Athletic Department.

The FHSAA's Sports Medicine Advisory Committee (SMAC) has developed recommendations for coping with heat stress. The following guidelines are to be adhered to the following heat stress readings:

Reading	Permitted Activity
≤ 82.0	Normal activities.
82.1 – 87.0	Three (3) separate four (4) minute rest breaks per hour of activity. Maximum two (2) hour activity time. Four (4) separate four (4) minute rest breaks per hour of activity. For football, student-athletes are restricted to helmet, shoulder pads and shorts during activity.
87.1 – 90.0	Maximum one (1) hour activity time. Five (5) separate four (4) minute rest breaks. No protective equipment permitted. No conditioning activities permitted.
90.1 – 92.0	No outdoor activities.
≥ 92.1	No outdoor activities.



All coaches must develop a plan for each level of permitted activity. Understand that you may need to modify and adapt your plan by changing the time of your activity or moving activities indoors.

### COOLING ZONES:

Cooling zones must be available for each outdoor school-sponsored activity (contests, practices, conditioning sessions, and workouts). Cooling zones should be placed in a shaded area, if available.

### Cooling zones must include:

- IMMEDIATE availability of cold-water immersion tubs or equivalent
- An employee or volunteer trained to administer cold-water immersion
- Unlimited access to water and electrolytes

### Cooling zones may also include:

- Ice sponges and towels
- Tarps to make "ice tacos"

### COLD IMMERSION TUBS:

Cold-water immersion tubs can rapidly reduce internal body temperature, reducing the risk of heat-related complications. The immediate availability of a cold-water immersion tub is crucial to cool a student-athlete as quickly as possible.

### When developing a plan, please consider the following:

- Must be able to fill the tub with ice and water – how will you address this at offsite facilities?
- Must have a trained employee or volunteer present to administer the immersion, if needed
- Must have a procedure in the Emergency Action Plan (EAP) specifically addressing cold-water immersion – what to do, assigned roles, etc.

### AUTOMATIC EXTERNAL DEFIBRILLATORS (AEDs):

Sudden cardiac arrest is one of the leading causes of sport-related deaths. In addition to Cardiopulmonary Resuscitation (CPR), it is essential to incorporate Automatic External Defibrillators (AEDs) in your procedures for sudden cardiac arrest management. Schools must make AEDs available year-round at all contests, practices, conditioning sessions, and workouts.

At HHS, AEDs are located in:

Main Clinic Area	Building #1 – 104
Athletic Office	Building #1 – 116 – Unit Available for Check-Out by Teams
Administration	Building #3 – 119
Auxiliary Gym	Building #4 – 105
Administration	Building #7 – 100
Competition Gym	Building #8 – 101G
ATC Golf Cart (Mobile)	Building #8 – 101D
Auditorium Sound Booth	Building #9 – 100
Softball/Baseball Electrical Room	Building #10 – 100A
Stadium Electrical Room (SMS)	Building #11 – 100A

Every coach, both paid and volunteer, must identify the location of the nearest AED to your facilities. All coaches must ensure that they have access to the AED if needed before any training with your team starts on campus.





# Head Injury - Concussion

- ▶ **Education:** All student-athletes and Coaches must complete the NFHS educational video on sports-related concussion prior to any participation in sports. Parents are strongly recommended to view the educational course as well.
- ▶ **Prevention:** Appropriate equipment fitting, injury awareness, knowledgeable coaching and direct supervision.
- ▶ **Care:** Recognize concerning injury - when in doubt, sit them out. Head injuries are not negotiable
  - ▶ Requires evaluation by a licensed MD or DO who is familiar with the most current consensus statement on sports-related concussion

# Head Injury Concussion

- ▶ State Law and FHSAA Policy: requires schools to educate kids on the dangers of concussion and to immediately remove anyone suspected of a head injury from activity (event or practice) until evaluated by an appropriate health care provider.
- ▶ **All head injuries are serious!**
- ▶ These safeguards are in place to protect the kids, not to punish them; please respect the actions taken for the safety of your child and report any symptoms you may have noticed as soon as possible.





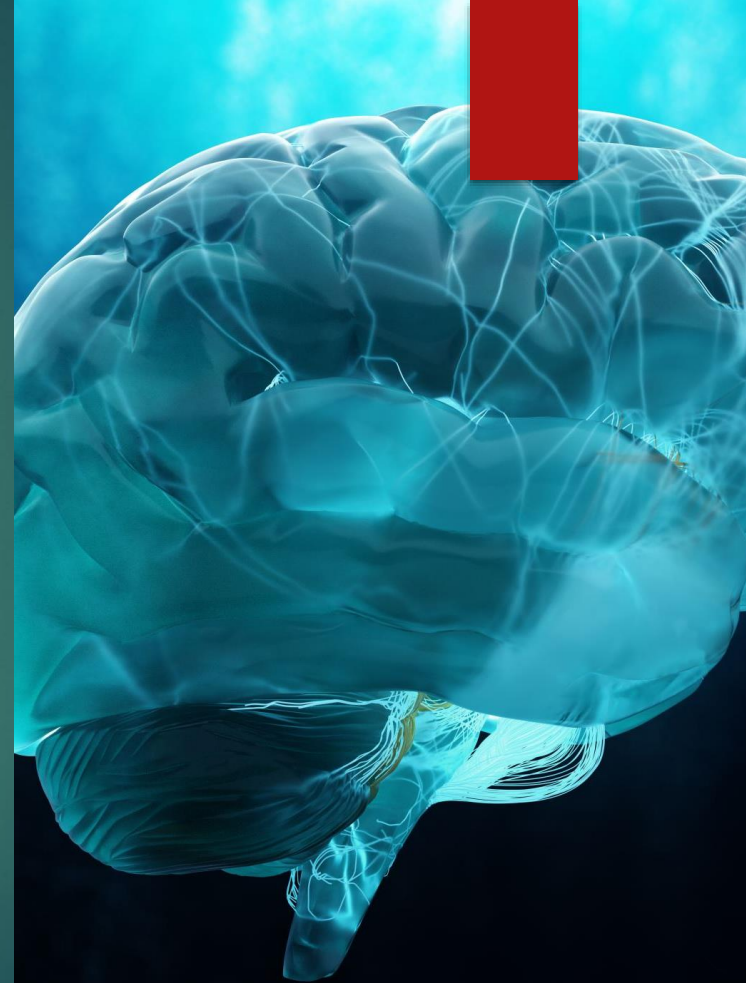
# Return to Play (RTP)

- ▶ Following diagnosis of a concussion, a supervised return-to-play protocol must be completed before return to competition. (FHSAA AT-18)
- ▶ Student must be cleared by a MD or DO to start AND complete the return to activity protocol.
  - ▶ FHSAA AT-18 form, page 1 - signed by doctor to begin protocol
  - ▶ FHSAA AT-18 form, page 2 - signed following completion of page 1 - return to normal team activity
- ▶ A concussion is an injury to the brain and therefore, recovery should be closely monitored/supervised by an athletic trainer or physician.



# What can I do as a parent/guardian?

- ▶ Be familiar with what a head injury is and common symptoms
  - ▶ Headache, dizziness, feeling in a fog, not feeling like self, sensitivity to light/sound, difficulty concentrating, nausea and many others
- ▶ Understand, all head injuries are serious, repeat head injuries are dangerous.
- ▶ Identify health care providers who are available at the school to assist athletes
  - ▶ Report any findings/concerns to coaches, athletic trainers, family health care provider
- ▶ When in doubt - get checked out by a qualified healthcare provider (ER, AHCP)



# Hagerty HS – Concussion Information

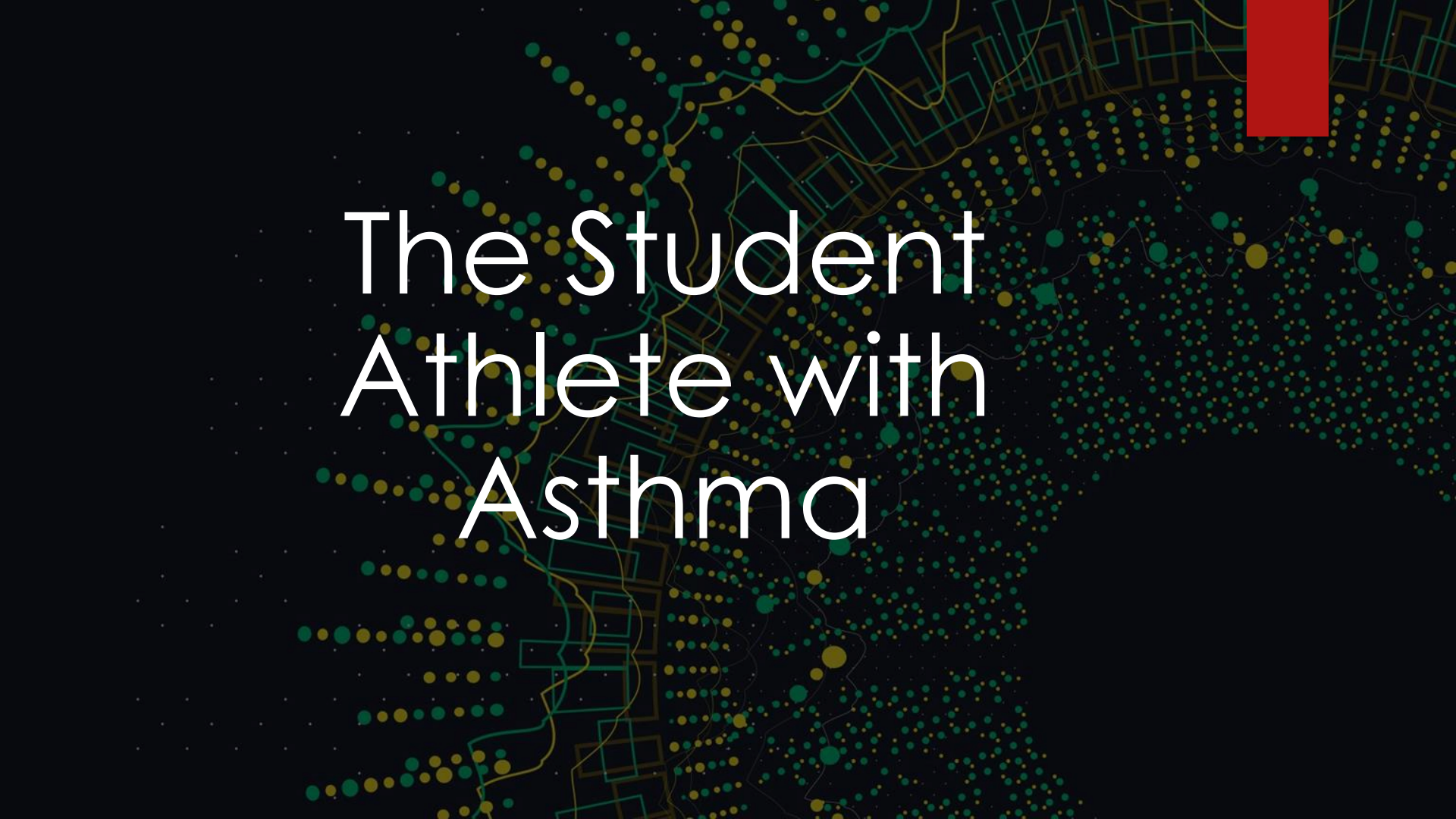
✓ Baseline Assessments – Completed by Sport via online link for data collection.

 Injury Notification – Coach to Parent, followed by Coach to AT Staff

 AT Staff Monitoring and Clearance Review

 Chain of Command – Coach to Parent, Coach to AT Staff, AT Staff to Coach

 Who is the most appropriate contact for a parent who suspects child has a head injury?  
– Coach and Athletic Training Staff at HHS



# The Student Athlete with Asthma

# Asthma and Exercise-Induced Bronchoconstriction

- ▶ Exercise-induced bronchoconstriction (EIB) occurs in athletes at a similar prevalence as that of the general population (9 to 15 percent).
- ▶ It is important to identify students with the diagnosis of asthma. Asthma may be unrecognized in the young athlete.
- ▶ **Asthma vs. EIB:**
  - ▶ Testing available to differentiate between two (lung function tests)
  - ▶ Asthma always produces symptoms, or seasonally associated with allergens
  - ▶ EIB is bronchospasm triggered by exercise
  - ▶ Both treated with Metered dose inhalers (MDI)
- ▶ Pulmonary disease accounts for 2 percent of sudden death in sports. Asthma and EIB can be treated with pre-exercise medication in most patients. These conditions are not a reason to avoid exercise.





# Symptoms of Asthma in Athletes

- ▶ Narrowing of the airway from airway smooth muscle contraction, mucus plug production leads to wheezing, which results in:
  - ▶ increased respiratory effort with difficulty breathing
  - ▶ anxiety
  - ▶ decreased speech
  - ▶ pursed lips
  - ▶ increased respiratory rate
  - ▶ sweating
  - ▶ increased heart rate
- ▶ EIB is commonly triggered by exercising in cold, dry air or environmental pollutants

# Treatment of an Athlete with Breathing Difficulties

- ▶ Quick relief and preventive treatment — Short-acting beta-agonists (SABAs; albuterol [salbutamol], levalbuterol) are the most effective therapy for quick relief of EIB. These are supplied via a metered dose inhaler.
- ▶ All athletes who report exercise-related symptoms must have access to their SABA (metered dose inhaler) for quick relief.
- ▶ 2-4 inhalations (e.g., albuterol 90 mcg/inhalation) are generally sufficient
- ▶ EIB should use MDI 15 min before exercise
- ▶ May need additional meds to control as well
- ▶ If no better, notify the athletic trainer, coach or EMT.
- ▶ Inhaler responsibility of the student. No inhaler, No participation. Always in gym bag for travel/away games

# Conclusion

- ▶ Activities are a rewarding experience for our kids; however, activity participation is not without risk.
  - ▶ Sudden cardiac arrest, exertional heat stroke and head injuries are catastrophic injuries associated with high school activity participation
  - ▶ Our State, the FHSAA and our schools have implemented strategies to keep kids safe
  - ▶ Parents/guardians are an integral component of this safety strategy
- ▶FOR MORE INFORMATION: Please contact your individual school athletic trainer, the FHSAA or FASMED.

