

# Emergency Preparedness in Athletics- Are You Ready?



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# What Are We Preparing For?

Exertional Heat Illness

Catastrophic  
Head/Neck/Spinal Cord  
Injury

Sudden Cardiac Arrest

**Since 1982, 1807  
catastrophic sport  
related injuries/illnesses  
have occurred at the high  
school**

**Football has the largest  
number of reported  
deaths  
(NCCSIR)**

# How Should We Prepare in Athletics?

Emergency  
Action Plans

AEDs

Medical  
Personnel  
Identified

Education

Pre-  
Participation  
Physical Exams

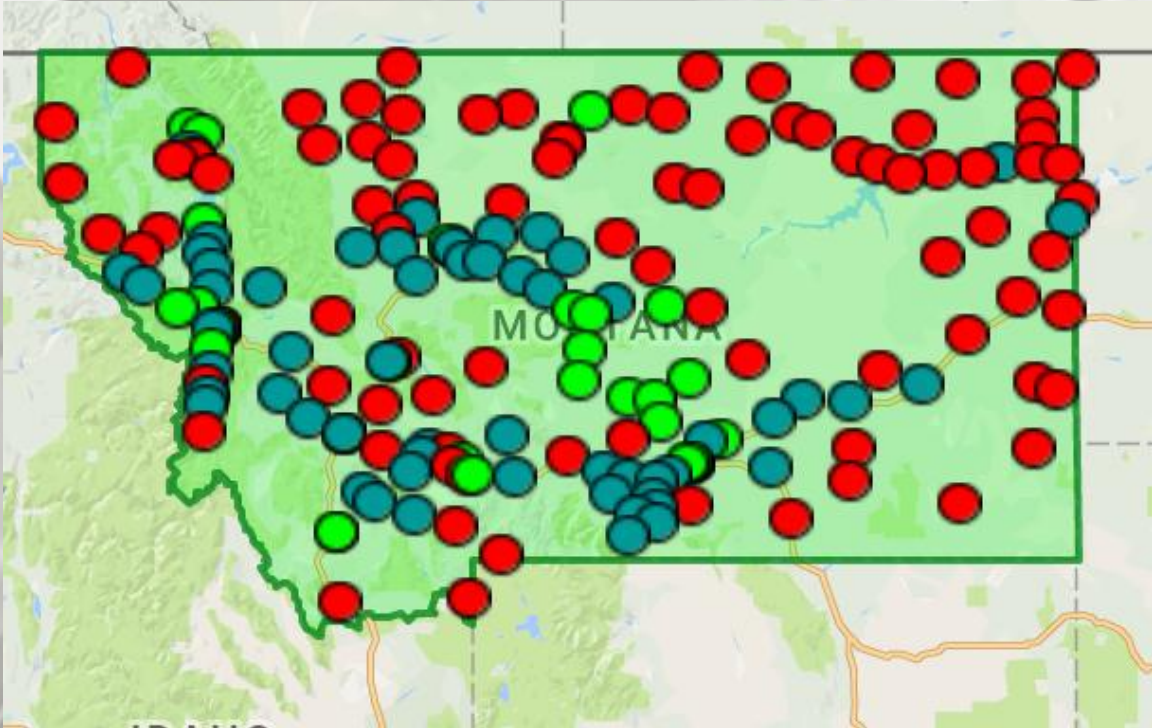




# Automated External Defibrillator

- **The rate of survival from sudden cardiac arrest falls 7-10% for each minute without CPR.\*\* *That would mean that if CPR was delayed even 3 minutes, the injured person now only a 70% chance of survival at best.***
- **Treatment of sudden cardiac arrest or commotio cordis, use of an AED with cardiopulmonary resuscitation (CPR) is the gold standard**
- **All staff should have access to an AED on school property and at all school sanctioned athletic events/activities. Individuals should be provided annual training and certification in CPR and AED use.**
- **AED should be stored in a safe place and easily accessible.**
- **AEDs should be inspected frequently to ensure proper working order. This includes making sure the batteries are charged, and wires and electrodes are in good condition.**

# Have the Right People On Hand



Red- No AT  
Blue- PT AT  
Green- FT AT  
KSI- ATLAS Project

# Pre-Participation Physical Exam

## MHSA CONFIDENTIAL ATHLETIC PRE-PARTICIPATION PHYSICAL EXAMINATION

See Montana High School Association, Article II, Section (3), Physical Exam. A physical examination is required for each student in order to be considered eligible for participation in an Association contest. Physical examinations must be completed prior to the first practice. This examination must be certified by a licensed medical professional acting within the scope and limitations of his/her practice. This certification is valid for a period of one school year. **A physical examination conducted before May 1<sup>st</sup> is not valid for participation for the following school year. All information is to remain confidential.**

**HISTORY – To be completed by the student and parent(s).**

### QUESTIONNAIRE FOR ATHLETIC PARTICIPATION (PLEASE PRINT)

Name  Male  Female  Grade  Date of Birth

Home Address  Phone Number

Parent's Name  Family Physician

Current School  Date

Student Signature

**Explain "Yes" answers below. Circle questions to which you don't know the answer.**

	Yes	No	Yes	No
1. Has a doctor ever denied or restricted your participation in sports for any reason?	<input type="checkbox"/>	<input type="checkbox"/>	25. Do you cough, wheeze, or have difficulty breathing during or after exercise?	<input type="checkbox"/> <input type="checkbox"/>
2. Do you have an ongoing medical condition (like diabetes or asthma)?	<input type="checkbox"/>	<input type="checkbox"/>	26. Is there anyone in your family who has asthma?	<input type="checkbox"/> <input type="checkbox"/>
3. Are you currently taking any prescription or nonprescription (over-the-counter) medicines or pills?	<input type="checkbox"/>	<input type="checkbox"/>	27. Have you ever used an inhaler or taken asthma medicine?	<input type="checkbox"/> <input type="checkbox"/>
4. Are you taking medicine for ADHD?	<input type="checkbox"/>	<input type="checkbox"/>	28. Were you born without or are you missing a kidney, an eye, a testicle, or any other organ?	<input type="checkbox"/> <input type="checkbox"/>
5. Do you have allergies to medicines, pollens, foods, or stinging insects?	<input type="checkbox"/>	<input type="checkbox"/>	29. Have you had infectious mononucleosis (mono) within the last month?	<input type="checkbox"/> <input type="checkbox"/>
6. Have you ever passed out or nearly passed out DURING exercise?	<input type="checkbox"/>	<input type="checkbox"/>	30. Do you have any rashes, pressure sores, or other skin problems?	<input type="checkbox"/> <input type="checkbox"/>
7. Have you ever passed out or nearly passed out AFTER exercise?	<input type="checkbox"/>	<input type="checkbox"/>	31. Have you had a herpes skin infection?	<input type="checkbox"/> <input type="checkbox"/>
8. Have you ever had discomfort, pain, or pressure in your chest during exercise?	<input type="checkbox"/>	<input type="checkbox"/>	32. Have you ever had a head injury or concussion?	<input type="checkbox"/> <input type="checkbox"/>
9. Does your heart race or skip beats during exercise?	<input type="checkbox"/>	<input type="checkbox"/>	33. Have you been hit in the head and been confused or lost your memory?	<input type="checkbox"/> <input type="checkbox"/>
10. Has a doctor ever told you that you have (circle all that apply): High blood pressure      A heart murmur High cholesterol      A heart infection	<input type="checkbox"/>	<input type="checkbox"/>	34. Have you ever had a seizure?	<input type="checkbox"/> <input type="checkbox"/>
11. Has a doctor ever ordered a test for your heart? (for example, ECG, echocardiogram)	<input type="checkbox"/>	<input type="checkbox"/>	35. Do you have headaches with exercise?	<input type="checkbox"/> <input type="checkbox"/>
12. Has anyone in your family died for no apparent reason?	<input type="checkbox"/>	<input type="checkbox"/>	36. Have you ever had numbness, tingling, or weakness in your arms or legs after being hit or falling?	<input type="checkbox"/> <input type="checkbox"/>
13. Does anyone in your family have a heart problem?	<input type="checkbox"/>	<input type="checkbox"/>	37. Have you ever been unable to move your arms or legs after being hit or falling?	<input type="checkbox"/> <input type="checkbox"/>
14. Has any family member or relative died of heart problems or of sudden death before age 50?	<input type="checkbox"/>	<input type="checkbox"/>	38. When exercising in the heat, do you have severe muscle cramps or become ill?	<input type="checkbox"/> <input type="checkbox"/>
15. Does anyone in your family have Marfan syndrome?	<input type="checkbox"/>	<input type="checkbox"/>	39. Has a doctor told you that you or someone in your family has sickle cell trait or sickle cell disease?	<input type="checkbox"/> <input type="checkbox"/>
16. Have you ever spent the night in a hospital?	<input type="checkbox"/>	<input type="checkbox"/>	40. Have you had any problems with your eyes or visions?	<input type="checkbox"/> <input type="checkbox"/>
17. Have you ever had surgery?	<input type="checkbox"/>	<input type="checkbox"/>	41. Do you wear glasses or contact lenses?	<input type="checkbox"/> <input type="checkbox"/>
18. Have you ever had an injury, like a sprain, muscle or ligament tear or tendonitis that caused you to miss a practice or game: If yes, circle affected area below:	<input type="checkbox"/>	<input type="checkbox"/>	42. Do you wear protective eyewear, such as goggles or a face shield?	<input type="checkbox"/> <input type="checkbox"/>
19. Have you had any broken or fractured bones, or dislocated joints? If yes, circle below:	<input type="checkbox"/>	<input type="checkbox"/>	43. Are you happy with your weight?	<input type="checkbox"/> <input type="checkbox"/>
20. Have you had a bone or joint injury that required x-rays, MRI, CT, surgery, injections, rehabilitation, physical therapy, a brace, a cast, or crutches? If yes, circle below:	<input type="checkbox"/>	<input type="checkbox"/>	44. Are you trying to gain or lose weight?	<input type="checkbox"/> <input type="checkbox"/>
			45. Have anyone recommended you change your weight or eating habits?	<input type="checkbox"/> <input type="checkbox"/>
			46. Do you limit or carefully control what you eat?	<input type="checkbox"/> <input type="checkbox"/>
			47. Do you have any concerns that you would like to discuss with a doctor?	<input type="checkbox"/> <input type="checkbox"/>
			<b>FEMALES ONLY</b>	
			48. Have you ever had a menstrual period?	<input type="checkbox"/> <input type="checkbox"/>
			49. How old were you when you had your first menstrual period?	<input type="text"/>
			50. How many periods have you had in the last year?	<input type="text"/>

**Explain "Yes" answers here:**

Head	Neck	Shoulder	Upper arm	Elbow	Forearm	Hand / fingers	Chest
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

21. Have you ever had a stress fracture?

22. Have you been told that you have or have you had an x-ray for atlantoaxial (neck) instability?

## 1. Medical and Family History

- Personal History questions regarding chest pain, syncope, fatigue, murmurs, blood pressure
- Family History questions regarding premature death, disability from heart disease and cardiac conditions in family members.

## 2. Physical Examination

- General Health Screen, Neurologic Screen, General Medical Screen

## 3. Medication Use

## 4. Nutritional Assessment

## 5. Heat and Hydration Related Risk Factors

## 6. Mental Health Considerations



# Education

- "Preparation through education is less costly than learning through tragedy." —  
Max Mayfield, Director National Hurricane Center



Remember the 5 Ps

- Prior Preparation Prevents Poor Performance
- Take a Time Out!

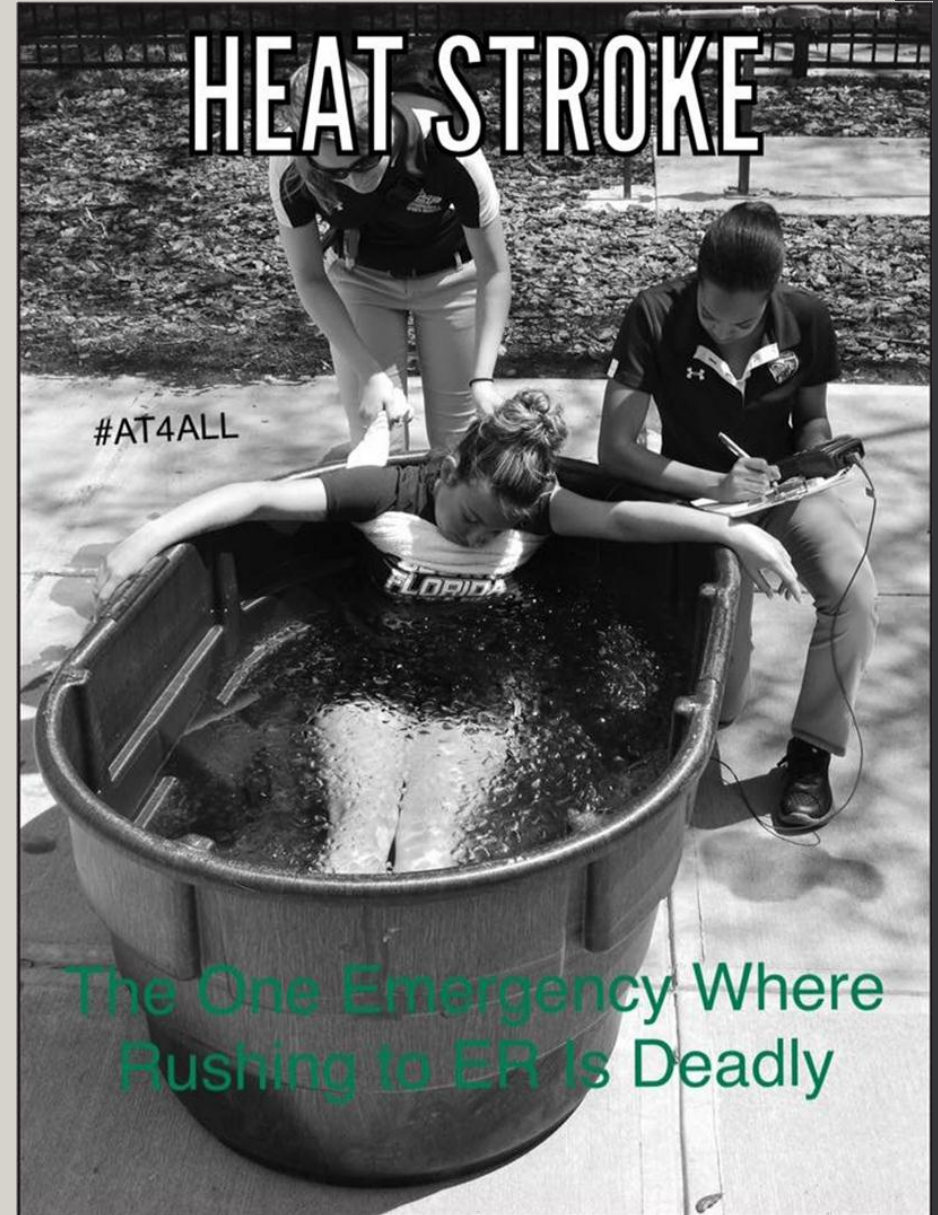


# Scenarios- Putting it All Together



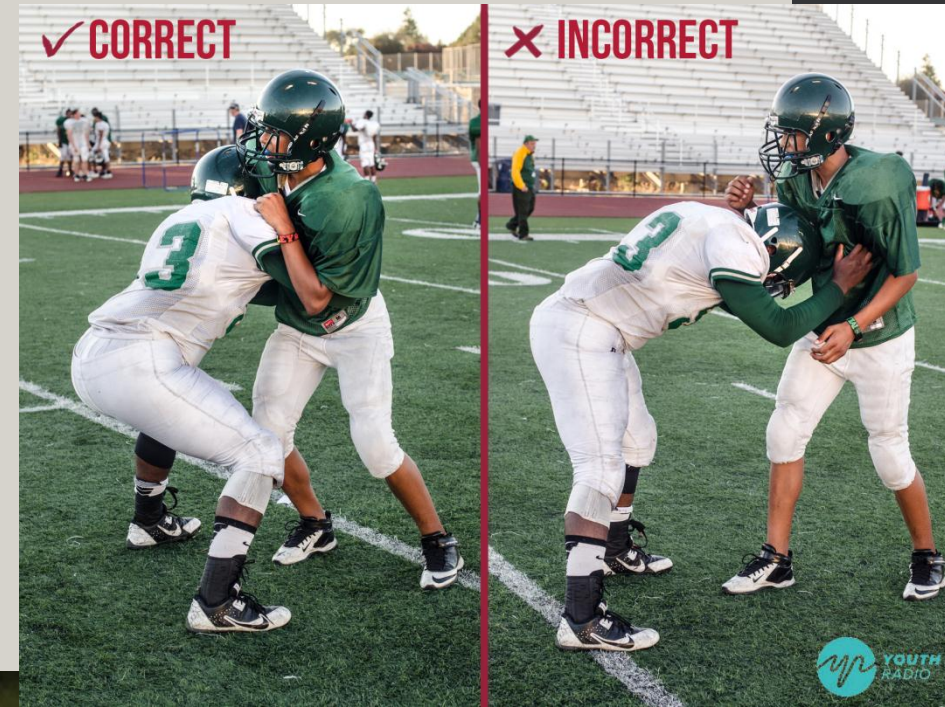
# Heat Illness Prevention

- Obtain a thorough medical history of each athlete
- Allow 7-14 days to acclimate
- Wear appropriate clothing during acclimatization
- Monitor heat index
- Unrestricted fluid and electrolyte replacement
- Record body weight before and after practice
- Identify susceptible athletes
- Monitor athletes for signs of heat illness



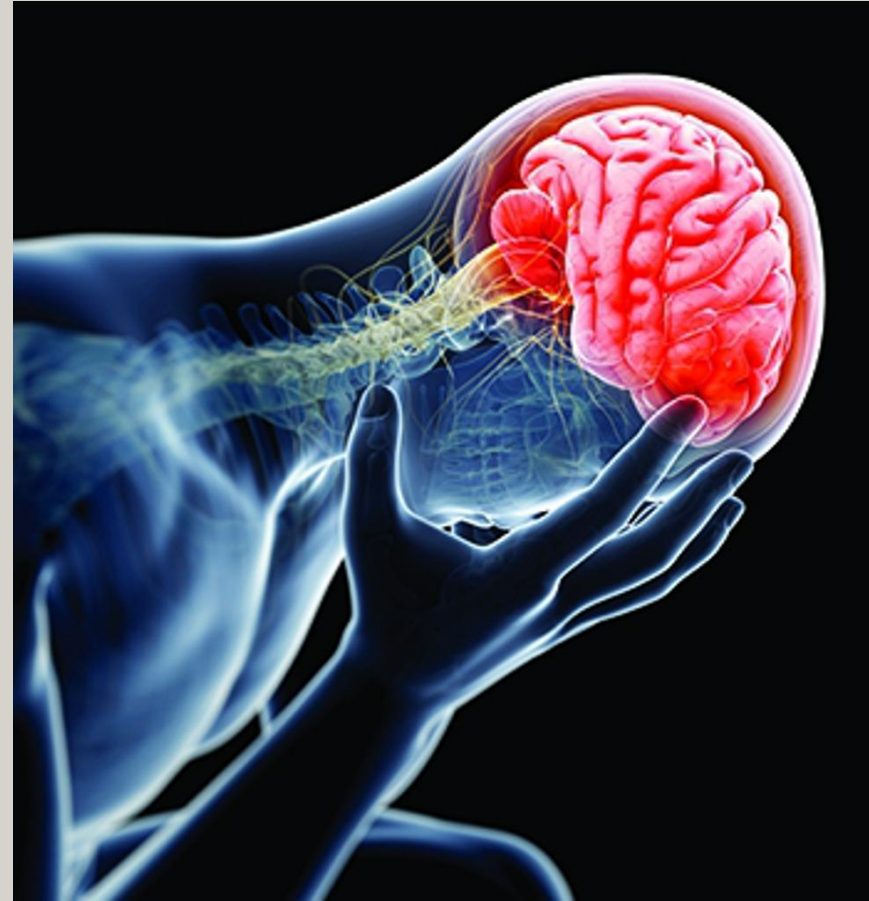
# Neck/Spinal Cord Injuries

- Instruct proper tackling technique: no axial loading
- Have medical staff to cover exercise sessions and games
- Enforce rules for safety
- Properly fit and maintain protective equipment
- Use protective equipment that meets safety standards (e.g., NOCSAE for football helmets)
- Have an EAP (Emergency Action Plan) specifically for cervical spine injuries
- Continually stay up to date and rehearse skills to manage cervical spine injury
- Properly identify predisposing conditions (eg: cervical stenosis etc)
- Have multiple tools/mechanisms to remove protective equipment safely
- **Equipment Removal by at least 3 Trained Rescuers**
  - Advances in equipment
  - Performed by higher level trained personnel
  - Expedited access to enhance care
  - Chest access is prioritized



# Traumatic Brain Injury Prevention

- Protective Equipment
  - Protective equipment (including mouth guards, helmets, and helmet modifiers) has not been shown to adequately prevent a concussion from occurring.
- Rule Change/Risk Compensation
  - Rule changes related to heading in soccer, tackling and other contact technique, equipment usage, and those relating to medical assessment may be protective in nature.
- Education
  - Include all stakeholders
  - Recognition, what to do if they suspect a concussion, and the process of treatment and returning to participation.



# Sudden Cardiac Arrest Prevention

- Practice the emergency action plan (EAP) to ensure that all members of the medical staff is ready to appropriately act if this condition occurs.
- Equipping recreational facilities with an automated external defibrillator (AED) and staff is trained in cardiopulmonary resuscitation (CPR) and first aid. Gradual increase in activity, rather than sudden or strenuous onset
- Avoid exercise in extreme weather: *heat, cold, and high altitude*
- Educate athletes, coaches, parents on healthy nutritional habits
- Include cardiac related examinations in the PPE to screen for family history of heart diseases







# Sample Athletic Emergency Action Plan

The following sample emergency action plan is just an example. Relevant changes should be made based on each institution's staffing availability, athlete age group, and site location. Depending on the setting, the institution may not have an athletic trainer present at all times. You should make relevant notes and plans throughout the EAP to ensure that proper protocol can be followed no matter who is available. Also, you should take state and federal laws and policies into consideration when developing your own emergency action plan, e.g. when planning for heat illnesses or concussions.

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## NAME OF SCHOOL

### EMERGENCY ACTION PLAN FOR ATHLETICS OVERVIEW

#### Introduction

Emergency situations may arise at any time during athletic events. Expedient action must be taken in order to provide the best possible care to the sport participant. The development and implementation of an emergency action plan will help ensure that the best care will be provided.

As emergencies may occur at any time and during any activity, all school activities workers must be prepared. Athletic organizations have a duty to develop an emergency plan that may be implemented immediately when necessary and provide appropriate standards of emergency care to all sports participants. As athletic injuries may occur at any time and during any activity, the sports medicine team must be prepared. This preparation involves formulation of an emergency plan, proper coverage of events, maintenance of appropriate emergency equipment and supplies, utilization of appropriate emergency medical personnel, and continuing education in the area of emergency medicine and planning. Hopefully, through careful pre-participation physical screenings, adequate medical coverage, safe practice and training techniques and other safety avenues, some potential emergencies may be averted. However, accidents and injuries are inherent with sports participation, and proper preparation on the part of the sports medicine team should enable each emergency situation to be managed appropriately.

#### Components of an Emergency Plan

1. Emergency Personnel
2. Emergency Communication
3. Emergency Equipment
4. Roles of First Responder
5. Venue Directions with a Map
6. Emergency Action Plan Checklist for Non-Medical Emergencies



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## Emergency Personnel

The first responder in an emergency situation during an athletic practice or competition is typically a member of the sports medicine staff, such as a certified athletic trainer. However, the first responder may also be a coach or another member of the school personnel. Certification in cardiopulmonary resuscitation (CPR), first aid, automated external defibrillator (AED), prevention of disease transmission, and emergency plan review is required for all athletics personnel associated with practices, competitions, skills instructions, and strength and conditioning [also including: athletic director, school nurse, certified athletic trainer, all coaches, etc.]. Copies of training certificates and/or cards are maintained in the athletic training facility and/or with the athletic director.

The emergency team may consist of physicians, emergency medical technicians, certified athletic trainers, athletic training student, coaches, managers, and possibly bystanders. Roles of these individuals will vary depending on different factors such as team size, athletic venue, preference of the head athletic trainer, etc.

The four basic roles within the emergency team are:

### **1. Establish scene safety and immediate care of the athlete:**

This should be provided by the most qualified individual on the medical team.

### **2. Activation of Emergency Medical Services:**

This may be necessary in situations where emergency transportation is not already present at the sporting event. Time is the most critical factor and this may be done by anyone on the team. However, the person chosen should be someone who is calm under pressure, communicates well, and is familiar with the location and address of the sporting event.

### **3. Equipment Retrieval:**

May be done by anyone on the emergency team who is familiar with the types and locations of the specific equipment needed. Athletic training students, managers, and coaches may be good choices for this role.

### **4. Direction of EMS to the Scene:**

One of the members of the team should be in charge of meeting the emergency medical personnel as they arrive at the site. This person should have keys to locked gates or doors.

Formation of an emergency team and implementation of specific roles are important. You should also assign more than one person to a role in case certain members are not present during a given situation.



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## Activating Emergency Medical Services

- **Call 9-1-1**

- **Provide Information**

- name, address, telephone number of the caller
- nature of emergency (medical or non-medical\*)
- number of athletes
- condition of athlete(s)
- first aid treatment initiated by the first responder
- specific directions as needed to locate the emergency scene (i.e. "use the south entrance to the stadium on Pomfret Street)
- other information requested by the dispatcher

\*If non-medical, refer to the specified checklist of the school's non-athletics emergency action plan

## Emergency Communication

Communication is a key to a quick, efficient emergency response. There should be a pre-established phone tree to ensure all relevant parties are notified. Access to a working telephone line or other device, either fixed or mobile, should be assured. There should also be back-up communication in effect in case there is a failure of the primary communication. At every athletic venue, home and away, it is important to know the location of a workable telephone.

## Emergency Equipment

All necessary emergency equipment should be at the site and quickly accessible. Personnel should be familiar with function and operation of each type of emergency equipment. The equipment should be checked on a regular basis to ensure good condition and equipment use should be rehearsed by all emergency personnel. Creating an equipment inspection log book is strongly recommended. Know how to properly care for and store all of the equipment. You should choose a clean, dry, environmentally controlled area and it should be readily available when emergency situations arise.

This type of equipment could include: spine boards and straps, automated external defibrillators (AEDs), AED pads, AED batteries, splinting equipment, helmet removal equipment and their batteries, etc.

**Coaches should take note of the closest AED to their practice and game locations.**



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## Medical Emergency Transportation

Emphasis is placed on having an ambulance on site at high risk sporting events, such as football, gymnastics, track and field meets, etc. In the event that an ambulance is on site, there should be a designated location with rapid access to the site and cleared route for entering/exiting the venue. In the event that an ambulance is not on site, the medical personnel should be aware of average EMS response time for the athletic venue and distance from the venue to local hospitals.

*Any emergency situation where there is impairment in loss of consciousness (LOC), airway, breathing, or circulation (ABCs) or there is a neurovascular compromise should be considered a “load and go” situation and emphasis placed on rapid evaluation, treatment, and proper transportation.*

## Non-Medical Emergencies

For the non-medical emergencies (fire, bomb threats, violent or criminal behavior, etc.) refer to the school emergency action plan checklist and follow instructions.

## Conclusion

The importance of being properly prepared when athletic emergencies arise cannot be stressed enough. An athlete’s survival may hinge on the training and preparation of athletic healthcare providers. It is prudent to invest athletic department “ownership” in the emergency action plan by involving the athletic administration and sport coaches as well as sports medicine personnel. The emergency action plan should be reviewed at least once a year with all athletic personnel and local emergency response teams. Through development and implementation of the emergency plan **NAME OF YOUR SCHOOL** helps ensure that the athlete will have the best care provided when an emergency situation does arise.

## Approval and acceptance of the NAME OF YOUR SCHOOL Emergency Plan for Athletics.

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
School Principal

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
School Athletic Director

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
Head Athletic Trainer



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## NAME OF SCHOOL

### IMPORTANT CONTACTS LIST

Off Campus Contacts	Phone Number
Police Department	XXX-XXX-XXXX
Fire and Ambulance	XXX-XXX-XXXX
Medical Center	XXX-XXX-XXXX
Poison Control Center	XXX-XXX-XXXX

On Campus Offices	Phone Number
Athletic Training Room	XXX-XXX-XXXX
Infirmery	XXX-XXX-XXXX
Athletic Director	XXX-XXX-XXXX
Main Office	XXX-XXX-XXXX
Administrative Office	XXX-XXX-XXXX
School Counselor Office	XXX-XXX-XXXX

Title	Name	Office	Cell
Athletic Trainer		XXX-XXX-XXXX	XXX-XXX-XXXX
Athletic Director		XXX-XXX-XXXX	XXX-XXX-XXXX
School Nurse		XXX-XXX-XXXX	XXX-XXX-XXXX
Principal		XXX-XXX-XXXX	XXX-XXX-XXXX



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NAME OF SCHOOL  
Contact Tree

Coach or First Responder at the Scene

Life Threatening Condition

Non-Life Threatening Condition

Call 9-1-1

Athletic Trainer  
Name (XXX) XXX-XXXX  
Assistant Athletic Trainer  
Name (XXX) XXX-XXXX

Athlete's Parent or Guardian

Athletic Director  
Name (XXX) XXX-XXXX

Principal  
Name (XXX) XXX-XXXX

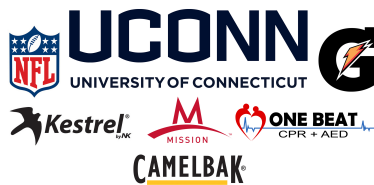
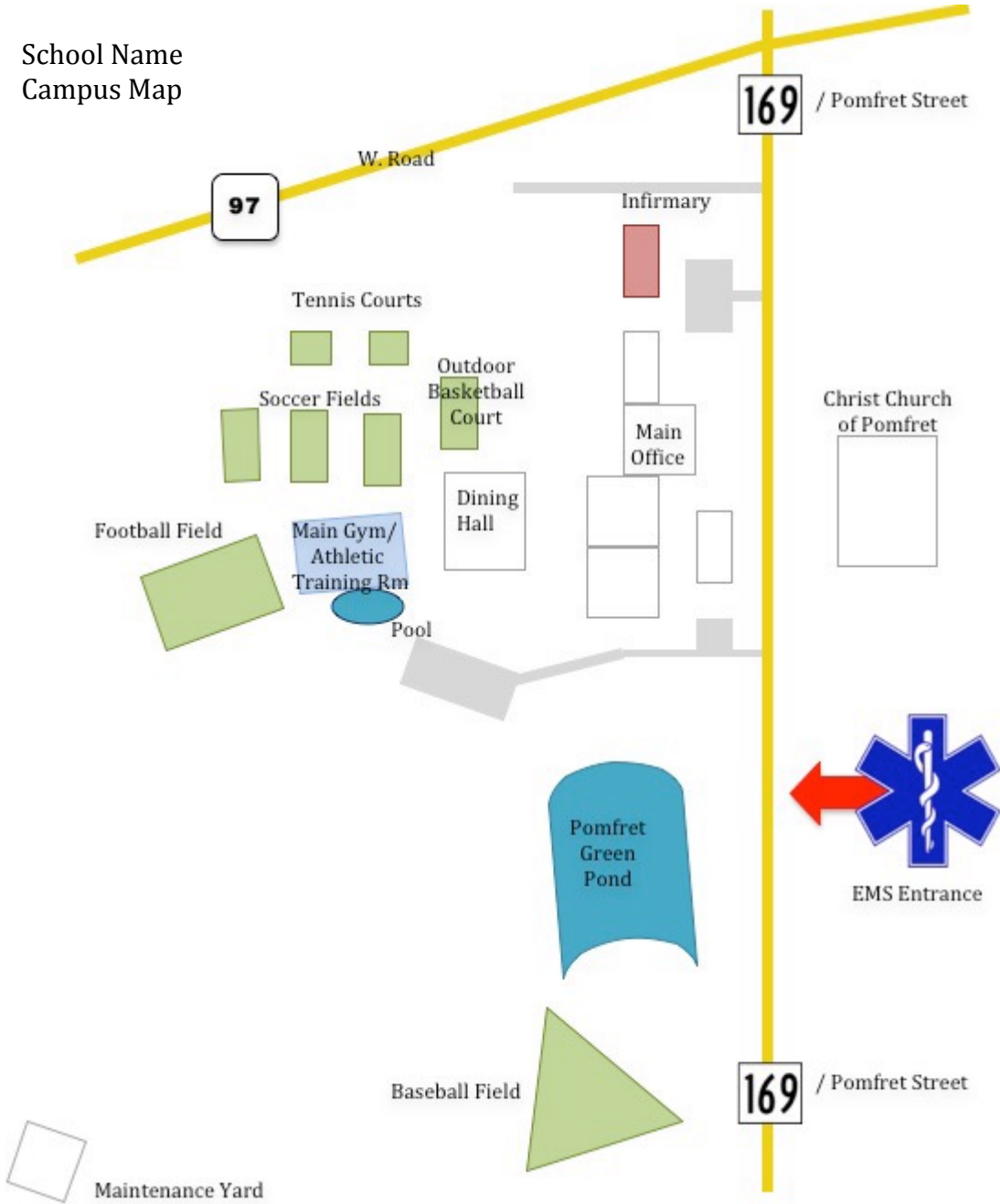
Note: This is a basic plan. Please use professional judgment when a player is injured. Move down the chart if you are unable to reach the appropriate staff member.



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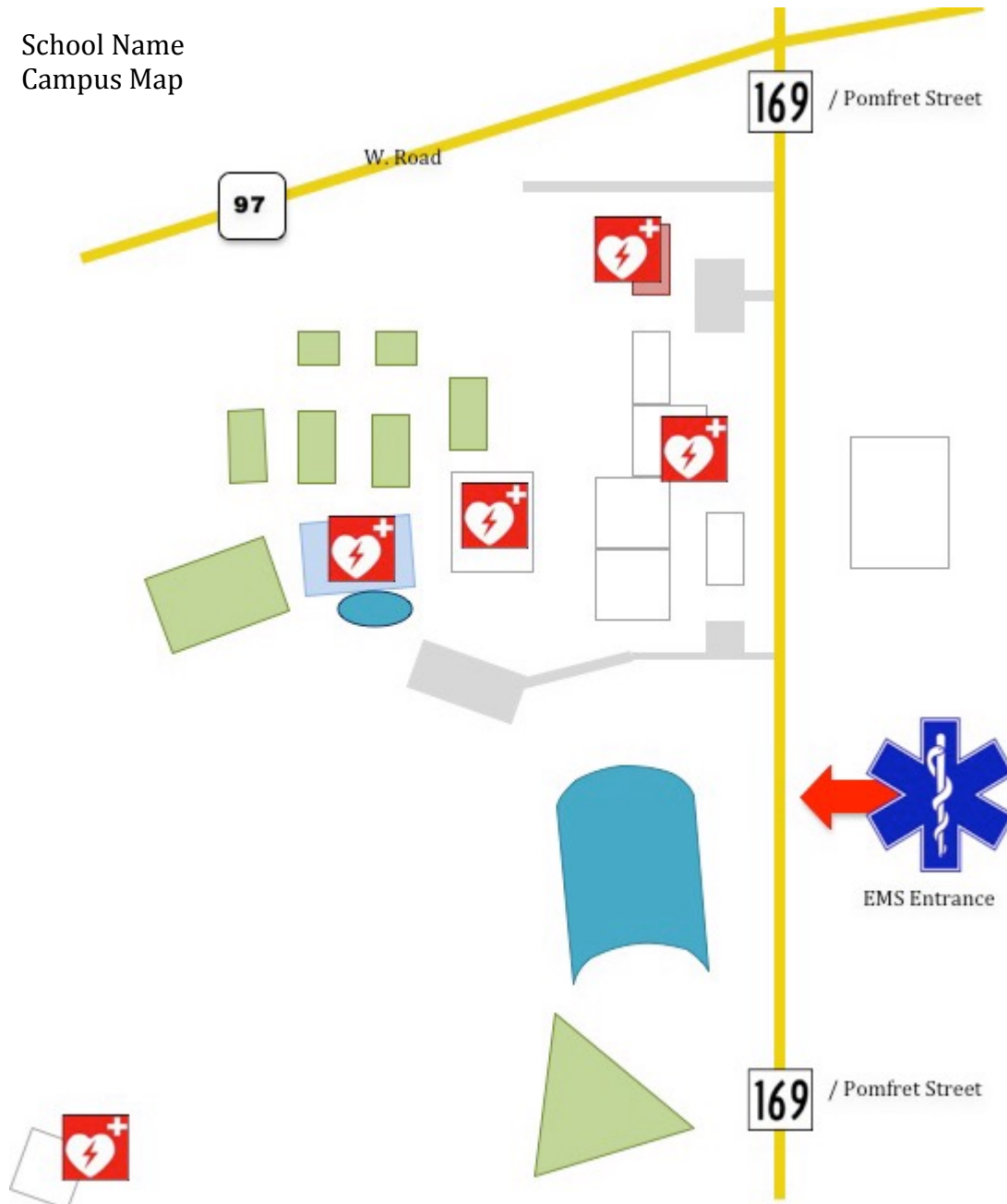
School Name  
Campus Map



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School Name  
Campus Map



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NAME OF SCHOOL

*Address*

*XXX Street Name, City, State, Zip*

Campus Athletics Venue Information

**NOTE: Some settings may have multiple entrances for EMS – each of these roads should be coded (i.e. Entrance #1, Entrance #2) and labeled on the map.**

Venue	EMS Route: Entrance #	Primary AED	Secondary AED
Main Gymnasium	Road Name by Road Name	Basketball Court	First Floor Across from the Weight Room
Football Stadium	Road Name by Road Name	Sideline with Athletic Trainer	First Floor Across from the Weight Room



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## SAMPLE EAP

**SPORT:** NAME OF VENUE (for PRACTICE? COMPETITION?)

**Address:** XXX

**Venue Directions:** (turn by turn leading up to each relevant access gate)

**GPS Coordinates (in the event of the need for a medical helicopter transport):** XXX

### MAP OF VENUE

This map should include major street names, a highlighted route to specific gates, and major buildings listed. The actual venue should be clearly demarcated.

Consider using a “Google maps” feature or a pre-made campus map that is posted online for added accuracy.

**Emergency Personnel:**

**Emergency Communication**

<b>Athletic Training Room</b>	Fixed Telephone Line	XXX-XXX-XXXX
<b>Certified Athletic Trainer</b>	Name	XXX-XXX-XXXX
<b>Athletic Director</b>	Name	XXX-XXX-XXXX
<b>Team Physician</b>	Name	XXX-XXX-XXXX
<b>School Nurse</b>	Name	XXX-XXX-XXXX

**Emergency Equipment:**

Supplies relevant to that sport or event, nearest AED during different types of competition (i.e. practice vs. games, when an ATC is present vs. not present), location of given supplies, and phone numbers and access key locations to relevant storage places.

**Role of First Responders:**

1. Immediate care of the injured or ill student-athlete
2. Activation of emergency medical services (EMS)
  - a. Call 911 (provide name, address, telephone number (number of individuals injured), condition of injured, first aid treatment, specific directions, other information as requested)
  - b. Activate phone tree
3. Emergency equipment retrieval
4. Direct EMS to scene (if not on site for game)
  - a. Open appropriate gates
  - b. Designate individual to “flag down” EMS and direct to scene
  - c. Scene control: limit scene to first aid providers and move bystanders away from area



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## NAME OF SCHOOL

### PROTOCOL FOR MEDICAL CERTIFICATION REQUIREMENTS

All athletics personnel associated with practices, competition, skills instruction, and strength and conditioning, including all head, assistant, and volunteer coaching staff, must have the following training:

- Red Cross CPR/AED for the First Responder
- Red Cross First Aid for the First Responder
- Prevention of Disease Transmission: Blood Bourne Pathogens
- Emergency Action Plan annual run-through

All updated copies of certificates/cards will be on file in the athletic director's office.

**Sample Log of Safety Certifications**

Sport	Staff Member	CPR/AED Good Until	First Aid Good Until
Football	<i>Name</i>	XX/XX/XXXX	XX/XX/XXXX
	<i>Name</i>	XX/XX/XXXX	XX/XX/XXXX
		XX/XX/XXXX	XX/XX/XXXX
Boys' Soccer		XX/XX/XXXX	XX/XX/XXXX
		XX/XX/XXXX	XX/XX/XXXX
		XX/XX/XXXX	XX/XX/XXXX



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NAME OF SCHOOL

### Emergency Action Plan Run Through

All personnel associated with athletics should be familiar with all relevant venue emergency action plans. Familiarization includes: knowing one’s specific role during an emergency situation, knowledge of emergency equipment, and how to appropriately activate the emergency action plan.

Each person who will be working with the school’s athletic programs should be given a copy of the emergency action plan annually and sign an agreement that they have read and understand the document.

Additionally, each team before the start and throughout the season should run through scenarios in order to increase the comfort level and efficiency of the emergency action plan. This team should also include the local ambulance services and the fire department. Ensure that all team members are on the same page with athlete care and transport protocols (i.e. helmet removal for equipment-intensive sports such as football and lacrosse or “cool first, transport second” policies for exertional heat illnesses). Run-throughs should also be taken into consideration where ambulance access would take place to determine if any gates or cars would block the entrance during practice/game times and where any keys or relevant equipment will be located.



*Gifts to support The Korey Stringer Institute may be made through the UConn Foundation, Inc. a tax-exempt 501(c)(3) corporation dedicated exclusively to benefit the University, and are deductible for federal incomes tax purposes to the extent allowable by law. All gifts will be used to benefit The Korey Stringer Institute and its mission.*



**SAMPLE VERIFICATION OF ACKNOWLEDGMENT OF TRAINING ON THE EMERGENCY ACTION PLAN**

Please copy form as needed

Each coach or volunteer in every sport providing instruction, assistance, or supervision in an athletic activity for the student athletes at SCHOOL NAME must sign this form certifying that the coach or volunteer has completed the training on the emergency action plan. The training must be completed **annually**.

I hereby verify by signing below that I have completed the training on the emergency action plan.

\_\_\_\_\_ (signature) \_\_\_\_\_ (title or position) \_\_\_\_\_ (date completed)

\_\_\_\_\_ (signature) \_\_\_\_\_ (title or position) \_\_\_\_\_ (date completed)

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THIS FORM IS TO BE KEPT ON FILE IN THE ATHLETIC TRAINING ROOM AND PRESENTED FOR REVIEW UPON REQUEST.



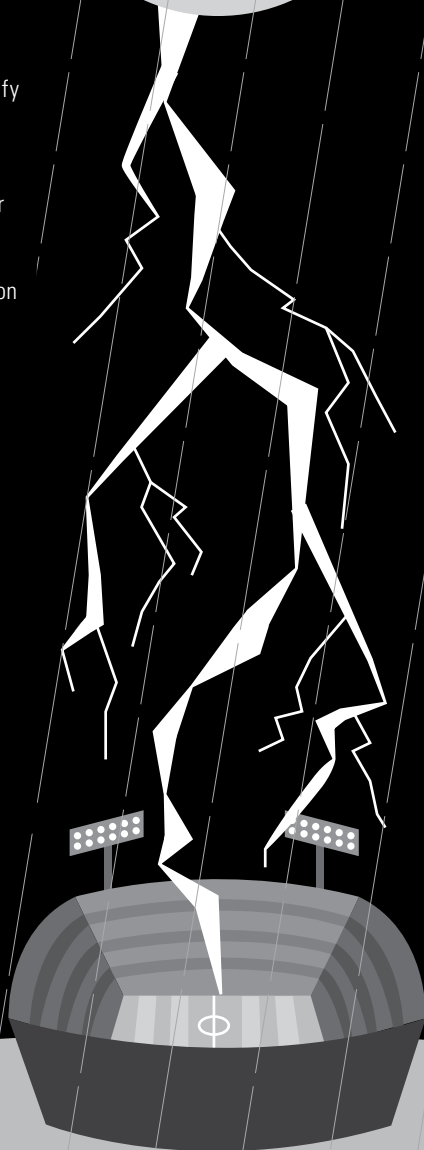
*Gifts to support The Korey Stringer Institute may be made through the UConn Foundation, Inc. a tax-exempt 501(c)(3) corporation dedicated exclusively to benefit the University, and are deductible for federal incomes tax purposes to the extent allowable by law. All gifts will be used to benefit The Korey Stringer Institute and its mission.*

# LIGHTNING

## DO'S & DON'TS

Late spring through early fall is a prime time for outdoor sports—it's also when lightning is most prevalent. Each year, an average of 25 million lightning flashes strike the ground in the United States, making lightning the most dangerous and frequently encountered thunderstorm hazard. Stay safe and active outdoors by following these lightning do's and don'ts.

- ✓ **DO** establish a chain of command and identify who makes the call to remove players from the field.
- ✓ **DO** designate a weather watcher to monitor the local weather.
- ✗ **DON'T** forget that lightning is most common from afternoon to early evening.
- ✓ **DO** postpone outdoor activities if a thunderstorm is eminent.
- ✓ **DO** identify a safe, fully enclosed building—such as a school, field house, library or other habitable building—to use if lightning begins.
- ✓ **DO** seek shelter in a fully enclosed metal vehicle, such as a school bus, car or van.
- ✗ **DON'T** evacuate to open structures including picnic, park, sun, bus, rain and shelters as well as storage sheds, tents, dugouts, refreshment stands, screened porches, press boxes and open garages.

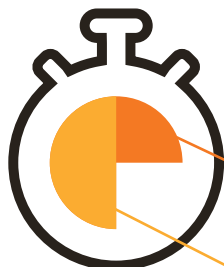


- ✓ **DO** stand away from showers, sinks, locker rooms, indoor pools, appliances and electronics.
- ✗ **DON'T** stand near open water, on elevated areas or under tall objects, such as trees, poles and towers.
- ✓ **DO** allow individuals to head indoors to wait out the storm if they feel in danger.
- ✗ **DON'T** resume activities until 30 minutes after the last strike of lightning is seen and the last sound of thunder is heard.
- ✓ **DO** call EMS if someone suffers a lightning-related injury.
- ✓ **DO** move the victim with care indoors, if necessary.
- ✗ **DON'T** believe myths—lightning victims don't carry a charge; they're safe to touch.
- ✓ **DO** evaluate the airway breathing and circulation, and begin CPR, if necessary.

# BEAT THE HEAT

Summer's high temperatures put student athletes at increased risk of heat illness. There are several types of heat illness. They range in severity, from heat cramps and heat exhaustion, which are common but not severe, to heat stroke, which can be deadly. Although heat illnesses can be fatal, death is preventable if they're quickly recognized and properly treated.

## DEHYDRATION AND HEAT ILLNESSES



As a rule-of-thumb, most athletes should consume 200 to 300 milliliters of fluid every

**15 MINUTES**  
OF EXERCISE.

It takes only **30 MINUTES** for cell damage to occur with a core body temperature of 105 degrees.



Currently, 13 states have heat-acclimatization policies for secondary school athletics with New Jersey being the first.



Exertional heat stroke is one of the top three killers of athletes and soldiers in training.

- From 2010-15, 20 athletic heat stroke fatalities were reported.
- It takes seven to 14 days for a body to adapt to exercising in the heat.
- Dehydration at levels of 3 to 4 percent body mass loss can reduce muscle strength by an estimated 2 percent.

### SAFETY TIPS



Have sports drinks on hand for workout sessions lasting longer than an hour.

Keep beverages cold – cold beverages are consumed 50 percent more than warm beverages.

Hydrate before, during and after activity.

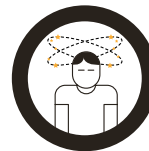
Remove unnecessary equipment, such as helmets and padding, when environmental conditions become extreme.



Clothing worn by athletes should be light colored, lightweight and protect against the sun.

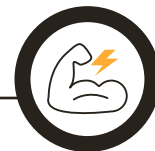
- For the first week or so, hold shorter practices with lighter equipment so players can acclimate to the heat.
- Follow a work-to-rest ratio, such as 10-minute breaks after 40 minutes of exercise.
- Get an accurate measurement of heat stress using a wet-bulb globe temperature, which accounts for ambient temperature, relative humidity and radiation from the sun.
- If someone is suffering from exertional heat stroke, remember to cool first and transport second.
- Have large cold tubs ready before all practices and games in case cold water immersion is needed to treat exertional heat stroke.

## SIGNS OF MINOR HEAT ILLNESS



Dizziness

Cramps, muscular tightening and spasms



Lightheadedness, when not associated with other symptoms

### EARLY WARNING SIGNS OF EXERTIONAL HEAT STROKE

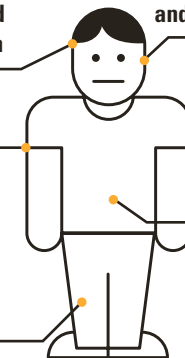
Headache, dizziness, confusion and disorientation

Excessive sweating and/or flushing

Fatigue

Nausea and/or vomiting

Chills and/or goose bumps



## SIGNS OF EXERTIONAL HEAT STROKE



Core body temperature of more than 105 degrees



Signs of nervous system dysfunction, such as confusion, aggression and loss of consciousness



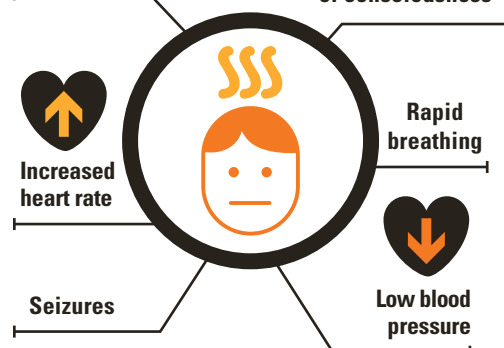
Increased heart rate

Rapid breathing



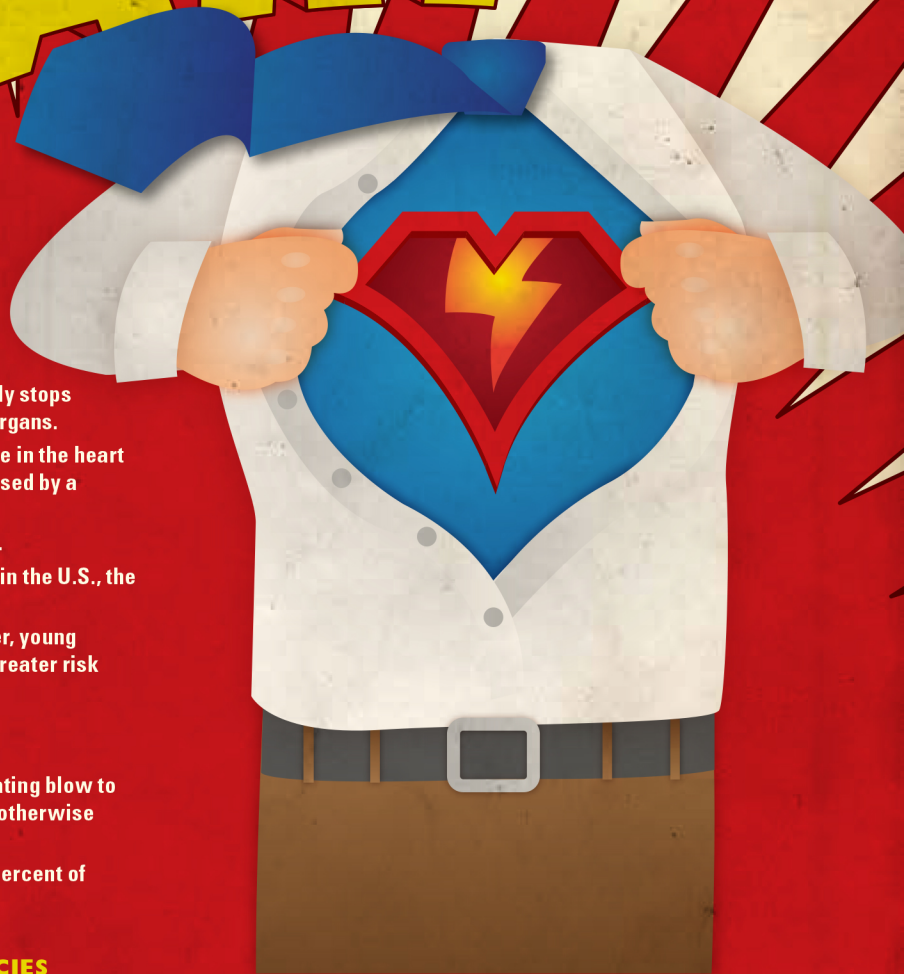
Low blood pressure

Seizures



Sources: Korey Stringer Institute, American Medical Society for Sports Medicine, NATA

# MATTERS OF THE HEART



## SUDDEN CARDIAC ARREST

- SCA is a condition in which the heart unexpectedly stops beating, halting blood flow to the brain and vital organs.
- SCA is usually caused by an electrical disturbance in the heart that disrupts pumping, while a heart attack is caused by a blockage of blood flow to the heart.
- SCA results in death if not treated within minutes.
- 2,000 patients under age 25 die of SCA every year in the U.S., the Center for Disease Control estimates.
- The cause of SCA in athletes is unknown, however, young athletes with underlying heart conditions are at greater risk during vigorous exercise.

## COMMOTIO CORDIS

- Commotio Cordis is caused by a blunt, nonpenetrating blow to the chest. It induces ventricular arrhythmia in an otherwise structurally normal heart.
- Commotio Cordis accounts for approximately 20 percent of sudden cardiac deaths in young athletes.

## PREPARING FOR CARDIAC EMERGENCIES

- Schools, clubs and sports facilities should have emergency action plans that include a response plan for SCA events.
- All facilities where sports are played should have automatic external defibrillators (AEDs) within 1-3 minutes.
- Schools, clubs and sports facilities should have someone on staff trained in CPR.
- When CPR is provided and an AED shock is administered within the first 3 to 5 minutes after a collapse, reported survival rates from cardiac arrest are as high as 74%.

## SCREENING ATHLETES FOR CARDIOVASCULAR ISSUES

- Athletes should undergo cardiovascular screening before athletic participation.
- A minimum standard of cardiovascular screening should include a comprehensive medical history, family history and physical exam.
- An electrocardiogram (ECG) can help identify underlying cardiac conditions that put athletes at greater risk. However, it's not a universal standard right now because of cost, physician infrastructure and sensitivity and specificity concerns.

## SIGNS AND SYMPTOMS OF CARDIAC ARREST IN ATHLETES

MALE ATHLETES	FEMALE ATHLETES
Chest, ear or neck pain	Center chest pain that comes and goes
Severe headache	Lightheadedness
Excessive breathlessness	Shortness of breath with or without discomfort
Vague discomfort	Pressure, squeezing, fullness
Dizziness, palpitations	Nausea, vomiting
Abnormal fatigue	Cold sweat
Indigestion, heartburn	Pain or discomfort in arms, back, neck, jaw or stomach

NOTE: Many young cardiac arrest victims have no symptoms until the cardiac arrest occurs.



# ENVIRONMENTAL COLD INJURIES

## SYMPTOMS:

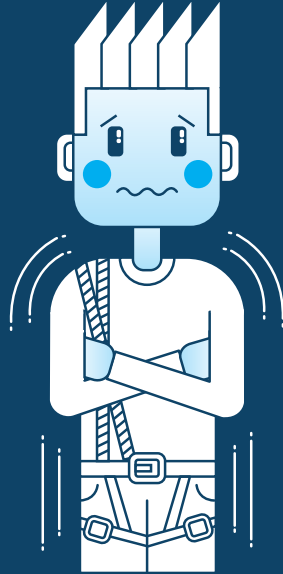
- **Mild:** Vigorous shivering, increased blood pressure, fine motor skill impairment, lethargy, apathy and mild amnesia
- **Moderate or severe:** No more of shivering, very cold skin, depress vital signs, impaired mental function, slurred speech, unconsciousness and gross motor skill impairment

## WHAT TO DO:

- Remove wet or damp clothing then insulate the body, including the head, with warm, dry clothing or blankets.
- Move the athlete to a warm shelter, protected from wind and rain.
- Apply heat only to the trunk and heat transfer areas of the body, such as armpits, chest wall and groin.
- Don't rewarm the extremities – it could send cold blood to the core and lead to a drop in core temperature, which may cause cardiac arrhythmias and death.
- Provide warm fluids and foods.
- Avoid applying friction massage to tissue, which can increase damage if frostbite is present.

## Hypothermia

OCCURS WHEN THE CORE BODY TEMPERATURE REACHES BELOW 95 DEGREES.



## SYMPTOMS:

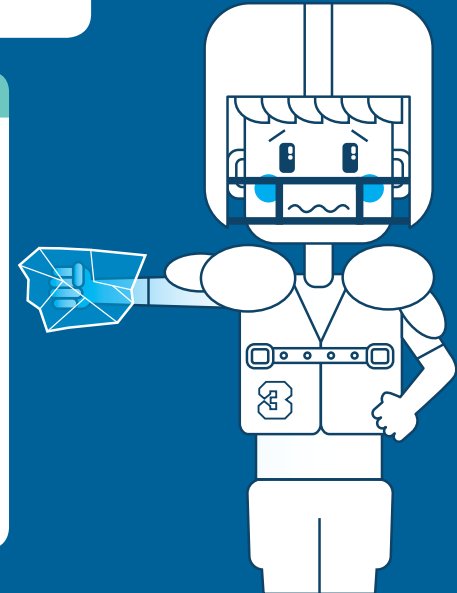
- **Mild:** Swelling, redness or mottled gray skin appearance, stiffness and momentary tingling or burning
- **Deep:** Edema, mottled gray skin appearance, tissue that feels hard and does not rebound, blisters and numbness or loss of sensation

## WHAT TO DO:

- Rule out the presence of hypothermia.
- Rewarm the tissue if there isn't a chance of refreezing.
- Immerse the affected tissue into a warm bath of gently circulating water for 15 to 30 minutes.
- Rewarming should be done slowly, so water temperature shouldn't exceed 98 degrees.
- Thawing will be complete when the tissue is pliable and color and sensation have returned.
- Note that rewarming can be painful, so a physician may prescribe pain medication.

## Frostbite

- THE FREEZING OF BODY TISSUE.
- A LOCALIZED RESPONSE TO A COLD, DRY ENVIRONMENT THAT CAN BE WORSENERD BY SWEAT COOLING THE TISSUE.



## SYMPTOMS:

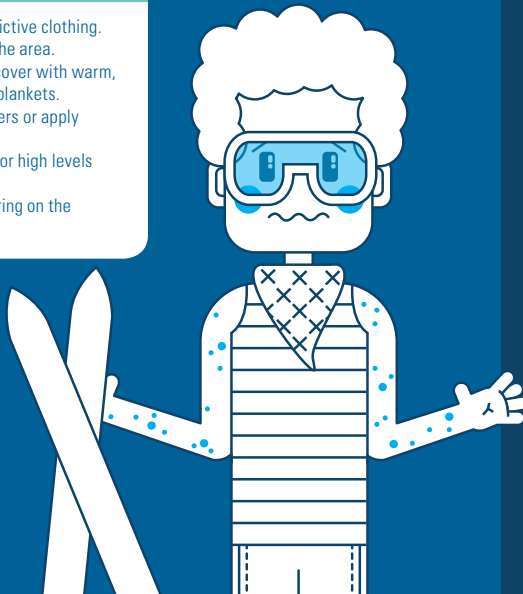
Small red bumps, swelling, tenderness, itching and pain

## WHAT TO DO:

- Remove wet or constrictive clothing.
- Gently wash and dry the area.
- Elevate the area and cover with warm, loose, dry clothing or blankets.
- Don't disturb the blisters or apply friction massage.
- Avoid lotions, creams or high levels of heat.
- Avoid any weight bearing on the affected area.

## Chilblain

- A NONFREEZING INJURY OF THE EXTREMITIES.
- OCCURS WITH EXTENDED EXPOSURE TO COLD, WET CONDITIONS.



## SYMPTOMS:

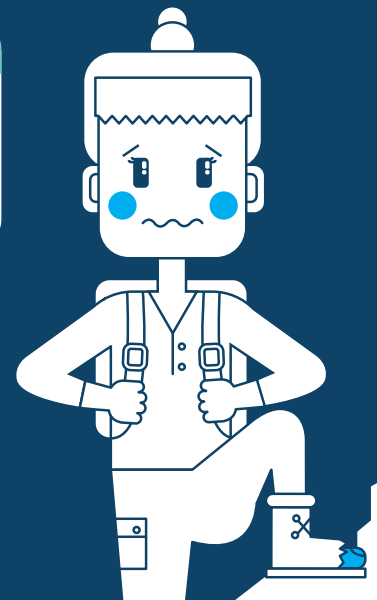
Burning, tingling or itching, loss of sensation, bluish or blotchy skin, swelling, pain or sensitivity, blisters, skin fissures and maceration

## WHAT TO DO:

- Thoroughly clean and dry the feet.
- Apply warm packs or soak the affected area in warm water for approximately five minutes.
- Put on clean dry socks.
- Allow footwear to dry before reusing.

## Immersion Foot

- A NONFREEZING INJURY OF THE EXTREMITIES ALSO KNOWN AS "TRENCH FOOT."
- OCCURS WITH PROLONGED EXPOSURE TO COLD, WET ENVIRONMENTS.



## Staying warm, staying safe

- Wear insulated clothing that also allows moisture to evaporate.
- Dress in layers that can be adjusted with changes in the weather.
- Use external heaters.
- Take regular indoor breaks.

- Maintain a well-balanced diet
- Stay hydrated with water or sports drink.
- Have extra shoes, socks and gloves available to replace wet clothing.

- Athletes who are young, old, diabetic, women or African-American should take extra precaution as they are at greater risk.

Source: National Athletic Trainers' Association

# CONCUSSION 101

WITH MORE ATTENTION BEING PAID TO CONCUSSIONS, they're no longer being thought of as simple "bumps on the head" or "bell-ringers." Help keep young athletes protected by better understanding the symptoms, treatment and prevention of concussions.

- A concussion is defined as a "trauma-induced alteration in mental status that may or may not involve loss of consciousness."
- This can be caused by a bump, blow or jolt to the head or by a hit to the body that causes the head and brain to move quickly back and forth.
- Concussion signs and symptoms can appear immediately or not be noticed until days or even weeks after the injury.

## HOW TO REMAIN SAFE ON THE FIELD

- Make sure all helmets and safety equipment are sport specific, properly fitted and refurbished according to industry standards.
- Follow sports safety rules and use proper techniques.
- Practice good sportsmanship.

## YOU HAVE A CONCUSSION – NOW WHAT?

- **Report symptoms:** Tell a coach, parent or athletic trainer if you suspect an athlete has a concussion.
- **Get checked out:** Only a health care professional experienced with concussion management can tell if a concussion has occurred and when it is OK to return to play.
- **Get plenty of rest:** Immediately after the concussion is sustained, rest is recommended. This includes keeping a regular sleep routine and avoiding activities that require a lot of concentration.
- **Give time to recover:** It's important to allot time to heal. Another concussion sustained while the brain is healing can result in long-term problems or even death in rare cases.
- **Take it slow at first:** After the physician or athletic trainer gives the OK to return to activity, an athlete shouldn't jump in all at once. The athletic trainer will work with the athlete to develop a safe plan for progressively returning to play.
- **Address concerns:** If there are concerns, don't hesitate to bring them up with a health care provider (athletic trainer, physician, etc.).

### KNOWING THE RED FLAGS

- CAN'T BE AWAKENED
- REPEATED VOMITING

- SLURRED SPEECH
- CAN'T RECOGNIZE PEOPLE OR PLACES



- WORSENING HEADACHE
- SEIZURES



- LOOKS LESS ALERT



- BALANCE PROBLEMS
- DIZZINESS

- INCREASING CONFUSION OR IRRITABILITY
- LOSS OF CONSCIOUSNESS
- WEAKNESS OR NUMBNESS IN ARMS OR LEGS
- UNUSUAL BEHAVIORAL CHANGE



- BOTHERED BY LIGHT OR NOISE



- SLOWED REACTION TIME



- SLEEP PROBLEMS

Sources: NATA, Sanford Orthopedic Sports Medicine, Center for Disease Control and Prevention, Heads Up Concussion, Fifth Annual Youth Sports Safety Summit

Illustration by: Thinkstock/ bakhtiar\_zein  
Infographic courtesy of the National Athletic Trainers' Association