CONNELLSVILLE AREA HIGH SCHOOL SPORTS MEDICINE EMERGENCY ACTION PLAN

Emergency situations may arise at any time during athletic events. The development and implementation of an emergency plan will help ensure that the best care will be provided in the quickest manner possible. As athletic injuries may occur at any time and during an activity, the emergency plan, proper coverage of events, maintenance of appropriate emergency equipment and supplies, utilization of appropriate emergency medical personnel, and continuing education in emergency medicine and planning. Proper preparation on the part of the sports medicine team should enable each emergency to be managed appropriately. This plan should serve as a guideline for such emergencies during athletic events at Connellsville Area.

Components of the Emergency Plan

1. These are the components of this plan:
2. Emergency personnel
3. Roles of the sports medicine team
4. Emergency communications
5. Emergency equipment
6. Venue addresses (supplied in each medical kit)
7. Emergency action plan checklist for lightning safety
8. Emergency action plan checklist for medical emergencies

Emergency Personnel

The sport medicine team is composed of a team-Physician, Certified Athletic Trainer, Athletic Director and in the absence of the previously mentioned personnel, Security personnel, the head coach and/or staff members. It is in this order that the responsibilities lie. If the physician is not present, the athletic trainer should take control of all athletic related emergencies and delegate the appropriate duties to the appropriate personnel. If the athletic trainer is not present, the head coach will take control of all athletic-related emergencies and delegate the appropriate duties to the appropriate personnel. A Certified and/or Licensed Athletic Trainer or first aid responder will be readily available during games and practices of high-risk interscholastic sports (as per the W.P.I.A.L. guidelines for medical coverage). When an ATC or first aid responder is not present, or when awaiting their arrival, the coaching staff is responsible for delivering first aid. Under these circumstances, there should be a reliable form of communication (telephone, cell phone) between the coach and EMS should the victim's status require more advanced care. When forming the emergency team, it is important to adapt to the team situation. Assigning multiple persons to each role is necessary if one person is unable to complete their task a backup is available to take over

Roles of the Sports Medicine Team

1. Establish scene safety and immediate care of the athlete.
2. Activation of the Emergency Medical System
    a. If 911 is required, the athletic trainer is to designate another member of the sports medicine team to call 911. Usually this is performed by the athletic director or one of the coaches present.

Roles of the First Responders

First Responders should be well versed on the EAP (Emergency Action Plan) and their roles beforehand. The following outline serves to detail the behaviors required of those involved with the execution of the EAP.

1. Activate the emergency medical system (EMS).

a. To dial from a school phone. **DIAL** 911

b. To dial from a cell phone. **DIAL** 911

c. Convey all relevant information such as:

i. Name, address, and phone number of caller

ii. Nature of the emergency

iii. Number of people/athletes injured

iv. Condition of athlete(s)

v. First aid treatment initiated by the sports medicine team

vi. Specific directions to the location of the emergency

vii. Other information requested by the dispatcher.

viii. Name of victim

ix. Victim's location

x. Description of the type of trauma

xi. Description of the care being provided

2. Provide immediate care to the injured or ill individual(s).

a. The most qualified person on the scene should initiate the emergency care. Those individuals with lesser qualifications should yield to those with higher qualifications as they arrive.

b. The following should be monitored:

i. Air, Breathing, and Circulation

ii. Pupils

iii. Skin color

iv. Temperature

v. Level of consciousness

vi. Movement

vii. Abnormal neurological responses (i.e., numbness,tingling)

3. Directions of EMS to scene

• All addresses are in the medical kit

CASD BUILDING & FIELD ADDRESSES

STADIUM- 1103 SOUTH ARCH ST. CONN., PA 15425

SR. **HIGH SCHOOL** – 201 FALCON DR. CONN., PA 15425

MIDDLE SCHOOL– 710 LOCUST ST. EXT., CONN., PA 15425

DUNBAR TWP. STADIUM & BASEBALL FIELD (TROTTER) - 301 STADIUM RD, CONN, PA 15425

CONNELLSVILLE AREA CAREER & TECH CENTER – 720 LOCUST ST, EXT, CONN, PA 15425

4. **Depending on the circumstances of the situation an individual may need to be assigned to crowd control (possibly school police)**

Emergency Communication

Communication is the key to quick emergency response. Athletic trainers and emergency medical personnel must work together to provide the best emergency response capability. Communication prior to the event is a good way to establish boundaries and to build rapport between the groups of professionals. If emergency medical transportation is not available on site during a particular sporting event, then direct communication with the emergency medical system (EMS) at the time of the injury or illness is necessary. In addition, direct communication with the student-athlete's parent/guardian is necessary unless they are not reachable, and the injury requires emergency treatment. Proper paperwork signed by the parent/guardian must be available to ensure that emergency treatment can be expedited.

Access to a working telephone or other telecommunications device, whether land line or mobile, should be assured. The communication system should be checked prior to each practice or competition to ensure proper working order. At Connellsville Area High School, cellular telephones are the primary means of communication.

Emergency Equipment

All necessary emergency equipment should be at the site or quickly accessible. Personnel should be familiar with the function and operation of emergency equipment. Equipment should be checked on a regular basis and in good operating condition. It is important to know the proper way to care for and store the equipment as well. Equipment should be stored in a clean and environmentally controlled area. It should be readily available when the emergency arises.

Medical Emergency Transportation

In an emergency, the athlete should be transported by ambulance, where the necessary staff and equipment is available to deliver appropriate care. If the parent/guardian is not available to accompany the injured athlete, a school official should accompany the athlete. Emergency care providers should refrain from transporting unstable athletes in inappropriate vehicles. Whenever possible, contact the parent/guardian prior to ambulance transportation. If the parent/guardian is present and the situation is deemed a non-emergency, then it is appropriate for the parent/guardian to transport the athlete to the nearest medical facility after the emergency personnel has appropriately stabilized the injury. Any emergency where there is impairment in level of consciousness, airway, breathing, or circulation or there is neurovascular compromise should be considered a "load and go" situation by calling 911 and emphasis placed on rapid evaluation, treatment, and transportation. Continue to attempt to contact the parent/guardian.

Non-Medical Emergencies

All non-medical emergencies should follow the Emergency Action Plan set forth by Connellsville Area School District's Emergency Action Plan.

Conclusion

The importance of being properly prepared when athletic emergencies arise cannot be stressed enough. An athlete's survival may hinge on how well trained and prepared athletic healthcare providers are. It is very important to include athletic administration, school administration, and coaches as well as the sports medicine personnel in the event of an emergency. The emergency plan should be reviewed at least once a year with all involved. Through development and implementation of the emergency plan, the athletic emergency action team helps ensure that the athlete will have the best care provided when an emergency does arise.

Approved by:

Board President, Jon Detweiler

CAHS Principle, Nick Bosnic

CAHS Athletic Director, Richard Evans

Mark S. Pohlot, LAT, ATC

Anthony J. DeCarlo M.S., LAT, ATC

Gina Canada, D.O.

Andrew Schleihauf, D.O.

CONNELLSVILLE AREA SPORTS MEDICINE EMERGENCY ACTION PLAN FOR INDOOR FACILITIES- HOME GAMES AND PRACTICES (HIGH SCHOOL GYMNASIUM, AUXILIARY GYM, WRESTLING ROOM, FITNESS CENTER WEIGHT ROOM AND SWIMMING POOL)

Emergency Personnel

- Certified Athletic Trainer (Mark S. Pohlot, LAT, ATC) cell # 724-323-2417
- Certified Athletic Trainer (Anthony DeCarlo, LAT, ATC) cell #412-551-5870
- Athletic Director (Richard Evans)
- Director of Security (Michael Parlak)
- Head Coach of the team involved in competition
- Team Physician(s) may be present (Dr. Gina Canada) (Dr. Andy Schleihauf)

Emergency Communications- Cell Phones or school phones (land lines)

Emergency Equipment

• Supplies maintained on sidelines during competition: otherwise, supplies are in the athletic training room.

• AED is located with ATC during event, accessible in the school, or in training room

Roles of the Sports Medicine Team

• Immediate care of the injured or ill student-athlete **PHYSICIAN/Athletic Trainer** • Activation of emergency medical system **(EMS)- Athletic Trainer, coach, or emergency personnel**

- **911 CALL** – Provide name, address, phone number, number of individuals involved, condition of injury, first aid treatment, specific directions to location of injured athlete, and other information as requested by EMS operator.
- Emergency equipment retrieval- **Student Assistants, coaches, or emergency personnel**

• Direction of EMS to scene –**Athletic Director, coach, or emergency personnel** ○ Meet EMS at entrance

○ Control scene (move bystanders) speak with student-athlete's parents/guardian

Traveling with an injured athlete to the hospital- **Parent/guardian of injured athlete if available. If the parent /guardian is not available, the designated coach should travel with the injured athlete.**

Venue – Connellsville Area High School is at 201 Falcon Dr. Connellsville, PA 15425. The entrance for EMS is located at the left side of the building next to the teacher's parking lot.

CONNELLSVILLE AREA SPORTS MEDICINE EMERGENCY ACTION PLAN FOR OUTDOOR HIGH SCHOOL FACILITIES- HOME GAMES AND PRACTICES (FOOTBALL, BASEBALL, SOFTBALL, SOCCER, TENNIS, CROSS COUNTRY)

Emergency Personnel

- Certified Athletic Trainer (Mark S. Pohlot, LAT, ATC) cell # 724-323-2417
- Certified Athletic Trainer (Anthony DeCarlo, LAT, ATC) cell #412-551-5870
- Athletic Director (Richard Evans)
- Director of Security (Michael Parlak)
- Head Coach of the team involved in competition
- Team Physician(s) may be present (Dr. Gina Canada) (Dr. Andy Schleihauf)

Emergency Communications- Cell Phones or school phones (land lines)

Emergency Equipment

• Supplies maintained on sidelines during competition: otherwise, supplies are in the athletic training room.

• AED is located with ATC during event, accessible in the high school, or in training room

Roles of the Sports Medicine Team

• Immediate care of the injured or ill student-athlete **PHYSICIAN/Athletic Trainer** • Activation of emergency medical system **(EMS)- Athletic Trainer, coach, or emergency personnel**

- o **911 CALL** – Provide name, address, phone number, number of individuals involved, condition of injury, first aid treatment, specific directions to location of injured athlete, and other information as requested by EMS operator.
- o Emergency equipment retrieval- **Student Assistants, coaches, or emergency personnel**

• Direction of EMS to scene –**Athletic Director, coach, or emergency personnel** o Meet EMS at field

• Control scene (move bystanders) speak with student-athlete's parents/guardians

Traveling with an injured athlete to the hospital- **Parent/guardian of injured athlete if available. If the parent /guardian is not available, the designated coach should travel with the injured athlete.**

Venue – All activities will use Connellsville Area High School which is 201 Falcon Dr. Connellsville, PA 15425. Baseball-softball-football will notify EMS to the rear of the high school. Soccer-tennis-cross country will notify EMS to the front of the building, visible from Falcon Dr

CONNELLSVILLE AREA SPORTS MEDICINE EMERGENCY ACTION PLAN FOR CONNELLSVILLE STADIUM - HOME GAMES AND PRACTICES (FOOTBALL, SOCCER AND TRACK)

Emergency Personnel

- Certified Athletic Trainer (Mark S. Pohlot, LAT, ATC) cell # 724-323-2417
- Certified Athletic Trainer (Anthony DeCarlo, LAT, ATC) cell #412-551-5870
- Athletic Director (Richard Evans)
- Director of Security (Michael Parlak)
- Head Coach of the team involved in competition
- Team Physician(s) may be present (Dr. Gina Canada) (Dr. Andy Schleihauf)

Emergency Communications- Cell Phones or stadium phone (located in main office)

Emergency Equipment

- Supplies maintained on sidelines during competition: otherwise supplies are located in the athletic training room, located in the field house, home side.
- AED is located with ATC or in training room (when ATC is not there)

Roles of the Sports Medicine Team

- Immediate care of the injured or ill student-athlete **PHYSICIAN/Athletic Trainer**
- Activation of emergency medical system **(EMS)- Athletic Trainer, coach, or emergency personnel**
  - **911 CALL** – Provide name, address, phone number, number of individuals involved, condition of injury, first aid treatment, specific directions to location of injured athlete, and other information as requested by EMS operator.
  - Emergency equipment retrieval- **Student Assistants, coaches, or emergency personnel**
- Direction of EMS to scene –**Athletic Director, coach, or emergency personnel**
  - Meet EMS at gate entrance
- Control scene (move bystanders) speak with student-athlete's parents/guardians

Traveling with an injured athlete to the hospital- **Parent/guardian of injured athlete if available. If the parent /guardian is not available, the designated coach should travel with the injured athlete.**

Venue – Connellsville stadium is located at 1103 South Arch St. Connellsville, PA 15425. EMS should be directed to the entrance gate for buses and staff

CONNELLSVILLE AREA SPORTS MEDICINE EMERGENCY ACTION PLAN FOR DUNBAR TOWNSHIP STADIUM, BASEBALL & SOFTBALL FIELDS- HOME GAMES AND PRACTICES (FOOTBALL, SOCCER, BASEBALL & SOFTBALL)

Emergency Personnel

- Certified Athletic Trainer (Mark S. Pohlot, LAT, ATC) cell # 724-323-2417
- Certified Athletic Trainer (Anthony DeCarlo, LAT, ATC) cell #412-551-5870
- Athletic Director (Richard Evans)
- Director of Security (Michael Parlak)
- Head Coach of the team involved in competition
- Team Physician(s) may be present (Dr. Gina Canada) (Dr. Andy Schleihauf)

Emergency Communications- Cell Phones

Emergency Equipment

- Supplies maintained on sidelines during competition: otherwise, supplies are located with athletic trainer.
- AED is located with ATC (due to location and other sports AED may not be present)

Roles of the Sports Medicine Team

- Immediate care of the injured or ill student-athlete **PHYSICIAN/Athletic Trainer**
- Activation of emergency medical system **(EMS)- Athletic Trainer, coach, or emergency personnel**
    - **911 CALL –** Provide name, address, phone number, number of individuals involved, condition of injury, first aid treatment, specific directions to location of injured athlete, and other information as requested by EMS operator.
    - Emergency equipment retrieval- **Student Assistants, coaches, or emergency personnel**
- Direction of EMS to scene –**Athletic Director, coach, or emergency personnel**
    - Meet EMS at field
- Control scene (move bystanders) speak with student-athlete's parents/guardians

Traveling with an injured athlete to the hospital- **Parent/guardian of injured athlete if available. If the parent /guardian is not available, the designated coach should travel with the injured athlete.**

Venue – Dunbar Twp. Stadium and baseball field is at 301 Stadium Rd. Connellsville, PA 15425. Football and soccer will direct EMS to the side of the field opposite of the press box. Baseball will direct EMS to follow the road around the stadium to the baseball field, which is on the left side of the road. Softball will direct EMS to the press box side of the field.

CONNELLSVILLE AREA SPORTS MEDICINE EMERGENCY ACTION PLAN FOR AWAY VENUE

Emergency Personnel

- Certified Athletic Trainer (Mark S. Pohlot, LAT, ATC) cell # 724-323-2417
- Certified Athletic Trainer (Anthony DeCarlo, LAT, ATC) cell #412-551-5870
- Athletic Director (Richard Evans)
- Director of Security (Michael Parlak)
- Head Coach of the team involved in competition
- Team Physician(s) may be present (Dr. Gina Canada) (Dr. Andy Schleihauf)

Emergency Communications Cell phone or phone provided by home team.

Emergency Equipment All teams should have their medical kit with them along with emergency contact lists. All other equipment should be provided by the home team.

Roles of the Sports Medicine Team

- Immediate care of the injured or ill student-athlete Physician/Athletic Trainer if present.
- Activation of emergency medical system (EMS) - Athletic Trainer, coach,or emergency personnel if present.
    - **911 CALL –** Provide name, address (should be given by home team), phone number, number of individuals involved, condition of injury, first aid treatment, specific directions to location of injured athlete (should be given by home team), and other information as requested by EMS operator.

Traveling with an injured athlete to the hospital- **Parent/guardian of injured athlete if available. If parent/guardian is not available, the designated coach should travel with the injured athlete.**

CONNELLSVILLE AREA HIGH SCHOOL LIGHTNING-SAFETY EMERGENCY ACTION PLAN

Lightning can strike from 10 miles away. However, when the first sight of lightning or sound of thunder is heard all activities are to be suspended. (NFHS Policy). In order to ensure the safety and well-being of the student-athletes, coaches and spectators at practices and athletic events, it is necessary to establish a comprehensive action plan for lightning and other weather-related emergencies.

The following plan has been adapted from the **NATA Position Statement: Lightning Safety for Athletics and Recreation.** This plan includes the chain of command, designated weather watcher, means of monitoring local weather, safe locations, criteria for suspension and resumption of activity and use of recommended lightning-safety strategies.

Chain of Command:

- If present, the **Athletic Director** is the ultimate authority and has the duty of suspension of the practice or game if the weather conditions become unsafe. • If the AD is not present, the **Athletic Trainer** has the authority and duty of suspension of the practice or game if the weather conditions become unsafe. • If none of the above is present, the **head coach** of the team (or his/her designee) has the authority and duty of suspension of the practice or game if the weather conditions become unsafe.
- If the game is already underway the officials of the game are responsible for suspension of the game, it is the responsibility of the school officials listed above to inform the officials of the weather conditions and request suspension of the game. If the **officials** feel that the weather conditions are unsafe, the field should be evacuated, and athletes sent to a safe location immediately.

Designated Weather Watcher:

1. The designated weather watcher is the athletic trainer if present at the practice or game.
2. If the athletic trainer is not available, the athletic director(or his/her designee) shall be the designated weather watcher.
3. If none of the above is present, the head coach or their assistant coach shall be the weather watcher. It is the ultimate responsibility of the head coach to be aware of unsafe weather conditions.

Means of Monitoring the Weather:

1. Before practices and games, the athletic trainer, athletic director, and coaches should monitor the weather-by-weather reports and forecasts on television and on the internet.
2. During practices and games, the weather should be monitored by the chain of command if there is the possibility of lightning or storms in the area. If anyone sees signs of possible inclement weather, such sightings should be reported to the chain of command for decisions about suspension of outdoor activities.

Safe Sites for Inclement Weather:

1. The primary choice for a safe location from lightning hazard is in any substantial structure that is frequently inhabited. These buildings should have electrical wiring, telephone wiring or plumbing pathways because these fixtures aid in grounding the building. It is important that everyone is away from doorways and windows and not in contact with plumbing or wiring during thunderstorms.

2. The secondary choice for a safe location from the lightning hazard is an enclosed vehicle. Cars or buses with metal with roofs and windows closed afford protection from lightning.
3. Individuals must not be in contact with the metal framework of the vehicle.
4. During away events, student-athletes and coaches should evacuate to the closest safe structure as directed by the host team. If no safe structure is available, the student athlete and coaches shall evacuate to the teambus.

Criteria for Suspension and Resumption of Activity:

1. Teams should seek a safe structure or location at the first sign of lightning or thunder activity. Postponement or suspension of an activity or contest should occur if signs of imminent thunderstorm activity are observed. These signs include darkening clouds, high winds, and thunder or lightning activity.
2. Once activities are suspended, the activity cannot be resumed until 30minutes after the last sound of thunder or lightning flash. (NFHS policy)

CONNELLSVILLE AREA HIGH SCHOOL MEDICAL EMERGENCY ACTION PLAN

Treatment Strategies for Exertional Heat Illnesses

Dehydration

When athletes do not replenish lost fluids, they become dehydrated.

Sign and Symptoms:

- Dry mouth
- Thirst
- Being irritable or cranky
- Headache
- Seeming bored or disinterested
- Dizziness
- Excessive fatigue
- Not able to run as fast or play as well as usual

Treatment:

- Move the athlete to a cool environment and rehydrate.
- Maintain normal hydration
- Begin exercise sessions properly hydrated. Any fluid deficits should be replaced within 1 to 2 hours after exercise is complete.
- Hydrate with cool water or sports drink like Gatorade, which contains carbohydrates and electrolytes (sodium and potassium) before and during exercise.
- Hydrate throughout sports practice to minimize dehydration and maximize performance.
- Seek medical attention to replace fluids via an intravenous line if the athlete is nauseated or vomiting.

Return-to-Play Considerations:

If the degree of dehydration is minor and the athlete is symptom free, continued participation is acceptable.

Heat Cramps

Muscle cramps are not well understood. Heat cramps are often present in athletes who perform strenuous exercise in the heat. Conversely, cramps also occur in the absence of warm or hot conditions.

Signs and Symptoms:

- Intense pain (not associated with pulling or straining a muscle)
- Persistent muscle contractions that continue during and after exercise

Treatment:

- Reestablish normal hydration status and replace some sodium losses with a sports drink or water
- Some additional sodium may be needed (especially in those with a history of heat cramps) earlier in the activity.
- Ice light stretching, relaxation and massage of the involved muscle may help acute pain of a muscle cramp.

Return-to-Play Considerations:

Athletes should be assessed to determine if they can perform at the level needed for successful participation.

Heat Exhaustion

Heat exhaustion is a moderate illness characterized by the inability to sustain adequate cardiac output, resulting from strenuous physical exercise and environmental heat stress.

Signs and Symptoms:

- Athlete finds it hard or impossible to keep playing
- Loss of coordination, dizziness, or fainting
- Dehydration
- Profuse sweating or pale skin
- Headache, nausea, vomiting or diarrhea
- Stomach/intestinal cramps or persistent muscle cramps

Treatment:

- Remove the athlete from play and immediately move to a shaded or air-conditioned area.
- Remove excess clothing and equipment.
- Cool the athlete until the rectal temperature is approximately 101 F. Due to legal concerns obtaining rectal temperature will not be attempted.
- Have the athlete lie comfortably with legs propped above heart level.
- If an athlete is not nauseated, vomiting or experiencing Central Nervous System (CNS) dysfunction, rehydrate orally with chilled water or sports drink. If an athlete is unable to take oral fluids, implement intravenous infusion of normal saline which will be administered by EMS personnel.
- Monitor heart rate, blood pressure, respiratory rate and CNS status.
- Transport to an emergency facility if rapid improvement is not noted with prescribed treatment.

Return-to Play Considerations:

The athlete should be symptom free and fully hydrated; recommended physician

clearance; rule out underlying conditions that predisposed him/her for continued problems; and avoid intense practice in heat until at least the next day.

Exertional Hyponatremia

When an athlete's blood sodium levels decrease, either due to over hydration or inadequate sodium intake, or both, medical complications can result in cerebral and/or pulmonary edema. This tends to occur during warm/hot weather activities. Hyponatremia may be completely avoided if fluid consumption during activity does not exceed fluid losses.

Signs and Symptoms:

- Excessive fluid consumption before, during and after exercising (weight gain during activity)
- Increasing headaches
- Nausea, vomiting (often repetitive)
- Swelling of extremities (hands and feet)
- In some cases, severe muscle cramping is a sign

Treatment:

- If blood levels cannot be determined onsite, hold off on rehydrating the athlete (may worsen condition) and transport immediately to a medical facility.
- The delivery of sodium, certain diuretics or intravenous solutions may be necessary. All will be monitored in the emergency department to ensure no complications develop.

Return-to Play Considerations:

- Physician clearance is strongly recommended in all cases.

Exertional Heat Stroke

A severe illness characterized by central nervous system (CNS) abnormalities and potentially tissue damage resulting from elevated body temperatures induced by strenuous physical exercise and increased environmental heat stress.

Signs and Symptoms:

- Increase in core body temperature, usually above 104`F (rectal temperature) when athlete falls ill (due to legal concerns obtaining rectal temperature will not be attempted)
- Central nervous system dysfunction, such as altered consciousness, seizures, confusion, emotional instability, irrational behavior or decreased mental acuity
- Nausea, vomiting or diarrhea
- Headaches, dizziness, or weakness
- Hot and wet or dry skin
- Increased heart rate, decreased blood pressure of fast breathing
- Dehydration
- Combativeness

Treatment:

Aggressive and immediate whole-body cooling is the key to optimizing treatment. The duration and degree of hyperthermia may determine adverse outcomes. If untreated, hyperthermia- induced physiological changes resulting in fatal consequences may occur within vital organ systems (muscle, heart, brain, etc.). Due to superior cooling rates, immediate whole body cooling (cold water immersion), is the best treatment for EHS and should be initiated

within minutes post-incident. It is recommended to cool first and transport second if onsite rapid cooling and adequate medical supervision are available.

Return-to-Play Considerations:

The athlete's physician should devise a careful return-to-play strategy that can be implemented with the assistance of a qualified health care professional.

(Excerpt quoted from NATA statement on Exertional Heat Illness)

SUDDEN DEATH IN SPORTS

Asthma

Asthma is a chronic disease that affects the lungs. Asthma can be triggered by respiratory infections, exercise, pollutants, and allergens. Asthma symptoms often worsen with exercise. Some athletes have symptoms only with exercise (exercise-induced asthma). Exercise-induced symptoms occur commonly and are often more intense in cold weather. Symptoms typically develop 10 to 15 minutes after a brief period of exercise or about 15 minutes into prolonged exercise. Symptoms usually resolve with rest for 30 to 60 minutes.

Prevention:

- Athletes who may have or are suspected of having asthma should undergo a thorough medical history and physical examination by their family physician.
- Athletes with asthma should warm-up before exercise or sport activity to decrease reliance on medications and minimize asthmatic symptoms and exacerbations.

Signs and Symptoms:

- Wheezing sound when breathing out
- Chest tightness
- Coughing during or after exercise
- Unable to control breathing

Treatment:

Treatment for those with asthma includes recognition of exacerbating factors and the proper use of asthma medications given to them by their family physician. The use of an albuterol inhaler 15 minutes prior to exercise will usually control the symptoms of exercise- induced asthma or instructions given to the athlete by their family physician. If the athlete has difficulty walking or talking due to shortness of breath or their lips are blue, this is indicative of a medical emergency and EMS should be activated.

Return-to-Play Considerations:

No specific guidelines describe RTP after an asthma attack in an athlete. However, in general, the athlete should first be asymptomatic and progress gradually in exercise activity.

Catastrophic Brain Injuries

A concussion is a type of traumatic brain injury that interferes with normal brain function. It occurs when the brain is rocked back and forth or twisted inside the skull because of a blow to the head or body. What may appear to be only a mild jolt or blow to the head or body can result in a concussion. Cerebral concussion is classified as mild traumatic brain injury and often affects athletes in both helmeted and non-helmeted sports. Although they are rare, severe catastrophic traumatic brain injuries, such as subdural and epidural hematomas and malignant cerebral edema (i.e., second-impact syndrome), results in more fatalities from direct trauma

than any other sport injury. When these injuries do occur, brain swelling or pooling of blood (or both) increases intracranial pressure; if this condition is not treated quickly, brainstem herniation and respiratory arrest can follow.

Prevention:

Preventing catastrophic brain injuries in sports, such as skull fractures, intracranial hemorrhages, and diffuse cerebral edema (second-impact syndrome), should involve the following: prevention and education about traumatic brain injury for athletes, coaches, and parents. Along with enforcing the standard use of sport-specific and certified equipment (e.g., National Operating Committee on Standards for Athletic Equipment-NOCSAE). Being properly prepared for on-field medical management of a serious head injury should be reviewed annually. The Athletic Trainer should ensure that all equipment meets NOCSAE standards. A poorly fitted helmet is limited in the amount of protection it can provide, and the Athletic Trainer should play a role in enforcing the proper fit and use of the helmet. Protective sport helmets are designed primarily to help prevent catastrophic injuries (e.g., skull fractures and intracranial hematomas) and not concussions. A helmet that protects the head from a skull fracture does not adequately prevent the rotational and shearing forces that lead to many concussions, a fact that many people misunderstand.

Signs and Symptoms:

- Headaches
- Nausea
- Balance problems or dizziness
- Double or fuzzy vision
- Sensitivity to light or noise
- Feeling sluggish
- Feeling foggy or groggy
- Concentration or memory problems
- Confusion

Treatment:

Once the athlete has been thoroughly evaluated and identified as having sustained a concussion by an appropriate health-care professional, remove the athlete from play. The athlete should be immediately referred to a physician or sent home with observation instructions. If symptoms persist after a concussion, the athlete should be immediately referred to a medical facility.

Return-to-Play Considerations:

Any athlete returning to activity must have a written note from their Physician or Neuropsychologist stating they are cleared to play after sustaining a concussion. The Athletic Trainer will follow the Physician or neuropsychologists' instructions for return-to-play. If symptoms occur at any time during the return-to-play protocol, the athlete should discontinue activity and be re-evaluated by their health care professional.

Cervical Spine Injuries

A catastrophic cervical spinal cord injury occurs with structural distortion of the cervical spine column and is associated with actual or potential damage to the spinal cord. The spinal injury that carries the greatest risk of immediate sudden death for the athlete occurs when the damage is both severe enough and at a high enough level in the spinal column (above C5) to affect the spinal cord's ability to transmit respiratory or circulatory control from the brain. The priority in these situations is simply to support the basic life function of breathing and circulation.

Prevention:

- The Athletic Trainer should be familiar with sport-specific causes of catastrophic cervical spine injury and understand the physiologic responses in spinal cord injury.
- Coaches and athletes should be educated about the mechanisms of catastrophic spine injuries and pertinent safety rules enacted for the prevention of cervical spine injuries.
- Helmets should undergo regular reconditioning and recertification with corrosion resistant hardware during the season.
- Emergency personnel (EMS) should become familiar with proper athletic equipment removal.

Signs and Symptoms:

- During initial assessment, the presence of any of the following, alone or in combination, requires the initiation of the spine treatment protocol:
    - Unconsciousness or altered level of consciousness
    - Bilateral neurological findings or complaints
    - Significant midline spine pain with or without palpation
    - Obvious spinal column deformity

Treatment:

Create as little motion as possible. The cervical spine should be in neutral position, and manual cervical spine stabilization should be applied immediately. Establish if EMS should be notified. If EMS is called, immediate attempts should be made to expose the airway. If rescue breathing becomes necessary, establish an airway and begin rescue breathing using the safest technique. Once EMS arrives the emergency personnel shall make the final decisions in transporting the injured athlete to the nearest hospital or what their protocols refer to.

Return-to-Play Considerations:

- Return-to-play after a cervical spine injury is permitted only with a clearance from the athlete's Physician.

<u>Diabetes Mellitus</u>

Diabetes mellitus (commonly known as diabetes) is a group of metabolic disorders which result in high blood sugar levels. The primary types of diabetes are Type 1 diabetes (insulin dependent), in which the body fails to produce insulin and Type 2 (non-insulin-dependent), which results from cells not being able to properly use insulin.

Prevention:

- The Athletic Trainer and coaching staff should know what athletes have diabetes.
- The athlete should be responsible enough to manage their diabetes with planned help from their Physician.

Signs and Symptoms of Hyperglycemia:

- Increased need to urinate and drink water
- Nausea and vomiting
- Abdominal pain
- Fast breathing
- Increase heart rate
- Confusion
- Fruity odor to breath

Signs and Symptoms of Hypoglycemia:

- Sweating
- Hunger

- Cool, pale skin
- Confusion
- Fainting
- Weakness
- Fatigue

Treatment:

Each athlete with diabetes will have a different regimen of diet, exercise, and medications to manage the condition. Athletes with Type 2 diabetes are usually not required to regularly monitor their blood sugar levels. Daily diabetes management will largely be the responsibility of the athlete and will vary with the day's activities. If a diabetic athlete exhibits any of the symptoms of hypoglycemia or hyperglycemia it should be considered a potential medical emergency. The athlete should be removed from play and follow the action plan set forth by their medical provider (Physician). All athletes with Type 1 diabetes should have their own "glucagon kit" available during all practices and games.

Return-to-Play Considerations:

A specific return-to-play guideline after hypoglycemic or hyperglycemic events does not exist. However, the athlete should demonstrate a stable blood glucose level that is within the normal range before return-to-play.

Sickle Cell Trait

Sickle cell trait (SCT) is not a disease, but a description of a type of hemoglobin gene. Hemoglobin carries oxygen in the bloodstream. SCT differs from sickle cell anemia in that the trait is present when one gene for sickle cell hemoglobin is inherited from one parent while a normal hemoglobin gene is inherited from the other. If a sickle cell gene is inherited from each parent, the child will then have sickle cell anemia. Sickle cell anemia is a serious disorder which typically causes severe medical problems early in childhood which continue into adulthood. People with SCT rarely have any symptoms of the condition. However, they may develop problems under extreme physical stress or with low oxygen levels (high-altitude). People with ancestors from Africa, Mediterranean countries, India, South or Central America, and Saudi Arabia are at increased risk for having SCT.

Prevention:

- Athletes with known SCT should have the Athletic Trainer informed of their condition on the pre-participation physical form.
- Athletes with known SCT should be allowed longer periods of rest and recovery between conditioning repetitions.
- Athletes should be watched carefully or excluded from participation in performance tests such as mile runs and serial sprints.
- Adjust work-rest cycles in the presence of environmental heat stress
- Emphasize hydration
- Control asthma (if present)
- Not to work out if feeling ill

Sign and Symptoms:

- Appears dazed or confused
- Appears weak
- Having difficulty breathing

• Muscle pain, weakness and/or cramping with more of a general area but still strong

Treatment:

• Signs and symptoms of sickling warrant immediate withdrawal from activity.

• The Athletic Trainer should monitor vital signs and activate the emergency plan if vital signs decline.

• If an athlete with SCT collapses this should be treated as a medical emergency.

Return-to-Play Considerations:

After a nonfatal episode, the athlete may return to their sport the same day once their conditions are managed, and symptoms subside. If a fatal episode arises, the athlete must be cleared by a Physician.

Head-Down Contact in Football

Sudden death from a cervical spine injury is most likely to occur in football from a fracture- dislocation above C4. Axial loading is accepted as the primary cause of cervical spine fractures and dislocations in football players. Axial loading occurs secondary to head-down contact, whether intentional or unintentional, when the cervical vertebrae are aligned in a straight column. What happens is the head is stopped due to contact, the trunk keeps moving, and the spine is crushed between the two. When maximum vertical compression is reached, the cervical spine fails, resulting in damage to the spinal cord. Football helmets have been successful in reducing the number of catastrophic brain injuries. However, it is not the cause or solution for cervical spine fracture, because of the head-first impact. Due to the body still in motion, no football helmet can withstand the amount of force placed on the cervical spine by the trunk of the body.

Prevention:

• Athletes should initiate contact with the shoulder while keeping the head up (see what you hit).

• Coaches should spend time with the athletes in teaching and practicing correct techniques with all position players.

Sign and Symptoms:

• Lowering of the head upon contact

• Not being able to see what you hit

• Athlete is trying to protect their eyes and face by lowering the head

Treatment:

An athlete with a cervical spine injury, due to head-down contact, should follow the cervical spine injury treatment.

Return-to-Play:

Athletes with cervical spine injuries need to have a clearance from their Physician.

Sudden Cardiac Arrest

- Sudden cardiac arrest is the leading cause of death in athletes. The athlete usually has an underlying cause for sudden cardiac arrest, which could be a structural cardiac abnormality. Commotio cordis is a blunt, nonpenetrating blow to the chest that induces ventricular arrhythmia in a normal heart and can cause sudden death in athletes.
- Many more structural abnormalities can cause sudden cardiac arrest in athletes and should be pointed out by the athlete in their physical form prior to athletic season.

Prevention:

- Know which athletes are at risk from their pre-participation physical form. Access to early defibrillation (if possible) is crucial.

Signs and Symptoms:

- Any athlete who has collapsed and unresponsive should be suspected of having a cardiac arrest.

Treatment:

If normal breathing and pulse are absent CPR should be started immediately and EMS activated. Retrieval of an AED should also be activated. Follow the EAP and continue to perform CPR until EMS arrives or the athlete regains consciousness.

<u>Dental & Oral Injuries</u>

Dental and Oral-related injuries continue to grow in high school athletics. There are only a few sports in high school that mandate mouth guards, such as hockey & football. There is a growing percentage of non-mandated mouth guard sports that have an increased risk of dental & oral injuries.

Types of Injuries:

- Tooth fractures
- Root fractures
- Tooth displacement injuries

Prevention:

- The Athletic Trainer should be familiar with emergency dental care of athletes and have an adequate knowledge of the teeth and jaw. Recognition of signs and symptoms of acute dental injuries are also important.
- An athlete that sustains a dental or oral injury should also be screened for a concussion. Since there is an overlap between sports-related dental injuries and concussions.
- Healthcare professionals, athletes, coaches, and parents should be educated on the importance of wearing a properly fitted mouth guard to reduce the risk of a dental or oral injury.

Sign and Symptoms:

Tooth fractures such as crown infractions, enamel only fractures, enamel-dentin crown fractures and enamel dentin pulp fractures are not considered to hold an athlete out of competition. Root fractures are less common than crown fractures however they are more serious and should be evaluated by a dentist. Tooth displacement injuries usually result from a traumatic force and should be referred to a dentist.

Treatment:

An athlete with a dental or oral injury should be evaluated and treated after sustaining the injury. Blood control along with injury recognition needs to be implemented to properly diagnose the problem. Upon evaluation the athletic trainer should recognize the injury and refer as necessary.

Return-to-Play Considerations:

For the most part dental and oral injuries are not common to hold athletes out from competition. With most dental and oral injuries pain is their guide for return-to-play. If any athlete goes to a dentist or physician for evaluation, as recommended by the athletic trainer or on their own, a note stating diagnosis and a clearance for participation must be present before allowing the athlete to return to activity.