MONETT HIGH SCHOOL

SPORTS MEDICINE HANDBOOK

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District Contact List

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Sarah Garner, Assistant Principal
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Monett Intermediate School
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School Resource Officer
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Athletic Director
Daryl Bradley
Mobile: 417-236-4223

Michael Calhoun, Assistant AD
Mobile: 417-440-0519

Emergency Phone Numbers

Emergency Services	**9-1-1**
Cox Health - Monett 801 Lincoln Ave., Monett, MO 65708 *24-Hour Emergency Department*	(417) 235-3144
Cox Health – Springfield 3801 S. National Ave., Springfield, MO 65803 *24-Hour Level 1 Trauma Center*	(417) 269-4083
Mercy Hospital – Aurora 500 S. Porter Ave., Aurora, MO 65605 *24-Hour Emergency Department*	(417) 678-2122
Mercy Hospital – Cassville 94 Main St., Cassville, MO 65625 *24-Hour Emergency Department*	(417) 847-6000
Mercy Hospital – Springfield 1235 E. Cherokee St., Springfield, MO 65804 *24-Hour Level 1 Trauma Center*	(417) 820-2115
Mercy Hospital – Joplin 100 Mercy Way, Joplin, MO 64804 *24-Hour Emergency Department*	(417) 556-3729
Monett Police Department 1901 E. Cleveland, Monett, MO 65708	(417) 235-3335 or 9-1-1 (Emergency) (417) 235-4241 (Non-Emergency)
Monett Fire Department 211 Fifth St., Monett, MO 65708	(417) 235-3131 or 9-1-1 (Emergency) (417) 235-7799 (Non-Emergency)
Barry-Lawrence County Ambulance District 307 Dairy St., Monett, MO 65708	(417) 235-3102 (Non-Emergency)
Lawrence County Sheriff's Department 300 E. Water St., Mt. Vernon, MO 65712	(417) 466-2131 (Non-Emergency)
Barry County Sheriff's Department 505 East St., Cassville, MO 65625	(417) 847-6556
Poison Control Center	1-800-222-1222

Other Helpful Numbers

Missouri Child Abuse Hotline	1-800-392-3738
Lawrence County Children's Division	(417) 678-4138
Barry County Children's Division	(417) 847-4761
National Child Abuse Hotline	1-800-4-A-CHILD (1-800-422-4453)
National Teen Dating Abuse Helpline	1-866-331-8474
National Domestic Abuse Hotline	1-800-799-7233
National Suicide Prevention Lifeline	1-800-273-TALK (8255)
Covenant House Nineline *Homeless & Runaway Teens*	1-800-999-9999
Youth America Hotline *Peer-to-Peer Counseling*	1-877-YOUTHLINE
Boys Town National Hotline *Suicide Prevention & At-Risk Teens*	1-800-448-3000

Athletic Health Care Team

Amanda Harbaugh, athletic trainer
The athletic trainer is the coordinator of the athletic health care team. The primary responsibilities of the athletic trainer are prevention, evaluation, and rehabilitation of athletic injuries. Prevention can take the form of many items including, but not limited monitoring weather conditions; ensuring safety of equipment and practice/playing surface; and sharing best practices of various athletic activities. Additional responsibilities include administration of the sports medicine department, clear communication with coaching staff, school administration, and emergency personnel, maintaining student medical files, and working in conjunction with the school nurse.

Dr. Boyd Crockett, supervising physician
The role of the supervising physician is to provide medical oversight to the athletic trainer(s), and to provide final clearance in situations of disputed return to play. The supervising physician is often the first referral made by the athletic trainer.

Daryl Bradley, athletic director
It is the role of the athletic director to provide a budget for the sports medicine department, act as a liaison between the athletic trainer and school administration, and enforce safety and policy when additional intervention between coaching staff and medical staff is needed.

Paula Fenske, school nurse
The school nurse and athletic trainer should work closely together notifying each other of injuries sustained by student-athletes. During the school day, the school nurse is responsible for initial or continued care of student-athletes. The school nurse provides care within their scope of practice for injuries such as dispensing pain relievers, applying elastic wraps, and providing wound care and ice packs. The school nurse also disseminates doctor's notes to the appropriate individuals.

Coaching Staff
It is the responsibility of the coaching staff to refer all injuries immediately to the athletic trainer. If the athletic trainer is unavailable, the coaching staff will provide basic first aid and facilitate getting the athlete scheduled with the athletic trainer for evaluation at a later time. MSHSAA requires all coaches to be first aid, CPR, and AED certified. The coaching staff must follow all recommendations set forth by the medical staff.

Local Emergency Personnel
Local emergency personnel are crucial to the athletic health care team. Their expertise and emergency equipment are vital to the health and safety of student-athletes. It is the responsibility of local emergency personnel to be familiar with venue specific EAPs and Cox Health policies and procedures in order to facilitate a smooth transition of care between the athletic trainer and emergency medical services. Transition of care does not take place until released by an athletic trainer.

General Sports Medicine Policies

Return to Play

Any athlete referred to a physician by the athletic trainer must have a note signed by the practitioner before returning to activity. All progress or release notes are to be turned in to the school nurse or athletic trainer. It is the prerogative of the athletic trainer and/or coaching staff to hold an athlete out for additional time based upon various parameters including, but not limited to, lost practice time and athlete's functional capacity. Coaches may not make any return to play decisions at any time.

Concussion RTP

Concussion Return to Play is a multi-step process required by MSHSAA, Cox Health, and Monett R-1. Any student diagnosed with a concussion must go through the entire return to play protocol regardless of clearance by another health care provider. Due to legal liability, no one (including parents) is allowed to waive the return to play process. The following steps must be completed before an athlete is allowed to return to full activity. Each step requires a minimum of 24 hours.

1. Full-academic activity
2. ImPACT test returns to baseline. If no baseline is on file, athlete will be held out until a full return to cognitive function can be established.
3. Light cardiovascular exercise.
4. Running in the gym or on the field. No helmet or other equipment.
5. Non-contact training drills in full-equipment. Weight training can begin.
6. Full, normal practice or training (a walk-through practice does not count as a full, normal practice).
7. Full Participation. Must be cleared by primary care physician before returning to play.

More information on concussion and return to play guidelines can be found within the concussion policy.

Medical Kits

Every team is assigned a medical kit at the beginning of their season. It is the responsibility of the team to ensure the kit remains in good repair and properly stocked. When items such as tape or bandages are needed, the head coach may procure additional supplies from the athletic trainer. Non-consumable items such as storage containers, tape cutters, and bottles should be returned in their original condition. Damaged goods may result in charges to the team account to replace the items. Kits should be cleaned of trash, dirt, and other debris before being returned at the end of season.

Appendix A shows the items that should be found in every team kit along with the cost to replace missing items.

Water, Ice, and Necessary Equipment

It is the responsibility of each team to set up their own water stations for practice and games. If ice, water, and/or cups are needed at an off-site location, the coaching staff must make arrangements for pick-up and delivery. The sports medicine staff is not responsible for transportation of such items.

Coolers, water bottles, and ice chests loaned by the sports medicine department are property of Monett High School Sports Medicine. All attempts should be made to keep these items in good working order. If they are lost or damaged, the team account will be charged to replace or repair the items. It is the responsibility of each team to ensure items are thoroughly cleaned upon return to the sports medicine department. The MHS cafeteria staff will often wash water bottles when asked in advance. Cleaning supplies for coolers and ice chests are available in the athletic training room.

Evaluation and Treatment Procedures

The on-site athletic trainer will immediately evaluate injuries sustained during athletic contests. Due to the nature of the sports schedule, multiple events may occur simultaneously. In this situation, the athletic trainer will attend the higher risk sport (as determined by the athletic trainer and athletic director) leaving lower risk events and all practices without immediate medical coverage. In the situations in which an athletic trainer is not present, the coach shall immediately contact the athletic trainer. The athletic trainer may chose to immediately evaluate or offer treatment suggestions to be performed by the coaching staff in their absence. If an injury is not immediately evaluated or reported, the following process will occur:

1. The athlete will notify coach of injury.
2. The coach will contact the athletic trainer to set-up a time the next day (or current day for injuries reported the day after), for evaluation. Evaluations may take place during resource time in the afternoon with teacher's permission and full passing grades or immediately after school depending on the athlete and athletic trainer's schedules for that day.
3. The athletic trainer will notify the coach will brief verbal instructions for athlete's activity level.
4. Written instructions for the coaching staff will be provided within 24 hours.
5. Treatment for injuries will take place during resource time or after school dependent upon the athlete's schedule and what is deemed most appropriate by the athletic trainer.

No athlete may be excused from class for injury evaluation and treatment. If the athlete does not have resource time during athletic training room hours, they must come after school.

Athletic Training System

All athletes are to maintain an active account within Athletic Training System. This allows for notification of injuries to medical staff and coaching staff, quick

documentation of injuries, and a tracking system for required paperwork. ATS accounts must be established within the first week of practice.
Detailed instructions for setting up and updating a current ATS account are available in Appendix B.

ImPACT Baseline Testing

ImPACT testing is a valuable tool in determining return to play after a concussion. In order to best use the testing system, athletes must have a baseline on file prior to the first day of practice. Baselines must be updates ever 2 years. Baselines are *required* for collision and contact sports and *highly recommended* for limited contact sports. Baseline testing opportunities are available during the summer and the week prior to winter and spring sports seasons. More information about baseline testing is available within the concussion protocol.

Collision	*Limited Contact*
Football	Baseball
	Softball
Contact	Pole Vault
Basketball	Volleyball
Wrestling	
Soccer	
Cheer	

Pre-Participation Examinations

All athletes must have a pre-participation examination on file before the first day of required physical activity. Exams must be documented on the MSHSAA-approved form provided by the school. All additional forms associated with the PPE packet must also be filled out in their entirety prior to the first day of practice. When a known medical risk is noted on the PPE, the athletic trainer will communicate with athlete and athlete's parents about necessary precautions and risks associated with their chosen sport.

If an athlete needs a copy of their PPE for any reason, a one-week notice is required.

Hygiene, Communicable Diseases, and Skin Disorders

Proper hygiene of student-athletes is imperative to keep communicable diseases to a minimum. Athletes should be encouraged to shower immediately after practice and games, preferably before leaving the athletic facility if possible. Athletes should also be encouraged to take home personal gear such as undergarments, workout apparel, and school clothes daily and wash/disinfect shoes weekly. Shoulder pads and other school-owned, sports-related gear should be disinfected weekly. Each team should have a written cleaning schedule. A blank schedule is available in appendix C.

Student-athletes, parents, and coaches are educated on proper hygiene and skin disorders at the annual pre-season meeting.

Personal Protection Items and Equipment

The easiest form of protection of student-athletes comes from personal protection items that fits the athlete well and has been properly maintained and properly maintained equipment. When fitting personal protection items, it is imperative that manufacture recommendations are followed, and items are fitted by qualified personnel trained in fitting that specific brand of equipment. If items have been damaged should be removed from use until properly repaired or replaced. Personal protection items such as shoulder pads should be sent to the manufacturer annually for reconditioning.

Sports-related equipment should be properly maintained as well. Equipment that is damaged should be removed from use until properly repaired or replaced. Torn pads and weight room benches should be recovered, as foam padding can become a breeding ground for bacteria.

Sports Medicine

CoxHealth Sports Medicine Automated External Defibrillator (AED) Policy and Procedures

Policy

Cox Health Sports Medicine personnel equipped with an AED should check the AED on a daily basis. To check the AED open the cover. Push the green "ON" button and listen for the beeps. The battery power monitor is located on the handle of the AED. If it says "OK" when turned on and off then the AED is good to go. Also check to make sure pads, razor and towel are located in the holder with the AED. Sign off and date on clipboard, once completed.

The on-site certified athletic trainer (AT) will follow procedure as a guide to use the AED.

Procedure

1. Determine possible need for AED by assessing patient. Even if patient does not need at moment of assessment, but you suspect it's a possibility, retrieve the unit.
2. Retrieving the AED unit for a code blue.
   A. If you are alone, go to nearest phone and call 9-911. Make sure to give your specific location (High School, Stadium address.) Retrieve the AED unit, return to the patient and begin CPR/AED procedures. *
   B. If another staff member or coach is close by, send them to call 911 and retrieve the AED. Begin CPR while waiting for AED.
   C. During this process, activate your emergency action plan for your specific site, making sure someone is stationed to direct EMS when they arrive.
3. AED use on patient in wet areas (shower, steam room, whirlpool, pool)
   A. Move patient away from standing water (i.e. remove from pool, whirlpool)
   B. Dry the patient's chest thoroughly, not just where defibrillation pads will be placed.
4. CoxHealth sports medicine employees will coordinate and facilitate BLS procedures during actual events. The assistance of off-duty medical personnel may be utilized by sports medicine staff if available and needed. School staff and/or security should clear the immediate area of bystanders when possible. Sports medicine staff will manage events as trained by BLS for Healthcare Providers.

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CoxHealth

Sports Medicine

CoxHealth Sports Medicine Cervical Spine Injuries Policy and Procedures Policy
CoxHealth Sports Medicine has adopted the National Athletic Trainers' Association Position Statement: Acute Management of the Cervical Spine Injured Athlete (2009)[1].

The on-site AT will follow procedure as a guide when a cervical spine injury is suspected. Any unconscious athlete will be treated as having a cervical spine injury.

Procedure

*All individuals responsible for the care of athletes should be involved in regular (at least annual) rehearsals of the emergency action plan, as well as training and practice in the special skills inherent to managing a cervical spine injury.[1]

1. **Any athlete suspected of having a spinal injury should not be moved and should be managed as though a spinal injury exists.**
    a. During initial assessment, the presence of any of the following findings, alone or in combination, heightens the suspicion for a potentially catastrophic cervical spine injury and requires the initiation of the spine injury management protocol: unconsciousness or altered level of consciousness, bilateral neurologic findings or complaints, significant midline spine pain with or without palpation, and obvious spinal column deformity.[1]
    b. When a potential spine injury is suspected, rescuers should ensure that the cervical spine is in a neutral position and should immediately apply manual cervical spine stabilization. This will minimize motion during the management of the injury.[1]
    c. Rescuers should not apply traction to the cervical spine, as this may cause distraction at the site of injury. Traction in a cervical spine with ligamentous injury can result in excessive distraction and subluxation that can further compromise the spinal cord.[1]
    d. If the spine is not in a neutral position, rescuers should realign the cervical spine to minimize secondary injury to the spinal cord and to allow for optimal airway management. However, the presence or development of any of the following, alone or in combination, represents a contraindication for moving the cervical spine to neutral position: the movement causes increased pain, neurologic symptoms, muscle spasm, or airway compromise; it is physically difficult to reposition the spine; resistance is encountered during the attempt at realignment; or the patient expresses apprehension.[1]
2. **Check Airway, Breathing, and Circulation (ABCs), neurological status, and level of consciousness**

a. Rescuers should immediately attempt to expose the airway, removing any existing barriers (example, protective face masks).[1]
b. If rescue breathing becomes necessary, the individual with the most training and experience should establish an airway and commence rescue breathing using the safest technique.[1]
c. During airway management, rescuers should cause as little motion as possible.[1]
d. The jaw-thrust maneuver is recommended over the head-tilt technique, which produces unnecessary motion at the head and in the cervical spine. Advanced airway management techniques (example, laryngoscope, endotracheal tube, *nasopharyngeal tube*) are recommended in the presence of appropriately trained and certified rescuers; these methods have been shown to cause less motion and, therefore, are less likely to worsen neurologic status.[1]

3. **Activate EMS (Call 911)/CoxHealth Standard Emergency Action Plan**
4. **If the athlete must be moved to maintain airway, breathing, and circulation, the athlete should be placed in a supine position while maintaining spinal mobilization.**
    a. Manual stabilization of the head should be converted to immobilization using a combination of external devices (example, cervical collars, foam blocks), and stabilization of the cervical spine should be continued until a destabilizing injury has been ruled out using appropriate diagnostic testing (imaging). Whenever possible, manual stabilization should be resumed after the application of external devices.[1]
    b. A variety of techniques exist to transfer and immobilize the injured athlete. Rescuers should use the technique that they have reviewed and rehearsed and that produces the least amount of spinal movement.[1]
    c. To facilitate transfer, the patient's body should be aligned as carefully as possible. Arms should be carefully moved to the sides and legs straightened and positioned together.
    d. If the athlete is prone, rescuers should inspect the spine before moving him or her.[1]
    e. If it is necessary to reposition the patient once on the spine board, he or she should not be moved in a perpendicular direction, to avoid shearing and the possibility of spinal column movement. Instead, the patient should be moved in either a cephalad or caudad direction, as deemed necessary by the rescuer controlling the head and neck.[1]
5. **For the supine athlete, a lift-and-slide technique *(example*, 6-plus-person lift, straddle lift and slide) of transferring the athlete to an immobilization device has been reported to produce less motion at the head and in the cervical spine than the log-roll technique and should be used in appropriate situations.**[1]
    a. The 6–plus-person lift involves lifting the athlete to allow for spine board placement. This technique is effective in minimizing structural interference that could result in unwanted spinal column movements.[1]

b. The straddle lift-and-slide technique requires only 4 rescuers to lift the body.[1]

6. **For the prone athlete, all potential rescuers must be familiar with the log-roll method.**[1]
    a. **It (*log-roll method*) is the only method of transferring to an immobilization device for an athlete who is prone.**[1]
    b. The log-roll technique requires 4 to 5 rescuers: 1 to control the head and cervical spine, 2 to 3 to roll the patient on command, and 1 to position the spine board.[1]

**Because removal of athletic equipment such as helmet and shoulder pads may cause unwanted movement of the cervical spine, removal of helmet and shoulder pads should be deferred until the athlete has been transported to an emergency medical facility, except under specifically appropriate circumstances. [1]

a. The first exception is if the helmet is not properly fitted to prevent movement of the head independent of the helmet. This is imperative, because when the helmet is left in place, it is responsible for securing the head, and, as such, immobilization of the helmet necessarily results in immobilization of the head. The second exception is if the equipment prevents neutral alignment of the cervical spine or airway access. This exception is further addressed in the following recommendations.[1]
b. Independent removal of the helmet or shoulder pads in American football and ice hockey is **not** recommended, because removing one and not the other compromises spinal alignment. Removal of the helmet and shoulder pads in these sports should be considered an all-or-nothing endeavor.[1]
c. No general recommendation regarding removal of equipment can be made for other sports that require a helmet (with or without shoulder pads) because of considerable variation in the capacity of that equipment to maintain a neutral cervical spine or immobilize the head. The primary acute treatment goals in these sports are to ensure that the cervical spine is properly aligned and that the head and neck are immobilized. Upon observation, if the equipment being worn does not permit the cervical spine to rest in neutral or does not adequately immobilize the head, then removal of one or more pieces of equipment in a safe manner is advisable to achieve neutral alignment or adequate stabilization (or both).[1]
d. If the athletic helmet is dislodged during the injury or removed (by either the medical team or the athlete) or if the shoulder pads cannot be easily removed, care must be taken to place padding beneath the head to maintain neutral cervical spine alignment. [1]
e. A rigid cervical immobilization collar should be placed on the athlete before transfer to a spine board. In equipment-laden sports, this may be difficult or impossible, although a cervical vacuum immobilization device has been shown to limit cervical spine range of motion in the fully equipped football player.[1]
f. All individuals responsible for the care of athletes should be involved in regular (at least annual rehearsals of the emergency action plan, as well

as training and practice in the special skills inherent to managing a cervical spine injury.[1]

7. Establish Airway

a. Face masks that interfere with the ability to access the airway should be completely removed from the helmet[1]

b. Face-mask removal should be initiated once the decision to immobilize and transport has been made.[1]

c. Rescuers should be aware of, and well trained in, established face-mask removal techniques. The face mask should be removed with the tool and technique that perform the task quickly and with minimal movement and difficulty. [1]

   i. A powered (cordless) screwdriver is generally faster, produces less head movement, and is easier to use than cutting tools; it should be the first tool used in attempting to remove a face mask attached with loop straps that are secured with screws. Because it may be impossible to remove the screws, a backup cutting tool, specifically matched to the sport equipment used, should be available. This is referred to as a combined-tool approach.[1]

d. <u>Face mask Removal</u>[1]

   i. Removing the loop straps from face masks can be a difficult skill and requires extensive practice.

   ii. For a football helmet face mask with 4 attachment locations, the 2 side straps should be removed first, followed by the top straps. This prevents the face mask from rotating down onto the athlete's face or throat during the removal attempt.

   iii. Placing pressure on the underside of the loop strap with the thumb of the other hand while unscrewing can assist in separating the screw from the T-nut.

   iv. If, when attempting to remove the screws from the helmet, 1 or more screws cannot be removed, it is important to continue with the next screw until all screws that can be unscrewed are successfully removed.

   v. If a backup cutting tool is required, ensure that the tool chosen will successfully cut the loop straps currently being used in the helmets worn by the football team or teams being covered. Not all facemask removal tools will remove all helmet–loop strap combinations.

   vi. A screwdriver may not suffice as a backup tool for loop straps secured with a quick-release mechanism rather than a traditional screw and T-nut attachment system. Therefore, an appropriate backup tool should be available to cut away the loop strap should the quick-release system fail.

e. If the face mask cannot be removed in a reasonable amount of time, then the helmet should be removed from the athlete in the safest manner possible. Helmet style will dictate the technique necessary to safely remove the helmet. A neutral cervical spine position should be preserved

during and after this process by removing additional pieces of equipment (*example*, shoulder pads) or by placing an object underneath the head (*example*, towel, padding) to maintain neutral alignment.

f. Head immobilization[1]

i. The head should always be the last part of the body secured to the spine board.
ii. A variety of head-immobilization options exist, including commercial head-immobilization devices, contoured helmet blocks, foam blocks, and towel rolls. Sand bags are not recommended as head-immobilization devices, as their weight is a liability during transfer.
iii. Once the selected head-immobilization device is placed to stabilize the head, tape or hook-and-loop straps should be used to secure the head to the spine board using 2 separate points of contact, the chin and the forehead, to prevent as much head and neck motion as possible.
iv. A spine board kit should contain all necessary packaging supplies: head-immobilization device, cervical collar, face-mask–removal tools, straps to secure the athlete to the board, wrist straps to secure the athlete's hands together, tape, and various sizes of padding or toweling. (Spine board on the ambulance or provided by school system)
v. Rescuers should select the strapping technique with which they are most comfortable and skilled.
vi. When securing the athlete to the spine board, the arms should be kept free to facilitate a variety of diagnostic and treatment techniques.
vii. Once the torso is secured to the spine board, the hands may be secured together on top of the body using hook-and-loop wrist straps or tape.
viii. The athlete should be restrained and secured sufficiently to the spine board that the board may be turned without creating spinal movement, in case, for example, the athlete vomits.
ix. Some athletes with cervical spine injuries may have concurrent closed head injuries. Therefore, rescuers may encounter combative athletes who resist immobilization. The rescuers should attempt to calm the patient and minimize movement as much as possible based upon the individual circumstances.
x. The ambulance should be positioned as close to the scene as possible to minimize transfer on a stretcher over surfaces that may cause body movement.

*8. **Appropriate Transfer of Athlete Care to EMT and/or Hospital/ER Staff***

Reference

1. Swartz, E.E., Boden, B.P., and Courson, R.W., et al. National Athletic Trainers' Association Position Statement: Acute Management of the Cervical Spine-Injured Athlete. *Journal of Athletic Training*. 2009;44(3):306-331.

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Sports Medicine

CoxHealth Sports Medicine Concussion Policy and Procedures

CoxHealth Sports Medicine has adopted the Consensus Statement on Concussion in Sport (Zurich 2012)[3] guidelines, which will be updated as research emerges.

Definition
The 3rd International Conference on Concussion in Sport (2008) defined a concussion as "a complex pathophysiological process affecting the brain, induced by traumatic biomechanical forces. Several common features that incorporate clinical, pathologic, and biomechanical injury constructs that may be utilized in defining the nature of a concussive head injury include:

> 1. Concussion may be caused by a direct blow to the head, face, neck, or elsewhere on the body with an "impulsive" force transmitted to the head.
> 2. Concussion typically results in the rapid onset of short-lived impairment of neurologic function that resolves spontaneously.
> 3. Concussion may result in neuropathologic changes but the acute clinical symptoms largely reflect a functional disturbance rather than a structural injury.
> 4. Concussion results in a graded set of clinical symptoms that may or may not involve loss of consciousness. Resolution of the clinical and cognitive symptoms typically follows a sequential course; however, it is postconcussive symptoms may be prolonged.
> 5. No abnormality on standard structural neuroimaging studies is seen in concussion."[1]

Signs and Symptoms
A concussion may include (but is not limited to) one or more of the following signs and symptoms[1]:

- Headache
- Emotional symptoms
- Feeling "like in a fog"
- Loss of consciousness
- Amnesia
- Irritability and/or other behavioral changes
- Slowed reaction times
- Drowsiness
- Sensitivity to light
- Dizziness

Policy
All athletes suspected of sustaining a concussion should be thoroughly evaluated by the certified athletic trainer (AT) on-site to determine the proper course of action. If no AT is on-site, the athlete should be immediately removed from activity (if a spinal injury is not suspected) and referred to a physician for further evaluation.

Procedure

- On-Field/Sideline Evaluation
    - The athlete should be initially evaluated by the on-site AT.
        - Primarily ruling out any possible cervical spine injury and/or other life threatening injuries, as well as managing any first-aid issues.
    - After any first-aid management, the AT should evaluate and assess the athlete utilizing the SCAT3[3] (Appendix D) or Child SCAT3[3] (Appendix E) dependent upon age of individual.
        - The initial SCAT3[3] or Child SCAT3[3] needs to be performed as soon as possible.
        - Another test that may be used in conjunction with the SCAT3[3] or Child SCAT3[3] is the Impact Test (which would be administered by a neuropsychologist) for a more detailed neurocognitive assessment.
    - Once an athlete is diagnosed with a concussion he/she will not be allowed to return to play (RTP) the same day, and he/she will be regularly monitored by the AT until the athlete leaves the AT's care.
        - The parent(s)/guardian(s) should be contacted and notified of the injury as soon as possible.
        - An athlete who is diagnosed with a concussion should not be allowed to operate a motor vehicle until he/she is asymptomatic for at least 24 hours.
            - ✧ If an athlete's parent/guardian is not present at the time of the injury and/or unable to transport the athlete home following a practice/game, <u>verbal</u> permission is needed from a parent/guardian as to who can transport the athlete.
        - An athlete should also have both physical and cognitive rest until he/she is asymptomatic.[1]
            - ✧ School activities/work, as well as watching television, activities on the computer, video games, and texting should be modified.
- An athlete who is diagnosed with a concussion will not be allowed to RTP until the following criteria are completed (in order):
    - **Receive clearance by a physician (MD or DO) within 72 hours of initial injury (to start graduated RTP protocol)**
        - It is recommended that the athlete see his/her primary care physician (PCP) initially.

        - ✧ Then, if needed, the on-site AT will provide you with a list of physicians with additional training in the evaluation of concussions in sports at various health care systems on request.
    - The parent(s)/guardian(s) and/or athlete will be given the concussion injury advice portion of the SCAT3[3] (Appendix) or Child SCAT3[3] for further concussion information.
        - ✧ A copy of the entire initial SCAT3[3] assessment will be given to the athlete and/or parent/guardian if possible to show the physician.
  - **Be asymptomatic for a minimum of 24 hours**
  - **Receive clearance by the on-site AT to start the graduated RTP protocol** (Appendix 3)
  - **Complete the graduated RTP protocol**
    - Minimum of 7 days asymptomatic
  - **Receive clearance by on-site AT to RTP**
  - Verbal consensus/clearance from head coach, parents/guardians, athlete, AT, and doctor/specialist that athlete is ready to RTP
    - If any one of the above mentioned individuals feels that the athlete is not ready to participate in his/her sport the athlete will not be allowed to RTP.
- Many factors (Concussion Modifiers-Appendix G) "may influence the investigation and management of concussion and, in some cases, may predict the potential for prolonged or persistent symptoms."[1]
- The AT will perform a minimum of two (possibly three) SCAT3[3] assessments.
  - The initial SCAT3[3] will be performed as soon as possible following a concussion.
  - The on-site AT will determine the appropriate number of SCAT3[3] assessments required.
- An athlete progressing through the graduated RTP protocol[1] (Appendix F) will be monitored closely.
  - "Generally each step should take 24 hours, so that an athlete would take approximately 1 week to proceed through the full rehabilitation protocol once asymptomatic at rest and with provocative exercise. If any postconcussion symptoms occur while in the stepwise program, then the patient should drop back to the previous asymptomatic level and try to progress again after a further 24-hour period of rest has passed."[1]
- Second Impact Syndrome
  - Second impact syndrome occurs when a second, often minor, injury occurs subsequent to a previous closed head injury that has not completely cleared. The athlete develops rapid brain swelling associated with collapse, rapid dilating pupils, loss of eye movement, and respiratory failure within seconds to minutes of the second injury. The outcome is uniformly severe brain injury or death. The only treatment is prevention."[2]

–Taken from the MSHSAA Sports Medicine Handbook, 2009-2010

References

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Sports Medicine

CoxHealth Sports Medicine Exertional Heat Illness Policy and Procedures

Policy

Cox Health Sports Medicine will follow procedure as a guide while covering any outdoor athletics events in hot, humid weather.

Procedure

I. **The following procedures should be followed for athletic contests scheduled during the day in hot weather:**[1]
   A. The National Weather Service, that is broadcast every hour, should be checked *by the on-site AT or high school AD (if AT not present)* at 1:00 p.m. on the day before a game, as well as one hour before the scheduled start of the contest.
   B. If heat index is stated between 95 and 105°F, plans should be implemented to alter game conditions for both schools.
   C. If heat index is stated over 105°F, plans to postpone or reschedule athletic contest should be implemented for both schools.

II. **The following procedures should be followed for practice sessions when a dangerous heat index level is indicated:**[1]
   A. The National Weather Service, that is broadcast every hour, should be checked *by the on-site AT or high school AD/Coach (if AT not present)* at 1:00 p.m. on the day before a practice, as well as one hour before the scheduled start of the practice.
   B. If heat index is stated between 95 and 105°F, plans should be implemented to alter practice conditions:
      a. Possible cancellation of all practice.
      b. Shorter practice time.
      c. Early morning or late evening practice.
      d. Move outside practice sessions indoors.
   C. If heat index is stated over 105°F, plans to postpone, reschedule, move outside practice sessions indoors.
   D. During times of hot weather, the on-site AT will determine the WBGT utilizing a sling psychrometer (if available) before and during practice and/or games.[2,3] This device will be used in conjunction with local heat index information (air temperature and relative humidity) available on The National Weather Service website (www.weather.gov) or broadcast to determine heat illness risk.

Table 1
Wet Bulb Globe Temperature Risk Chart

WBGT	Flag Color	Level of Risk	Comments
<65°F (<18°C)	Green	Low	Risk low but still exists on the basis of risk factors
65°-73°F (18°-23°C)	Yellow	Moderate	Risk level increases as event progresses through the day
73°-82°F (23°-28°C)	Red	High	Everyone should be aware of injury potential; individuals at risk should not compete
>82°F (>28°C)	Black	Extreme or hazardous	Consider rescheduling or delaying the event until safer conditions prevail; if the event must take place, be on high alert. Take steps to reduce risk factors (e.g., more and longer rest breaks, reduced practice time, reduced exercise intensity, access to shade, minimal clothing and equipment, cold tubs at practice site, etc.).

The WBGT can be measured with a WBGT meter. The calculation for the determination of WBGT is: WBGT = .7 (Wet Bulb Temperature) + .2 (Black Globe Temperature) + .1 (Dry Bulb Temperature).

This table was originally printed in Roberts WO. Medical management and administration manual for long distance road racing. In: Brown CH, Gudjonsson B, eds. *IAAF Medical Manual for Athletics and Road Racing Competitions: a Practical Guide*. Monaco: International Association of Athletics Federations;1998:39-75.

E.

Relative Humidity (%)																
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										
	"A"	"B"		"C"		"D"										

Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

"A" = Caution **"C" = Danger**
"B" = Extreme Caution **"D" = Extreme Danger**

It is recommended that:
If the heat index is between 95 and 105 degrees, practices and game conditions should be altered.
If the heat index is over 105 degrees, a practice or contest should be postponed or rescheduled.

i. Caution "A": Recommended 25 to 30 minutes of activity followed by 5- to 10-minute rest and fluid breaks[5]
ii. Extreme Caution "B": Recommended 20 to 25 minutes of activity followed by 5- to 10-minute rest and fluid breaks; practice should be in shorts (with helmets and shoulder pads only, not full equipment, if worn for activity)[5]
iii. Danger "C": Recommended 5 to 20 minutes of activity followed by 5- to 10-minute rest and fluid breaks, practice

should be in shorts only (with all protective equipment removed, if worn for activity)[5]

iv. Extreme Danger "D": Recommended cancelling or rescheduling all practices and events[5]
    1. Add 5° to temperature between 10 a.m. and 4 p.m. from mid-May to mid-September on bright, sunny days.
    2. Check the environmental conditions before and during the activity, and adjust the practice schedule accordingly. Schedule training sessions to avoid the hottest part of the day (10 AM to 5 PM), especially in the acclimatization during the first few days of practice sessions.

F. Practice weigh ins

a. It is recommended that a weight chart be kept for each individual athlete and posted in the locker room or available area. Each athlete should weigh in at the beginning of each practice session and weigh out at the end of each practice session. The percentage of weight loss should be calculated.
b. **A weight loss greater than three (3) percent should indicate potential danger of excessive loss of body fluids**. Replace fluid deficits to less than 3% before the next practice session.[3]
    i. **Greater than five (5) percent weight loss indicates the possibility and significant danger of developing a heat-related illness**.[1] The athlete will be held from practice until they regain proper hydration status.

G. Heat Acclimatization (Recommendations for safe acclimatization)

a. Days 1 through 5 of the heat-acclimatization period consist of the first 5 days of formal practice. During this time, athletes may not participate in more than 1 practice per day.
b. If a practice is interrupted by inclement weather or heat restrictions, the practice should recommence once conditions are deemed safe. Total practice time should not exceed 3 hours in any 1 day.
c. An additional 1-hour maximum walk-through is permitted during days 1–5 of the heat-acclimatization period. However, a 3-hour recovery period should be inserted between the practice and walk through.
d. During days 1–2 of the heat-acclimatization period, in sports requiring helmets or shoulder pads, a helmet should be the only protective equipment permitted (goalies, as in the case of field hockey and related sports, should not wear full protective gear or perform activities that would require protective equipment).
e. During days 3–5, only helmets and shoulder pads should be worn.
f. Beginning on day 6, all protective equipment may be worn and full contact may begin.

i. Football only: On days 3–5, contact with blocking sleds and tackling dummies may be initiated.

ii. b. Full-contact sports: 100% live contact drills should begin no earlier than day6.

g. Beginning no earlier than day 6 and continuing through day 14, double-practice days must be followed by a single-practice day. On single-practice days, 1 walk-through is permitted, separated from the practice by at least 3 hours of continuous rest. When a double practice day is followed by a rest day, another double practice day is permitted after the rest day.

h. On a double-practice day, neither practice should exceed 3 hours in duration, and student-athletes should not participate in more than 5 total hours of practice. Warm-up, stretching, cool-down, walkthrough, conditioning, and weight-room activities are included as part of the practice time. The 2 practices should be separated by at least 3 continuous hours in a cool environment

i. Because the risk of exertional heat illnesses during the preseason heat-acclimatization period is high, we strongly recommend that an athletic trainer be on site before, during, and after all practices.

Preseason Heat-Acclimatization Guidelines

Area of Practice Modification	Practices 1-5		Practices 6-14
	Days 1-2	Days 3-5	
# of Practices Permitted Per Day	1		2, only every other day
Equipment	Helmets only	Helmets & Shoulder Pads	Full Equipment
Maximum Duration of Single Practice Session	3 hours		3 hours (a total maximum of 5 hours on double session days)
Permitted Walk Through Time	1 hour (but must be separated from practice for 3 continuous hours)		
Contact	No Contact	Contact only with blocking sleds/dummies	Full, 100% live contact drills

NOTE: warm-up, stretching, cool-down, walk-through, conditioning, and weight-room activities are included as part of practice time

http://ksi.uconn.edu/information/athletic-trainers/heat- considerations/

H. Hydration Recommendations

a. It must be instilled in the athletes by the coaches that water and salt replenishment is a continual process and not a "stop-gap

maneuver." Athletes should be encouraged during hot weather to drink adequate quantities of fluid throughout the day at home, as well as at practice sessions. Following exercise athletes should consume approximately 1–1.25 L (16 oz) of fluid for each kilogram of body water lost during exercise or until urine is clear.[2]

b. During practice sessions, water should be available to them at all times. Obviously, the hotter, more humid weather indicates more frequent water breaks. This can be scheduled either up to every ten (10) to fifteen (15) minutes during extremes or if applicable, free water intake should be allowed during the entire practice session.
c. Salt replacement is also a daily process and the athletes should be encouraged to adequately salt their foods during all meals. Salted solutions may be given during practice sessions but certainly water is adequate.[1]
    i. <u>It is not advised to use salt tablets at any time.</u> These can actually cause more danger, as they cause more concentrations in the stomach and can lead to nausea, vomiting and stomach problems.
d. Avoid taking any supplements, stimulants, and/or other medications unless prescribed for you by your physician.

III. Heat Illness Emergency Management

A. Include the following supplies on the field, in the locker room, and at various other stations[2]:
    a. A supply of cool water or sports drinks or both to meet the participants' needs
    b. Ice for active cooling (ice bags, tub cooling) and to keep beverages cool during exercise.
    c. Rectal thermometer to assess body-core temperature (if available).
    d. Telephone or 2-way radio to communicate with medical personnel and to summon emergency medical transportation
    e. Tub, wading pool, kiddy pool, or whirlpool to cool the trunk, and extremities for immersion cooling therapy
B. Immediately contact the on-site AT for exam if any of the following occur:
    a. Cramping / muscle spasms / convulsions.
    b. Nausea and/or vomiting.
    c. Elevated body temperature (>104°F).
    d. Severe headache, dizziness, confusion, and/or lethargy.
    e. Staggering body control, decreasing level of consciousness, intense thirst.
C. **<u>Heat Cramps</u>**[5]
        a. Re-establish normal hydration status and replace some sodium losses with a sports drink or other sodium source.

b. Some additional sodium may be needed (especially in those with a history of heat cramps) earlier in the activity (pre-cramps) and is best administered by dilution into a sports drink. For example, 1/2 g of sodium (equal to the amount of sodium found in 1/4 tsp of table salt) dissolved in about 1 L (approximately 32 oz) of a sports drink early in the exercise session provides ample fluids and sodium, and the flavor (while certainly saltier) is still very palatable.
c. Light stretching, relaxation and massage of the involved muscle may help acute pain of a muscle cramp.
d. Athletes should be assessed to determine if they can perform at the level needed for successful participation.

D. **Heat Exhaustion**[5]
   a. If Heat Exhaustion is suspected remove athlete from play and immediately move to a shaded or air-conditioned area.
   b. Remove excess clothing and equipment.
   c. Cool athlete in pool until rectal temperature is approximately 102°F (38.3°C) (if thermometer is available).
   d. If on-site cold water immersion is not possible move athlete to cooler environment and apply ice bags around athletes neck, armpits, groin, etc.
   e. If athlete is not nauseated, vomiting or experiencing any CNS dysfunction, rehydrate orally with chilled water or sports drink. If athlete is unable to take oral fluids, implement intravenous infusion of normal saline.
   f. Monitor heart rate, blood pressure, respiratory rate, rectal temperature and CNS status.
   g. Transport to an emergency facility if rapid improvement is not noted with prescribed treatment. Contact AD.
   h. **Return to Play Considerations after heat exhaustion:**
      i. Athlete should be symptom free and fully hydrated.
      ii. Recommend physician clearance or, at minimum, a discussion with supervising physician before return.
      iii. Rule out underlying condition or illness that predisposed athlete for continued problems.
      iv. Avoid intense practice in heat until at least the next day to ensure recovery from fatigue and dehydration. (In severe cases, intense practice in heat should be delayed for more than 1 day.)
      v. If underlying cause was lack of acclimatization and/or fitness level, correct this problem before athlete returns to full-intensity training in heat (especially in sports with equipment)

E. **Heat Stroke**[5]

a. Suspect if collapse or central nervous system dysfunction (e.g. irrational behavior, irritability, emotional instability, altered consciousness, collapse, coma, dizziness etc)
b. If suspected check rectal temperature (if thermometer is available).
c. If Heat Stroke is suspected and/or temperature is > 104°F, immediately immerse the athlete's whole body in cold water (approximately 35°-58°F/1.67°-14.5°C) if possible on-site.
d. If on-site cold water immersion is not possible move athlete to cooler environment and apply ice bags around athletes neck, armpits, groin, etc.
e. Call 911/Activate EMS
f. Remove all excess clothing and equipment
g. Monitor airway, breathing, circulation, core temperature, and CNS status (cognitive, convulsions, orientation, consciousness, etc.) at all times.
h. Cease aggressive cooling when core temperature reaches approximately 102°F (38.3°-38.9°C); continue to monitor.
i. If rapid onsite cooling was administered and rectal temperature has reached approximately 102°F (38.3°-38.9°C), transport athlete to medical facility for monitoring of possible organ system damage.
j. Contact Athletic Director.
k. **Return to Play after EHS:**
    i. Physician clearance is necessary before returning to exercise. The athlete should avoid all exercise until completely asymptomatic and all laboratory tests are normal.
    ii. Severity of the incident should dictate the length of recovery time. The athlete should avoid exercise for the minimum of 1 week after release from medical care.
    iii. The athlete should cautiously begin a gradual return to physical activity to regain peak fitness and acclimatization under the supervision of an AT or other qualified health care professional. Type and length of exercise should be determined by the athlete's physician and might follow this pattern:
    iv. Easy to moderate exercise in a climate controlled environment for several days, followed by strenuous exercise in a climate-controlled environment for several days
    v. Easy to moderate exercise in heat for several days, followed by strenuous exercise in heat for several days.
    vi. (If applicable) Easy-to-moderate exercise in heat with equipment for several days, followed by strenuous exercise in heat with equipment for several days.

F. **Exertional Hyopnatremias**[5] Appropriate to consider in appropriate event lasting for several hours of continuous exercise, ex. Marathon.
    a. If blood sodium levels cannot be determined onsite, hold off on rehydrating athlete (may worsen condition) and transport immediately to a medical facility.
    b. 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.
    c. **Return to Play Consideration:**
        i. Physician clearance is strongly recommended in all cases.
        ii. In mild cases, activity can resume a few days after completing an educational session on establishing an individual-specific hydration protocol. This will ensure the proper amount and type of beverages and meals are consumed before, during and after physical activity

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1. Guidelines for avoiding heat-related problems during practice and contests. MSHSAA 2009-2010 Sports Medicine Manual. Pages 10-11.
2. Binkley, H.M., Beckett, J., Casa D.J., Kleiner, D.M., Plummer, P.E. National Athletic Trainers' Association position statement: Exertional heat illnesses. *Journal of Athletic Training*. 2002;37(3):329–343.
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Addendum—Heat Guidelines

Addendum

CoxHealth Heat Related Recommendations and additional information:

1. It is recommended that practice sessions during middle and late August be scheduled as much as possible during the early morning hours and late evening hours. For example, 8 o'clock practice in the morning and 6:00 p.m. practices seem to be advisable. When more than one practice session per day is encountered, sufficient recovery time should be observed between sessions.[1]
2. It is recommended that during hot weather in game situations several heat breaks be called in addition to any other time-outs. It is recommended that at least three (3) breaks per quarter be done by the officiating crew. (For Football).[1]
3. Heat disorders may be classified as heat cramps, heat syncope, heat exhaustion and heat stroke.[1]
    a. Exercise associated muscle cramps (EAMC), also called heat cramps, are painful spasms of skeletal muscles that are commonly observed following prolonged, strenuous exercise, often in the heat.[3]
    b. In EAMC, the affected muscle or muscle group is contracted tightly causing pain that is sometimes excruciating. Most EAMC spasms last 1–3 min, but the total series may span 6–8 hours.[3]
    c. Heat cramps are often present in athletes who perform strenuous exercise in the heat.[5]
    d. Common signs and symptoms associated with heat cramps are intense pain (not associated with acute muscle strain) and persistent muscle contractions in working muscles during and after prolonged exercise and most often associated with exercise in heat. Other signs and symptoms include "salty sweaters" (those with high salt concentration in sweat), high sweat rate, heavy sweating, lack of heat acclimatization, insufficient sodium intake (during meals and practice), dehydration, thirsty, irregular meals, increased fatigue and previous cramping history.[5]
    e. Heat exhaustion is a moderate illness characterized by the inability to sustain adequate cardiac output, resulting from strenuous physical exercise and environmental heat stress5
        i. An athlete with heat exhaustion has obvious difficulty continuing intense exercise in heat, lack of severe hyperthermia (usually <104°F/40°C), although it would be expected to find mild hyperthermia at the time of the incident (more commonly, 100°-103°F/37.7°-39.4°C) and lack of severe CNS dysfunction5. Other common signs and symptoms are physical fatigue, dehydration and/or electrolyte depletion, ataxia and coordination problems, syncope, dizziness, profuse sweating, pallor, headache, nausea, vomiting, diarrhea, stomach/ intestinal cramps, persistent muscle cramps and rapid recovery with treatment.[5]
        ii. The vast majority of athletes with heat exhaustion recover on site and, when clinically stable, may be discharged in the

company of a friend or relative with instructions for continued rest and rehydration.[3]

4. Exertional heat stroke (EHS) "is defined as a rectal temperature greater than 40°C (104°F) accompanied by symptoms or signs of organ system failure, most frequently central nervous system dysfunction. Early recognition and rapid cooling can reduce both the morbidity and mortality associated with EHS.[3]
    a. EHS is a life-threatening medical emergency that requires immediate whole body cooling for a satisfactory outcome. [3]
    b. Cold water immersion provides the fastest whole body cooling rate and the lowest morbidity and mortality for EHS. When water immersion is unavailable, ice water towels/ sheets combined with ice packs on the head, trunk, and extremities provide effective but slower whole body cooling.[3]
    c. Common signs and symptoms associated with EHS are CNS dysfunction (altered consciousness, coma, convulsions, disorientation, irrational behavior, decreased mental acuity, irritability, emotional instability, confusion, hysteria, apathy) and hyperthermic (rectal temperature usually >104°F/40°C) immediately post-incident. Other signs and symptoms include nausea, vomiting, diarrhea, headache, dizziness, weakness, hot and wet or dry skin (important to note that skin may be wet or dry at time of incident), increased heart rate, decreased blood pressure, increased respiratory rate, dehydration and combativeness.[5]
5. Exertional Hyponatremia is when an athlete consumes more fluids (especially water) than necessary, and/or sodium lost in sweat is not adequately replaced, sodium in the bloodstream can become diluted and cause cerebral and/or pulmonary edema. This is called hyponatremia (low blood-sodium levels) and tends to occur during warm/hot weather activities. [5]
    a. The risk of acquiring hyponatremia can be substantially reduced if fluid consumption during activity does not exceed fluid losses and sodium is adequately replaced. Because progressive dehydration may also compromise thermoregulatory function, it is of great value for an athlete to be aware of individual fluid needs to protect against both dehydration and overhydration.[5]
    b. Most critical criteria for determination are low blood sodium levels (<130 mmol/L). Severity of condition increases as sodium levels decrease, likelihood of excessive fluid consumption before, during and after exercise (weight gain during activity), low sodium intake, likelihood of sodium deficits before, during and after exercise and if condition progresses, CNS changes (e.g., altered consciousness, confusion, coma, convulsions, altered cognitive functioning) and respiratory changes resulting from cerebral and/or pulmonary edema, respectively. Other signs and symptoms might include increasing headache, nausea, vomiting (often repetitive), swelling of

extremities (hands and feet), irregular diet (e.g., inadequate sodium intake), during prolonged activity (often lasting >4 hours), copious urine with low specific gravity following exercise, lethargy/apathy, agitation and absence of severe hyperthermia (most commonly <104°F/40°C).[5]

References

9. Guidelines for avoiding heat-related problems during practice and contests. MSHSAA 2009-2010 Sports Medicine Manual. Pages 10-11.
10. Binkley, H.M., Beckett, J., Casa D.J., Kleiner, D.M., Plummer, P.E. National Athletic Trainers' Association position statement: Exertional heat illnesses. *Journal of Athletic Training*. 2002;37(3):329–343.
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Sports Medicine

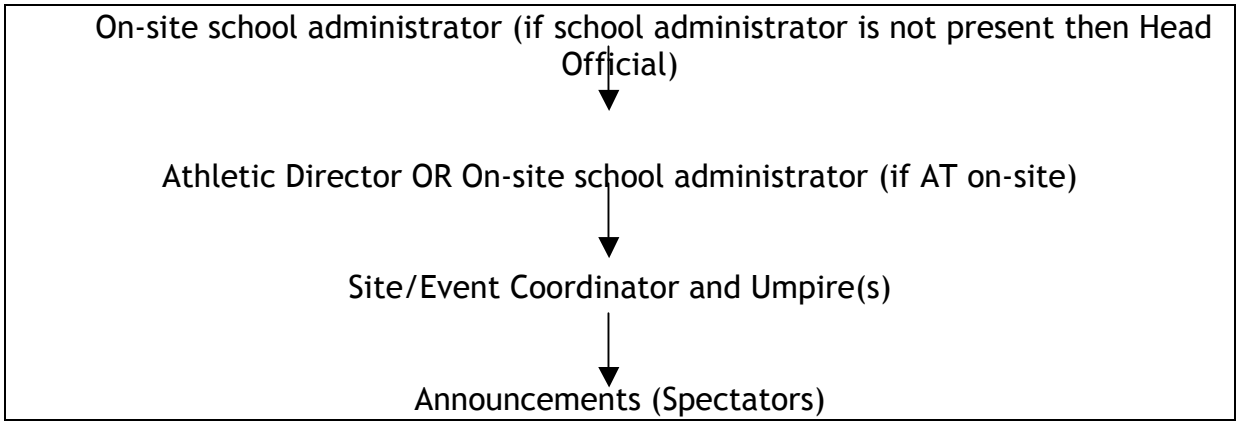
CoxHealth Sports Medicine Lightning Policy and Procedures

Policy

Cox Health Sports Medicine has adopted the position statement from the National Athletic Trainers' Association (2000)[1] on lightning safety for athletics.
The on-site certified athletic trainer (AT) will follow procedure as a guide while covering any outdoor home varsity practice and/or event.

Procedure

1. Formalize and implement a comprehensive, proactive lightning-safety policy or emergency action plan specific to lightning safety. The components of this policy should include the following[1]:
    A. An established chain of command that identifies who is to make the call to remove individuals from the field or an activity.[1]



    B. A designated weather watcher (ie, a person who actively looks for the signs of threatening weather and notifies the chain of command if severe weather becomes dangerous).[1]
        I. On-site AT OR Athletic Director, On-site school administrator, and/or Head/Assist. Coach (if AT not on-site)
    C. A means of monitoring local weather forecasts and warnings.[1]
        I. Sky Scan Lightning/Storm Detector; National Weather Service Website/Radar via internet and/or cell phone
    D. A listing of specific safe locations (for each field or site) from the lightning hazard.[1]
        I. Each high school will have designated safe locations for each sport/venue in their Emergency Action Plans (EAPs).
    E. The use of specific criteria for suspension and resumption of activities (refer to recommendations 4, 5, and 6).[1]

F. The use of the recommended lightning-safety strategies (refer to recommendations 7, 8, and 9).[1]

2. The primary choice for a safe location from the lightning hazard is any substantial, frequently inhabited building. The electric and telephone wiring and plumbing pathways aid in grounding a building, which is why buildings are safer than remaining outdoors during thunderstorms. It is important not to be connected to these pathways while inside the structure during ongoing thunderstorms.[1]
    a. Each high school should have a list in their EAPs of safe locations for each sport venue.
3. The secondary choice for a safer location from the lightning hazard is a fully enclosed vehicle with a metal roof and the windows closed. Convertible cars and golf carts do not provide protection from lightning danger. It is important not to touch any part of the metal framework of the vehicle while inside it during ongoing thunderstorms.[1]
4. Seeking a safe structure or location at the first sign of lightning or thunder activity is highly recommended. By the time the flash-to-bang count approaches 30 seconds (or is less than 30 seconds), all individuals should already be inside or should immediately seek a safe structure or location. To use the flash-to-bang method, the observer begins counting when a lightning flash is sighted. Counting is stopped when the associated bang (thunder) is heard. Divide this count by 5 to determine the distance to the lightning flash (in miles). For example, a flash-to-bang count of 30 seconds equates to a distance of 6 miles (9.66 km).[1]
    a. Another important factor to consider when using the flash to- bang method is that, although a relatively rare occurrence, lightning has been reported to strike 16.09 km (10 miles) or more from where it is raining.[1]
    b. An important adage for athletic trainers, coaches, and officials to remember is, “if you see it (lightning) flee it, if you hear it (thunder), clear it.”[1]
5. Postpone or suspend activity if a thunderstorm appears imminent before or during an activity or contest (regardless of whether lightning is seen or thunder heard) until the hazard has passed. Signs of imminent thunderstorm activity are darkening clouds, high winds, and thunder or lightning activity.[1]
6. Once activities have been suspended, wait at least **30 minutes after the last sound of thunder or lightning flash before resuming an activity or returning outdoors**. A message should be read over the public address system and lightning-safety tips should be placed in game programs alerting spectators and competitors about what to do and where to go to find a safer location during thunderstorm activity.[1]
    a. Public Address System Evacuation Announcements
        i. *"All spectators, competitors, and personnel should go inside the nearest school building as quickly as possible. A vehicle with a metal roof and the windows rolled up is a safe alternative to a sturdy building. Do not take shelter under trees or other tall, lone objects. Do not remain on, under, or near metal bleachers*

or metal fences. Do not use the telephone or the shower or plumbing facilities."[2]

b. Each time lightning is observed or thunder is heard, the 30-minute clock should be reset.[1]

7. Extremely large athletic events are of particular concern with regard to lightning safety. Consider using a multidisciplinary approach to lessen lightning danger, such as integrating weather forecasts, real-time thunderstorm data, a weather watcher, and the flash-to-bang count to aid in decision making.[1]

8. Avoid being in contact with, or in proximity to, the highest point of an open field or on the open water. Do not take shelter under or near trees, flag poles, or light poles.[1]
9. Avoid taking showers and using plumbing facilities (including indoor and outdoor pools) and land-line telephones during thunderstorm activity. Cordless or cellular telephones are safer to use when emergency help is needed.[1]
10. Individuals who feel their hair stand on end or skin tingle or hear crackling noises should assume the lightning-safe position[1]:
    a. Crouched on the ground, weight on the balls of the feet, feet together, head lowered, and ears covered). DO NOT lie flat on the ground.
11. Observe the following basic first-aid procedures, in order, to manage victims of lightning strike[1]:
    A. Survey the scene for safety. Ongoing thunderstorms may still pose a threat to emergency personnel responding to the situation.
    B. Activate the local emergency management system/EAP.
    C. Move the victim carefully to a safer location, if needed.
    D. Evaluate and treat for apnea and asystole.
    E. Evaluate and treat for hypothermia and shock.
    F. Evaluate and treat for fractures.
    G. Evaluate and treat for burns.
12. All persons should maintain current cardiopulmonary resuscitation (CPR) and first-aid certification.[1]
13. All individuals should have the right to leave an athletic site or activity, without fear of repercussion or penalty, in order to seek a safe structure or location if they feel they are in danger from impending lightning activity.[1]

- Note: "It is not uncommon to find a lightning-strike victim unconscious, with fixed and dilated pupils and cold extremities and in cardiopulmonary arrest. Case studies of individuals with prolonged apnea and asystole after a lightning strike have demonstrated successful resuscitations using CPR. Once stopped, the heart will most likely spontaneously restart, but breathing centers in the brain may be damaged. Respiratory arrest lasts longer than cardiac arrest, leading to secondary asystole from hypoxia. Therefore, the basic principle of Triage, "treat the living first," should be reversed in cases involving casualties from a lightning strike. It is imperative to treat those persons who are "apparently dead" first by promptly initiating CPR."[1]

Reference

1. Walsh, K., Bennett B., and Cooper M.A., et al. National Athletic Trainers' Association Position Statement: Lightning Safety for Athletics and Recreation. *Journal of Athletic Training*. 35(4);471-477.
2. Bennett, B. A Model Lightning Safety Policy for Athletics. *Journal of Athletic Training*. 1997;32(3):251-253.

ORIGINATED: 9/2010 BY: Sports Medicine Manager
REVIEWED: 5/15 REVISED 5/15

CoxHealth
Sports Medicine

CoxHealth Sports Medicine Skin Infection Policy and Procedures

POLICY

The CoxHealth Skin Infection Policy follows in accordance with Sports Related Skin Infections Position Statement and Guidelines from the Missouri State High School Activities Association (MSHSAA), the National Federation of State High School Associations' (NFHS) Sports Medicine Advisory Committee (SMAC), and the National Athletic Training Association's (NATA) position statement on Infectious Skin Disease.

The nature of athletics lends to an environment that may increases the risk of skin infection. While the majority of these infections are transmitted through skin-to-skin contact, a significant number are due to shared equipment, towels, or poor hygiene in general.[1] Trauma, environmental factors, and infectious agents act together to continually attack the integrity of the skin.[2]

The guidelines set forth follow the principles of Universal Precautions and err in favor of protecting participants in situations where skin-to-skin contact may occur. Consideration *may be* given to the particular sport with a reduced risk of transmission, but these rules must be strictly adhered to in sports such as wrestling, football, and basketball where skin to skin contact is frequent and unavoidable.[1]

Risk of Transmission

The NFHS SMAC has established three different levels of categorizing the risk of transmission.

High Risk	**Medium Risk**	**Low Risk**
-Football	-Baseball	-Tennis
-Wrestling	-Softball	-Track and Field
-Basketball	-Lacrosse	-Cross Country
	-Cheer/Spirit	-Swim and Dive
	-Volleyball	-Golf
	-Soccer	

General Guidelines

The most common skin infections include fungal infections, viral infections (herpes simplex and molluscum contagiosum) and bacterial infections (impetigo, folliculitis, furuncles, carbuncles and MRSA (methicillin-resistant staphylococcus aureus). Miscellaneous Viral Infections such as

Molluscum contagiosum and verruca are types of warts that are caused by viruses, but are *not* considered highly contagious. Therefore these lesions require no treatment or restrictions, but should be covered if prone to bleeding when abraded.

Ringworm, Tinea Corporis
Clinical Features: These fungal lesions are due to dermatophytes. Lesions often present with a well-defined, round, erythematous, scaly plaque with raised borders; however, tinea corporis gladiatorum (tinea corporis in wrestlers) frequently presents with a more irregular lesions.[2] It easily transmissible.

PROCEDURE: The athlete should be treated with an oral or topical antifungal medication for a minimum of 72 hours prior to participation. Once the lesion is considered to be no longer contagious it may be covered with a bio-occlusive dressing, pre-wrap, and tape.

Impetigo, Folliculitis, Carbuncle and Furuncle, MRSA
Clinical Features:

- **Impetigo:** Bullous impetigo presents on the trunk or the extremities with raised blisters that rupture easily, resulting in moist erosions surrounded by a scaly rim. Nonbullous impetigo presents with thin walled vesicles that rupture into a honey-colored crust.

- **Folliculitis:** Presents as papules and pustules at the base of hair follicles, especially in areas that have been shaved, taped, or abraded. Also known as ingrown hair.

- **Carbuncle and Furuncle**: Furuncles present as tender areas that, over several days, develop a reddened nodular swelling; carbuncles present as

the coalescence of multiple furuncles in a deep, communicating, purulent mass.

- **MRSA**: community-associated MRSA presents similarly to other bacterial infections. Furuncles, carbuncles, and abscesses are the most frequent clinical manifestations. Often community-associated MRSA lesions are confused with spider bites. Lesions may begin as small pustules that develop into larger pustules or abscesses with areas of erythema and some tissue necrosis.

PROCEDURE: While these infections may be secondary to a variety of bacteria, they should all be treated as MRSA infections. The athlete should be removed from practices and competition and treated with oral antibiotics. Return to contact practices and competition may occur after 72 hours of treatment providing the infection is resolving.

All lesions are considered infectious until each one has a well-adherent scab without any drainage or weeping fluids. Once a lesion is no longer considered infectious, it should be covered with a bio occlusive dressing until complete resolution.

Since nasal colonization of these bacteria is common, recurrent episodes may bring the need to consider treatment with intranasal topical mupirocin and daily body washes with a chlorhexidine 4% solution for at least five days. All team members should be visually screened for similar infections.

Shingles and Cold Sores

Clinical Features: Lesions are typically found on the head, face, neck, or upper extremities and present as clustered, tense vesicles on an erythematous base.

PROCEDURE: Lesions on exposed areas of skin that are not covered by clothing, uniform, or equipment require the player to be withdrawn from any activity that may result in direct skin-to-skin contact with another participant. Covering infectious lesions with an occlussive dressing is not acceptable. Primary outbreaks of shingles and cold sores require 10-14 days of oral antiviral medications while recurrent outbreaks require five days of treatment as a minimum treatment time

prior to returning to participation. To be considered "non-contagious," all lesions must be scabbed over with no oozing or discharge and no new lesions should have occurred in the preceding 48 hours.

Herpes Gladiatorum

Herpes Gladiatorum is a skin infection, primarily seen among wrestlers, is caused by Herpes Simplex Virus Type 1 (HSV-1). The spreading of this virus is strictly skin-to-skin with the preponderance of the outbreaks developing on the head, face and neck, reflecting the typical lock-up position.

Clinical Features: raised rash with groupings of 6-10 vesicles (blisters). The skin findings are accompanied by sore throat, fever, malaise and swollen cervical lymph nodes.

PROCEDURE: The infected individual should be removed from contact and treated with antiviral medications for 10-14d (recurrence 5d) They may return to contact only after all lesions are healed with well adherent scabs, no new vesicle formation and no swollen lymph nodes near the affected area. Consideration should be given to prophylactic oral antivirals for the remainder of the season and each subsequent season.

Minimum Criteria for Return to Play

Condition	**Return to Play**
Tinea corporis (ring worm)	-Minimum 72 hour oral or topical anti-fungal (14 days if on scalp) -Lesions must be covered with bio-occlusive dressing, pre-wrap, and tape
Impetigo, Folliculitis, Carbuncle and Furuncle, MRSA	-No new lesions at least 48 hours -Minimum 72 hour (oral) **antibiotic therapy** -No moist or draining lesions ***MRSA lesions must be treated for a minimum of 7 days***.
Herpes Gladiatorum (Herpes Simplex-primary), Shingles, Cold Sores	-Free of systemic symptoms (fever, malaise, swollen lymph nodes, etc.) -No new lesions at least 72 hrs -No moist lesions, lesion must be covered by a firm, adherent crust -Minimum of 120 hours (full 5 days) systemic antiviral therapy or 10-14 days therapy if first infection

References:

[1]NFHS SMAC MSHSAA. (2010). Sports related skin infections position statement and guidelines.
[2] Zinder, S.M., Basler, S.W., Foley, J., et al. (2010). National athletic trainers' association position statement: Skin Diseases. *Journal of Athletic Training*. 45(4);411-428.
ORIGINATED: 12/2012 BY: Sports Medicine Manager
REVIEWED: 7/15 REVISED 7/15

Medical Emergency Protocol

1. **Assess the situation.** Quickly check for level of consciousness, airway, breathing, and circulation. Do not move an unconscious athlete. Always assume there is a neck injury until it is known otherwise.

2. **Begin appropriate emergency care.** The most qualified individual on scene should provide acute care to the patient(s) or direct other care providers, as needed. Individuals with lower credentials should yield to those with more appropriate training in regards to life-threatening situations, orthopedic injuries, and medical complaints.

3. **Activate EMS (if necessary) & notify student-athlete's parents.** If athletic trainer is not present, call athletic trainer. This should be done as soon as the situation is deemed an emergency or a life-threatening event. Activating the EMS system may be done by anyone. However, the person chosen for this duty should be someone who is calm under pressure and who communicates well over the telephone. This person should also be familiar with the location of the injured person and the facility (administrator, coaching staff, school resource officer).

Activation of the EMS system (Making the call)

- Dial 9-1-1 from any on- or off-campus phone
- Providing Information:
  - Identification of caller (Name and title, if needed)
  - Phone number
  - Location of the caller (Your specific location & location of the patient, if different)
  - Number of injured patients
  - The condition of patient(s)
  - First Aid treatment initiated by the First Responder
- Directions needed to locate the emergency scene
- Provide other information as requested by the 9-1-1 dispatcher

4. **Appoint an individual to wait for Emergency Medical Services at designated entrance.** This should be someone with keys to any locked gate or doors and should know the fastest access to the emergency scene. The school resource officer or a policeman will perform this role if present otherwise a person at the scene should be designated. This person should remain stationed at the appropriate pre-arranged arrival site until EMS arrives. Be prepared to unlock and open any gates and/or doors as needed for appropriate access.

5. **Remove student-athletes and spectators from emergency scene.** Limit scene to those providing care. Move bystanders away from area. Allow family to remain close but try to prevent them from interfering with care.

6. **Gathers all necessary paperwork for hospital treatment.** If parent is not present, a coach or school administrator should accompany athlete to the hospital with a copy of the athlete's Pre-Participation Exam. Every team should travel with copies of each athlete's PPE.

Emergency Action Plans

Emergency Action Plans for all facilities begin on page 12. Each summer, the medical staff, coaching staff, and local emergency personnel will meet to review and rehearse each EAP. Before each sporting event, the athletic health care team will meet to briefly review their roles, location of equipment, and other pertinent information

Athletic Training Room

Address: 1 David Sippy Drive, Monett, MO 65708
Directions: Drive East on Cleveland/Business 60. School is located on the north side of the road across from the Police Station.

Closest Phone: South Wall in ATR under cabinet

Key Holders: Coach, Athletic Trainer, or Administrator
Key Needed: Key Fob and AAA

AED: Commons outside of Assistant Principal's Office

Ambulance Entrance: West Entrance by Weight Room

Tornado Shelter: Performing Arts Center

STOP!

If athlete is unconscious and/or has possible sustained a head or neck injury – Do ***NOT*** move athlete!!!!

1. Assess the situation.

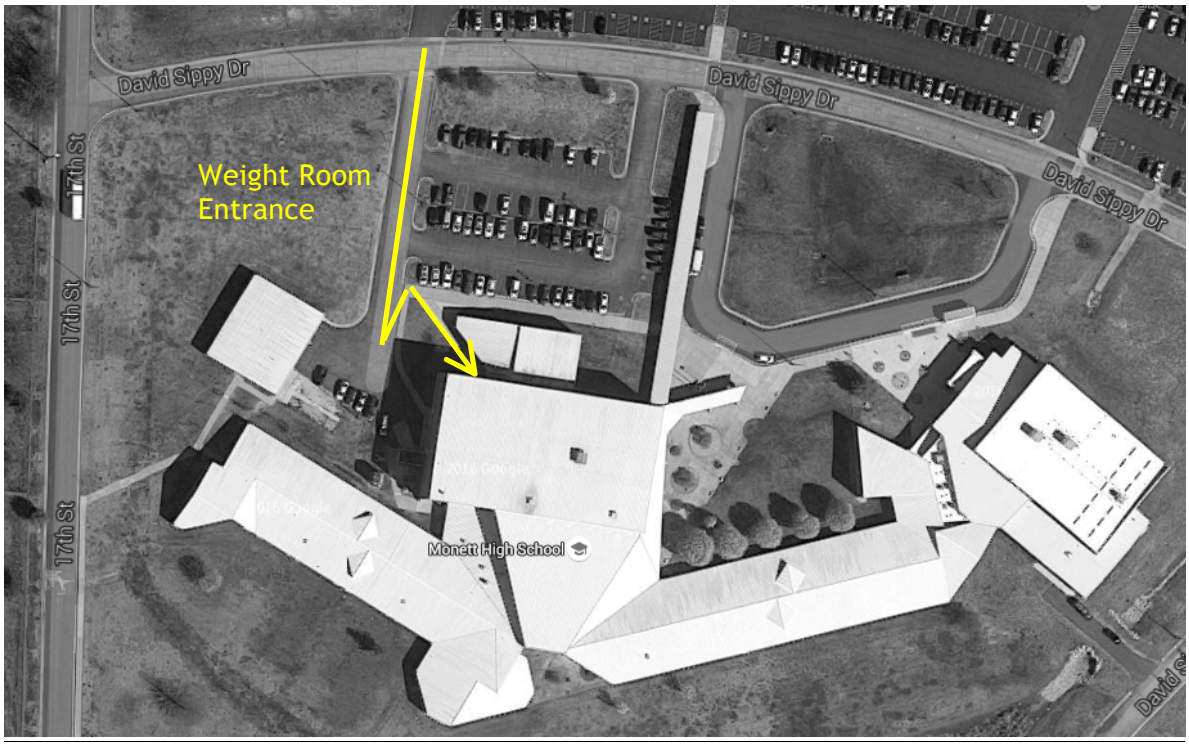
2. Begin appropriate emergency care.
   (I.e. CPR, Stabilize head/neck, compression, elevation)

3. Activate EMS giving exact location and appropriate entrance. Contact student-athlete's parents. If athletic trainer is not present, call athletic trainer.

4. Remove student-athletes and spectators from emergency scene.

5. Appoint an individual to wait for Emergency Medical Services at designated entrance.

6. Gathers all necessary paperwork for hospital treatment.


David Sippy Dr
David Sippy Dr
David Sippy Dr
17th St
17th St
17th St
Weight Room
Entrance
Monett High School

Burl Fowler Stadium

Address: 710 9th Street
Directions: Southwest Corner of Cleveland and 13th Street. See map for detailed entrance locations.

Phone: Cell Phone

Key Holder: Coach, Athletic Trainer, or Administrator
Key Needed: Master Padlock Key

AED:
During Practice: Locker Room on the Purple Box
During Events: Home Sidelines (during events)
During Off-Season: No AED at this location. Call 9-1-1.

Ambulance Entrance: Front Entrance or South Gate off access road (dependent on location of emergency)

Tornado Shelter: Middle School Cafeteria

During lightning delays (as determined by the Monett R1 Lightning Policy), spectators should return to their personal vehicles, the restrooms on the south end of the Field House, or other lightning safe location. A lightning safe location is an enclosed building with plumping and electrical or a hardtop vehicle with windows up. Players, coaches, and officials will take shelter in the Field House.

STOP!

If athlete is unconscious and/or has possible sustained a head or neck injury – Do ***NOT*** move athlete!!!!

1. Assess the situation.

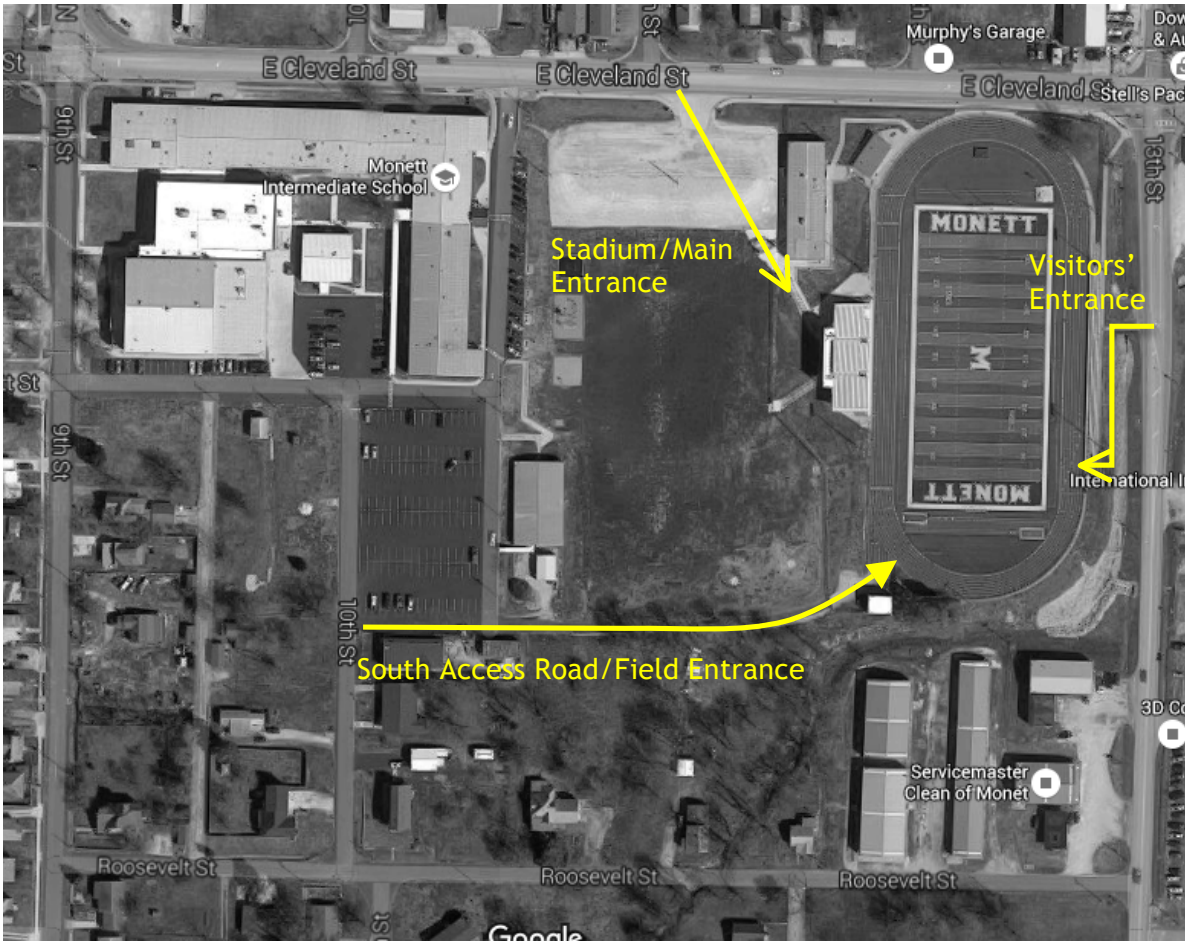
2. Begin appropriate emergency care.
   (I.e. CPR, Stabilize head/neck, compression, elevation)

3. Activate EMS giving exact location and appropriate entrance. Contact student-athlete's parents. If athletic trainer is not present, call athletic trainer.

4. Remove student-athletes and spectators from emergency scene.

5. Appoint an individual to wait for Emergency Medical Services at designated entrance.

6. Gathers all necessary paperwork for hospital treatment.


E Cleveland St
E Cleveland St
E Cleveland St
Murphy's Garage
Monett Intermediate School
Stadium/Main Entrance
Visitors' Entrance
MONETT
9th St
13th St
10th St
South Access Road/Field Entrance
Servicemaster Clean of Monett
Roosevelt St
Roosevelt St
Roosevelt St

E.E. Camp Gymnasium (Middle School)

Address: 710 9th Street
Directions: Go south on H Hwy through the light at Cleveland. Middle School Gymnasium will be on the East side of the Road.

Phone: Offices in Boys or Girls Locker Rooms

Keys: Coach or Administrator

AED: North Wall by Door in Middle School Teacher Workroom

Ambulance Entrance: Front Entrance or Lower Entrance on SE Corner of building (depending on location of emergency)

Inclement Weather Shelter: Middle School Cafeteria

STOP!

If athlete is unconscious and/or has possible sustained a head or neck injury – Do ***NOT*** move athlete!!!!

1. Assess the situation.

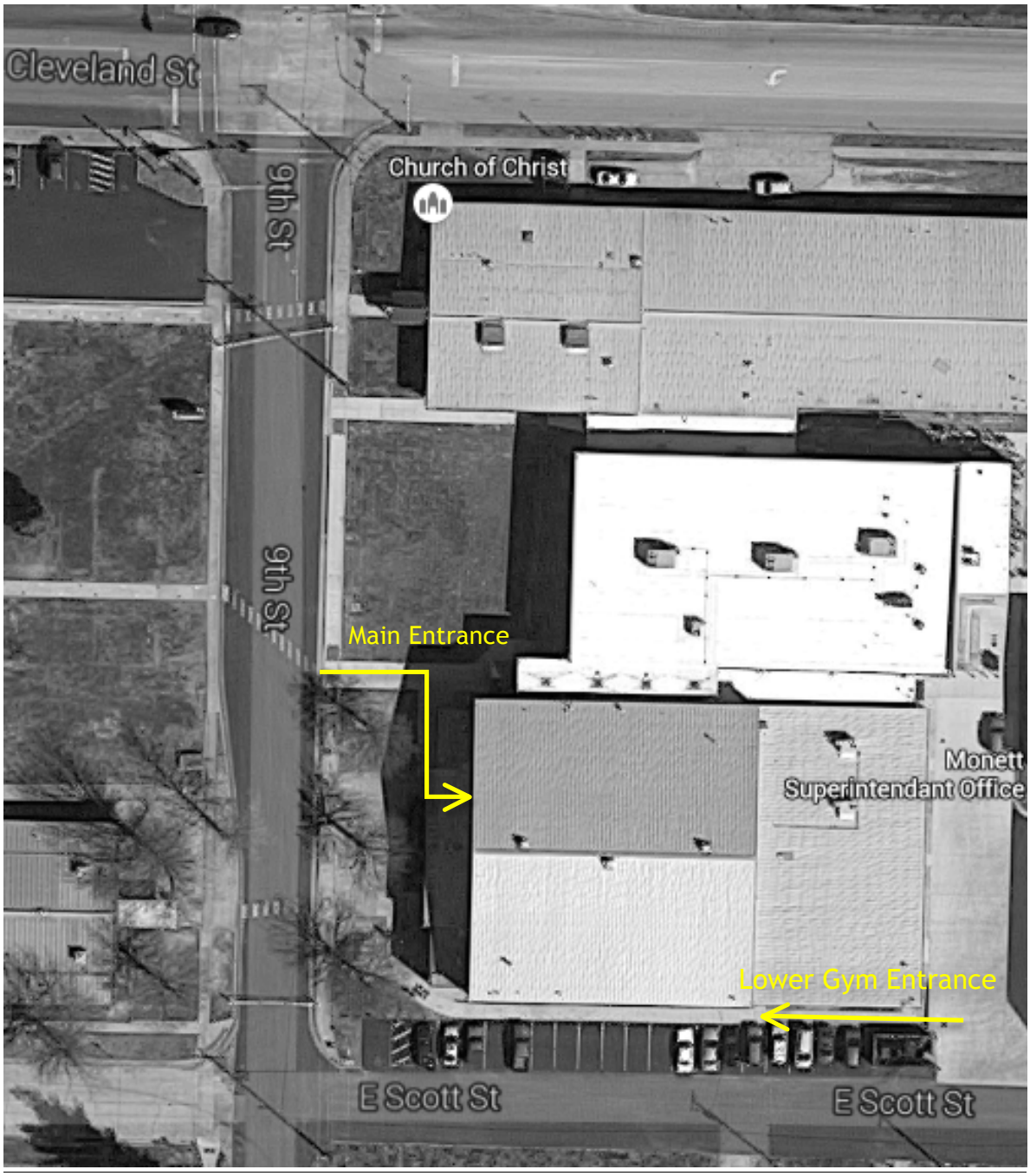
2. Begin appropriate emergency care.
   (I.e. CPR, Stabilize head/neck, compression, elevation)

3. Activate EMS giving exact location and appropriate entrance. Contact student-athlete's parents. If athletic trainer is not present, call athletic trainer.

4. Remove student-athletes and spectators from emergency scene.

5. Appoint an individual to wait for Emergency Medical Services at designated entrance.

6. Gathers all necessary paperwork for hospital treatment.


Cleveland St
Church of Christ
9th St
9th St
Main Entrance
Monett
Superintendant Office
Lower Gym Entrance
E Scott St
E Scott St

High School Gymnasium

Address: 1 David Sippy Drive
Directions: Drive East on Cleveland/Business 60. School is located on the north side of the road across from the Police Station.

Phone: Weight Room

Key Holder: Coach, Athletic Trainer, or Administrator
Key Needed: Key Fob and AAA

AED: Commons outside of Assistant Principal's Office

Ambulance Entrance: West Entrance by Weight Room

Inclement Weather Shelter: Performing Arts Center

STOP!

If athlete is unconscious and/or has possible sustained a head or neck injury – Do ***NOT*** move athlete!!!!

1. Assess the situation.

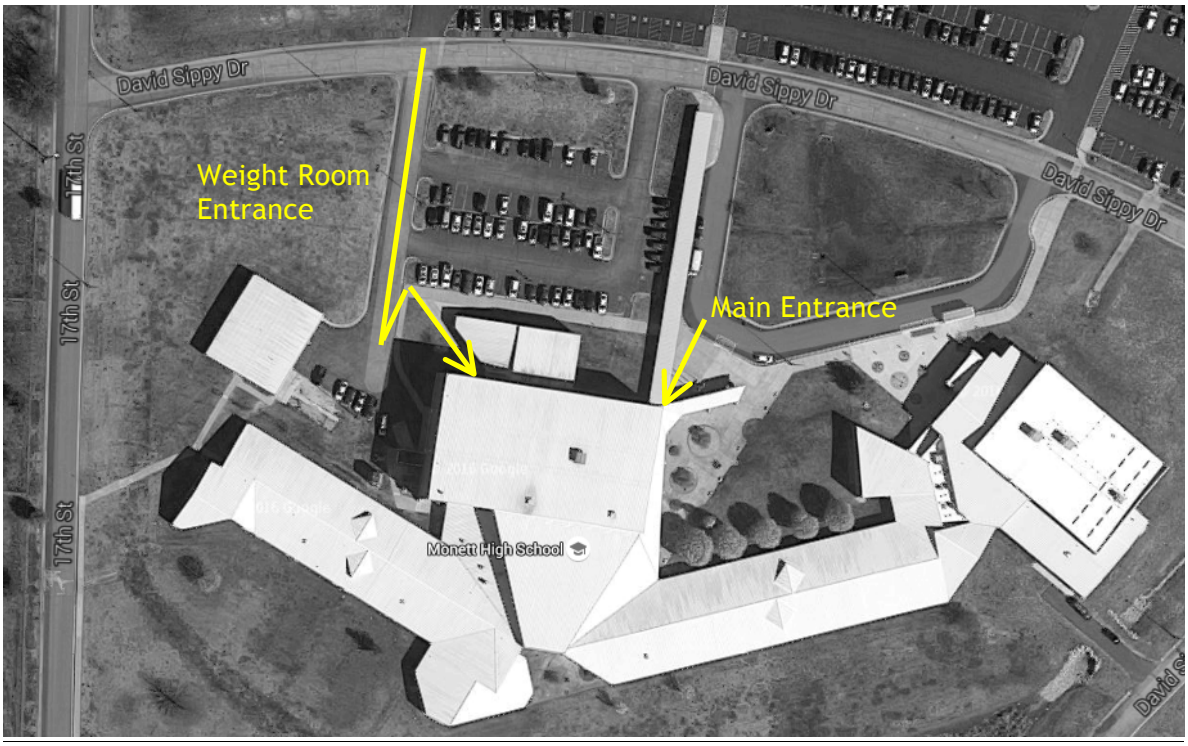
2. Begin appropriate emergency care.
   (I.e. CPR, Stabilize head/neck, compression, elevation)

3. Activate EMS giving exact location and appropriate entrance. Contact student-athlete's parents. If athletic trainer is not present, call athletic trainer.

4. Remove student-athletes and spectators from emergency scene.

5. Appoint an individual to wait for Emergency Medical Services at designated entrance.

6. Gathers all necessary paperwork for hospital treatment.


David Sippy Dr
David Sippy Dr
David Sippy Dr
17th St
17th St
17th St
Weight Room
Entrance
Main Entrance
Monett High School

Monett Athletic Complex (MAC)

Address: 2150 Park Street
Directions: Drive East on Cleveland/Business 60. MAC is located behind Ramey's in the old gymnastic building.

Phone: Wall behind Counter

Keys: Coach

AED:
During Off-Season: No AED at this location. Call 9-1-1.
During Winter Sports Season: Counter

Ambulance Entrance: Front entrance

Inclement Weather Shelter: Locker Room/Bathrooms or Performing Arts Center

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STOP!

If athlete is unconscious and/or has possible sustained a head or neck injury – Do ***NOT*** move athlete!!!!

1. Assess the situation.

2. Begin appropriate emergency care.
   (I.e. CPR, Stabilize head/neck, compression, elevation)

3. Activate EMS giving exact location and appropriate entrance. Contact student-athlete's parents. If athletic trainer is not present, call athletic trainer.

4. Remove student-athletes and spectators from emergency scene.

5. Appoint an individual to wait for Emergency Medical Services at designated entrance.

6. Gathers all necessary paperwork for hospital treatment.


David Sippy Dr
David Sippy Dr
17th St
17th St
17th St
Park St
Park St
Main Entrance
Monett High School
Ramey
Price Cutter Pharmacy
Coinstar
David Sippy Dr
Bridle Ln
Old Airport Rd
Old Airport Rd
E Cleveland St
E Cleveland St
Market Fresh
Produce - Missouri

Monett YMCA

Address: 115 S. Lincoln Ave

Directions: From the intersection of Highway 60 and Highway 37/Lincoln Ave., go south on Highway 37/Lincoln Ave. The YMCA is located on the east side of the road immediately past the South Park Entrance.

Phone: Front Desk/Pool Area

Keys: Front Desk Staff

AED: Entrance near desk

Ambulance Entrance: Front entrance on east side of building

Inclement Weather Shelter: YMCA Locker Rooms

STOP!

If athlete is unconscious and/or has possible sustained a head or neck injury – Do ***NOT*** move athlete!!!!

1. Assess the situation.

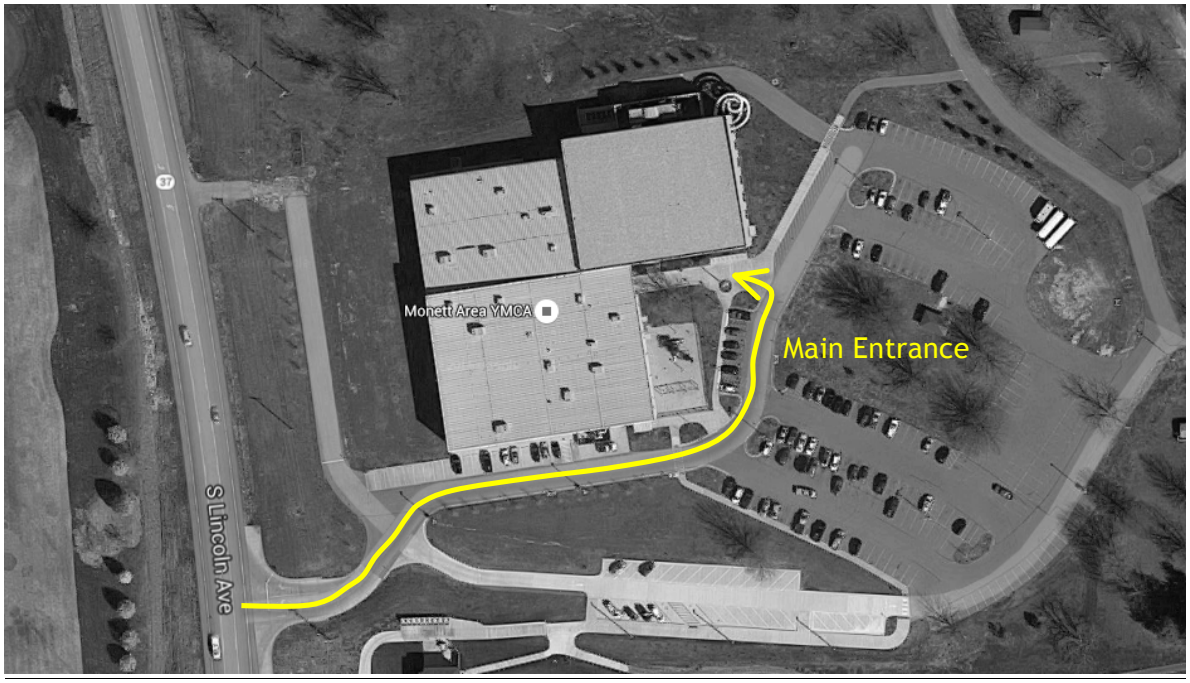
2. Begin appropriate emergency care.
   (I.e. CPR, Stabilize head/neck, compression, elevation)

3. Activate EMS giving exact location and appropriate entrance. Contact student-athlete's parents. If athletic trainer is not present, call athletic trainer.

4. Remove student-athletes and spectators from emergency scene.

5. Appoint an individual to wait for Emergency Medical Services at designated entrance.

6. Gathers all necessary paperwork for hospital treatment.


Monett Area YMCA
Main Entrance
S Lincoln Ave
37

North Park Baseball Fields

Address: None

Directions: Take Hwy 37 North towards the north edge of town. Park is on the east side of the road before the large turn. To get to the baseball field, go straight through the parking lot and over the bridge. Field will be on your left.

Phone: Cell Phone

Keys: n/a

AED: No AED at this location. Call 9-1-1.

Ambulance Entrance: Enter access road into North Park through the baseball paking lot. Designated individual will need to remove cable from entrance.

Tornado Shelter: Middle School Cafeteria

During lightning delays (as determined by the Monett R1 Lightning Policy), everyone should return to their personal vehicles/bus, the restrooms in the concessions building, or other lightning safe location. A lightning safe location is an enclosed building with plumping and electrical or a hardtop vehicle with windows up.

STOP!

If athlete is unconscious and/or has possible sustained a head or neck injury – Do ***NOT*** move athlete!!!!

1. Assess the situation.
2. Begin appropriate emergency care.
   (I.e. CPR, Stabilize head/neck, compression, elevation)
3. Activate EMS giving exact location and appropriate entrance. Contact student-athlete's parents. If athletic trainer is not present, call athletic trainer.
4. Remove student-athletes and spectators from emergency scene.
5. Appoint an individual to wait for Emergency Medical Services at designated entrance.
6. Gathers all necessary paperwork for hospital treatment.


Monett Christian Academy
N Central Ave
Monett North Park
Baseball Stadium Main Entrance
Barry-Lawrence County Counseling

North Park Softball Fields

Address: None

Directions: Take Hwy 37 North towards the north edge of town. Park is on the east side of the road before the large turn. To get to the softball field, take an immediate left before entering the main parking lot. Go around to the lower parking lot.

Phone: Cell Phone

Keys: n/a

AED: No AED at this location. Call 9-1-1.

Ambulance Entrance: Access road through North Park entering from lower parking lot.

Tornado Shelter: Middle School Cafeteria

During lightning delays (as determined by the Monett R1 Lightning Policy), everyone should return to their personal vehicles/bus, the restrooms in the concessions building, or other lightning safe location. A lightning safe location is an enclosed building with plumping and electrical or a hardtop vehicle with windows up.

STOP!

If athlete is unconscious and/or has possible sustained a head or neck injury – Do ***NOT*** move athlete!!!!

1. Assess the situation.
2. Begin appropriate emergency care.
   (I.e. CPR, Stabilize head/neck, compression, elevation)
3. Activate EMS giving exact location and appropriate entrance. Contact student-athlete's parents. If athletic trainer is not present, call athletic trainer.
4. Remove student-athletes and spectators from emergency scene.
5. Appoint an individual to wait for Emergency Medical Services at designated entrance.
6. Gathers all necessary paperwork for hospital treatment.


Monett Christian Academy
N Central Ave
Softball Access Road Entrance
Monett North Park
Barry-Lawrence County Counseling

North Park Tennis Courts

Address: None

Directions: Take Hwy 37 North towards the north edge of town. Park is on the east side of the road before the large turn. Tennis courts are on the south side of the main parking lot.

Phone: Cell Phone

Keys: n/a

AED: No AED at this location. Call 9-1-1.

Ambulance Entrance: Access road through North Park

Tornado Shelter: Middle School Cafeteria

During lightning delays (as determined by the Monett R1 Lightning Policy), everyone should return to their personal vehicles/bus, the restrooms in the concessions building, or other lightning safe location. A lightning safe location is an enclosed building with plumping and electrical or a hardtop vehicle with windows up.

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1. Assess the situation.

2. Begin appropriate emergency care.
   (I.e. CPR, Stabilize head/neck, compression, elevation)

3. Activate EMS giving exact location and appropriate entrance. Contact student-athlete's parents. If athletic trainer is not present, call athletic trainer.

4. Remove student-athletes and spectators from emergency scene.

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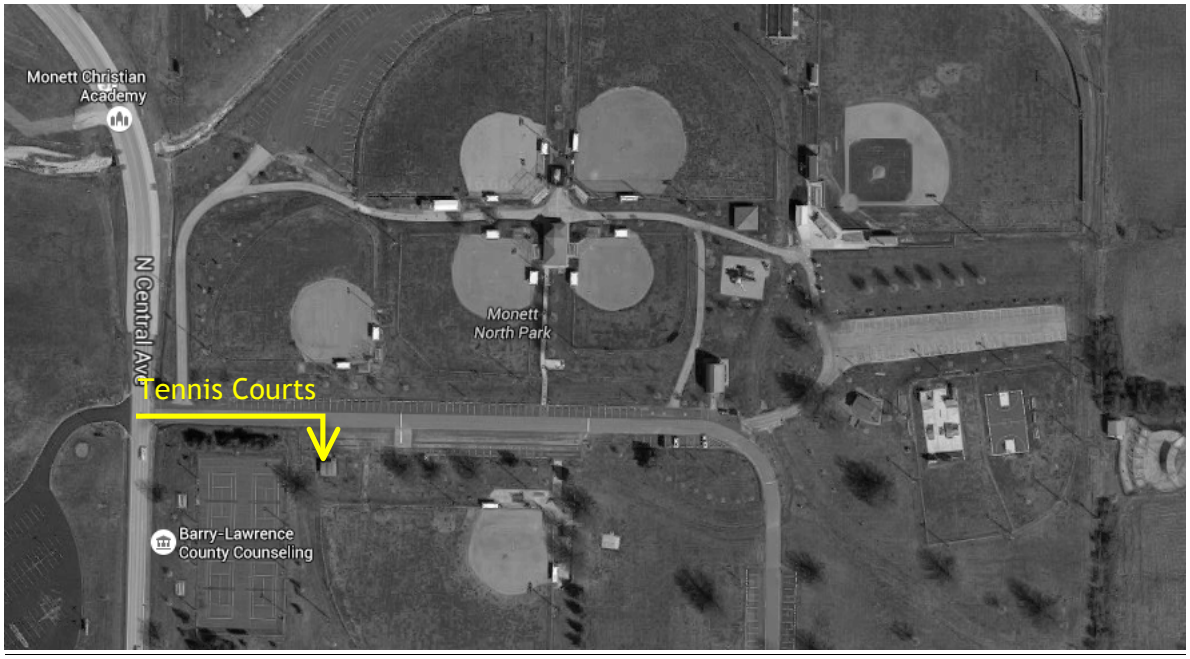

Monett Christian Academy
N Central Ave
Monett North Park
Tennis Courts
Barry-Lawrence County Counseling

South Park Soccer Fields

Address: None

Directions: From 13th St., turn WEST or from Central St. turn EAST onto Dairy St. Turn south onto Waldensian. Go under the bridge. The soccer fields will be on your right.

Phone: Cell Phone

Keys: City Padlock Key

AED: No AED at this location. Call 9-1-1.

Ambulance Entrance: Second Parking Lot

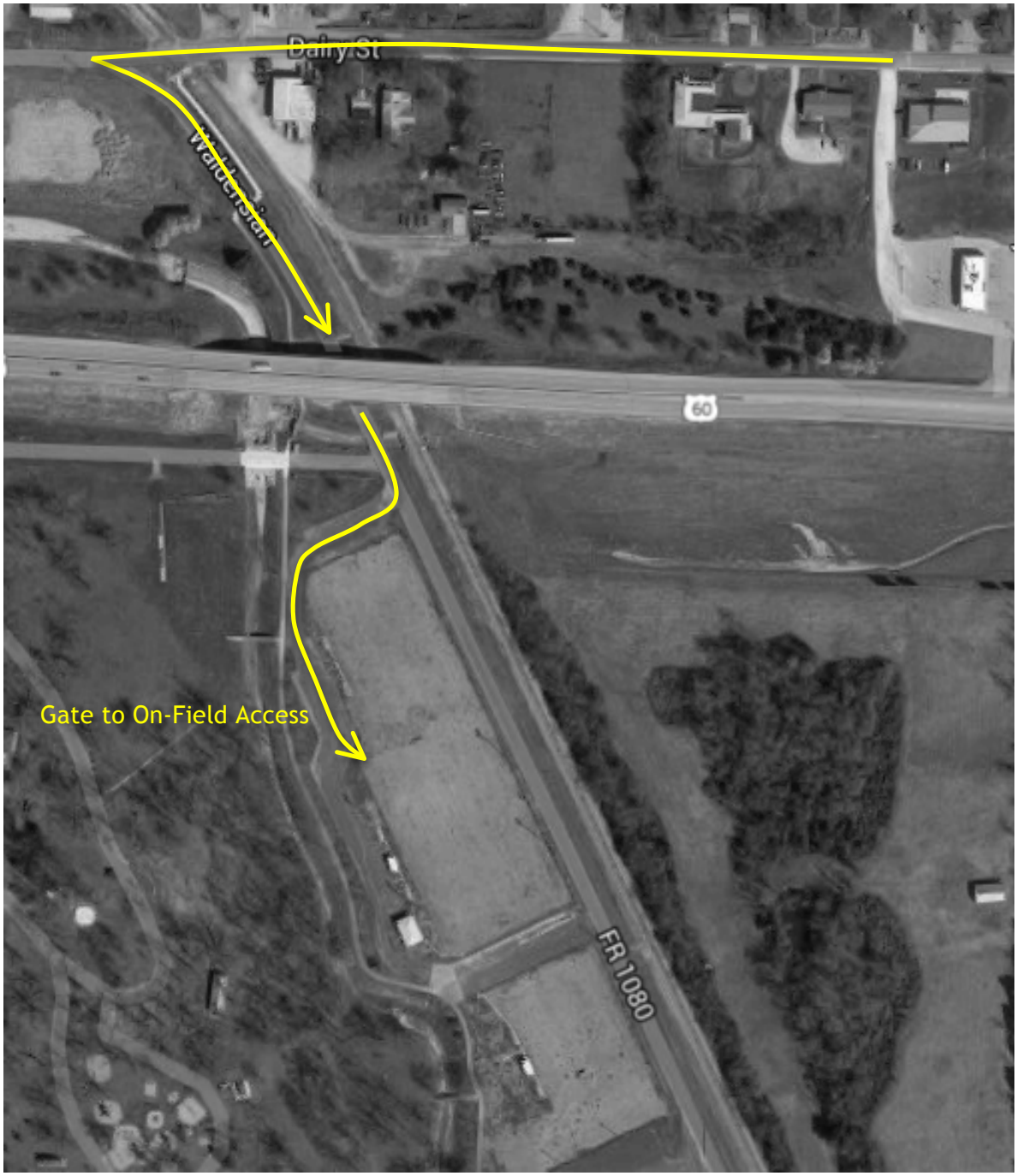
Tornado Shelter: Middle School Cafeteria or Performing Arts Center

During lightning delays (as determined by the Monett R1 Lightning Policy), everyone should return to their personal vehicles/bus, the restrooms in the concessions building, or other lightning safe location. A lightning safe location is an enclosed building with plumping and electrical or a hardtop vehicle with windows up.

STOP!

If athlete is unconscious and/or has possible sustained a head or neck injury – Do ***NOT*** move athlete!!!!

1. Assess the situation.
2. Begin appropriate emergency care.
   (I.e. CPR, Stabilize head/neck, compression, elevation)
3. Activate EMS giving exact location and appropriate entrance. Contact student-athlete's parents. If athletic trainer is not present, call athletic trainer.
4. Remove student-athletes and spectators from emergency scene.
5. Appoint an individual to wait for Emergency Medical Services at designated entrance.
6. Gathers all necessary paperwork for hospital treatment.


Dairy St
Waterman
60
Gate to On-Field Access
FR 1080

APPENDIX

Appendix A

Basic Team Medical Kit Supplies

Basic First Aid

CPR mask	$8.15
*Penlight	$1.83
Gloves	$3.25
Non-sterile gauze	$1.00
*Hand sanitizer	$1.25
*Hydrogen Peroxide (bottle)	$1.75
*Hydrogen Peroxide (2oz spray)	$3.95
Triple-antibiotic ointment	$2.00
Assorted bandages	$6.00
Second Skin	$3.50
Cotton-tipped applicators	$0.30
Tongue depressors	$0.25
*Nail clippers	$1.95
Nose plugs	$0.30
*Contact Case	$2.75
*Contact Solution	$6.05
Ice bags	$1.50
Flexi-wrap	$7.90

Taping Supplies

*Tuf-Skin	$11.15
Pre-Wrap	$1.15/roll
Stretchy Tape	$2.20/roll
White Tape	$2.30/roll
*Shark (tape cutter)	$14.65

Elastic Wraps

*4” Single Elastic Wrap	$2.75/each
*6” Double Elastic Wrap	$6.96/each
*6” Single Elastic Wrap	$4.45/each

*Indicates durable items that should be returned intact at the end of the season. Bottles may be refilled as needed in the athletic training room. Elastic wraps may be washed and reissued.

All other items are considered single use and may be replenished as needed by the athletic trainer. Please give 1-2 hours notice when consumable items need to be replenished.

Athletic Trainer System®

CoxHealth uses Athletic Trainer System® (ATS) to manage the documentation of health records of all student- athletes for whom we provide sports medicine services. Student-athletes and their parents/guardians can create a user profile which enables them to 1) provide/update demographic , emergency contact, insurance, and health history information, 2) complete and electronically sign and/or scan and upload important documents, and 3) report injuries to the athletic trainer. Initial user profile set up takes about 20-30 minutes. Once completed each athlete/parent/guardian will then be able to review and verify their information each year in a matter of minutes. Having up-to-date and accurate information helps your athletic trainer provide the best level of medical services, which is a direct benefit to you. If you encounter any difficulties, please contact your school's athletic trainer directly for assistance.

If you know you have never created a User Profile in ATS, skip down to the 'Instructions for Creating a NEW User Profile', otherwise, start here.

Instructions for updating information in an EXISTING User Profile

Step 1: Go to coxhealth2.atsusers.com using any internet browser (except Internet Explorer, version 10).

Step 2: Using your established Athlete ID and Password, and 'atscoxhealth' as the Database Name, log in to your user profile and click on 'Agree' when the User Agreement screen pops up.

Step 3: Click on the **Athlete Information** icon and then using the tabs at the top of the main screen to navigate from page to page, update the **General**, **Insurance**, and **Contacts** information, clicking on the '**Verify...**' button on each of those screens to save any changes made or verify that you have checked it all for correctness.

Step 4: Click on the **Athlete Forms** tab. Using the **Form Name** dropdown menu, select and complete, one at a time, all three applicable forms (Health *History Form, Medical Treatment Consent Form, impact Testing Consent Form*). These forms require electronic signatures from both the student-athlete AND the parent/guardian. This is done by signing with a stylus or using the mouse or mouse pad, then typing the signer's name, then clicking on "Sign" to apply the signature. Each signature will update within about 20-30 seconds. Once each form has been completed and signed, click "Save" and watch for the verification message to appear.

**Before moving on to Step 5, scan or take a photo of your completed physical and save it to your computer, so that you can upl oad it in Step 5. Please note, the file cannot exceed 1MB in size, so you may have to use a lower resolution if you are taking a photo of it with a Smartphone

Step 5: Click on the **eFiles** tab. Place your cursor in the **Description** field and type "Physical 2014-15", then click on "Choose File". Locate the file containing your

scanned or photographed, completed physical and double click on it. When it appears next to the "Choose File" button, then click on "Upload". A pop-up window telling you that your save is complete should appear, and your new document should appear in the list.

Thank you for taking the time to update your health information. You can now logout of ATS®.

Instructions for creating a NEW User Profile

Step 1: Go to coxhealth2.atsusers.com using any internet browser (except Internet Explorer, version 10).

Step 2: Using the word 'New' as both an Athlete ID and Password, and 'atscoxhealth' as the Database Name, log in to the Athletic Trainer System® Athlete Portal, and click on 'Agree' when the User Agreement screen pops up.

Step 3: Complete as much information as you can (yellow highlighted field are required) under the **General** tab. If necessary, multiple items can be selected from dropdown menus by holding down the 'Control' key on your keyboard while selecting the items. In the Athlete ID field we recommend using your student ID number. In the Password field, use a familiar, but strong password that incorporates capital and lower case letters, numbers and/or symbols. This Athlete ID and Password is what you will use the next time you log in to ATS. You can type freely in the ***Medical Alerts***, ***Allergies***, and ***Current Medications*** fields, so even if an option is not listed, please type it in, providing all pertinent information. Do not leave these blank; at least type ***"None"*** or ***"N/A"*** so that it is apparent that you did not skip that field. Once complete click ***"Save Athlete Information"***.

**Note: When trying to save your profile, if you get a pop-up error stating that an athlete with that name, gender, year and birth date already exists, you will need to logout, obtain the existing Athlete ID and Password from your athletic trainer, and follow the instructions for updating an EXISTING User Profile (found above in these instructions).

Once information under the **General** tab has been saved, the screen will refresh and four new tabs (**Insurance, Contacts, Athlete Forms,** and **eFiles**) will appear at the top of the screen. Provide that data page by page, saving your information by clicking on the blue check mark at the bottom of each page once completed.

Insurance Tab Click the **"Add"** icon and provide as much information as you can (yellow highlighted fields are required). At the bottom, you can easily upload a scanned or photographed image of your insurance card (image cannot exceed 1MB) by taking a picture and emailing it to yourself and saving it to your computer.

Contacts Tab Click the **"Add"** icon and fill out as much information as you can (yellow highlighted fields are required). Enter at least 1 emergency contact, but preferable 2-3.

Step 4: Click on the **Athlete Forms** tab. Using the **Form Name** dropdown menu, select and complete, one at a time, all three applicable forms (Health *History Form, Medical Treatment Consent Form, impact Testing Consent Form*). These

forms require electronic signatures from both the student-athlete AND the parent/guardian. This is done by signing with a stylus or using the mouse or mouse pad, then typing the signer's name, then clicking on "Sign" to apply the signature. Each signature will update within about 20-30 seconds. Once each form has been completed and signed, click "Save" and watch for the verification message to appear.

**Before moving on to Step 5, scan or take a photo of your completed physical and save it to your computer, so that you can upl oad it in Step 5. Please note, the file cannot exceed 1MB in size, so you may have to use a lower resolution if you are taking a photo of it with a Smartphone

Step 5: Click on the **eFiles** tab. Place your cursor in the **Description** field and type "Physical 2014-15", then click on "Choose File". Locate the file containing your scanned or photographed, completed physical and double click on it. When it appears next to the "Choose File" button, then click on "Upload". A pop-up window telling you that your save is complete should appear, and your new document should appear in the list.

Thank you for creating your user profile and providing us with this important information. You can now logout of ATS®.

Appendix C

Cleaning Schedule

Dept/Team:																
Daily																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

Weekly					
	Monday	Tuesday	Wednesday	Thursday	Friday
	Monday	Tuesday	Wednesday	Thursday	Friday
	Monday	Tuesday	Wednesday	Thursday	Friday
	Monday	Tuesday	Wednesday	Thursday	Friday
	Monday	Tuesday	Wednesday	Thursday	Friday

Monthly	

Appendix D

SCAT3™

Sport Concussion Assessment Tool – 3rd Edition

For use by medical professionals only

Name | Date/Time of Injury: Date of Assessment: | Examiner:

What is the SCAT3?[1]

The SCAT3 is a standardized tool for evaluating injured athletes for concussion and can be used in athletes aged from 13 years and older. It supersedes the original SCAT and the SCAT2 published in 2005 and 2009, respectively[2]. For younger persons, ages 12 and under, please use the Child SCAT3. The SCAT3 is designed for use by medical professionals. If you are not qualified, please use the Sport Concussion Recognition Tool[1]. Preseason baseline testing with the SCAT3 can be helpful for interpreting post-injury test scores.

Specific instructions for use of the SCAT3 are provided on page 3. If you are not familiar with the SCAT3, please read through these instructions carefully. This tool may be freely copied in its current form for distribution to individuals, teams, groups and organizations. Any revision or any reproduction in a digital form requires approval by the Concussion in Sport Group.

NOTE: The diagnosis of a concussion is a clinical judgment, ideally made by a medical professional. The SCAT3 should not be used solely to make, or exclude, the diagnosis of concussion in the absence of clinical judgement. An athlete may have a concussion even if their SCAT3 is "normal".

What is a concussion?

A concussion is a disturbance in brain function caused by a direct or indirect force to the head. It results in a variety of non-specific signs and/or symptoms (some examples listed below) and most often does not involve loss of consciousness. Concussion should be suspected in the presence of **any one or more** of the following:

- Symptoms (e.g., headache), or
- Physical signs (e.g., unsteadiness), or
- Impaired brain function (e.g. confusion) or
- Abnormal behaviour (e.g., change in personality).

SIDELINE ASSESSMENT

Indications for Emergency Management

NOTE: A hit to the head can sometimes be associated with a more serious brain injury. Any of the following warrants consideration of activating emergency procedures and urgent transportation to the nearest hospital:

- Glasgow Coma score less than 15
- Deteriorating mental status
- Potential spinal injury
- Progressive, worsening symptoms or new neurologic signs

Potential signs of concussion?

If any of the following signs are observed after a direct or indirect blow to the head, the athlete should stop participation, be evaluated by a medical professional and **should not be permitted to return to sport the same day** if a concussion is suspected.

Any loss of consciousness?	Y	N
"If so, how long?"		
Balance or motor incoordination (stumbles, slow/laboured movements, etc.)?	Y	N
Disorientation or confusion (inability to respond appropriately to questions)?	Y	N
Loss of memory:	Y	N
"If so, how long?"		
"Before or after the injury?"		
Blank or vacant look:	Y	N
Visible facial injury in combination with any of the above:	Y	N

1 Glasgow coma scale (GCS)

Best eye response (E)	
No eye opening	1
Eye opening in response to pain	2
Eye opening to speech	3
Eyes opening spontaneously	4
Best verbal response (V)	
No verbal response	1
Incomprehensible sounds	2
Inappropriate words	3
Confused	4
Oriented	5
Best motor response (M)	
No motor response	1
Extension to pain	2
Abnormal flexion to pain	3
Flexion/Withdrawal to pain	4
Localizes to pain	5
Obeys commands	6
Glasgow Coma score (E + V + M)	of 15

GCS should be recorded for all athletes in case of subsequent deterioration.

2 Maddocks Score[3]

"I am going to ask you a few questions, please listen carefully and give your best effort."

Modified Maddocks questions (1 point for each correct answer)

What venue are we at today?	0	1
Which half is it now?	0	1
Who scored last in this match?	0	1
What team did you play last week/game?	0	1
Did your team win the last game?	0	1
Maddocks score		of 5

Maddocks score is validated for sideline diagnosis of concussion only and is not used for serial testing.

Notes: Mechanism of Injury ("tell me what happened"?):

Any athlete with a suspected concussion should be REMOVED FROM PLAY, medically assessed, monitored for deterioration (i.e., should not be left alone) and should not drive a motor vehicle until cleared to do so by a medical professional. No athlete diagnosed with concussion should be returned to sports participation on the day of Injury.

BACKGROUND

Name: _____ Date: _____

Examiner: _____

Sport/team/school: _____ Date/time of injury: _____

Age: _____ Gender: ☐ M ☐ F

Years of education completed: _____

Dominant hand: ☐ right ☐ left ☐ neither

How many concussions do you think you have had in the past? _____

When was the most recent concussion? _____

How long was your recovery from the most recent concussion? _____

Have you ever been hospitalized or had medical imaging done for a head injury? ☐ Y ☐ N

Have you ever been diagnosed with headaches or migraines? ☐ Y ☐ N

Do you have a learning disability, dyslexia, ADD/ADHD? ☐ Y ☐ N

Have you ever been diagnosed with depression, anxiety or other psychiatric disorder? ☐ Y ☐ N

Has anyone in your family ever been diagnosed with any of these problems? ☐ Y ☐ N

Are you on any medications? If yes, please list: ☐ Y ☐ N

_____

SCAT3 to be done in resting state. Best done 10 or more minutes post excercise.

SYMPTOM EVALUATION

How do you feel?

"You should score yourself on the following symptoms, based on how you feel now".

	none	mild		moderate		severe	
Headache	0	1	2	3	4	5	6
"Pressure in head"	0	1	2	3	4	5	6
Neck Pain	0	1	2	3	4	5	6
Nausea or vomiting	0	1	2	3	4	5	6
Dizziness	0	1	2	3	4	5	6
Blurred vision	0	1	2	3	4	5	6
Balance problems	0	1	2	3	4	5	6
Sensitivity to light	0	1	2	3	4	5	6
Sensitivity to noise	0	1	2	3	4	5	6
Feeling slowed down	0	1	2	3	4	5	6
Feeling like "in a fog"	0	1	2	3	4	5	6
"Don't feel right"	0	1	2	3	4	5	6
Difficulty concentrating	0	1	2	3	4	5	6
Difficulty remembering	0	1	2	3	4	5	6
Fatigue or low energy	0	1	2	3	4	5	6
Confusion	0	1	2	3	4	5	6
Drowsiness	0	1	2	3	4	5	6
Trouble falling asleep	0	1	2	3	4	5	6
More emotional	0	1	2	3	4	5	6
Irritability	0	1	2	3	4	5	6
Sadness	0	1	2	3	4	5	6
Nervous or Anxious	0	1	2	3	4	5	6

Total number of symptoms (Maximum possible 22) _____

Symptom severity score (Maximum possible 132) _____

Do the symptoms get worse with physical activity? ☐ Y ☐ N

Do the symptoms get worse with mental activity? ☐ Y ☐ N

☐ self rated ☐ self rated and clinician monitored

☐ clinician interview ☐ self rated with parent input

Overall rating: If you know the athlete well prior to the injury, how different is the athlete acting compared to his/her usual self?

Please circle one response:

no different	very different	unsure	N/A

Scoring on the SCAT3 should not be used as a stand-alone method to diagnose concussion, measure recovery or make decisions about an athlete's readiness to return to competition after concussion. Since signs and symptoms may evolve over time, it is important to consider repeat evaluation in the acute assessment of concussion.

COGNITIVE & PHYSICAL EVALUATION

4 Cognitive assessment

Standardized Assessment of Concussion (SAC)[4]

Orientation (1 point for each correct answer)

What month is it?	0	1
What is the date today?	0	1
What is the day of the week?	0	1
What year is it?	0	1
What time is it right now? (within 1 hour)	0	1
Orientation score		of 5

Immediate memory

List	Trial 1		Trial 2		Trial 3		Alternative word list		
elbow	0	1	0	1	0	1	candle	baby	finger
apple	0	1	0	1	0	1	paper	monkey	penny
carpet	0	1	0	1	0	1	sugar	perfume	blanket
saddle	0	1	0	1	0	1	sandwich	sunset	lemon
bubble	0	1	0	1	0	1	wagon	iron	insect
Total									

Immediate memory score total of 15

Concentration: Digits Backward

List	Trial 1		Alternative digit list		
4-9-3	0	1	6-2-9	5-2-6	4-1-5
3-8-1-4	0	1	3-2-7-9	1-7-9-5	4-9-6-8
6-2-9-7-1	0	1	1-5-2-8-6	3-8-5-2-7	6-1-8-4-3
7-1-8-4-6-2	0	1	5-3-9-1-4-8	8-3-1-9-6-4	7-2-4-8-5-6
Total of 4					

Concentration: Month in Reverse Order (1 pt. for entire sequence correct)

Dec-Nov-Oct-Sept-Aug-Jul-Jun-May-Apr-Mar-Feb-Jan	0	1
Concentration score		of 5

5 Neck Examination:

Range of motion Tenderness Upper and lower limb sensation & strength

Findings: _____

6 Balance examination

Do one or both of the following tests.

Footwear (shoes, barefoot, braces, tape, etc.) _____

Modified Balance Error Scoring System (BESS) testing[5]

Which foot was tested (i.e. which is the **non-dominant** foot) ☐ Left ☐ Right

Testing surface (hard floor, field, etc.) _____

Condition

Double leg stance:	Errors
Single leg stance (non-dominant foot):	Errors
Tandem stance (non-dominant foot at back):	Errors

And/Or

Tandem gait[6,7]

Time (best of 4 trials): _____ seconds

7 Coordination examination

Upper limb coordination

Which arm was tested: ☐ Left ☐ Right

Coordination score of 1

8 SAC Delayed Recall[4]

Delayed recall score of 5

INSTRUCTIONS

Words in *Italics* throughout the SCAT3 are the instructions given to the athlete by the tester.

Symptom Scale

"You should score yourself on the following symptoms, based on how you feel now".

To be completed by the athlete. In situations where the symptom scale is being completed after exercise, it should still be done in a resting state, at least 10 minutes post exercise.

For total number of symptoms, maximum possible is 22.

For Symptom severity score, add all scores in table, maximum possible is 22 x 6 = 132.

SAC[4]

Immediate Memory

"I am going to test your memory. I will read you a list of words and when I am done, repeat back as many words as you can remember, in any order."

Trials 2 & 3:

"I am going to repeat the same list again. Repeat back as many words as you can remember in any order, even if you said the word before."

Complete all 3 trials regardless of score on trial 1 & 2. Read the words at a rate of one per second. **Score 1 pt. for each correct response.** Total score equals sum across all 3 trials. Do not inform the athlete that delayed recall will be tested.

Concentration

Digits backward

"I am going to read you a string of numbers and when I am done, you repeat them back to me backwards, in reverse order of how I read them to you. For example, if I say 7-1-9, you would say 9-1-7."

If correct, go to next string length. If incorrect, read trial 2. **One point possible for each string length**. Stop after incorrect on both trials. The digits should be read at the rate of one per second.

Months in reverse order

"Now tell me the months of the year in reverse order. Start with the last month and go backward. So you'll say December, November … Go ahead"

1 pt. for entire sequence correct

Delayed Recall

The delayed recall should be performed after completion of the Balance and Coordination Examination.

"Do you remember that list of words I read a few times earlier? Tell me as many words from the list as you can remember in any order."

Score 1 pt. for each correct response

Balance Examination

Modified Balance Error Scoring System (BESS) testing[5]

This balance testing is based on a modified version of the Balance Error Scoring System (BESS)[5]. A stopwatch or watch with a second hand is required for this testing.

"I am now going to test your balance. Please take your shoes off, roll up your pant legs above ankle (if applicable), and remove any ankle taping (if applicable). This test will consist of three twenty second tests with different stances."

(a) Double leg stance:

"The first stance is standing with your feet together with your hands on your hips and with your eyes closed. You should try to maintain stability in that position for 20 seconds. I will be counting the number of times you move out of this position. I will start timing when you are set and have closed your eyes."

(b) Single leg stance:

"If you were to kick a ball, which foot would you use? [This will be the dominant foot] Now stand on your non-dominant foot. The dominant leg should be held in approximately 30 degrees of hip flexion and 45 degrees of knee flexion. Again, you should try to maintain stability for 20 seconds with your hands on your hips and your eyes closed. I will be counting the number of times you move out of this position. If you stumble out of this position, open your eyes and return to the start position and continue balancing. I will start timing when you are set and have closed your eyes."

(c) Tandem stance:

"Now stand heel-to-toe with your non-dominant foot in back. Your weight should be evenly distributed across both feet. Again, you should try to maintain stability for 20 seconds with your hands on your hips and your eyes closed. I will be counting the number of times you move out of this position. If you stumble out of this position, open your eyes and return to the start position and continue balancing. I will start timing when you are set and have closed your eyes."

Balance testing – types of errors

1. Hands lifted off iliac crest
2. Opening eyes
3. Step, stumble, or fall
4. Moving hip into > 30 degrees abduction
5. Lifting forefoot or heel
6. Remaining out of test position > 5 sec

Each of the 20-second trials is scored by counting the errors, or deviations from the proper stance, accumulated by the athlete. The examiner will begin counting errors only after the individual has assumed the proper start position. **The modified BESS is calculated by adding one error point for each error during the three 20-second tests. The maximum total number of errors for any single condition is 10.** If a athlete commits multiple errors simultaneously, only one error is recorded but the athlete should quickly return to the testing position, and counting should resume once subject is set. Subjects that are unable to maintain the testing procedure for a minimum of **five seconds** at the start are assigned the highest possible score, ten, for that testing condition.

OPTION: For further assessment, the same 3 stances can be performed on a surface of medium density foam (e.g., approximately 50 cm x 40 cm x 6 cm).

Tandem Gait[6,7]

Participants are instructed to stand with their feet together behind a starting line (the test is best done with footwear removed). Then, they walk in a forward direction as quickly and as accurately as possible along a 38mm wide (sports tape), 3 meter line with an alternate foot heel-to-toe gait ensuring that they approximate their heel and toe on each step. Once they cross the end of the 3m line, they turn 180 degrees and return to the starting point using the same gait. A total of 4 trials are done and the best time is retained. Athletes should complete the test in 14 seconds. Athletes fail the test if they step off the line, have a separation between their heel and toe, or if they touch or grab the examiner or an object. In this case, the time is not recorded and the trial repeated, if appropriate.

Coordination Examination

Upper limb coordination

Finger-to-nose (FTN) task:

"I am going to test your coordination now. Please sit comfortably on the chair with your eyes open and your arm (either right or left) outstretched (shoulder flexed to 90 degrees and elbow and fingers extended), pointing in front of you. When I give a start signal, I would like you to perform five successive finger to nose repetitions using your index finger to touch the tip of the nose, and then return to the starting position, as quickly and as accurately as possible."

Scoring: 5 correct repetitions in < 4 seconds = 1

Note for testers: Athletes fail the test if they do not touch their nose, do not fully extend their elbow or do not perform five repetitions. **Failure should be scored as 0.**

References & Footnotes

1. This tool has been developed by a group of international experts at the 4th International Consensus meeting on Concussion in Sport held in Zurich, Switzerland in November 2012. The full details of the conference outcomes and the authors of the tool are published in The BJSM Injury Prevention and Health Protection, 2013, Volume 47, Issue 5. The outcome paper will also be simultaneously co-published in other leading biomedical journals with the copyright held by the Concussion in Sport Group, to allow unrestricted distribution, providing no alterations are made.

2. McCrory P et al., Consensus Statement on Concussion in Sport – the 3rd International Conference on Concussion in Sport held in Zurich, November 2008. British Journal of Sports Medicine 2009; 43: i76-89.

3. Maddocks, DL; Dicker, GD; Saling, MM. The assessment of orientation following concussion in athletes. Clinical Journal of Sport Medicine. 1995; 5(1): 32–3.

4. McCrea M. Standardized mental status testing of acute concussion. Clinical Journal of Sport Medicine. 2001; 11: 176–181.

5. Guskiewicz KM. Assessment of postural stability following sport-related concussion. Current Sports Medicine Reports. 2003; 2: 24–30.

6. Schneiders, A.G., Sullivan, S.J., Gray, A., Hammond-Tooke, G.&McCrory, P. Normative values for 16-37 year old subjects for three clinical measures of motor performance used in the assessment of sports concussions. Journal of Science and Medicine in Sport. 2010; 13(2): 196–201.

7. Schneiders, A.G., Sullivan, S.J., Kvarnstrom. J.K., Olsson, M., Yden. T.&Marshall, S.W. The effect of footwear and sports-surface on dynamic neurological screening in sport-related concussion. Journal of Science and Medicine in Sport. 2010; 13(4): 382–386

ATHLETE INFORMATION

Any athlete suspected of having a concussion should be removed from play, and then seek medical evaluation.

Signs to watch for

Problems could arise over the first 24–48 hours. The athlete should not be left alone and must go to a hospital at once if they:

- Have a headache that gets worse
- Are very drowsy or can't be awakened
- Can't recognize people or places
- Have repeated vomiting
- Behave unusually or seem confused; are very irritable
- Have seizures (arms and legs jerk uncontrollably)
- Have weak or numb arms or legs
- Are unsteady on their feet; have slurred speech

Remember, it is better to be safe.
Consult your doctor after a suspected concussion.

Return to play

Athletes should not be returned to play the same day of injury.
When returning athletes to play, they should be **medically cleared and then follow a stepwise supervised program,** with stages of progression.

For example:

Rehabilitation stage	Functional exercise at each stage of rehabilitation	Objective of each stage
No activity	Physical and cognitive rest	Recovery
Light aerobic exercise	Walking, swimming or stationary cycling keeping intensity, 70 % maximum predicted heart rate. No resistance training	Increase heart rate
Sport-specific exercise	Skating drills in ice hockey, running drills in soccer. No head impact activities	Add movement
Non-contact training drills	Progression to more complex training drills, eg passing drills in football and ice hockey. May start progressive resistance training	Exercise, coordination, and cognitive load
Full contact practice	Following medical clearance participate in normal training activities	Restore confidence and assess functional skills by coaching staff
Return to play	Normal game play	

There should be at least 24 hours (or longer) for each stage and if symptoms recur the athlete should rest until they resolve once again and then resume the program at the previous asymptomatic stage. Resistance training should only be added in the later stages.

If the athlete is symptomatic for more than 10 days, then consultation by a medical practitioner who is expert in the management of concussion, is recommended.

Medical clearance should be given before return to play.

Scoring Summary:

Test Domain	Score		
	Date:	Date:	Date:
Number of Symptoms of 22			
Symptom Severity Score of 132			
Orientation of 5			
Immediate Memory of 15			
Concentration of 5			
Delayed Recall of 5			
SAC Total			
BESS (total errors)			
Tandem Gait (seconds)			
Coordination of 1			

Notes:

CONCUSSION INJURY ADVICE

(To be given to the **person monitoring** the concussed athlete)

This patient has received an injury to the head. A careful medical examination has been carried out and no sign of any serious complications has been found. Recovery time is variable across individuals and the patient will need monitoring for a further period by a responsible adult. Your treating physician will provide guidance as to this timeframe.

If you notice any change in behaviour, vomiting, dizziness, worsening headache, double vision or excessive drowsiness, please contact your doctor or the nearest hospital emergency department immediately.

Other important points:

- Rest (physically and mentally), including training or playing sports until symptoms resolve and you are medically cleared
- No alcohol
- No prescription or non-prescription drugs without medical supervision. Specifically:
  - No sleeping tablets
  - Do not use aspirin, anti-inflammatory medication or sedating pain killers
- Do not drive until medically cleared
- Do not train or play sport until medically cleared

Clinic phone number

Patient's name

Date/time of injury

Date/time of medical review

Treatingphysician

Contact details or stamp

Appendix E

Child-SCAT3™

Sport Concussion Assessment Tool for children ages 5 to12 years

For use by medical professionals only

What is childSCAT3?[1]

The ChildSCAT3 is a standardized tool for evaluating injured children for concussion and can be used in children aged from 5 to 12 years. It supersedes the original SCAT and the SCAT2 published in 2005 and 2009, respectively[2]. For older persons, ages 13 years and over, please use the SCAT3. The ChildSCAT3 is designed for use by medical professionals. If you are not qualified, please use the Sport Concussion Recognition Tool[1].Preseason baseline testing with the ChildSCAT3 can be helpful for interpreting post-injury test scores.

Specific instructions for use of the ChildSCAT3 are provided on page 3. If you are not familiar with the ChildSCAT3, please read through these instructions carefully. This tool may be freely copied in its current form for distribution to individuals, teams, groups and organizations. Any revision and any reproduction in a digital form require approval by the Concussion in Sport Group.
NOTE: The diagnosis of a concussion is a clinical judgment, ideally made by a medical professional. The ChildSCAT3 should not be used solely to make, or exclude, the diagnosis of concussion in the absence of clinical judgement. An athlete may have a concussion even if their ChildSCAT3 is "normal".

What is a concussion?

A concussion is a disturbance in brain function caused by a direct or indirect force to the head. It results in a variety of non-specific signs and/or symptoms (like those listed below) and most often does not involve loss of consciousness. Concussion should be suspected in the presence of any one or more of the following:

- Symptoms (e.g., headache), or
- Physical signs (e.g., unsteadiness), or
- Impaired brain function (e.g. confusion) or
- Abnormal behaviour (e.g., change in personality).

SIDELINE ASSESSMENT

Indications for Emergency Management

NOTE: A hit to the head can sometimes be associated with a more severe brain injury. If the concussed child displays any of the following, then do not proceed with the ChildSCAT3; instead activate emergency procedures and urgent transportation to the nearest hospital:

- Glasgow Coma score less than 15
- Deteriorating mental status
- Potential spinal injury
- Progressive, worsening symptoms or new neurologic signs
- Persistent vomiting
- Evidence of skull fracture
- Post traumatic seizures
- Coagulopathy
- History of Neurosurgery (eg Shunt)
- Multiple injuries

Glasgow coma scale (GCS)

Best eye response (E)	
No eye opening	1
Eye opening in response to pain	2
Eye opening to speech	3
Eyes opening spontaneously	4
Best verbal response (V)	
No verbal response	1
Incomprehensible sounds	2
Inappropriate words	3
Confused	4
Oriented	5
Best motor response (M)	
No motor response	1
Extension to pain	2
Abnormal flexion to pain	3
Flexion/Withdrawal to pain	4
Localizes to pain	5
Obeys commands	6
Glasgow Coma score (E + V + M)	of 15

GCS should be recorded for all athletes in case of subsequent deterioration.

Potential signs of concussion?

If any of the following signs are observed after a direct or indirect blow to the head, the child should stop participation, be evaluated by a medical professional and **should not be permitted to return to sport the same day** if a concussion is suspected.

Any loss of consciousness?	☐ Y ☐ N
"If so, how long?"	
Balance or motor incoordination (stumbles, slow/laboured movements, etc.)?	☐ Y ☐ N
Disorientation or confusion (inability to respond appropriately to questions)?	☐ Y ☐ N
Loss of memory:	☐ Y ☐ N
"If so, how long?"	
"Before or after the injury?"	
Blank or vacant look:	☐ Y ☐ N
Visible facial injury in combination with any of the above:	☐ Y ☐ N

2

Sideline Assessment – child-Maddocks Score[3]

"I am going to ask you a few questions, please listen carefully and give your best effort."

Modified Maddocks questions (1 point for each correct answer)

Where are we at now?	0	1
Is it before or after lunch?	0	1
What did you have last lesson/class?	0	1
What is your teacher's name?	0	1
child-Maddocks score		of 4

Child-Maddocks score is for sideline diagnosis of concussion only and is not used for serial testing.

Any child with a suspected concussion should be REMOVED FROM PLAY, medically assessed and monitored for deterioration (i.e., should not be left alone). No child diagnosed with concussion should be returned to sports participation on the day of injury.

BACKGROUND

Name: _____ Date/Time of Injury: _____

Examiner: _____ Date of Assessment: _____

Sport/team/school: _____

Age: _____ Gender: ☐ M ☐ F

Current school year/grade: _____

Dominant hand: ☐ right ☐ left ☐ neither

Mechanism of Injury ("tell me what happened"?): _____

For Parent/carer to complete:

How many concussions has the child had in the past? _____

When was the most recent concussion? _____

How long was the recovery from the most recent concussion? _____

Has the child ever been hospitalized or had medical imaging done (CT or MRI) for a head injury?	☐ Y ☐ N
Has the child ever been diagnosed with headaches or migraines?	☐ Y ☐ N
Does the child have a learning disability, dyslexia, ADD/ADHD, seizure disorder?	☐ Y ☐ N
Has the child ever been diagnosed with depression, anxiety or other psychiatric disorder?	☐ Y ☐ N
Has anyone in the family ever been diagnosed with any of these problems?	☐ Y ☐ N
Is the child on any medications? If yes, please list:	☐ Y ☐ N

SYMPTOM EVALUATION

3 Child report

Name:	never	rarely	sometimes	often
I have trouble paying attention	0	1	2	3
I get distracted easily	0	1	2	3
I have a hard time concentrating	0	1	2	3
I have problems remembering what people tell me	0	1	2	3
I have problems following directions	0	1	2	3
I daydream too much	0	1	2	3
I get confused	0	1	2	3
I forget things	0	1	2	3
I have problems finishing things	0	1	2	3
I have trouble figuring things out	0	1	2	3
It's hard for me to learn new things	0	1	2	3
I have headaches	0	1	2	3
I feel dizzy	0	1	2	3
I feel like the room is spinning	0	1	2	3
I feel like I'm going to faint	0	1	2	3
Things are blurry when I look at them	0	1	2	3
I see double	0	1	2	3
I feel sick to my stomach	0	1	2	3
I get tired a lot	0	1	2	3
I get tired easily	0	1	2	3

Total number of symptoms (Maximum possible 20)

Symptom severity score (Maximum possible 20 x 3 = 60)

☐ self rated ☐ clinician interview ☐ self rated and clinician monitored

4 Parent report

The child	never	rarely	sometimes	often
has trouble sustaining attention	0	1	2	3
is easily distracted	0	1	2	3
has difficulty concentrating	0	1	2	3
has problems remembering what he/she is told	0	1	2	3
has difficulty following directions	0	1	2	3
tends to daydream	0	1	2	3
gets confused	0	1	2	3
is forgetful	0	1	2	3
has difficulty completeing tasks	0	1	2	3
has poor problem solving skills	0	1	2	3
has problems learning	0	1	2	3
has headaches	0	1	2	3
feels dizzy	0	1	2	3
has a feeling that the room is spinning	0	1	2	3
feels faint	0	1	2	3
has blurred vision	0	1	2	3
has double vision	0	1	2	3
experiences nausea	0	1	2	3
gets tired a lot	0	1	2	3
gets tired easily	0	1	2	3

Total number of symptoms (Maximum possible 20)

Symptom severity score (Maximum possible 20 x 3 = 60)

Do the symptoms get worse with physical activity? ☐ Y ☐ N

Do the symptoms get worse with mental activity? ☐ Y ☐ N

☐ parent self rated ☐ clinician interview ☐ parent self rated and clinician monitored

Overall rating for parent/teacher/coach/carer to answer.
How different is the child acting compared to his/her usual self?

Please circle one response:

no different | very different | unsure | N/A

Name of person completing Parent-report: _____

Relationship to child of person completing Parent-report: _____

Scoring on the ChildSCAT3 should not be used as a stand-alone method to diagnose concussion, measure recovery or make decisions about an athlete's readiness to return to competition after concussion.

COGNITIVE & PHYSICAL EVALUATION

5 Cognitive assessment

Standardized Assessment of Concussion – Child Version (SAC-C)[4]

Orientation (1 point for each correct answer)

What month is it?	0	1
What is the date today?	0	1
What is the day of the week?	0	1
What year is it?	0	1
Orientation score		of 4

Immediate memory

List	Trial 1	Trial 2	Trial 3	Alternative word list		
elbow	0 1	0 1	0 1	candle	baby	finger
apple	0 1	0 1	0 1	paper	monkey	penny
carpet	0 1	0 1	0 1	sugar	perfume	blanket
saddle	0 1	0 1	0 1	sandwich	sunset	lemon
bubble	0 1	0 1	0 1	wagon	iron	insect
Total						

Immediate memory score total of 15

Concentration: Digits Backward

List	Trial 1	Alternative digit list		
6-2	0 1	5-2	4-1	4-9
4-9-3	0 1	6-2-9	5-2-6	4-1-5
3-8-1-4	0 1	3-2-7-9	1-7-9-5	4-9-6-8
6-2-9-7-1	0 1	1-5-2-8-6	3-8-5-2-7	6-1-8-4-3
7-1-8-4-6-2	0 1	5-3-9-1-4-8	8-3-1-9-6-4	7-2-4-8-5-6
Total of 5				

Concentration: Days in Reverse Order (1 pt. for entire sequence correct)

Sunday-Saturday-Friday-Thursday-Wednesday-Tuesday-Monday	0	1
Concentration score		of 6

6 Neck Examination:

Range of motion Tenderness Upper and lower limb sensation & strength

Findings: _____

7 Balance examination

Do one or both of the following tests.

Footwear (shoes, barefoot, braces, tape, etc.) _____

Modified Balance Error Scoring System (BESS) testing[5]

Which foot was tested (i.e. which is the **non-dominant** foot) ☐ Left ☐ Right

Testing surface (hard floor, field, etc.) _____

Condition

Double leg stance:	Errors
Tandem stance (non-dominant foot at back):	Errors

Tandem gait[6,7]

Time taken to complete (best of 4 trials): _____ seconds

If child attempted, but unable to complete tandem gait, mark here ☐

8 Coordination examination

Upper limb coordination

Which arm was tested: ☐ Left ☐ Right

Coordination score of 1

9 SAC Delayed Recall[4]

Delayed recall score of 5

Since signs and symptoms may evolve over time, it is important to consider repeat evaluation in the acute assessment of concussion.

INSTRUCTIONS

Words in *italics* throughout the ChildSCAT3 are the instructions given to the child by the tester.

Sideline Assessment – child-Maddocks Score

To be completed on the sideline/in the playground, immediately following concussion. There is no requirement to repeat these questions at follow-up.

Symptom Scale[8]

In situations where the symptom scale is being completed after exercise, it should still be done in a resting state, at least 10 minutes post exercise.

On the day of injury

- the child is to complete the Child Report, according to how he/she feels now.

On all subsequent days

- the child is to complete the Child Report, according to how he/she feels today, **and**
- the parent/carer is to complete the Parent Report according to how the child has been over the previous 24 hours.

Standardized Assessment of Concussion – Child Version (SAC-C)[4]

Orientation

Ask each question on the score sheet. A correct answer for **each question scores 1 point.** If the child does not understand the question, gives an incorrect answer, or no answer, then the score for that question is 0 points.

Immediate memory

"I am going to test your memory. I will read you a list of words and when I am done, repeat back as many words as you can remember, in any order."

Trials 2 & 3:

"I am going to repeat the same list again. Repeat back as many words as you can remember in any order, even if you said the word before."

Complete all 3 trials regardless of score on trial 1 & 2. Read the words at a rate of one per second. **Score 1 pt. for each correct response.** Total score equals sum across all 3 trials. Do not inform the child that delayed recall will be tested.

Concentration

Digits Backward:

"I am going to read you a string of numbers and when I am done, you repeat them back to me backwards, in reverse order of how I read them to you. For example, if I say 7-1, you would say 1-7."

If correct, go to next string length. If incorrect, read trial 2. **One point possible for each string length.** Stop after incorrect on both trials. The digits should be read at the rate of one per second.

Days in Reverse Order:

"Now tell me the days of the week in reverse order. Start with Sunday and go backward. So you'll say Sunday, Saturday … Go ahead"

1 pt. for entire sequence correct

Delayed recall

The delayed recall should be performed after completion of the Balance and Coordination Examination.

"Do you remember that list of words I read a few times earlier? Tell me as many words from the list as you can remember in any order."

Circle each word correctly recalled. **Total score equals number of words recalled.**

Balance examination

These instructions are to be read by the person administering the childSCAT3, and each balance task **should be demonstrated to the child**. The child should then be asked to copy what the examiner demonstrated.

Modified Balance Error Scoring System (BESS) testing[8]

This balance testing is based on a modified version of the Balance Error Scoring System (BESS)[8]. A stopwatch or watch with a second hand is required for this testing.

"I am now going to test your balance. Please take your shoes off, roll up your pant legs above ankle (if applicable), and remove any ankle taping (if applicable). This test will consist of two different parts."

(a) Double leg stance:

The first stance is standing with the feet together with hands on hips and with eyes closed. The child should try to maintain stability in that position for 20 seconds. You should inform the child that you will be counting the number of times the child moves out of this position. You should start timing when the child is set and the eyes are closed.

(b) Tandem stance:

Instruct the child to stand heel-to-toe with the non-dominant foot in the back. Weight should be evenly distributed across both feet. Again, the child should try to maintain stability for 20 seconds with hands on hips and eyes closed. You should inform the child that you will be counting the number of times the child moves out of this position. If the child stumbles out of this position, instruct him/her to open the eyes and return to the start position and continue balancing. You should start timing when the child is set and the eyes are closed.

Balance testing – types of errors - Parts (a) and (b)

1. Hands lifted off iliac crest
2. Opening eyes
3. Step, stumble, or fall
4. Moving hip into > 30 degrees abduction
5. Lifting forefoot or heel
6. Remaining out of test position > 5 sec

Each of the 20-second trials is scored by counting the errors, or deviations from the proper stance, accumulated by the child. The examiner will begin counting errors only after the child has assumed the proper start position. **The modified BESS is calculated by adding one error point for each error during the two 20-second tests. The maximum total number of errors for any single condition is 10.** If a child commits multiple errors simultaneously, only one error is recorded but the child should quickly return to the testing position, and counting should resume once subject is set. Children who are unable to maintain the testing procedure for a minimum of **five seconds** at the start are assigned the highest possible score, ten, for that testing condition.

OPTION: For further assessment, the same 2 stances can be performed on a surface of medium density foam (e.g., approximately 50cm x 40cm x 6cm).

Tandem Gait[6,7]

Use a clock (with a second hand) or stopwatch to measure the time taken to complete this task. Instruction for the examiner – **Demonstrate the following to the child**:

The child is instructed to stand with their feet together behind a starting line (the test is best done with footwear removed). Then, they walk in a forward direction as quickly and as accurately as possible along a 38mm wide (sports tape), 3 meter line with an alternate foot heel-to-toe gait ensuring that they approximate their heel and toe on each step. Once they cross the end of the 3m line, they turn 180 degrees and return to the starting point using the same gait. ***A total of 4 trials are done and the best time is retained****. Children fail the test if they step off the line, have a separation between their heel and toe, or if they touch or grab the examiner or an object. In this case, the time is not recorded and the trial repeated, if appropriate.*

Explain to the child that you will time how long it takes them to walk to the end of the line and back.

Coordination examination

Upper limb coordination

Finger-to-nose (FTN) task:

The tester should **demonstrate it to the child**.

"I am going to test your coordination now. Please sit comfortably on the chair with your eyes open and your arm (either right or left) outstretched (shoulder flexed to 90 degrees and elbow and fingers extended). When I give a start signal, I would like you to perform five successive finger to nose repetitions using your index finger to touch the tip of the nose as quickly and as accurately as possible."

Scoring: 5 correct repetitions in < 4 seconds = 1
Note for testers: Children fail the test if they do not touch their nose, do not fully extend their elbow or do not perform five repetitions. **Failure should be scored as 0.**

References & Footnotes

1. This tool has been developed by a group of international experts at the 4th International Consensus meeting on Concussion in Sport held in Zurich, Switzerland in November 2012. The full details of the conference outcomes and the authors of the tool are published in The BJSM Injury Prevention and Health Protection, 2013, Volume 47, Issue 5. The outcome paper will also be simultaneously co-published in other leading biomedical journals with the copyright held by the Concussion in Sport Group, to allow unrestricted distribution, providing no alterations are made.

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6. Schneiders, A.G., Sullivan, S.J., Gray, A., Hammond-Tooke, G. & McCrory, P. Normative values for 16-37 year old subjects for three clinical measures of motor performance used in the assessment of sports concussions. Journal of Science and Medicine in Sport. 2010; 13(2): 196–201.

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CHILD ATHLETE INFORMATION

Any child suspected of having a concussion should be removed from play, and then seek medical evaluation. The child must NOT return to play or sport on the same day as the suspected concussion.

Signs to watch for

Problems could arise over the first 24–48 hours. The child should not be left alone and must go to a hospital at once if they develop any of the following:

- New Headache, or Headache gets worse
- Persistent or increasing neck pain
- Becomes drowsy or can't be woken up
- Can not recognise people or places
- Has Nausea or Vomiting
- Behaves unusually, seems confused, or is irritable
- Has any seizures (arms and/or legs jerk uncontrollably)
- Has weakness, numbness or tingling (arms, legs or face)
- Is unsteady walking or standing
- Has slurred speech
- Has difficulty understanding speech or directions

Remember, it is better to be safe.
Always consult your doctor after a suspected concussion.

Return to school

Concussion may impact on the child's cognitive ability to learn at school. This must be considered, and medical clearance is required before the child may return to school. **It is reasonable for a child to miss a day or two of school after concussion, but extended absence is uncommon.** In some children, a graduated return to school program will need to be developed for the child. The child will progress through the return to school program provided that there is no worsening of symptoms. If any particular activity worsens symptoms, the child will abstain from that activity until it no longer causes symptom worsening. Use of computers and internet should follow a similar graduated program, provided that it does not worsen symptoms. This program should include communication between the parents, teachers, and health professionals and will vary from child to child. The return to school program should consider:

- Extra time to complete assignments/tests
- Quiet room to complete assignments/tests
- Avoidance of noisy areas such as cafeterias, assembly halls, sporting events, music class, shop class, etc
- Frequent breaks during class, homework, tests
- No more than one exam/day
- Shorter assignments
- Repetition/memory cues
- Use of peer helper/tutor
- Reassurance from teachers that student will be supported through recovery through accommodations, workload reduction, alternate forms of testing
- Later start times, half days, only certain classes

The child is not to return to play or sport until he/she has successfully returned to school/learning, without worsening of symptoms. Medical clearance should be given before return to play.

If there are any doubts, management should be referred to a qualified health practitioner, expert in the management of concussion in children.

Return to sport

There should be no return to play until the child has successfully returned to school/learning, without worsening of symptoms.
Children must not be returned to play the same day of injury.
When returning children to play, they should **medically cleared and then follow a stepwise supervised program,** with stages of progression.

For example:

Rehabilitation stage	Functional exercise at each stage of rehabilitation	Objective of each stage
No activity	Physical and cognitive rest	Recovery
Light aerobic exercise	Walking, swimming or stationary cycling keeping intensity, 70% maximum predicted heart rate. No resistance training	Increase heart rate
Sport-specific exercise	Skating drills in ice hockey, running drills in soccer. No head impact activities	Add movement
Non-contact training drills	Progression to more complex training drills, eg passing drills in football and ice hockey. May start progressive resistance training	Exercise, coordination, and cognitive load
Full contact practice	Following medical clearance participate in normal training activities	Restore confidence and assess functional skills by coaching staff
Return to play	Normal game play	

There should be approximately 24 hours (or longer) for each stage and the child should drop back to the previous asymptomatic level if any post-concussive symptoms recur. Resistance training should only be added in the later stages.
If the child is symptomatic for more than 10 days, then review by a health practitioner, expert in the management of concussion, is recommended.
Medical clearance should be given before return to play.

Notes:

CONCUSSION INJURY ADVICE FOR THE CHILD AND PARENTS / CARERS

(To be given to the **person monitoring** the concussed child)

This child has received an injury to the head. A careful medical examination has been carried out and no sign of any serious complications has been found. It is expected that recovery will be rapid, but the child will need monitoring for the next 24 hours by a responsible adult.

If you notice any change in behavior, vomiting, dizziness, worsening headache, double vision or excessive drowsiness, please call an ambulance to transport the child to hospital immediately.

Other important points:

- Following concussion, the child should rest for at least 24 hours.
- The child should avoid any computer, internet or electronic gaming activity if these activities make symptoms worse.
- The child should not be given any medications, including pain killers, unless prescribed by a medical practitioner.
- The child must not return to school until medically cleared.
- The child must not return to sport or play until medically cleared.

Clinic phone number

Patient's name _____

Date/time of injury _____

Date/time of medical review _____

Treating physician _____

Contact details or stamp

Appendix F

Graduated RTP Protocol[1]

Table 1. Graduated Return-to-Play Protocol

Rehabilitation Stage	Functional Exercise at Each Stage of Rehabilitation	Objective of Each Stage
1. No activity	Complete physical and cognitive rest	Recovery
2. Light aerobic exercise	Walking, swimming, or stationary cycling, keeping intensity to <70% of maximum predicted heart rate; no resistance training	Increase heart rate
3. Sport-specific exercise	Skating drills in ice hockey, running drills in soccer; no head impact activities	Add movement
4. Non-contact training drills	Progression to more complex training drills, eg, passing drills in football and ice hockey; may start progressive resistance training	Exercise, coordination, and cognitive load
5. Full-contact practice	Following medical clearance, participate in normal training activities	Restore athlete's confidence; coaching staff assesses functional skills
6. Return to play	Normal game play	

Appendix G
Concussion Modifiers[1]

Table 2. Concussion Modifiers

Factors	Modifier
Symptoms	Number Duration (>10 d) Severity
Signs	Prolonged loss of consciousness (>1 min), amnesia
Sequelae	Concussive convulsions
Temporal	Frequency: repeated concussions over time Timing: injuries close together in time "Recency": recent concussion or traumatic brain injury
Threshold	Repeated concussions occurring with progressively less impact force or slower recovery after each successive concussion
Age	Child or adolescent (<18 y old)
Comorbidities and premorbidities	Migraine, depression, or other mental health disorders, attention deficit hyperactivity disorder (ADHD), learning disabilities (LDs), sleep disorders
Medication	Psychoactive drugs, anticoagulants
Behaviour	Dangerous style of play
Sport	High-risk activity, contact and collision sport, high sporting level

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