



Wabash General Hospital

ORTHOPAEDIC AND SPORTS MEDICINE

Edwards County CUSD #1
Concussion Management Protocol

2023-2024

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Introduction – What is a concussion?

A concussion is a type of traumatic brain injury that interferes with normal function of the brain. You've probably heard the terms "ding" and "bell-ringer." These terms were previously used to refer to minor head injuries and thought to be a normal part of collision sports. Research has now shown us that there is no such thing as a minor brain injury. **Any suspected concussion must be taken seriously.** The athlete does not have to be hit directly in the head, or lose consciousness to injure the brain. Less than 5% of players actually lose consciousness. Any force that is transmitted be it only a mild jolt, or blow to the head or body, can result in a concussion.

What exactly happens to the brain during a concussion is not entirely understood. It appears to be a very complex process affecting both the structure and function of the brain. The brain is rocked back and forth or twisted inside the skull as a result of a blow to the head or body and the sudden movement of the brain causes stretching and tearing of brain cells, damaging the cells and creating chemical changes in the brain. Once this injury occurs, the brain is vulnerable to further injury and very sensitive to any increased stress until it fully recovers.

The understanding of sports-related concussion by medical professionals continues to evolve. We now know that young athletes are particularly vulnerable to the effects of a concussion. Once considered little more than a "ding" on the head, it is now understood that a concussion has the potential to result in a variety of short- or long-term changes in brain function or, in rare cases, even death.

Prevention

Wabash General Hospital Orthopedic and Sports Medicine Department recognizes that protecting students from head injuries is one of the most important ways of preventing a concussion. Although the risk of a concussion is present with certain types of sports; education, proper athletic equipment and supervision will help minimize the risk(s) of such injuries. WGH encourages each area high school and sport association to make sure their equipment for their athletic teams is all certified to meet the national safety standards approved by the National Organization for Care and Safety of Athletic Equipment (NOCSAE). *Note that NCOSAE quality check certified does not mean that the equipment will **fully** prevent an athlete from getting an injury.

The WGH certified athletic trainer will provide athletes and parents with information, regarding the signs and symptoms of concussions, how such injuries occur, and possible long term effects resulting from such injuries via the high school website, or available in paper form that can be picked up from the high school nurse or the athletic trainer if computer access is unavailable. Parents and students must turn in a signed form, per Illinois SB 07 (Public Act 99-245) stating that "A student may not participate in an interscholastic activity until the student and their parent/guardian have signed a form acknowledging receiving and reading information that explains concussion prevention, symptoms, treatment, and guidelines for returning to participation." Emphasis must be placed on the need for medical evaluation should such an injury occur to prevent persisting symptoms of a concussion, and following the guidelines for return to learn (RTL) and return to play (RTP). It is extremely important that all students

be made aware of the importance of reporting any symptoms of a concussion to their parent/guardian and/or appropriate district staff.

WGH Orthopedic and Sports Medicine Department encourages each school district to list concussion information in their athletic handbook each year and will help update the information, through the certified athletic trainer, in order that it stays current with the newest information.

Education

WGH Orthopedic and Sports Medicine Department understands the importance of educating the public and school in regards to concussions. WGH certified athletic trainers will help provide concussion education for all administrators, teachers, coaches, school nurses, and guidance counselors. Education of parents should be accomplished through preseason meetings for sports and/ or information sheets provided to parents. Education should include, but not be limited to the definition of concussion, signs and symptoms of concussion, how concussions may occur, why concussions are not detected with CT Scans or MRI's, management of the injury and the protocol for RTL and RTP. The protocols will cover all students returning to school after suffering a concussion *regardless if the accident occurred outside of school or while participating in a school activity.*

The department also highly encourages each school district to comply with SB 07 (Public Act 99-245). This bill requires that all junior high, high school coaching personnel and athletic directors complete an online concussion certification program every two years. WGH recommends the course Heads Up, Concussion in Youth Sports for physical education teachers and coaches. It is a free web-based course developed by the CDC. It is available at http://www.cdc.gov/concussion/HeadsUp/online_training.html. WGH also recommends the course Heads Up to Clinicians for school nurses and athletic trainers to be completed every two years. It is a free web-based course developed by the CDC and available at <http://preventingconcussions.org/>. This is not an IL specific training video; therefore the scope of practice of certified athletic trainers and school nurses in IL may differ from what is described in the training. Registered professional nurses and certified athletic trainers practicing in IL must follow IL laws in regards to licensing and scope of practice.

Concussion Oversight Team

Each school district is to establish a concussion oversight team (COT). The COT includes WGH sports medicine physician, Dr. Karsten Slater, Wabash General Hospital's certified athletic trainer provided at the school (where available), the school superintendent, the high school principal, athletic director, and school nurse. Additional school staff, such as guidance counselors, teachers, physical education teachers and coaches may participate with the COT on an as needed basis. The COT will collaborate with the private medical provider, the student and the student's family to assist the student to recovery. WGH encourages each school to appoint a training coordinator for all administrators, teachers, coaches and parents. Training is mandatory, by law, for all physical education teachers, coaches, assistant coaches and volunteer coaches that work with student athletes. It is also mandatory for all school nurses and certified athletic trainers. In addition, information related to concussions will be provided to parents at the beginning of sports seasons. (Refer to the *Prevention* section previously discussed in this protocol)

The COT will act as a liaison for any student returning to school and/or play following a concussion. The COT may appoint specific members of the team to design an appropriate plan for the student, or may do so as a whole. Many resources are available and can be utilized in this planning, such as the National

Federation of High Schools *Suggested Guidelines for Concussion Management and Consensus statement on concussion in sport: the 4th International conference on Concussion in Sport*. As well as their *Concussion in the Classroom* 2nd Edition. Schools may find check lists for concussions available for free on the CDC website: www.cdc.gov/concussion.

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Concussion Recognition & Management Protocol

Recognition:

If an athlete exhibits any signs, symptoms, or behaviors that make you suspicious that he or she may have/had a concussion, that athlete *must be removed from all physical activity*, including sports and recreation. Continuing to participate in physical activity after a concussion can lead to worsening concussion symptoms, Second Impact Syndrome, and even death.

Parents and coaches are not expected to be able to “diagnose” a concussion. That is the role of an appropriate health-care professional. However, everyone involved in athletics must be aware of the signs, symptoms and behaviors associated with a concussion. If you suspect that an athlete may have a concussion, then he or she must be immediately removed from all physical activity.

<u>Signs Observed by Coaching/Teaching Staff</u>	<u>Symptoms Reported by Student/Athlete</u>
<ul style="list-style-type: none"> • Appears dazed or stunned • Is confused about assignment or position • Forgets an instruction • Is unsure of game, score or opponent • Moves clumsily • Answers questions slowly • Loses consciousness (even briefly) • Shows mood, behavior or personality changes • Can’t recall events prior to hit or fall • Can’t recall events after hit or fall 	<ul style="list-style-type: none"> • Headaches or “pressure” in head • Nausea or vomiting • Balance problems or dizziness • Double or blurry vision • Sensitivity to light • Sensitivity to noise • Feeling sluggish, hazy, foggy or groggy • Concentration or memory problems • Confusion • Doesn’t “feel right” or “feeling down” <p><i>(These are by no means all of the signs and symptoms of a concussion.)</i></p>

The signs, symptoms, and behaviors associated with a concussion *are not always apparent immediately* after a bump, blow, or jolt to the head or body and *may develop* over a few hours or longer. An athlete should *be closely watched* following a suspected concussion and should **never be left alone**.

Athletes must know that they should *never try* to “tough out” a suspected concussion. Teammates, parents and coaches should *never encourage* an athlete to “play through” the symptoms of a concussion. In addition, there should never be an attribution of bravery to athletes who do play despite having concussion signs and/or symptoms.

If an athlete returns to activity before being fully healed from an initial concussion, the athlete is at greater risk for a repeat concussion. A repeat concussion that occurs before the brain has a chance to recover from the first can slow recovery or increase the chance for long-term problems. In rare cases, a repeat concussion can result in severe swelling and bleeding in the brain that can be fatal. This is known as *Second Impact Syndrome*. The risks of such behavior must be emphasized to all members of the team, as well as coaches and parents.

Management:

- 1) Prior to the beginning of each sports season, all athletes participating in sports (football, basketball, softball, baseball, cheerleading, volleyball) including marching band will have a baseline SCAT (Standardized Concussion Assessment Tool) or ImPACT Assessment Tool evaluation. This information will be used to assess any changes in the event a student experiences a concussion. Parents will be notified about the testing and can notify the certified athletic trainer if they wish to exclude their student athlete from the testing. Results of the testing will be made available to the parents on request.

- 2) If the student is suspected to have a concussion, either based on the disclosure of a head injury, observed or reported symptoms, or by sustaining a significant blow to the head or body, the student must be removed from athletic activity and/or physical activities (e.g. PE class, recess) and may not be returned to athletic activities until he/she has been symptom-free for a minimum of 24 hours and has been evaluated by and receives written and signed authorization to return to activities by a physician licensed to practice medicine in all its branches in Illinois or a certified athletic trainer working in conjunction with a physician licensed to practice medicine in all its branches in Illinois. *Due to the need for cognitive rest, a student should not be required to write a report if they are not permitted to participate in PE class by their medical provider.*
 - a) IHSA protocols, policies and by-laws state that students who sustain, or are suspected to have sustained a concussion during athletic activities be ***immediately removed***. Students may ***NOT*** return to athletic activities until they have been evaluated by, and receive written and signed authorization to return to activities from a physician licensed to practice medicine in all its branches in Illinois or a certified athletic trainer working in conjunction with a physician licensed to practice medicine in all its branches in Illinois.
www.ihsa.org/Resources/SportsMedicine/ConcussionManagement.aspx
 - i) In the past, athletes were allowed to return to play if their symptoms resolved within 15 minutes of the injury. Studies have shown us that the young brain does not recover quickly enough for an athlete to return to activity in such a short time. *An athlete should never be allowed to resume physical activity following a concussion until he or she is symptom free and given the approval to resume physical activity by an appropriate health-care professional as defined in the IHSA protocols, policies and by-laws.*

- 3) ***All head injuries***, whether reported by the athlete, or observed by staff/coaches ***MUST*** be reported. Reporting rules are as follow:
 - a) If a student sustains a possible head injury during school hours, the student is to be removed from activity and is to be seen by the school nurse. It is the responsibility of the supervising adult to ensure that the school nurse is summoned or the student is taken directly to the nurse.

- The school nurse will also provide parents/guardians with oral and/or written instructions on observing the student for concussive complications that warrant immediate emergency care.
- i) If the school nurse is not present, the student must be taken to the certified athletic trainer.
 - ii) If the school nurse, nor the certified athletic trainer are available, the student must be taken to the athletic director and the parents shall be notified of the incident and shall be encouraged to have their child seen by a qualified health care professional and will receive a Parent's information sheet on concussions provided by the CDC.
- b) If a student sustains a possible head injury during a sport practice or competition, the athlete is to be removed from activity/play and is to be seen by the certified athletic trainer. If the AT is not on-site, it is the responsibility of the coach to ensure that the AT is summoned or the student is taken to the AT. The certified AT will also provide parents/guardians with oral and/or written instructions on observing the student for concussive complications that warrant immediate emergency care. (The AT will notify the school nurse the next day of the injury so that proper care can be maintained.)
 - i) If the certified athletic trainer is not available, it shall be the responsibility of the coach to contact the student's parent(s)/guardian and notify them of the incident and have them take their child to be seen by a qualified health care professional.
 - c) If the student sustains a head injury other than in a school activity, the parents should notify the school, who will notify the COT by calling the school so that proper care can be maintained.
- 4) When a concussion has been reported, the COT will begin the Return to Learn (RTL) protocol for the affected student to help promote cognitive rest and rehabilitation for the healing process.
 - 5) When the school has received medical authorization to return to activities (after student has completed the RTL protocol), the SCAT or ImpACT test will be repeated.
 - a) If test results have returned to normal and the student has been symptom free for 24 hours without use of medication then the student will begin the Return to Play (RTP) protocol set forth by the CMT, under the direction of the certified athletic trainer.
 - b) If the student is still experiencing symptoms, or if the medical history, concussion severity, tests, etc., concern the COT, further consultation will be considered.
 - i) When it is determined safe for the student to return to play, the athletic trainer will be notified that the athlete can begin the RTP protocol.
 - 6) Elementary students and secondary students who are not involved in sports must have written authorization from their health care provider and be symptom free without medication for seven days before returning to physical education, recess or any other physical activity at school. Due to the need for cognitive rest, a student should not be required to write a report if they are not permitted to participate in PE class by their medical provider. The school nurse will notify the physical education teacher that the student has sustained a concussion and is ready to return to physical activity. The physical education teacher will remove the student from play if there are any complaints of headaches, dizziness or any other adverse reactions and then notify the nurse. The nurse will then notify the parents that the student is being removed from physical activity and discuss follow-up care with the medical provider.
 - 7) If, in the event, the student/athlete is unconscious call 911 and activate EMS. The following circumstances are medical emergencies:
 - Any time an athlete has a loss of consciousness *of any duration*. While loss of consciousness is not required for a concussion to occur, it may indicate more serious brain injury.

- If an athlete exhibits any of the following:
 - a) decreasing level of consciousness,
 - b) looks very drowsy or cannot be awakened,
 - c) if there is difficulty getting his or her attention,
 - d) irregularity in breathing,
 - e) severe or worsening headaches,
 - f) persistent vomiting, or
 - g) Any seizures.

Cognitive Rest

A concussion can interfere with school, work, sleep and social interactions. Many athletes who have a concussion will have difficulty in school with short- and long-term memory, concentration and organization. These problems typically last no longer than two to three weeks, but for some, these difficulties may last for months. It is best to lessen the student's class load early on after the injury. Most students with concussion recover fully. However, returning to sports and other regular activities too quickly can prolong the recovery. *Each student will heal and recover differently than another when it comes to any injury, especially one as important as a concussion. It is important to note that there is no "cookie-cutter" approach to recovering from a concussion.*

The first step in recovering from a concussion is rest. ***Rest is essential to help the brain heal.*** Students with a concussion need rest from physical and mental activities that require concentration and attention as these activities may worsen symptoms and delay recovery. Exposure to loud noises, bright lights, computers, video games, television and phones (including texting) all may worsen the symptoms of concussion. As the symptoms lessen, increased use of computers, phone, video games, etc., may be allowed, as well as a gradual progression back to full academic work. **For this reason, it is recommended by the WGH Orthopaedic and Sports Medicine Department that any student who has been diagnosed with a concussion will have to remain home for a full day of school, to allow for cognitive rest and will then proceed the return to learn (RTL) program for getting back on track in class, set forth by the school they attend.** (Schools may use the below Return to Learn format to help develop their own, in case one has not already been established.)

Athletes who have suffered a concussion will not be allowed to start the RTP protocol until they have completed the return to learn (RTL) protocol.

Return to Learn (RTL)

Following a concussion, many athletes will have difficulty in school. These problems may last from days to months and often involve difficulties with short- and long-term memory, concentration, and organization. In many cases, it is best to lessen the student's class load early on after the injury. This may include staying home from school for a few days, followed by a lightened schedule for a few days, or longer, if necessary. Decreasing the stress on the brain early on after a concussion may lessen symptoms and shorten the recovery time.

Once a student returns to school, after having suffered a head injury, they will be integrated back into the classroom, using the Return to Learn (RTL) protocol developed by the COT. The student's teachers

will be notified by the athletic director of the student's return and the considerations to be made by receiving an informative sheet titled: *Concussion in the Classroom*.

In the RTL protocol, each phase is to be completed following a *rest period*, encompassing *24 hours*. If the student/athlete completes a phase **with no recurrence** of any signs or symptoms, then they may progress to the next phase. The RTL protocol is as follows:

Phase 1, part A:

Student will stay home the day following the injury and will track symptoms using the Symptom Evaluation (SE) sheet provided by the school, when available. The SE will be completed when the student wakes up and before bedtime. The first 24 hours, the student must have complete cognitive rest. This means that the student will have no interaction with television, computer screens, cell phones, gaming consoles, etc. and will stay at home in order to reduce the amount of stimuli and exposure to triggers that can increase symptoms. *Student will need to be symptom free for a full 24 hours before beginning part B of Phase 1: Light mental activity at home.*

Phase 1, part B:

Student will complete a SE upon waking up. Student will stay home with light mental activity allowed up to 30 minutes with a SE at the end of the activity, followed by a rest period of one to two hours. If student is asymptomatic then repeat the process. If the student's symptoms recur during the first 30 minutes, then a second SE will be done after the rest period to determine if the issues resolved, stayed the same, or were made worse. If symptoms (1) resolved, a student may complete light homework for up to 15 minutes then repeat SE, followed by a rest period. (2) If symptoms stayed the same or were made worse while resting, student will have complete rest for the remainder of the day and repeat the phase the next day. *This phase is completed and the student may begin to reintegrate back into school only when the student can complete a full day of light mental activity at home with no recurrence of symptoms, or has a full resolution of symptoms with rest.*

Phase 2: Two class periods* with Maximum Accommodations[†]:

Student will complete a SE at the nurse's office when arriving at school. The student will spend 30 minutes in one class period, and then return to nurse's office to recheck symptoms and rest for the remainder of the class time. This same procedure will be followed for the second period. They will return home after their second class period. If the student reports any symptoms after time in class, the student is to rest for at least 30 minutes in the nurse's office- with no mental activity - and have symptoms rechecked to see if they have resolved after the rest period. If they resolved completely, the student may complete the next period. If they improved, but did not completely resolve then the student will need to rest up to 30 more minutes and recheck symptoms again. If symptoms returned to normal then student may go back to class for 30 minutes or the remainder of the period, whichever is the lesser of the two. If the symptoms do not completely resolve after the additional rest time then parents will be notified by the nurse or AT and the student will be sent home and repeat the phase again. *This phase is completed when the student can attend two class periods with accommodations with no recurrence of symptoms, or symptoms resolved with rest periods, for one red day AND one black day.*

No written reports, tests or quizzes at this time. Please allow extra time on assignments, or modify assignments to fit the student's current needs.

Phase 3: Two class periods with moderate accommodations⁺:

The student will fill out SE in nurse's office upon arriving at school and before student leaves to return home if no complaints of symptoms through two class periods. The student will complete two class periods as normal. If symptoms return during class time the student will report to the nurse during that particular class and the student is to fill out a SE and then rest for at least 30 minutes in the nurse's office- with no mental activity. Symptoms will be rechecked to see if they have resolved after the rest period. If symptoms resolved completely, the student may complete the next period, if applicable. If symptoms improved, but did not completely resolve then the student will be given up to 30 more minutes of rest and recheck symptoms again. If symptoms returned to normal then student may go back to class for 30 minutes or the remainder of the period, whichever is the lesser of the two. If the symptoms do not completely resolve after the additional rest time then a decision will be made regarding notifying the parents and having the student go home. If student is sent home, the phase will be repeated the next attendance day. If the student is asymptomatic, or symptoms resolve with rest, then while at home the student may work on homework for missed classes following the Phase 1, part B instructions. *This phase is complete when a student can attend two class periods with moderate accommodations with no recurrence, or a resolution of symptoms with rest for a red day AND a black day.*

No written reports, tests or quizzes at this time. Please allow extra time on assignments, or modify assignments to fit the student's current needs.

Phase 4: Full day attendance with maximum accommodation:

Student will complete SE with nurse when arriving at school. Student will complete first half of day as a regular day. During 3rd and 4th period, the student will complete the afternoon as they would Phase 2 and 3. 30 minutes during 3rd hour, reporting to the nurse for SE and rest. If no symptoms, student may return to class for the remaining 15 minutes. Fourth hour will follow same procedure. If the student has recurring symptoms that do not resolve completely, but do improve with resting during the period, an extra 30 minutes may be added, going into the next period. If no resolution, parents will be notified to pick student up and they will repeat the process the next attendance day. If a student has recurring symptoms that do resolve, but missed the 4th hour class due to extended rest time, the phase will need to be repeated. *This phase is completed when the student can complete two full periods as normal and two later periods, 30 minutes each, with no recurrence or a resolution of symptoms with given rest periods on a red day AND a black day.*

No written reports, tests or quizzes at this time. Please allow extra time on assignments, or modify assignments to fit the student's current needs.

Phase 5: Full day attendance w/ no accommodation:

The student will attend school as normal. If the student experiences symptoms while in class, they will go to the nurse's office for rest and perform a SE to see if symptoms resolved after rest time. If resolved, the student may go back to class. If not resolved or worsened, parents will be notified and the student will be sent home and repeat the full day w/ no accommodations the next day. *This phase is complete when a student can participate in a full day of school with no recurrence of symptoms or has a resolution of symptoms after rest period for a red day AND a black day.*

Written reports, tests and quizzes may be added AFTER this step has been completed.

Attendance Recording:

When students are excluded from school, for either partial days or full days, as specified in the Return to Learn Protocols, these days will be considered a student absence but will be recorded as an excused medical (doctor) absence.

**Class periods will be decided by the parents, students, ECCUSD school nurse and the WGH certified athletic trainer to accommodate academic schedule and individual needs based on the injury.*

+If a student chooses to attend lunch during these phases, they will check in with the nurse, or AT, whichever one is available, after they eat in order to rate how they feel after being exposed to a more stimulated environment.

Students should report to their teacher or nurse of any recurring or worsening symptoms at any time and must be removed from class and taken to the nurse's office, if available. If the nurse is not available, the student will be taken to the AT and the athletic training room for rest. If neither the nurse nor the AT is available, the student will be taken to the AD's office. If the symptoms do not resolve with complete cognitive rest after an hour, or worsen, the parents will again be contacted and it will be recommended the child be removed from school and be taken to receive prompt medical attention. The student may return to school when they are symptom free and the process will start again.

Return to Play (RTP)

Once an athlete has completed the RTL protocol and no longer has signs, symptoms, or behaviors of a concussion **after 24 hours and medication free, and is cleared to return to activity by an appropriate health-care professional**, he or she should proceed in a step-wise fashion, known as return to play (RTP), to allow the brain to re-adjust to exercise, ***under the supervision of the certified athletic trainer.***

Each phase is to be completed following a rest period, encompassing 24 hours. If the student/athlete completes a phase ***with no recurrence*** of any signs or symptoms, then they may progress to the next phase. ***There is no skipping or joining of phases.*** Each one is to be done separately, spaced out by 24 hours. (Not all athletes will recover at the same pace with concussion, just as they would not recover at the same pace with any other injury.) Once the student completes all phases, they may be allowed to fully participate in their activities. The RTP schedule will proceed as below, ***following*** medical clearance:

Progressive Return to Play (RTP) (under the supervision of the certified athletic trainer)

Phase 1: Light cardio (bike, treadmill, and/or light jog – flat surfaces only.)

Phase 2: Phase 1 plus reaction/quickness drills (cone drills and agility ladder)

Phase 3: Phase 1 & 2 plus body weight exercises. (squats, lunges, push-ups)

Phase 4: Phase 1-3 plus drills per sport position & conditioning, helmet only

Phase 5: Full day of practice

Phase 6: Return to competition

If, at any time, the student has **any recurrence** of signs or symptoms of concussion, activity **must be stopped**, cognitive rest must be followed and the student must be symptom free for 24 hours before starting at the beginning of the RTP protocol. If the student reports symptoms or exhibits any signs after starting the RTP a second time, the student will be re-evaluated and further consultation considered.

REVIEW AND UPDATE

Each year, the WGH Orthopedic and Sports Medicine Department will review the concussion management protocol and its implementation and make necessary changes whenever state laws and the governing bodies of the Illinois High School Association make any rule changes regarding concussions and their treatment, as well as the re-establishment of a student in athletics, as well as the classroom. The department encourages each school to do the same.