



SPECTRUM MEDICAL, INC Concussion Policy and Protocol For Coverage of Pittsylvania County Schools

The following information is a guideline to follow during the assessment and management of sports-related mild traumatic brain injury (concussions). These guidelines are based on the latest information regarding concussion management including those from the American Academy of Pediatrics. These same guidelines are being recommended by the National Collegiate Athletic Association (NCAA) and the National Federation of High School sports (NFHS).

The policy will enable the sports medicine staff to have a written document available for reference when explaining the appropriate action regarding concussion management, including referral policies, and the return to play (RTP) guidelines, to student-athletes, parents, coaches, and other appropriate school personnel. These procedures, in general consultation with a physician, are to be followed when dealing with an athlete that is suspected to have a head injury. It is the goal of the sports medicine staff to minimize and prevent further injury to the brain, such as second impact syndrome, while allowing student-athletes to RTP in the healthiest and safest manner.

Concussions can occur in any sports and adolescents are more susceptible than adults, since their brains are still in development. We continually monitor prevention and care guidelines, and will update our approaches as new research become available.

Concussion Protocol

The definition of a concussion continues to evolve as more knowledge is gained. It is a complex process affecting the brain due to direct or indirect forces to the head. The disturbance of brain function occurs from changes in the metabolic/chemical processes of the brain rather than a structural injury such as a "bruise".

A concussion may be caused either by a direct blow to the head, face, or neck or elsewhere on the body with an "impulsive" force transmitted to the head. When an athlete shows symptoms or behaviors consistent with the symptoms below, a concussion must be suspected.

Concussion symptoms include:

- ❖ **Physical:** Headache, Nausea/vomiting, Balance/gait disturbance, Vision issues (focus, diplopia, light sensitivity), Noise sensitivity, "Dazed and Confused", Stunned, Fatigue
- ❖ **Cognitive:** Feeling "Foggy", "Off", "Slow", "Out of it", Difficulty concentrating or following conversation or instructions, Amnesia, Confusion, Answer questions slowly, Repeats questions
- ❖ **Emotional:** Changes in personality or mood swings, Emotion not matching situation, Irritability, Sadness, Nervousness
- ❖ **Sleep:** Any alteration patterns from "normal patterns": Drowsiness, Difficulty falling asleep, Sleeping less than usual, Sleeping more than usual

Concussion Management

Any student-athlete with a suspected concussion or **ANY** related signs or symptoms are reported or observed after receiving a mechanism that has the potential to cause a head injury, must be removed from all athletic participation, practice or competition. The student-athlete will be withheld from the competition or practice and not returned to activity for the remainder of that day or until evaluated by a healthcare provider with experience in the evaluation and management of concussions.

If no athletic healthcare provider is available for diagnosis, the athlete will not be allowed to return to practice or play when showing symptoms. The presiding coach will determine if 911 should be called, and will call the student's parents immediately. When 911 is called, an athletic administrator will also be notified. The player will not be left alone, not allowed to transport themselves off the premises, and must be monitored for a change in condition over then next several hours. The athletic trainer and/or physician then will determine the plan of care.

Visiting sport team members evaluated by host team medical staff will be managed according to the guidelines when the visiting team is without their own medical staff.

Initial assessment

As with all acute head and neck injuries, initial assessment of the ABC's (airway, breathing and circulation) and stabilization of the cervical spine are of the utmost importance. A cervical spine injury should be assumed in any athlete who is found to be unconscious after head or neck trauma. Maintaining adequate cervical spine stabilization is critical until a thorough evaluation has been performed and the athlete cleared for a spinal injury. If a qualified medical provider is not available for an evaluation, immediate referral and transportation to the ER is necessary.

If an athlete did not lose consciousness or quickly regains consciousness and is not suspected of having a cervical spine injury, they can be moved to the sidelines for additional testing.

If the athlete suffers a loss of consciousness:

- ✓ **If unconscious or unresponsive**
 - Use Cervical Spine Precautions
 - Check ABC's: Airway, Breathing, and Circulation
 - Call 911 and transport via Ambulance for Immediate ER referral

- ✓ **If conscious and responsive**
 - Use Cervical Spine Precautions
 - Check ABC's: Airway, Breathing, and Circulation
 - Athletes complains of cervical pain/paralysis
 - Call 911, Transport via Ambulance for Immediate ER referral

- ✓ **Preliminary Cervical spine okay**
 - Move to Sideline for assessment
 - Sideline evaluation
 - C-spine assessment
 - Neurological assessment
 - SAC1 assessment
 - Referral to ER with copy of SAC1/SCAT results

The athlete should be sent for an **EMERGENT MEDICAL REFERRAL** if the following occur:

- | | |
|--|---------------------------------|
| -On Field loss of consciousness unresolved | -Headaches that worsen |
| -C-Spine Complaints | -Looks drowsy/can't wake up |
| -Focal Neurological Deficit | -Can't recognize people/places |
| -Recurrent Vomiting | -Seizures |
| -Bleeding/clear fluid leakage from ears and nose | -Weakness/numbness in arms/legs |
| -Unresolved Balance or Gait disturbance | -Slurred Speech |

Medical Provider Follow-Up

Any athlete removed from play due to suspicion of a concussion or continues to have symptoms must follow-up with an appropriate medical provider for evaluation before returning to competition.

The provider will perform an appropriate neurological evaluation and repeat SAC and/or SCAT2 testing. They will also determine if referral for neuropsychological testing is necessary, direct time needed for cognitive rest, and determine when the athlete is cleared to play due to completion of the graduated return to play scale. The treating provider will give either a verbal or written clearance to return to play to the athletic trainer, coach, athletic director, or appropriate school representative.

Once a concussion is diagnosed, athletes are not able to progress through the step-wise return to play protocol faster than the required time, nor can any additional physician excuse or clear the athlete without completing the necessary steps in the required time frame.

Neuropsychological testing

Neuropsychological testing shall be necessary when the athlete suffers symptoms greater than a week, symptoms worsen, and/or the symptoms fail to resolve within a reasonable time.

Cognitive Rest

Cognitive rest such as limiting TV viewing, video games, and testing is recommended during this period. Recent information suggests that mental exertion, as well as physical exertion, should be avoided until concussion

symptoms have cleared. Premature mental or physical exertion may lead to more severe and more prolonged post concussion period. Therefore, the athlete should not study, play video games, do computer work or phone texting until his or her symptoms are resolving.

Once symptoms are clear, the student-athlete should try reading for short periods of time. When 1-2 hours of studying can be done without symptoms developing, the athlete may return to school for short periods gradually increasing until a full day of school is tolerated without return of symptoms. (National federation of High schools)

Once the athlete is able to complete a full day of schoolwork, without PE or other exertion, the athlete is ready to begin the graduated return to play protocol.

Physical Rest

After a concussion, all athletes should be withheld from physical exertion until they are symptomatic at rest. Before returning to any physical activity, the athlete must be cleared for progression by the medical care team.

Graduated Return to Play (RTP)

When the player is symptom-free and able to resume activity, a prescribed sequence of steps must be followed. With this stepwise progression, the athlete will only continue to proceed to the next level if asymptomatic at the current level. Each step will take 24 hours so that an athlete would take one week to proceed through the full rehabilitation protocol once they are asymptomatic at rest and with provocative exercise. If any post-concussion symptoms occur while in the stepwise program, then the patient will drop back to the previous asymptomatic level and try to progress again after a further 24-hour period of rest has passed.

Once the athlete successfully completes each step, the athlete will be cleared to play with without restrictions if no symptoms return. This requires documentation of progression and signed off by appropriate medical personnel.

<u>Rehabilitation Stage</u>	<u>Functional Exercise Goal of Stage</u>
1. No Activity	Complete physical and cognitive rest
2. Light Aerobic	Walking, stationary bike to elevate HR but no resistance
3. Sport Specific	“Drills and Skills” (basic) of specific sport. No impact. No Resistance
4. Non Contact training	Resistance exercise, “Drills and Skills” (complex)
5. Full Contact practice	Full practice after clearance
6. Return to Play	Unrestricted Activity

Adapted from McCrory: *Clin J Sport Med.* 19(3). May 2009.185-200.

Each session requires 24 hr before next level. Recurrence of ANY Sx at ANY level requires 24 wait and repeat test at that level. Failure to progress requires referral for consult/additional testing.

References

McCrory, Paul, Willem Meeuwisse, MD, Karen Johnston, MD, Jiri Dvorak, MD, Mark Aubry, MD, Mick Malloy, MB, and Robert Cantu, MD. "Consensus Statement on Concussion in Sport 3rd International Conference on Concussion in Sport Held in Zurich, November 2008." *Clinical Journal of Sport Medicine* 19.3 (2009): 185- 200. Web. 22 July 2010. http://journals.lww.com/cjsportsmed/Fulltext/2009/05000/Consensus_Statement_on_Concussion_in_Sport_3rd.1.aspx >.

National Federation of State High School Associations, Indianapolis, IN.