4.6 – Concussion

4.6.1 – HCPS Policy (Current)

Harrisonburg City Public Schools (HCPS) has researched and formulated the best practices for a safe evaluation, diagnosis, and return to sport progression related to concussions in student-athletes. The goals of this regulation are

- To ensure that HCPS personnel and HCPS coaches (paid and volunteer), as well as student athletes and their parents/guardians, are educated on concussions.
- To outline how to properly identify and immediately remove student-athletes from activity that are suspected of a concussion, as well as refer them medically as needed, and
- To emphasize that the return to learn and return to sport protocols are individualized for each student-athlete in order to give them adequate time for healing and returning to being symptom free

Definitions

1. Concussion: A type of traumatic brain injury (TBI), caused by a direct blow to the head, neck, or body, or other related trauma resulting in an impulsive force being transmitted to the brain that occurs in sports and exercise-related activities. This causes a neurotransmitter and metabolic cascade as well as blood flow changes, and inflammation affecting the brain,
    a. Signs and Symptoms may occur and be presented immediately after the injury, but could also be delayed and evolve over minutes to hours.
2. Licensed Health Care Provider: A physician (MD), physician assistant (PA), doctor of osteopathy (DO), or certified athletic trainer (ATC) licensed by the the Virginia Board of Medicine; a neuropsychologist licensed by the Board of Psychology; or a nurse practitioner (NP)
3. Student-Athlete: a student who is enrolled in Harrisonburg City Public Schools who participates in one or more of the school sponsored athletic teams
4. Student: a person enrolled in Harrisonburg City Public Schools. This person is not actively participating in an HCPS VHSL-sanctioned sport but may be enrolled in a physical education class.
    a. Concussions may occur in PE classes, other class or school activities, or outside the classroom activities that students participate in on their own
5. Academic Accommodations: Temporary restrictions and/or modifications on a student-athlete's participation in academics/cognitive exertion that supports a controlled and progressive increase in cognitive activities while the student-athlete recovers from a concussion, allowing the student-athlete to participate in classroom activities and learn while managing their healing and reported symptoms.
6. Return to Learn: A progression back to preinjury learning activities with no new academic support, including school accommodations or learning adjustments
7. Return to Sport: Completion of the return to sport progression with no symptoms and no clinical findings associated with the current concussion at rest and with maximal physical exertion

8. Relative Rest: a period immediately after concussion - usually the first 24-48 hours, in which activities of daily living and reduced screen time are strongly recommended
    a. Complete rest is not recommended at all during any period of concussion recovery
9. Persisting Symptoms: Symptoms that are lasting for greater than four weeks
10. Complete Symptom Resolution: Resolution of symptoms associated with the current concussion at rest with no return of symptoms during or after maximal physical and cognitive exertion

11. Second Impact Syndrome: A condition that occurs after a second impact injury while the student-athlete is still symptomatic from a previous injury to the body or head

Concussion Management Team

1. Harrisonburg City Public School's Concussion Management Team (CMT) shall consist of the following school personnel:
    a. School Principals/Designee
    b. Student Activities and Athletics Director (SAAD)
    c. Team Physician
    d. Athletic Trainers
    e. School Nurses
    f. Middle School Representative
    g. Recommended Personnel from Central Office
        i. Chief Operating Officer
        ii. Chief Officer for Student Support
2. The role of the CMT shall be to develop and ensure all school personnel and athletic coaches receive and are educated on concussion education materials and training. The CMT shall also ensure that parents/guardians and student-athletes are being educated and trained on concussions during each sport season.
3. The CMT will develop reporting, management, and review the protocols for the school. The CMT will maintain records of all suspected and diagnosed concussions.
4. The CMT will meet, at minimum, annually to review the policies and procedures for Harrisonburg City Public School's Concussion Management, including but not limited to, the school's education materials and presentations, policies & procedures, and concussion reporting and management. The CMT will also meet to debrief after emergency situations to review incidents.

Required Concussion Education

1. School personnel will be required to complete concussion education that shall consist of signs and symptoms of a concussion, proper referral if suspicion of a concussion,

academic accommodations, and protocols for Return to Learn and Return to Sport progression in accordance with Va. Code § 22.1-271.6.

2. Every head and assistant coach, as well as any volunteer coaches, or anyone serving in a coaching, leadership, or advisory role over student-athletes at any time will be required to complete concussion training that shall consist of recognizing signs and symptoms of a concussion, strategies to reduce the risk of concussions, how to seek proper medical evaluation of and treatment of concussions, and the Harrisonburg City Public Schools protocol for safe Return to Learn and Return to Sport progressions.
    a. The SAADs of HCPS will keep certificates of completion of the National Federation of State High School Associations' *"Concussion in Sport"* course. This course will be mandatory for all coaches.
    b. Coaches will not be able to participate in any athletic activities around the student-athletes until this course has been completed. This must be completed annually.
3. During the preseason for each season, each student-athlete and their parent/guardian shall receive concussion education training via the parent meeting held after tryout week or will be required to review the concussion education materials on the respective school's website that is developed by the CMT. Afterwards, the student-athlete and parent/guardian must sign the concussion and handbook form acknowledging receipt of such information. Information included in the education training will include, but not limited to:
    a. Recognition of the signs and symptoms of a concussion
    b. Review of the short- and long-term health effects of concussion
    c. Understanding of the Return to Learn and Return to Sport Progressions
    d. Second Impact Syndrome and the other risk factors of playing with concussion symptoms after impact
4. The signed Concussion Acknowledgement Form, acknowledging receipt of concussion education shall be valid for one fiscal year and will satisfy the requirements for concussion education for all student-athletes in accordance with the VA Code §22.1-275. Signed documents will be kept by the Athletic Trainer in the office of the Athletic Training Room in each student-athlete's medical record.
5. Baseline testing shall occur annually for the highest risk athletes. Harrisonburg City Public Schools utilizes concussion baseline testing. This test will be used in the event of a head injury to either help the Athletic Trainer determine if there is a concussion present or not as well as help determine the athlete's readiness for returning to their sport. A student-athlete must be back to baseline on their test to be eligible for returning to their sport. Should the student-athlete not reach their baseline scores, they will not be allowed to return to unrestricted participation of their sport. Should a student-athlete continuously not reach their baseline score, the athletic trainer may consult with the team physician and may result in a referral to the physician's office for further evaluation.

a. A doctor's note will still be required for the student-athlete to return back to activity if a referral is made.

Evaluation of Concussions/Removal of Play

1. A student-athlete suspected of having a concussion by a coach, athletic trainer, or team physician in any practice, game, or competition, shall be removed from activity immediately. The student-athlete will then be evaluated and, if necessary, referred for further treatment. A student-athlete who has been removed from activity, evaluated, and suspected of having sustained a concussion shall not return to activity that same day.
2. In determining whether a student-athlete removed from play is suspected of having a concussion, an appropriate licensed healthcare professional (listed above under the definition of healthcare provider) shall evaluate the student-athlete at the time of removal utilizing the standardized concussion sideline assessment instruments.
    a. If a coach removes a student-athlete from play due to a suspected concussion, and a licensed healthcare provider is not onsite, a coach should not allow that student-athlete to return to activity until they are evaluated by a licensed healthcare professional.
    b. The coach should then contact the athletic trainer and inform them of the suspected concussion and removal of play of the athlete.
3. The determination of whether a student-athlete is removed from play when suspected of having a concussion and shall remain removed from play shall be the sole determination of the licensed healthcare provider conducting the concussion evaluation assessment. Such determination is final and may not be overruled by another licensed healthcare professional, any member of the coaching staff, school staff, or any other school or athletics personnel.
    a. The only exception is when a physician clears a student-athlete to return back to sport, the athletic trainer is still required to lead the student-athlete through the Return to Sport progression. A student-athlete will not be permitted to return fully to their sport after clearance from a physician until the Return to Sport progression is completed.
4. Any member of the coaching staff and/or the parent or guardian of the student-athlete may elect not to return the student-athlete to play, even if after the concussion evaluation assessment does determine that the student-athlete is not suspected of having sustained a concussion.
5. The athletic trainer will be in communication with the student-athlete's teachers, administrator, school counselor, school nurse as well as the school principal and SAAD to inform them of the injury. At this time, the athletic trainer will give their suggested academic accommodations to help this student navigate their recovery process. Should it be needed, the athletic trainer may place the student-athlete in a 24-hour monitoring

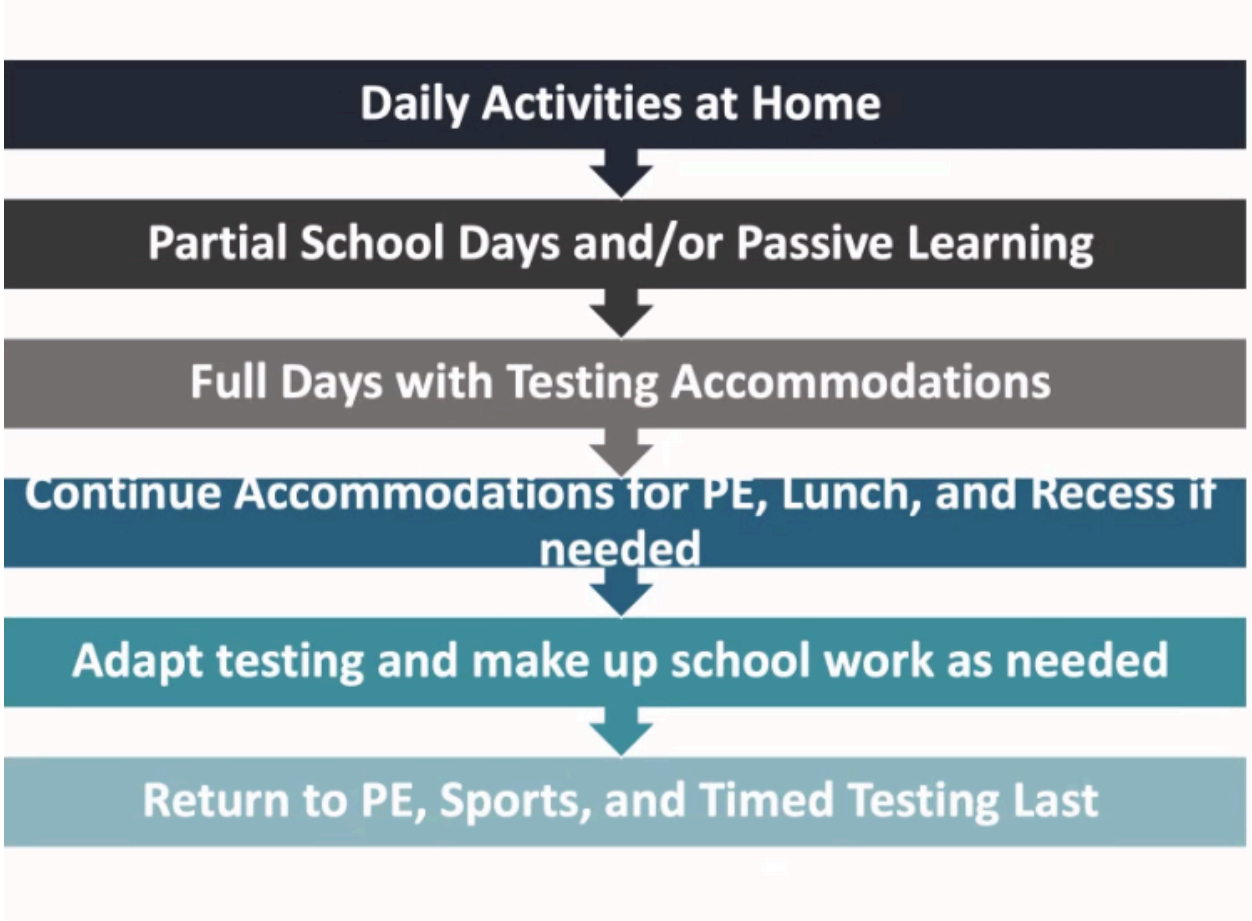
period, especially if the student-athlete sustained an injury to the head and a concussion was not diagnosed yet at that time.

6. **Red Flag Signs and Symptoms**
    a. Any of these symptoms will automatically require immediate referral to Emergency Services. This includes but is not limited to the following as well as up to the discretion of the Athletic Trainer and/or Team or Sideline Physician:
        i. Loss of Consciousness/Unresponsiveness
        ii. Unstable Condition of Athlete (condition is worsening overall)
        iii. Severe and Persistent Headache or Headache that continues to get worse
        iv. Repeated Vomiting
        v. Seizures
        vi. Potential Spinal Injury
            1. Especially with associated numbness or tingling in the upper and/or lower extremities
        vii. Difficulty being awakened/Extreme lethargy
        viii. Slurred/Incoherent Speech
        ix. Inability to recognize people or places
        x. Blood or other fluids leaking from nose or ears
        xi. Pupil reaction abnormalities
    b. Symptoms of concussion that do not warrant emergent treatment/non-red flag symptoms include but not limited to:
        i. Headache
        ii. Pressure in head
        iii. Nausea
        iv. Neck pain
        v. Blurry Vision
        vi. Dizziness
        vii. Balance problems
        viii. Light sensitivity
        ix. Noise sensitivity
        x. Feeling slowed down
        xi. “Feeling in a fog”
        xii. “Don’t feel right”
        xiii. Difficulty concentrating
        xiv. Difficulty remembering
        xv. Fatigue/Low Energy
        xvi. Confused
        xvii. Nervous/Anxious
        xviii. Drowsiness
        xix. More emotional

xx. Irritability
xxi. Sadness
xxii. Trouble falling asleep
xxiii. Needing more sleep/Sleeping too much

Return to Learn/Academic Accommodations

1. School personnel shall be alerted to cognitive and academic issues that may be experienced by a student-athlete who has suffered a concussion, including, but not limited to; difficulty with concentration, organization, and short-/long-term memory; sensitivity to bright lights and sounds, and short-term problems with speech and language, reasoning, planning, and problem solving. The Athletic Trainer will alert personnel of student-athletes that are diagnosed either by the Athletic Trainer themselves or by a physician. The School Nurse will alert personnel of students who are diagnosed with a concussion by a physician.
2. School personnel shall accommodate the gradual return to full participation in academic activities by a student-athlete or student who has suffered a concussion as appropriate, based on the recommendation of the student-athlete's licensed healthcare provider as to the appropriate amount of time that such student-athlete needs to be away from the classroom.
3. Due to cognitive activity having the potential to exacerbate and potentially prolong symptoms of a concussion, if a student has been diagnosed with a concussion, academic accommodations may be recommended.
4. The Return to Learn and Return to Sport progression strategies can occur in parallel. However, a student-athlete should complete a full Return to Learn before unrestricted Return to Sport. This means that the student-athlete should be attending full days of school without the use of academic accommodations before being cleared for sport. All personnel of that student-athlete will again be notified of the lifting of academic accommodations to allow for release from the Return to Learn progression.



Return to Sport

1. After a student-athlete is diagnosed with a concussion, they will be monitored daily by the Athletic Trainer. The Athletic Trainer will track the student-athlete's symptoms each day that they are able to attend school. Symptoms will be tracked using the *"Daily Symptom Check for Concussion Follow-Up"* This will allow for the Athletic Trainer to make sure the student-athlete is making appropriate progress. If a student athlete is not making progress or is still reporting symptoms after two weeks post-diagnosis, a referral to a physician will be encouraged to parents/guardians from the Athletic Trainer. If a student-athlete is referred to a physician, a clearance note will still be required before a student-athlete can be released to participate in any activity, including the Return to Sport progression.
2. As a student-athlete is progressing with their symptoms, they will also be going through the 6-stage Return to Sport Progression. An athlete must be in each stage a minimum of 24 hours. Stages 1-3 will occur while an athlete is still reporting symptoms, as long as they are making progress and showing a decrease in their symptoms. Stages 4-6 will occur once a student-athlete reports that they are symptom free for at least 24 hours. However, if there is a risk of head impact during stage 3, medical clearance should be

made and the student-athlete should be symptom free. Student-athletes will report their symptoms before and after activity. A student-athlete will be educated prior to activity to make sure that their current reported symptoms do not get worse by more than a 2-point increase. The Athletic Trainer will also make sure that the student-athlete is aware that the increase in symptoms should not last more than 1 hour. If symptoms increase more than 2 points or their increased symptoms are lasting more than 1 hour, activity level will be decreased or possibly halted for the following day.

3. The 6-stage progression will be as followed:
    a. **Stage 1**: symptom-limited activity or "relative rest"
        i. Activities of Daily Living (ADLs) that do not increase symptoms
        ii. Goal at this state is to reintroduce school with accommodations if needed
    b. **Stage 2**: Mild symptom exacerbation lasting briefly is okay (no more than a 2 point increase for less than 1 hour)
        i. Stage 2a: light aerobic activity up to 55% Max HR (Can use age predicted maxHR)
            1. This includes stationary biking or walking at a slow to moderate pace
        ii. Stage 2b: moderate aerobic activity up to 70% max HR
            1. Goal is to increase pace and increase light resistance exercise
    c. **Stage 3**: Sport Specific Exercise
        i. This includes any kind of running, change of direction exercises, plyometric drills, sport-specific training drills
        ii. Goal is to add in movement and change of direction
        iii. **Athletes should be symptom free first if head impact is possible with sport specific drills.

Stages 4-6 occur when a student athlete is symptom free. This means that the student-athlete has completed their Return to Learn and is fully back in school with no accommodations needed, no return of symptoms, or the use of medication to assist with symptoms.

    d. **Stage 4**: Non-Contact Drills
        i. Athletes are integrated back into team practice with higher intensity and more challenging training drills.
        ii. Goal is to resume normal/usual intensity of exercise, coordination, and increase thinking
    e. **Stage 5**: Full Contact Practice
        i. Participate in normal practice activities with no restrictions
    f. **Stage 6**: Return to Sport
        i. Normal game play

Table 2 Return-to-sport (RTS) strategy—each step typically takes a minimum of 24 hours

Step	Exercise strategy	Activity at each step	Goal
1	Symptom-limited activity	Daily activities that do not exacerbate symptoms (eg, walking).	Gradual reintroduction of work/school
2	Aerobic exercise **2A—Light** (up to approximately 55% maxHR) **then** **2B—Moderate** (up to approximately 70% maxHR)	Stationary cycling or walking at slow to medium pace. May start light resistance training that does not result in more than mild and brief exacerbation* of concussion symptoms.	Increase heart rate
3	Individual sport-specific exercise Note: If sport-specific training involves any risk of inadvertent head impact, medical clearance should occur prior to Step 3	Sport-specific training away from the team environment (eg, running, change of direction and/or individual training drills away from the team environment). No activities at risk of head impact.	Add movement, change of direction
Steps 4–6 should begin after the resolution of any symptoms, abnormalities in cognitive function and any other clinical findings related to the current concussion, including with and after physical exertion.			
4	Non-contact training drills	Exercise to high intensity including more challenging training drills (eg, passing drills, multiplayer training) can integrate into a team environment.	Resume usual intensity of exercise, coordination and increased thinking
5	Full contact practice	Participate in normal training activities.	Restore confidence and assess functional skills by coaching staff
6	Return to sport	Normal game play.	

*Mild and brief exacerbation of symptoms (ie, an increase of no more than 2 points on a 0–10 point scale for less than an hour when compared with the baseline value reported prior to physical activity). Athletes may begin Step 1 (ie, symptom-limited activity) within 24 hours of injury, with progression through each subsequent step typically taking a minimum of 24 hours. If more than mild exacerbation of symptoms (ie, more than 2 points on a 0–10 scale) occurs during Steps 1–3, the athlete should stop and attempt to exercise the next day. Athletes experiencing concussion-related symptoms during Steps 4–6 should return to Step 3 to establish full resolution of symptoms with exertion before engaging in at-risk activities. Written determination of readiness to RTS should be provided by an HCP before unrestricted RTS as directed by local laws and/or sporting regulations.

HCP, healthcare professional; maxHR, predicted maximal heart rate according to age (ie, 220-age).

4. The coach, school nurse, school administration, SAADs, and/or athletic trainer of a student-athlete may elect not to allow a student-athlete to return to extracurricular physical activities, even after the production of written medical release from the student-athlete's licensed health care provider, if the coach, school nurse, or athletic trainer observes continued signs and symptoms of a concussion or the student athlete continues to report symptoms on the Daily Symptom Check. If the student-athlete's coach, school nurse, or athletic trainer makes such a decision, he/she shall attempt to communicate the observations and concerns to the student-athlete's parent or guardian and the student-athlete's licensed healthcare provider within one day of the decision not to allow such student-athlete to return to extracurricular physical activities.

Helmet Replacement and Reconditioning

1. To prevent and/or reduce the incidence of concussion, all helmets used in Harrisonburg City Public Schools Athletics must conform to the National Operation Committee on Standards for Athletic Equipment (NOCSAE) and be certified as conforming by the manufacturer at the time of purchase.
2. Reconditioned helmets that have been purchased must be recertified as conforming to the NOCSAE by the reconditioner.
    a. It will be the responsibility of each respective coach and the SAAD to make sure that helmets are in good working and safe condition as well as sending them off for reconditioning when required.