

## **ATHLETIC CONCUSSION POLICY**

The purpose of this policy is to provide information and standardized procedures for persons involved in the prevention, training management and return to activity decisions regarding student who incur head injuries while involved in extracurricular athletic activities including, but not limited to interscholastic sports, in order to protect their health and safety as required by Massachusetts law and regulations. The requirements of the law apply to all public middle and high schools, however configured, serving grades six through high school graduation. In addition to any training required by law, the following persons shall complete one of the head injury safety training programs approved by the Massachusetts Department of Public Health (DPH) as found on its website: coaches; certified athletic trainers; trainers; volunteers; school and team physicians; school nurses; athletic directors; directors responsible for a school marching band; employees or volunteers; and students who participate in an extracurricular activity and their parents

**1 Extracurricular Athletic Activity** means an organized school sponsored athletic activity generally occurring outside of school instructional hours under the direction of a coach, athletic director or marching band leader including, but not limited to, alpine and Nordic skiing and snowboarding, baseball, basketball, cheerleading, cross country track, fencing, field hockey, football, golf, gymnastics, horseback riding, ice hockey, lacrosse, marching band, rifle, rugby, soccer, skating, softball, squash, swimming and diving, tennis, track (indoor and outdoor), ultimate Frisbee, volleyball, water polo, and wrestling. All interscholastic athletics are deemed to be extracurricular athletic activities.

Upon the adoption of this policy by the School Committee, the Superintendent shall ensure that DPH receives an affirmation on school district letterhead that the district has developed policies and the School Committee has adopted a final policy in accordance with the law. This affirmation shall be updated by September of odd numbered years.

The Athletic Director shall maintain or cause to be maintained complete and accurate records of the district's compliance with the requirements of the Concussion Law, and shall maintain the following records for three years or, at a minimum, until the student graduates, unless state or federal law requires a longer retention period:

1. Verifications of completion of annual training and receipt of materials
2. DPH Pre-Participation forms and receipt of materials
3. DPH Report of Head Injury forms or school based equivalents
4. DPH Medical Clearance and Authorization Forms or school based equivalents
5. Graduated re-entry plans for return to full academic and extracurricular athletic activities

This policy also applies to volunteers who assist with extracurricular athletic activities. Such volunteers shall not be liable for civil damages arising out of any act or omission relating to the requirements of the law, unless such volunteer is willfully or intentionally negligent in his act or omission.

Most student athletes who sustain a concussion can fully recover as long as their brain has time to heal before sustaining another hit; however, relying only on an athlete's self-report of symptoms to determine injury recovery is inadequate as many high school athletes are not aware of the signs and symptoms or the severity concussive injuries pose, or they may feel pressure from coaches, parents, and/or teammates to return to play as quickly as possible. One or more of these factors will likely result in under-diagnosing

the injury and a premature return to play. Massachusetts General Laws and Department of Public Health regulations make it imperative to accurately assess and treat student athletes when concussions are suspected. Student athletes who receive a concussion may appear to be “fine” on the outside, when in actuality they have a brain injury and are not able to return to play. Incurring a second concussion can prove to be devastating to a student athlete. Research has shown that young concussed athletes who return to play before their brain has healed are highly vulnerable to more prolonged post-concussion syndrome or, in rare cases, a catastrophic neurological injury known as Second Impact Syndrome.

The following protocol will discuss and outline what a concussion is, the mechanism of injury, signs and symptoms, management and return to play requirements, as well as information on Second Impact Syndrome and Post-Concussion Syndrome. Lastly, this policy will discuss the importance of education for our athletes, coaches and parents and other persons required by law.

This protocol should be reviewed on a yearly basis with all staff to discuss the procedures to be followed to manage sports-related concussions. This protocol will also be reviewed on a yearly basis by the athletic department as well as by nursing staff. Any changes in this document will be approved by the school committee and given to athletic staff, including coaches and other school personnel in writing. And accurate synopsis of this policy shall be played in the student and faculty handbooks.

LEGAL REFS.:M.G.L. 111:222; 105 CMR 201.00

## **ATHLETIC CONCUSSION REGULATIONS**

### **Section I. What is a Concussion?:**

A concussion is defined as a transient alteration in brain function without structural damage, but with other potentially serious long-term ramifications. In the event of a concussion, the brain sustains damage at a microscopic level in which cells and cell membranes are torn and stretched. The damage to these cells also disrupts the brain at a chemical level, as well as causing restricted blood flow to the damaged areas of the brain, thereby disrupting brain function. A concussion, therefore is a disruption in how the brain works; it is not a structural injury. Concussions are difficult to diagnose because the damage cannot be seen. A MRI or CT scan cannot diagnose a concussion, but they can help rule out a more serious brain injury to a student athlete. Because concussions are difficult to detect, the student athletes must obtain medical approval before returning to athletics following a concussion.

### **Section II. Mechanism of Injury:**

A concussion is caused by a bump, blow, or jolt to the head or body. Any force that causes the brain to bounce around or twist within the skull can cause a concussion. A bump, blow, or jolt to the head or body can be caused by either indirect or direct trauma. The two direct mechanisms of injury are coup-type and contrecoup-type. Coup-type injury is when the head is stationary and struck by a moving object such as another player’s helmet, ball, or sport implement, causing brain injury at the location of impact.

Contrecoup-type injury occurs when the head is moving and makes contact with an immovable or slowing moving object as a result of deceleration, causing brain injury away from the site of impact. Indirect forces are transmitted through the spine and jaw or blows to the thorax that whip the head while the neck muscles are relaxed. Understanding the way in which an injury occurred is vital in understanding and having a watchful eye for athletes who may exhibit symptoms of a concussion so these student athletes can receive the appropriate care.

**Section III. Signs and Symptoms:**

- Confusion
- Forgets plays
- Unsure about game, score, opponent
- Altered coordination
- Balance problems
- Personality Changes
- Slow response to questions
- Forgets events prior to injury (retrograde amnesia)
- Forgets events after the injury (anterograde amnesia)
- Loss of consciousness (any duration)
- Headache
- Fatigue
- Nausea or vomiting
- Double vision/blurry vision
- Sensitivity to light (photophobia)
- Sensitivity to noise
- Ringing in the ears (tinnitus)
- Feeling sluggish
- Feeling Foggy
- Problems concentrating
- Change in sleep patterns (excess or lack of)
- Dizziness
- Sadness
- Seeing stars
- Vacant stare/glassy eyed
- Nervousness
- Irritability
- Inappropriate emotions

If any of the above signs or symptoms are observed after a suspected blow to the head, jaw, spine, or body, they may be indicative of a concussion and the student athletes must be removed from play immediately and not allowed to return until cleared by an appropriate allied health professional.

**Section IV. Management and Referral Guidelines:**

1. When an athlete loses consciousness for any reason, the athletic trainer will start the EAP (Emergency Action Plan) by activating EMS; check ABC's (airway, breathing, circulation); stabilize the cervical spine; and transport the injured athlete to the appropriate hospital via ambulance. If the athletic trainer is not available, the coach should immediately call EMS, check ABC's and not move the athlete until help arrives.

2. Any athlete who is removed from the competition or event and begins to develop signs and symptoms of a worsening brain injury will be transported to the hospital immediately in accordance with the EAP

Worsening signs and symptoms requiring immediate physician referral include:

- Amnesia lasting longer than 15 minutes
- Deterioration in neurological function
- Decreasing level of consciousness
- Decrease or irregularity of respiration
- Decrease or irregularity of pulse
- Increase in blood pressure
- Unequal, dilated, or unreactive pupils
- Cranial Nerve deficits
- Any signs or symptoms of associated injuries: spine fracture, skull fracture, bleeding
- Mental status changes: lethargy, difficulty maintaining arousal, confusion, agitation
- Seizure activity
- Vomiting
- Worsening headache
- Motor deficits subsequent to initial on-field assessment
- Sensory deficits subsequent to initial on-field assessment
- Balance deficits subsequent to initial on-field assessment
- Cranial Nerve deficits subsequent to initial on-field assessment

3. After a student athlete sustains a blow to the head or body in a mechanism that may cause a concussion, the athletic trainer will use the Standardized Assessment for Concussion (SAC) to assess and document the student athlete's concussion-like signs and/or symptoms. The athletic trainer will also document the student athlete's pulse, respiration, and blood pressure. After the initial evaluation of a concussion, all signs and symptoms will be tracked on the computer using the Impact Test.
4. Any athlete who is symptomatic but stable is allowed to go home with his/her parent(s)/guardian(s) or other adult who is verbally appointed by the parent(s)/guardian(s) following the head injury;
  - A. If the head injury occurs at home practice or game, parent(s)/guardian(s) will immediately be notified by the athletic trainer and the student athlete may go home with his/her parent(s)/guardian(s) or other adult who is verbally appointed by the parent(s)/guardian(s)
  - B. If the injury occurs at an away game or event, the student may go home with the team unless otherwise suggested by the covering allied health care professional, or be picked up by a parent(s)/guardian(s) or other adult who is verbally appointed by the parent(s)/guardian(s)
  - C. Parent(s)/guardian(s) will receive important information regarding signs and symptoms of deteriorating brain injury/function prompting immediate referral to a local emergency room as well as return to play requirements. Parents are consulted prior to gradual return to play by the Certified Athletic Trainer

**Section V. Gradual Return to Play Protocol:**

1. The Impact Test is a tool that helps manage concussions, determine recovery from injury, and is helpful in providing proper communication between coaches, parents and clinicians. The Impact Test is a neurocognitive test that helps measure the student athletes' symptoms, as well as test verbal and visual memory, processing speed, and reaction time. It is mandatory for all student athletes to take the Impact Test for a baseline score in accordance with Massachusetts State Law. The law states that all public schools must develop safety protocols on concussions and all public school must receive information on past concussion history.
2. Each student athlete will complete a baseline Impact Test at the beginning of their sport season. All student athletes, marching band and cheerleading members will undergo Impact Testing. Student athletes will be re-tested every other year. If a student athlete plays more than one sport during the academic year, their initial baseline test will not have to be repeated in the next sport season . For example, if a student athlete plays a Fall sport and completes their baseline test for that season, they will not have to re-test in order to play a Winter or Spring sport of that same year. If a student athlete posts scores below the norm, the student athlete will be re-rested at another time with the Certified Athletic Trainer. Student athletes cannot begin practice until a valid baseline score is obtained.
  - a. At the beginning of every sport season, student athletes are required to complete a concussion history form and return it to the athletic department. This information will be recorded in the student information system for tracking purposes.
  - b. Following any concussion the athletic trainer must notify the athletic director and school nurse.
  - c. Following a concussion the student athlete will take a post-injury Impact Test 24-48 hours following the head injury. After a student athlete takes their first post-injury test, they will not be re-tested again for 3 days. Student athletes will not be permitted to return to play while symptomatic.
  - d. If, after the second post-injury Impact Test the athlete is not back to his/her baseline, the parent/guardian will be notified and the student athlete will be referred to their healthcare provider.
  - e. Student athletes who continue to exhibit concussion symptoms for a week or more, or who's concussion symptoms cause significant academic disruption must be evaluated by a physician before returning to play.
  - f. The student will require medical clearance from the healthcare provider, have Impact Test results that are back to baseline, and be completely asymptomatic to begin the in order to move on to functional/physical testing known as the Gradual Return to Play Protocol. Parent(s)/guardian(s) will be notified when this process is complete.
  - g. Once a student athlete is asymptomatic, provides clearance from their provider AND their post-injury test is back to their baseline score, the student athlete will go through 5 days of progressive exertional post concussion assessments known as the Gradual Return to Play Protocol. The student athlete must remain asymptomatic during and for 24 hours in between all functional and physical tests to return to play. All tests will be administered by a certified athletic trainer.

3. Sub-Threshold Exercise Progression Post Concussion Diagnosis

“Sub-Threshold Exercise” refers to light, aerobic exercise that does not produce symptoms. Student athletes should get as much mental and physical rest as possible for the first 48 hours following the initial injury, this includes bright, loud or stimulating environments and screen time. Increasing amounts of research, literature, and individual practices are supporting proof that sub-threshold exercise following the initial 48 hours of injury are conducive to preventing deconditioning and the “sluggish, couch potato effect” in youths with concussions and does not pose any further injury to the brain. Once a physician has officially diagnosed a student athlete with a concussion, the student athlete is encouraged by the point person and the certified athletic trainer, to participate in once daily sub-threshold exercise right away. If the exercise being completed produces symptoms, the student is advised to discontinue for that day and not exceed the time or intensity of that exercise the next day.

A. **Stage 1: Student is not attending full days of school.** 30%-40% maximum exertion:

Low levels of light physical activity. This will include walking, light stationary bike for about 10-15 minutes, light isometric strengthening (quad sets, UE light hand weights, hamstring sets, SLRs, resistive band ankle strengthening) and stretching exercises.

B. **State 2: Student is attending full days of school.** (40%-60% maximum exertion):

Moderate levels of physical activity. Treadmill jogging, stationary bike, or elliptical for 20-25 minutes. Light weight strength exercises (resistive band exercises UE and LE, wall squats, lunges, step up/downs) dynamic stretching.

4. Exertional Post Concussion Assessments: Once student is cleared by physician to resume athletic activity.

- a. **Stage 3:** (60%-80% maximum exertion): Sport specific drills (running, high intensity elliptical or stationary bike), regular weight training, agility drills (agility ladder, side shuffles, zig-zags, box jumps, hurdles).
- b. **Stage 4: Student is asymptomatic 24 hours after Stage 3.** (80% maximum exertion): Limited, non-contact, controlled sports practice and drills with team for 2 days.
- c. **Stage 5: Student is asymptomatic 24 hours after 2 days of stage 4.** Unrestricted, full contact sports practice with team for 2 days.

**Section VI. School Nurse Responsibilities:**

1. Participate and complete the CDC training course on concussions. A certificate of completion will be recorded by the nurse leader yearly.
2. Complete the symptom assessment when student athlete enters the Health Office with questionable concussion during school hours. Repeat in 15 minutes.
3. Observe students with a concussion for a minimum of 30 minutes. If symptoms are not present, the student may return to class.
4. If symptoms are present, notify parent/guardian and instruct parent/guardians that student must be evaluated by an MD.
5. If symptoms appear after a negative assessment, MD referral is necessary.
6. Allow students who are in recovery to rest in HO when needed.
7. Develop plan for students regarding pain management.

8. School nurse will notify teachers and guidance counselors if any students or student athlete has academic restrictions or modifications related to their concussion.
9. Educate parents and teachers about the effects of concussion and returning to school and activity.
10. If injury occurs during the school day, inform administrator and complete accident/incident form
11. Enter physical exam dates and concussion dates into the student information system.

### **Section VII. School Responsibilities**

1. Review and, if necessary, revise the concussion policy every 2 years.
2. Once the school is informed of the student's concussion, a contact of "point person" should be identified (e.g. guidance counselor, athletic director, school nurse, school psychologist, or teacher).
3. Point person to work with the student on organizing work assignments, making up work and giving extra time for assignments and tests/quizzes.
4. Assist teachers in following the recovering stage for student.
5. Convene meeting and develop rehabilitative plan.
6. Decrease workload if symptoms appear.
7. Recognize that the student's ability to perform complex math equations may be different from the ability to write a composition depending on the location of the concussion in the brain.
8. Educate staff on the signs and symptoms of concussions and the educational impact concussions may have on the students.
9. Include concussion information in student handbooks.
10. Develop of plan to communicate and provide language-appropriate educational materials to parents with limited English proficiency.

### **Section VIII. Athletic Director Responsibilities:**

1. Provide parents, athletes, coaches, and volunteers with educational training and concussion materials yearly.
2. Ensure that all educational training programs are completed and recorded.
3. Ensure that all students meet the physical exam requirements consistent with 105 CMR 200.000 prior to participation in any extracurricular athletic activity
4. Ensure that all students participating in extracurricular athletic activity have completed and submitted their pre-participation forms, which include health history form, concussion history form, and MIAA form.
5. Ensure that athletes are prohibited from engaging in any unreasonably dangerous athletic technique that endangers the health or safety of an athlete, including using a helmet or any other sports equipment as weapon.
6. Ensure that all head injury forms are completed by parent/guardians or coaches and reviewed by the coach, athletic trainer, and the school nurse.
7. Informs parent/guardians that if all necessary forms are not completed, their child will not participate in athletic extracurricular activities until they do so.

### **Section IX. Parent/Guardian Responsibilities:**

1. Complete and return concussion history form to athletic department.
2. Inform school if student sustains a concussion outside of school hours. Complete new concussion history form following new injury.
3. If student suffers a concussion outside of school, complete head injury form and return it to the school nurse.
4. Complete a training provided by the school on concussions.
5. Watch for changes in your child that may indicate that your child does have a concussion or that your child's concussion may be worsening. Report to a physician:
  - a. Loss of consciousness
  - b. Headache
  - c. Dizziness
  - d. Lethargy
  - e. Difficulty concentrating
  - f. Balance problems
  - g. Answering questions slowly
  - h. Difficulty recalling events
  - i. Repeating questions
  - j. Irritability
  - k. Sadness
  - l. Emotionality
  - m. Nervousness
  - n. Difficulty with sleeping
6. Encourage your child to follow concussion protocol
7. Enforce restrictions on rest, electronics and screen time.
8. Reinforce recovery plan
9. Request a contact person from the school with whom you may communicate about your child's progress and academic needs.
10. Observe and monitor your child for any physical or emotional changes.
11. Request to extend make up time for work if necessary.
12. Recognize that your child will be excluded from participation in any extracurricular athletic event if all forms are not completed and on file with the athletic department.

#### **Section X. Student and Student Athlete Responsibilities**

1. Complete Baseline Impact Test prior to participation in athletics
2. Return required concussion history form prior to participation in athletics.
3. Participate in all concussion training and education and return certificate of completion to the athletic department prior to participation in athletics.
4. Report all symptoms to athletic trainer and/or school nurse
5. Follow recovery plan
6. REST
7. NO ATHLETICS
8. BE HONEST

9. Keep strict limits on screen time and electronics
10. Tell your teachers if you are having difficulty with your classwork
11. See the athletic trainer and/or school nurse for pain management.
12. Return to sports only when cleared by physician and athletic trainer through Gradual Return to Play Protocol
13. Report any symptoms to the athletic trainer and/or school nurse and parent/guardian if any occur after or during return to play protocol.
14. Return medical clearance form to athletic trainer prior to return to play.
15. Students who do not complete and return all required trainings, testing, and forms will not be allowed to participate in sports.

#### **Section XI. Coach & Marching Band Instructor Responsibilities**

1. Participate in concussion education course offered by the National Federation of State High School Associations (NFHS) on a yearly basis. Complete certificate of completion and return to the athletic department.
2. Ensure all student athletes have completed Impact Test Baseline before participation.
3. Ensure all student athletes have returned concussion history and health history form prior to participation in athletics.
4. Complete a head injury form if one of your players suffers a head injury and the athletic trainer is not present at the athletic event. This form must be shared with the athletic trainer and school nurse.
5. Ensure all students have completed a concussion educational training and returned their certificate of completion prior to participation in athletics.
6. Remove from play any student athlete who exhibits signs and symptoms of a concussion.
7. Do not allow student athletes to return to play until cleared by a physician and certified athletic trainer.
8. Follow Gradual Return to Play Protocol.
9. Refer any student athlete with returned signs and symptoms back to the certified athletic trainer.
10. Any coach, marching band instructor, or volunteer coach for extracurricular activities shall not encourage or permit a student participating in the activity to engage in any unreasonably dangerous athletic technique that unnecessarily engangers the health of a student athlete, including using a musical instrument, helmet or any other sports equipment as a weapon.

#### **Section XII. Post-Concussion Syndrome:**

Post-Concussion Syndrome is a poorly understood condition that occurs after a student athlete receives a concussion. Student athletes who receive concussions can have symptoms that last a few days to a few months and, even up to a full year, until their neurocognitive function returns to normal. Therefore, all school personnel must pay attention to and closely observe all student athletes for post-concussion syndrome and its symptoms. Student athletes who are still suffering from concussion symptoms are not ready to return to play. The signs and symptoms of post-concussion syndrome are:

- Dizziness
- Headache with exertion

- Tinnitus
- Fatigue
- Irritability
- Frustration
- Difficulty coping with daily stress
- Impaired memory or concentration
- Eating and sleeping disorders
- Behavioral changes
- Alcohol intolerance
- Decreases in academic performance
- Depression
- Visual disturbances

### **Section XIII. Second Impact Syndrome:**

Second Impact Syndrome is a serious medical emergency and a result of an athlete returning to play too soon following a concussion. Second Impact Syndrome occurs because of rapid brain swelling and herniation of the brain after a second head injury occurs before a previous alteration in brain function has resolved. The second impact that a student athlete may receive may only be a minor blow to the head or body. A blow to the chest or back may create enough force to snap the athlete's head and send acceleration/deceleration forces to an already compromised brain. The resulting symptoms occur because of a disruption to the brain's blood and auto regulatory system which leads to swelling of the brain, increasing intracranial pressure and herniation.

After a second impact a student athlete usually does not become unconscious, but appears to be dazed. The student athlete may remain standing and be able to leave the field under his/her own power. Within 15 seconds to several minutes, the athlete's condition worsens rapidly with dilated pupils, loss of eye movement, loss of consciousness leading to coma and respiratory failure. The best way to handle Second Impact Syndrome is to prevent it from occurring altogether. All student athletes who incur a concussion must not return to play until they are asymptomatic and cleared by an appropriate health care professional.

### **Section XIV. Concussion Education:**

It is extremely important to educate coaches, athletes, and the community about concussions. On a yearly basis, all coaches must complete online course called "Concussion In Sports: What You Need to Know" which is offered by the National Federation of State High School Associations (NFHS). Student athletes also need to understand the importance of reporting a concussion to their coaches, parents, certified athletic trainer and other school personnel. Every year student athletes and parents will participate in educational training on concussions and complete a certificate of completion. This training may include CDC Heads-Up Video Training or training provided by the school district.

The school district may also offer seminars, speakers, and discussion panels on the topic of concussions. Seminars offer an opportunity for the certified athletic trainer, athletic director and nurse leader to speak about concussions on the field at practices and games and to discuss the protocol and policy that the district has enacted. Providing education within the community will offer the residents and parents of athletes an opportunity to ask questions and voice their concerns on the topic of brain injury and

concussions. When it comes to concussions, everyone needs to be aware of the potential dangers and remember that a concussion is a brain injury. Whenever anyone has a doubt about a student athlete with a concussion, sit them out and have them see the appropriate health care professional.

First Read- June 26, 2019

Second Read and Vote- July 17, 2019