

CONCUSSION MANAGEMENT





Concussion Overview

Concussion is a type of traumatic brain injury that can occur as the result of a fall, motor vehicle accident, or any other activity that results in an impact to the head or body.

A concussion is the reaction of the brain to the force transmitted to the head. Essentially, a concussion is an injury that results from the brain moving back and forth or twisting rapidly inside the skull due to an impact or blow occurring on the head or anywhere on the body.

Concussion symptoms result from a temporary change in the brain's function causing short-term impairment. The signs of a concussion may occur immediately or evolve over minutes or days. There is a wide range of symptoms from a concussion, and students with concussions may display very different signs and symptoms.

In most cases, the symptoms of a concussion resolve over a period of a few days or weeks. However, in some cases symptoms can last for several weeks or months. In a small number of cases, or in cases of re-injury during the recovery phase, permanent brain injury is possible. Children and adolescents are more susceptible to concussions and take longer than adults to fully recover.

Therefore, it is imperative that any student who is suspected of having sustained a concussion be immediately removed from cognitive and physical activities, then remain out of those activities until evaluated and cleared to return to activity by a licensed health care provider (see table 1). Physical activities are all types of physical movement that raise the heart rate, such as sports, PE class, recess etc. Cognitive activities are those that stimulate activity in the brain and may occur with or without physical movement.

Education Law §902 requires public school districts to employ a director of school health services (a.k.a., medical director) who must be either a physician or nurse practitioner. In instances where a school district affiliates itself with a medical practice for its required health and welfare services, one physician or nurse practitioner within that medical practice is to be designated the medical director.

Education Law §902, allows districts to employ school nurses who are registered professional nurses (RN). If districts also choose to employ licensed practical nurses (LPN), they should be cognizant that LPNs are not independent practitioners and must work under the direction of the RN, medical director, or other appropriate licensed healthcare professional. LPNs' scope of practice does not permit them to assess or



triage; therefore, they cannot be the healthcare professional assessing and triaging injured students or assessing a student's progress in return to school activities. (See NYS Nursing: Practice Information: FAQ (nysed.gov))

The Commissioner's regulation §135.4(c)(4)(iii) requires public school districts that operate a high school to employ a director of physical education. The director of physical education is required to have certification in physical education and administrative and supervisory service. Such director shall provide leadership and supervision for the class instruction, intramural activities, and interschool athletic competition in the total physical education program. Where there are extenuating circumstances, a member of the physical education staff may be designated for such responsibilities, upon approval of the Commissioner. School districts may share the services of a director of physical education according to Commissioner's regulation §135.4(c)(4)(iii).

Districts may also employ certified athletic trainers at the secondary school level. Athletic trainers employed by secondary schools must be certified athletic trainers according to Commissioner's regulation §135.4(c)(7)(i)(d)(1) and must be supervised by a physician in accordance with Education Law Article 162, §8351. (See NYSED Office of Professions, Athletic Trainers.)



Prevention and Safety

Protecting students from head injuries is one of the most important ways to prevent a concussion. The risk of a concussion may always be present, especially with certain types of activities such as interscholastic athletics, extramural activities, physical education classes and recess. To minimize the risk, Williamson Central School District is committed to the following:

- Educate staff, parents/guardians, and students on:
 - signs and symptoms of concussions
 - how such injuries occur
 - possible long-term effects resulting from such injury.
- Provide concussion education to parents/guardians and students as part of the sports sign-up process.
- Review concussion information with athletes periodically throughout the sports season including:
 - emphasis on the need to report symptoms after head injury and to follow guidelines for return to school and activities
 - use of appropriate safety equipment
 - Avoiding contact with other players with the head
- Recess should include adult supervision, with all playground equipment in good repair, and play surfaces composed of approved child safety materials.
- Physical education programs will include
 - plans that emphasize safety practices
 - lessons on the need for and correct use of safety equipment
 - review of rules of play prior to taking part in activities and enforced throughout the activity
- All school coaches, physical education teachers, nurses, and certified athletic trainers complete a NYSED approved course on concussions and concussion management every two years.
- All other teachers/classroom staff should complete training on concussions, effects on learning and Return to Learn (i.e. Safe Schools Concussion training for teachers)



Identification of Students with Possible Concussion

Any student who is observed to, or is suspected of, suffering a significant blow to the head or body, has fallen from any height, or collides hard with another person or object, may have sustained a concussion. Such injuries can occur during interscholastic sports, recess, PE and other classes. Concussions may also occur at places other than school.

Symptoms of a concussion may appear immediately, may become evident in a few hours, or evolve and worsen over a few days.

Symptoms of a concussion include, but are not necessarily limited to:

- Amnesia (e.g., decreased or absent memory of events prior to or immediately after the injury, or difficulty retaining new information)
- Confusion or appearing dazed
- Headache or head pressure
- Loss of consciousness
- Balance difficulty or dizziness, or clumsy movements
- Double or blurry vision
- Sensitivity to light and/or sound
- Nausea, vomiting, and/or loss of appetite
- Irritability, sadness or other changes in personality
- Feeling sluggish, foggy, groggy, or lightheaded
- Concentration or focusing problems
- Slowed reaction times, drowsiness
- Fatigue and/or sleep issues (e.g., sleeping more or less than usual)

Students who develop any of the following serious signs, or significant worsening of the above listed symptoms, must be seen and evaluated immediately at the nearest hospital emergency room:

- Headaches that significantly worsen
- Seizures
- Looks drowsy and/or cannot be awakened
- Repeated vomiting
- Slurred speech
- Unable to recognize people or places
- Weakness or numbing of arms or legs, facial drooping
- Unsteady gait
- Dilated or pinpoint pupils, or change in pupil size of one eye
- Significant irritability
- Any loss of consciousness
- Suspicion of skull fracture: blood draining from ear, or clear fluid from nose



Staff Member Roles in Concussion Identification

All district staff members who observe a student displaying signs and/or symptoms of a concussion, or learn of a head injury from the student, should have the student accompanied to the school health office.

- At no point in time should a student who is suspected of suffering a concussion be left alone or out of sight of the school personnel responsible for the student as concussions may worsen over time and they may need emergency medical care.
- Call 911 for any students who develop any of the following signs, or significant worsening of the above listed symptoms, as they must be seen and evaluated immediately at the nearest hospital emergency room:
 - Severe or worsening headache
 - Seizures
 - Looks drowsy and/or cannot be awakened
 - Repeated vomiting
 - Slurred speech
 - Unable to recognize people or places
 - Weakness or numbing of arms or legs, facial drooping
 - Unsteady gait
 - Dilated or pinpoint pupils, or change in pupil size of one eye
 - Any loss of consciousness
 - Suspicion of skull fracture: blood draining from ear, or clear fluid from nose
- If there isn't a school nurse available, the school should contact the parent/guardian to pick up their child and strongly recommend they have their child evaluated by a medical professional or notify them that 911 has been called as above.
- The parent/guardian should be provided written information about concussion such as the **CDC Heads Up information sheet for Parents**.
- Sideline evaluation: Any student who is observed to, or is suspected of, suffering a significant blow to the head or body, has fallen from any height, or collides hard with another person or object, may have sustained a concussion and if they have any symptoms of concussion must be removed from physical activity immediately. The coach, teacher, athletic trainer or nurse will complete the "SIDELINE EVALUATION" with mechanism of injury and observations and give this information to the parent.
- Districts will allow school staff who are appropriately licensed or certified healthcare professionals who are credentialed to use validated neurocognitive computerized testing concussion assessment tools, Impact (Immediate Post Concussion Assessment & Cognitive Testing), to review and obtain baseline and post-concussion performance data.



Diagnosis

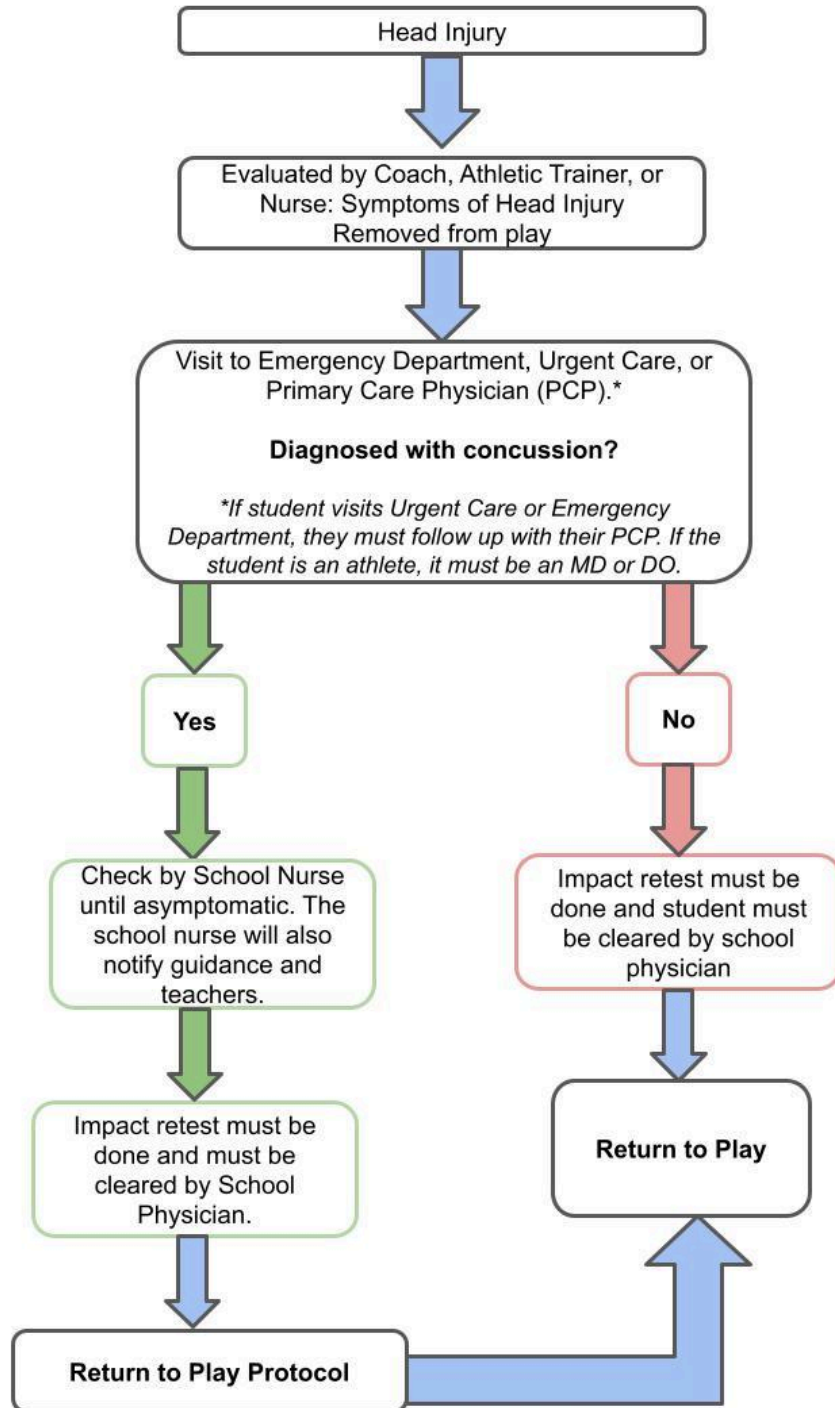
In New York State, the diagnosis of a concussion remains within the scope of practice of the following health care providers: physicians, nurse practitioners, and physician assistants. The activity/location where the injury occurred determines who can diagnose and clear a student to return to school activities. This is outlined in Table 1. These health care professionals may refer the student to other specialists once a diagnosis of concussion is made.

Table 1- Diagnosis and Clearance of Concussions

Where injury occurred	Who can diagnose	Who can clear to return to <u>school activities, inclusive of PE</u>	Who has final clearance for student to return to <u>athletic activities</u>	Additional Information
School Athletic Activities (Interscholastic sports)	Physician Per concussion Management and Awareness Act	Physician Per concussion Management and Awareness Act	District Medical Director* For nonpublic school, a licensed physician Per Commissioner's Regulation part 136.5 (d)(2)	Must be symptom free for 24 hours prior to return to Athletic Activities (interscholastic sports) Per concussion Management and Awareness Act
School during non-Athletic activities	Physician Nurse Practitioner Physician Assistant Per Title VIII of Education Law	Physician Nurse Practitioner Physician Assistant or Designee (e.g., Neuropsychologist) Per Title VIII of Education Law	District Medical Director* For nonpublic school, a licensed physician, nurse practitioner or physician assistant Per Commissioner's Regulation part 136.5 (d)(2)	School must follow private health care provider orders Per concussion Management and Awareness Act
Outside of school	Physician Nurse Practitioner Physician Assistant Per Title VIII of Education Law	Physician Nurse Practitioner Physician Assistant or Designee (e.g., Neuropsychologist) Per Title VIII of Education Law	District Medical Director* For nonpublic school, a licensed physician, nurse practitioner or physician assistant Per Commissioner's Regulation part 136.5 (d)(2)	School must follow private health care provider orders Per concussion Management and Awareness Act



*The district medical director is the final person to clear a public school student to return to athletic activities (interscholastic sports). It is at the discretion of the district medical director to accept a private health care provider clearance or to require the student to complete a gradual return to play protocol prior to permitting the student to return to participation in interscholastic athletics. For a student attending a nonpublic school the student's treating physician determines limitations on school attendance and activities.





Injury Characteristics

The student, and/or the parent/guardian, and/or school staff member who observed the injury should be asked the following as part of an initial evaluation:

- Description of the injury
- Cause of the injury
- Student's memory before and after the injury
- If any loss of consciousness occurred
- Physical pains and/or soreness directly after injury

Symptoms

Students should be assessed for symptoms of a concussion including, but not limited to, those listed previously.

Risk Factors to Recovery

According to the Consensus Statement on Concussion in Sport - the 5th International Conference, October 2016 2 , students with these conditions are at a higher risk for prolonged recovery from a concussion:

- History of concussion, especially if currently recovering from an earlier concussion
- Personal and/or family history of migraine headaches
- History of learning disabilities or developmental disorders
- History of depression, anxiety, or mood disorders

Students, whose symptoms worsen or generally show no reduction after 7-14 days or sooner depending on symptom severity, should be considered for referral to a neuropsychologist, neurologist, physiatrist, or other medical specialist in traumatic brain injury.



Post Concussion Management

Students who have been diagnosed with a concussion require both physical and cognitive rest. How long that rest period is, and what activities may or may not be permitted will be different for each student. Delay in instituting healthcare provider orders for such rest may prolong recovery from a concussion. Children and adolescents are at increased risk of protracted recovery and severe, potential permanent disability (e.g., early dementia also known as chronic traumatic encephalopathy), or even death if they sustain another concussion before fully recovering from the first concussion. Therefore, it is imperative that a student is fully recovered before resuming physical and/or athletic activities that may result in another concussion. Best practice warrants that, whenever there is a question of safety, a healthcare provider err on the side of caution.

Return to Academic Activities (RTL)

After an initial period of relative rest lasting approximately 24-48 hours, a healthcare provider may clear a student to begin a gradual return to academic or cognitive activities. This may or may not coincide with the student's return to physical activities. If unable to progress through these steps over 4 weeks, the school may implement a 504 plan/IEP to provide appropriate accommodations to help promote learning.

Return to Physical Activities (RTP)

As with cognitive rest, there must be a period of no physical activity for the first 24-48 hours. A gradual return to physical activities typically is done by progressing a student through levels of physical activity that increase in duration and/or intensity. Gradual return to activity should occur with the introduction of a new activity level every 24 hours. If any post-concussion symptoms return, the student should stop the activity and drop back to the previous level of activity. School staff should monitor students daily following each progressive level of physical activity for any return of signs and symptoms of concussion.

The district medical director has the final authority to clear students to participate in or return to extra-class activities (interscholastic athletics or intramurals) in accordance with Commissioner's regulation §136.5(d)(2).



Example RTL

- Step 1: Getting ready to return - can move to the next step if tolerating these activities.
 - Begins 1-2 days prior to returning to school.
 - Gentle activities (eg. walking, reading, up to 15 minutes screen time, etc.
 - Avoid activities that cause symptoms.

- Step 2: Back to modified school - can move to the next step when able to tolerate these activities.
 - Early bed. Lots of rest. Less stressful classes to start.
 - Can start with partial days and slowly progress up to full days as symptoms allow.
 - NO tests/quizzes. Homework is less than 15 minutes.
 - Utilize quiet study halls or tutor if available.
 - OK to take breaks to the nurse's office if needed.
 - Avoid the cafeteria, loud bus, loud hallways. Allow extra time between classes if needed.
 - NO band/music.

- Step 3: Back to nearly normal school days - can move to the next step when symptom-free.
 - Back to full days of school but may need fewer than 5 days/week.
 - As much homework as tolerated without producing symptoms. Max of 1 test/week.
 - Still NO band/music

- Step 4 - Full school
 - Full attendance. Full homework. Normal tests/quizzes.
 - Can return to band/music if it does not produce symptoms.



Williamson Concussion Management - Return to Play Protocol

This is a six stage progression to Return to Play. There is a minimum of 24 hours between steps. If, at any stage, symptoms recur, the protocol begins from the prior step.

Student Name: _____
Sport (if applicable): _____

Date of Injury: _____

Symptom free for 24 hours and medical clearance received from Primary Care Physician.

**If an athlete, the provider must be MD or DO.*

Signature: _____

Date: _____

Return to Play Protocol Steps

Please return to the health office when completed.

Step 1: Light low-impact aerobic activity (i.e. stationary bike, elliptical machine, walking - three ten minute intervals).

Signature: _____

Date: _____

Step 2: If an athlete, sport specific activity (non-contact) - Jogging/running (all directions), stair-stepper, stationary hopping, catching, throwing - two 15 minute intervals. No resistance training.

Signature: _____

Date: _____

Step 3: Low resistance training under supervision and with spotting. If no exercise equipment is available, perform body weight exercises (i.e. push-ups, sit-ups, tricep dips, squats, lunges, core exercises, broad jumps, running up/down steps). Allow up to 45 minutes of aerobic exercise.

Signature: _____

Date: _____

Step 4: If an athlete, retake Impact test. The athlete needs to be cleared by our physician for full contact training the following day. Non-contact training drills only today. If non- athlete continue aerobic exercise.

Signature: _____

Date: _____

School Medical Director Signature: _____ Date: _____

Step 5: If an athlete, full contact training; reproduce the impact forces the athlete may encounter during their sport (i.e. ball heading, tackling, landing from a height). If non- athlete continue aerobic exercises.

Signature: _____

Date: _____

Step 6: Return to play.

Signature: _____

Date: _____

School Medical Director Signature: _____ Date: _____



Williamson Central School District
Concussion Checklist

Student Name: _____

Date							
Dizziness	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Headache Present/Headache Level	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Tinnitus	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Nausea	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Fatigue	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Drowsy	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Light Sensitivity	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Sound Sensitivity	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Blurred Vision	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Memory Problem	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Poor Balance/Coordination	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO



Legislative Background

The Concussion Management and Awareness Act, (Chapter 496 of the Laws of 2011) requires the Commissioner of Education, in conjunction with the Commissioner of Health, to promulgate rules and regulations related to students who sustain a concussion, also known as a mild traumatic brain injury (MTBI), at school and at any district-sponsored event or related activity.

- Among other mandates, the law requires that school coaches, physical education teachers, nurses, and certified athletic trainers complete a New York State Education Department (NYSED) approved course on concussions and concussion management every two years. This course must address guidelines for a student's return to school and certain school activities after sustaining a concussion regardless of whether or not the concussion occurred outside of school.
- Additionally, the law requires that students who sustained, or are suspected to have sustained, a concussion during Athletic Activities (interscholastic sports) are to be immediately removed from such activities.
- Such students may not return to Athletic Activities (interscholastic sports) until they have been symptom-free for a minimum of 24 hours and have been evaluated by and receive written and signed authorization to return to activities from a duly licensed physician.

All public schools are required to employ a medical director who is a physician or nurse practitioner. (Education Law Article 19 §902). The medical director should be consulted when developing district policies and protocols for health-related matters such as concussion management.

NYSED Commissioner's regulations regarding concussion management and awareness can be found at Section 136.5 of Title 8 of the New York Code of Rules and Regulations [8 N.Y.C.R.R.]

- In accordance with those regulations, a school shall require the immediate removal from athletic activities of any student who has sustained, or who is believed to have sustained, a mild traumatic brain injury.
- If there is any doubt as to whether a student has sustained a concussion, it shall be presumed that the student has been so injured until proven otherwise.
- No such student shall resume athletic activity until the student has been symptom free for not less than twenty-four hours and has been evaluated by and received written and signed authorization from a licensed physician; and has received clearance from the medical director to participate. [8NYCRR 136.5 (d)]