Guidelines for Concussion Management in Schools

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The State Education Department
Office of Student Support Services

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Foreword

The purpose of this document is to provide school personnel, parents/guardians, students, and private health providers with information on concussion management in school settings. It explains the purpose of a concussion management program in schools and provides guidance for developing an effective program including planning, implementation, and follow-up protocols. This will assist in identifying a student with a potential concussion and ensure that a student who has been diagnosed with a concussion receives the appropriate care and attention at school to aid in their recovery.

Every attempt has been made to ensure that the information and resources contained in this document reflect best practice in the fields of medicine and nursing practice. Local educational agencies should review these guidelines with their counsel as necessary to incorporate the guidance with school policy.

Concussion Overview

Concussion is a type of traumatic brain injury (TBI) and is sometimes referred to as a mild TBI. Concussions are injuries to the brain that occur as the result of a fall, motor vehicle accident, or any other activity that results in an impact to the head or body.

In New York State in 2019:

- 109 children 19 years of age or younger died due to a traumatic brain injury.
- 11,976 children 19 years of age or younger visited the emergency room for traumatic brain injury and 1,501 were hospitalized.

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

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

In most cases, the symptoms of a concussion generally resolve over a brief period ranging from 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, athletic, and other physical activities and remain out of cognitive, athletic, and other physical activities until evaluated and cleared to return to activity by a licensed health care provider.** Athletic activities are defined by commissioner's regulations and include participation in sessions for instruction and practice in skills, attitudes, and knowledge through participation in individual, group and team activities organized on an intramural, extramural, interschool athletic, or inclusive athletic basis to supplement regular physical education class instruction, otherwise known as extraclass periods in physical education or extraclass activities. Physical activities are all other types of physical movement that raise the heart rate, such as PE class, recess etc. Cognitive activities are those that stimulate activity in the brain and may occur with or without physical movement.

Legislative Background

The Concussion Management and Awareness Act, Chapter 496 of the Laws of 2011, (revised to include nonpublic schools effective July 1, 2023) 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 school-sponsored event or related activity.

These guidelines for return to school and certain school activities apply to all public and nonpublic school students who have sustained a concussion regardless of where the concussion occurred. The law also 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. Finally, 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. For students attending public schools, such written clearance should be sent to the school for review by the district's director of school health services (a.k.a., medical director). All clearance notes and healthcare provider orders are to be filed in the student's cumulative health record as required in the law and Commissioner's regulation §136.5(d)(2)(i).

Schools shall require the immediate removal from athletic activities 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 for extra class athletic activities in public schools, has received clearance from the medical director to participate in such activity [Commissioner's regulation 136.5(d)(2)].

Additionally, the revised regulations define athletic activities as participation in sessions for instruction and practice in skills, attitudes, and knowledge through participation in individual, group and team activities organized on an intramural, extramural, interschool athletic, or inclusive athletic basis to supplement regular physical education class instruction, otherwise known as extraclass periods in physical education or extraclass activities [Commissioner's regulations 136.9(b)(1)].

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[1]. 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.)

Policy and Protocol Development

Schools are strongly advised to develop a written concussion management policy. This policy should reference the school's protocols, (in public schools written collaboratively with the district's medical director) to give direction to staff involved in the identification of a potential concussion. Policies should provide clear protocols for students who have been diagnosed with a concussion, but permit accommodations for individual student needs, as determined by the student's healthcare provider and/or district medical director. When developing concussion management plans, schools will want to promote an environment where reporting signs and symptoms of a concussion is required and seen as important.

The New York State Education Department (NYSED) and the New York State Department of Health (NYSDOH) recommend the following be included in a school's policy on concussion management:

- A commitment to implement strategies that reduce the risk of head injuries in the school setting and during school sponsored events. A procedure and treatment plan developed by the district medical director and/or other licensed healthcare professionals employed by the school, to be utilized by school staff who may respond to a person with a head injury. The procedure and treatment plan should be appended to the school policy.
- A procedure to ensure that school nurses, certified athletic trainers, physical education teachers, and coaches have completed the NYSED-approved, **required** training course (See *Guidelines for the Team* for each profession). Additionally, the policy should address the education needs of teachers and other appropriate staff, students, and parents/guardians.
- A procedure for a coordinated communication plan among appropriate staff to ensure that private provider orders for post-concussion management are implemented and followed, and for students to resume participation in athletic activities with the district medical director approval or in the case of a nonpublic school student the approval of their private physician.
- A procedure for regular review of the concussion management policy (at least every three years or with updates to guidance).

Prevention and Safety

Protecting students from head injuries is one of the most important ways to prevent a concussion. Although the risk of a concussion may always be present with certain types of activities, to minimize the risk, schools should ensure that (where appropriate) education, proper equipment, and supervision to minimize the risk is provided to school staff, students, and parents/guardians. Education should include:

- signs and symptoms of concussions:
- how such injuries occur: and
- possible long-term effects resulting from such injury.

It is imperative that students know the symptoms of a concussion and the critical importance of informing appropriate personnel, even if the student believes they have sustained the mildest of concussions and students should be educated on the importance of reporting any symptoms of a concussion to their parent/guardian and/or appropriate school staff. This information should be reviewed periodically with student athletes throughout each season. Emphasis must be placed on the need for medical evaluation should such an injury occur to prevent persisting symptoms of a concussion and on following the guidelines for return to school and activities. Providing supporting written material is advisable. School staff members must follow school emergency protocols and procedures for any student reporting signs and symptoms of injury or illness.

The Concussion Management and Awareness Act requires that consent forms (required for participation in interscholastic athletics) contain information on concussions and/or reference how to obtain information on concussions from the NYSED and NYSDOH websites. This information is available at New York State Education Department- School Health Services, and New York State Department of Health Bureau of Occupational Health and Injury Prevention- Traumatic Brain Injury.

Since previous history of concussion can increase the likelihood of future concussions along with impacting recovery, both the Required New York State School Health Examination Form (nysed.gov) and the Sample Interval Health History Form (schoolhealthny.com) require notation of history of previous concussion(s).

School personnel should be aware of the types of activities that present a higher-than-average risk for concussion. These activities include, but are not limited to:

- Interscholastic athletics;
- Extramural activities; and
- Physical education classes and recess.

Schools should evaluate the physical design of their facilities and their emergency safety plans to identify potential risks for falls or other injuries. Recess should include adult supervision, with all playground equipment in good repair, and play surfaces composed of approved child safety materials. Physical education programs should include:

- Plans that emphasize safety practices;
- Lessons on the need for and correct use of safety equipment; and
- Review of rules of play prior to taking part in the physical activity and enforced throughout the duration thereof.

It is strongly recommended that the physical education (PE) director, and/or the athletic director

(AD) of a school ensure that:

- All interscholastic athletic competition rules are followed;
- Appropriate safety equipment is used; and
- Rules of sportsmanship are enforced.

PE directors should instruct and encourage PE teachers, coaches, and student athletes to refrain from initiating contact to another player with their head or to the head of another player. Players should be proactively instructed on sport-specific safe body alignment and encouraged to be aware of what is going on around them. These practices will reduce the number of unexpected body hits that may result in a concussion and/or neck injury. In addition, proper instruction should include the rules of the sport, defining sportsman like conduct, and enforcing penalties for deliberate violations.

Identification

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 in athletic activities (interscholastic sports), recess, PE, and other classes. Symptoms of a concussion may appear immediately, may become evident in a few hours, or evolve and worsen over a few days. Concussions may also occur at places other than school. School staff 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. If there is no school nurse, or they are unavailable, the school should contact the parent/guardian to pick up their child and strongly recommend they have their child evaluated by a healthcare professional and the parent/guardian should be provided written information about concussion. Such written information is available on the Centers for Disease Control and Prevention's -HEADS UP to schools-parents

At no point in time should a student who is suspected of suffering a concussion be left alone or out of eyesight of the school personnel responsible for the student. This includes sitting on the team bench unattended or lying down in a separate room in the heath office or locker room. Concussion symptoms may be evolving, and at any time the student may need further assistance or transportation for emergency medical care.

Students who are suspected of having suffered a concussion outside of school, or in school but **not** occurring during athletic activities (interscholastic sports) should be seen by a healthcare provider who may be a physician, nurse practitioner or physician assistant for diagnosis. Such healthcare providers may choose to refer the student to a specialist as needed.

This is in contrast for students who suffer or are suspected of having suffered a concussion **during** athletic activities (interscholastic sports). As required by the Concussion Management and Awareness Act, such student's evaluation and clearance authorizing return to athletic activities (interscholastic sports) must be performed, written, and signed by a duly licensed physician. In public schools such written clearance must be sent to school for review by the district medical director. In nonpublic schools the school must obtain the student's evaluation and clearance from a duly licensed physician and follow any guidance from the student's treating physician. The student's evaluation, orders and clearance are to be kept in the student's cumulative health record.

Schools should be cognizant of the various constraints that many students' families face. Although schools may assist parents/guardians with finding an appropriate healthcare provider, schools **should not require** students to see a school-chosen provider for a fee to be cleared to return to athletic activities (interscholastic sports).

Symptoms

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 signs, or if the above listed symptoms worsen, must be seen and evaluated immediately at the nearest hospital emergency room:

- Headaches that worsen
- Seizures
- Looks drowsy and/or cannot be awakened
- Repeated vomiting
- Slurred speech
- Inability to recognize people or places
- Weakness or numbing in 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

Sideline Assessment and Neurocognitive Testing

Schools may, in collaboration with their medical director in public schools, choose to allow school staff who are appropriately licensed or certified healthcare professionals who are credentialed to use validated neurocognitive computerized testing concussion assessment tools such as Impact (Immediate Post Concussion Assessment & Cognitive Testing), CogSport (also known as Axon), Headminders, and ANAM (Automated Neuropsychological Assessment Metrics) to review and obtain baseline and post-concussion performance data. Schools may also choose to allow credentialed or trained school personnel or licensed health professionals as indicated by test, to use sideline assessment tools such as SCAT 6 (Sport Concussion Assessment Tool 5), SAC (Standardized Assessment of Concussion) K-Test, or BESS (Balance Error Scoring System) *. When choosing to use assessment tests and tools, it is important that schools are cognizant of credentialing requirements of assessors, required testing conditions, along with conditions and time intervals required for post-concussion testing. The school must obtain authorization from the parent/guardian prior to the testing. Additionally, parents/guardians should be given a copy of the results.

Neurocognitive computerized tests and sideline assessments may assist school staff in determining the severity of a student's symptoms. However, they are not a replacement for a healthcare evaluation to diagnose a concussion or clear a student to return to activities. All

students with a suspected concussion are to be removed from athletic and physical activities, should be symptom free for not less than 24 hours, and cleared to begin a gradual return to activities by a physician if injured during athletic activities, or a healthcare provider for all other injury locations.

In public schools, return to athletics will require the approval of the district medical director; in nonpublic schools, the concussed student's treating physician will provide return to athletic clearance pursuant to Commissioner's regulation §136.5(d)(2). Results from assessment tools or tests completed at school should be provided to healthcare providers to aid in the diagnosis and treatment of students.

***** The Concussion Recognition Tool-6 (CRT6), Sport Concussion Assessment Tool-6 (SCAT6) and Child SCAT6 provide updated iterations of the acute sport-related concussion (SRC) tools best used in the first 72 hours (and up to 1 week).[1]

[1] Patricios JS, Schneider KJ, Dvorak J*, et al*
Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport–Amsterdam, October 2022
British Journal of Sports Medicine 2023;**57:**695-711.

Diagnosis

In New York State, the diagnosis of a concussion remains within the scope of practice of the following healthcare providers: physicians, nurse practitioners, and physician assistants. These healthcare professionals may refer the student to other specialists once a diagnosis of concussion is made.

As part of their licensure in accordance with the NYSED's Board of Regents rules, licensed healthcare professionals are required to remain current on best practices in their fields. Healthcare providers who are not familiar with *current* best practice on concussion management are strongly encouraged to seek out professional development updates. One such resource from the Centers for Disease Control and Prevention (CDC) is a free online course: Online Concussion Training for Healthcare Providers. The following information provides a general overview of current best practice to familiarize school healthcare professionals and is not a substitute for necessary professional development education.

It cannot be emphasized enough that any student suspected of having 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 – **must be removed from cognitive, athletic and physical activities (e.g., PE class, recess)**, and observed until an evaluation can be completed by a healthcare provider*.

Evaluation by a healthcare provider of a student suspected of having a concussion should include a thorough health history and a detailed account of the injury. The (CDC) recommends that physicians, nurse practitioners, and physician assistants use the Acute Concussion Evaluation Form- Clinicians to conduct an initial evaluation.

The CDC recommends evaluation of three areas:

- Characteristics of the injury
- Type and severity of cognitive and physical symptoms
- Risk factors that may prolong recovery

Please note** – ***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. Such written clearance should be sent to the school for review by the district's medical director, and filed in the student's cumulative health record as required in law and Commissioner's regulation § 136.5 (d)(2)(i).

Table 1- Diagnosis and Clearance of Concussions

Where injury occurred	Who can diagnose	Who can clear to return to school activities, inclusive of PE	Who has final clearance for student to return to athletic activities	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 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 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; and
- 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.

[2] Br J Sports Med 2017; **0:1**–10. doi:10.1136/bjsports-2017-097699McCrory P, et al. 2017, Consensus statement on concussion in sport—the 5th international conference on concussion in sport held in Berlin, October 2016 (bmj.com)

Post-Concussion Management

Students who have been diagnosed with a concussion require both physical and cognitive rest as determined by the treating healthcare provider. 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. Private healthcare provider's orders for avoidance of cognitive and physical activity and graduated return to activity should be followed and monitored both at home and at school. Public school districts should consult their medical director if further discussion and/or clarification is needed regarding a private healthcare provider's order, or in the absence of private healthcare provider orders. Nonpublic schools should consult the student's parent/guardian and ask for clarification from the treating healthcare provider.

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.

When a student diagnosed with a concussion returns to school it is important that the school and the parent/guardian maintain ongoing communication. This is necessary as schools will need to keep the parent/guardian informed on the student's status and progress. The parent/guardian will need to inform the school of any signs and symptoms they see, such as development of late-in-the-day headaches or extreme fatigue when returning home from school. If developmentally appropriate, students, as well as the parent/guardian, should be included in plans for gradual return to activities.

Students may feel upset about having to limit activities or having difficulties keeping up in school. Students should be reassured that the situation is most likely temporary, that the goal is to help the student get back to full activity as soon as it is safe, and to avoid activities which will delay their recovery. Students should be informed that the concussion will resolve more quickly when they follow their healthcare provider's orders as supported by numerous studies. Students will need encouragement and support at home and school until symptoms fully resolve.

Cognitive Rest

Cognitive rest requires that the student limit participation in, or exposure to, activities that require concentration or mental stimulation including, but not limited to:

- Computers and video games
- Television viewing
- Driving
- Texting
- Reading or writing
- Studying or homework
- Taking a test or completing significant projects
- Participation in band, chorus, plays, etc.
- Employment

- Loud music
- Bright lights

Parents/guardians, teachers, and other school staff should watch for signs of concussion symptoms reappearing such as fatigue, irritability, headaches, blurred vision, or dizziness, which may reappear with any type of mental activity or stimulation. If any of these signs and symptoms occur, the student should cease the activity. Return of symptoms should guide whether the student should participate in an activity. See Return to Academic Activities section beginning on page 15 for further information on concussion symptoms and how they may manifest as behaviors in school.

> The basis for recommending physical and cognitive rest is that rest may ease discomfort during the acute recovery period by mitigating post-concussion symptoms and/or that rest may promote recovery by minimizing brain energy demands following concussion.
>
> There is currently insufficient evidence that prescribing complete rest achieves these objectives. After a brief period of rest during the acute phase (24–48 hours) after injury, patients can be encouraged to become gradually and progressively more active while staying below their cognitive and physical symptom-exacerbation thresholds (i.e., activity level should not bring on or worsen their symptoms).[3]

Return to Academic Activities

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. The healthcare provider should give clear orders on the gradual return to activity protocol that the school must follow. If a school has concerns or questions about the private healthcare provider's orders, the district medical director or their designee should contact that provider. In the case of a nonpublic school, an employed licensed healthcare provider or school administrator should contact the parent/guardian who can than contact the treating provider to discuss, clarify, and obtain written orders addressing concerns/questions. Even with classroom accommodations, a student with a concussion will need to **gradually** return to all academic activities.

Current research suggests that some level of sub symptoms with activity is acceptable; however, symptoms should not be made worse (e.g., no more than two points on a 10-pointVisual Analog Scale). A Visual Analog Scale (VAS) is a visual scale designed to document the characteristics of symptom (cognitive or physical) severity in individual patients.[4] Sample VAS can be found at Pain Assessment Scales/Tools » Pain Assessment and Management Initiative » College of Medicine - Jacksonville » University of Florida (ufl.edu)Pain Assessment

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[3] Br J Sports Med 2017; **0:1**–10. doi:10.1136/bjsports-2017-097699McCrory P, et al. 2017, Consensus statement on concussion in sport—the 5th international conference on concussion in sport held in Berlin, October 2016 (bmj.com)

[4] Klimek, Ludger et al. "Visual analogue scales (VAS): Measuring instruments for the documentation of symptoms and therapy monitoring in cases of allergic rhinitis in everyday health care: Position Paper of the German Society of Allergology (AeDA) and the German Society of Allergy and Clinical Immunology (DGAKI), ENT Section, in collaboration with the working group on Clinical Immunology, Allergology and Environmental Medicine of the German Society of Otorhinolaryngology, Head and Neck Surgery (DGHNOKHC)." *Allergo journal international* vol. 26,1 (2017): 16-24. doi:10.1007/s40629-016-0006-7

Scales/Tools - College of Medicine, University of Florida (ufl.edu). The VAS used should be approved for use by the student's healthcare provider, by a school nurse (RN), or the district's medical director. Therefore, schools will need to follow provider orders on return to activities. School staff should monitor students daily following each progressive level of academic activity, for any return of signs and symptoms of concussion. A gradual progression should be followed based on private healthcare provider's or other specialist's orders and recommendations.

Students with concussions may become fatigued easily and may need time to rest in school. Initially a student with a concussion may only be able to attend school for a few hours per day and/or need rest periods during the day. Students may exhibit increased difficulties with focusing, memory, learning additional information, and/or an increase in irritability or impulsivity. School personnel, particularly teachers including home tutors, should have clear directions on the student's gradual return to academic activities. They should be instructed that any activity may cause the student to become easily fatigued and the student should be allowed to rest, as needed. They should also be reminded that even lights and noise (e.g., walking between classes in a crowded hallway or cafeteria) may cause a recurrence of concussion symptoms.

Classroom teachers should delay testing a child diagnosed with a concussion until cleared by their provider for return to full academic activities. Generally, school principals are permitted to authorize certain testing accommodations for students who incur an injury within 30 days prior to state test administration. Principals should refer to test manuals available at Accommodations for Testing | New York State Education Department (nysed.gov) for information on the procedures they must follow in authorizing such accommodations. These manuals also provide information on the provisions for a student to be medically excused from a state test, as well as opportunities for make ups.

The CDC Heads Up program has resources to assist teachers regarding accommodations for students with concussion, Helping Students Recover from a Concussion: Classroom Tips for Teachers. Examples of accommodations include but are not limited to eliminating homework, shortened classroom assignments, and lengthened time to complete assignments. See page 36 for more information on accommodating students with concussions in the classroom.

Teachers will need to be instructed to listen to the student's report of symptoms and watch for clues reflecting a return of symptoms. If a student complains of return of symptoms, they must cease the activity. If a school nurse is available, the student should be seen in the health office. If a school nurse is not available, the parent/guardian should be notified. Teachers and other school personnel who do not cease student activities with return of symptoms may inadvertently prolong the student's recovery - therefore it is imperative that student complaints (e.g., blurry vision, headaches, etc.) are acted on. Table 2 provides a framework of gradual return to academic activities.

Table 2: Return-to-Learn Strategies [5]

Step	Mental activity	Activity at each step
1	Daily activities that do not result in more than a mild exacerbation* of symptoms related to the current concussion	Typical activities during the day (e.g., reading) while minimizing screen time. Start with 5–15 min at a time and increase gradually
2	School activities	Homework, reading or other cognitive activities outside of the classroom.
3	Return to school part time	Gradual introduction of schoolwork. May need to start with a partial school day or with greater access to rest breaks during the day.
4	Return to school full time	Gradually progress in school activities until a full day can be tolerated without more than mild* symptom exacerbation.

Following an initial period of relative rest (24–48 hours following an injury at Step 1), athletes (students) can begin a gradual and incremental increase in their cognitive load. Progression through the strategy for students should be slowed when there is more than a mild and brief symptom exacerbation.

* Mild and brief exacerbation of symptoms is defined as an increase of no more than two points on a 0–10-point scale (with 0 representing no symptoms and 10 the worst symptoms imaginable) for less than an hour when compared with the baseline value reported prior to cognitive activity.

Schools should have policies and/or procedures in place for transitioning students back to academic activities as ordered by the healthcare provider, and for making accommodations for missed tests and/or assignments. Administrators should review with the teaching staff methods to provide short term accommodations aligned with provider recommendations for students diagnosed with a concussion. In public schools, the district medical director may develop a return to cognitive activities protocol for students with concussions whose provider does not provide direction on limitations or needed accommodations. In nonpublic schools, the student's treating healthcare provider should provide direction regarding return to cognitive activities.

In some situations, a 504 plan may be appropriate for students whose concussion symptoms are significant or last 6 months or longer. Section 504 is part of the Rehabilitation Act of 1973 and is designed to protect the rights of individuals with disabilities in programs and activities that receive Federal financial assistance from the U.S. Department of Education. Section 504 requires a school to provide a "free appropriate public education" (FAPE) to each qualified student with a disability who is in the school's jurisdiction, regardless of the nature or severity of the disability. Under Section 504, FAPE consists of the provision of regular or special education and related aids and services designed to meet the student's individual educational needs as adequately as the needsof nondisabled students are met. More information is available on Section 504 law at the US Department of Education Office of Civil Rights and Protecting Students with Disabilities Q&A on Section 504 which includes information on addressing temporary impairments such as

[5] Patricios JS, Schneider KJ, Dvorak J, *et al*
Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport–Amsterdam, October 2022
British Journal of Sports Medicine 2023;**57:**695-711.

concussions.

Physical Rest

Physical rest includes getting adequate sleep, taking frequent rest periods or naps, and avoiding physical activity that requires exertion. Some activities that should be avoided include, but are not limited to:

- Ones that result in contact and collision and are elevated risk for re-injury;
- High speed and/or intense exercise and/or sports; and
- Any activity that results in an increased heart rate or increased head pressure (e.g., straining or strength training).

Students may find that they need to rest during the school day and should be allowed to do so as needed. Every student will be different and should be treated individually. One student may be able to attend school full days without difficulties, while another may find lights, noise and other stimulation causes fatigue or headaches and need to rest periodically.

As with cognitive rest, after a period of no physical activity for the first 24-48 hours, a private healthcare provider may choose to clear the student to begin a graduated return to physical activities. The healthcare provider should provide clear orders on the gradual return to physical activities protocol that the school must follow.

> After a brief period of initial rest (24–48 hours), symptom- limited activity can be begun while staying below a cognitive and physical exacerbation threshold (stage 1). Once concussion-related symptoms have resolved, the athlete should continue to proceed to the next level if he/she meet all the criteria (e.g., activity, heart rate, duration of exercise, etc.) without a recurrence of concussion-related symptoms. Generally, each step should take 24 hours, so that athletes would take a minimum of 1 week to proceed through the full rehabilitation protocol once they are asymptomatic at rest. However, the time frame for RTS* may vary with player age, history, level of sport, etc., and management must be individualized.
>
> In athletes who experience prolonged symptoms and resultant inactivity, each step may take longer than 24 hours simply because of limitations in physical conditioning and recovery strategies outlined above. This specific issue of the role of symptom-limited exercise prescription in the setting of prolonged recovery is discussed in an accompanying systematic review. If any concussion-related symptoms occur during the stepwise approach, the athlete should drop back to the previous asymptomatic level and attempt to progress again after being free of concussion-related symptoms for a further 24-hour period at the lower level. [7]
>
> * RTS means return to sports

As noted in the previous section on return to academic activities, some level of sub symptoms with activity is acceptable; however, symptoms should not be made worse (e.g., no more than two points on a 10-point Visual Analog Scale). The VAS used should be approved for use by the student's healthcare provider, by a school nurse (RN), district's medical director, or a certified

athletic trainer for student athletes. School staff should monitor students daily following each progressive level of physical activity, for any return of signs and symptoms of concussion. A gradual progression should be followed based on private healthcare provider's or other specialist's orders and recommendations.

Staff members should report any observed or reported return of signs and symptoms to the school nurse, certified athletic trainer for student athletes, or administration in accordance with school policy.

Return to Physical Activities

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 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. Current research suggests that some level of symptoms with activity is acceptable**. Therefore, schools will need to follow provider orders on return to activities. School staff should monitor students daily following each progressive level of physical activity for any return of signs and symptoms of concussion. A gradual progression should be followed based on private healthcare provider's or other specialist's orders and recommendations.

If a school has concerns or questions about the private healthcare provider's orders, the district medical director or their designee should contact that provider to discuss and clarify. The district medical director may develop a return to physical activity protocol for students with concussions whose provider does not provide direction on limitations or needed accommodations. For nonpublic schools, if there are concerns or questions about the private healthcare provider's orders, the parent/guardian should be contacted by school administration and asked to obtain in writing the needed clarification or question response from the treating healthcare provider. There are two types of exertional physical activities that need to be adjusted for students recovering from a concussion:

1. Physical activities during the school day such as physical education (PE) class, exercise, and recess; and
2. Athletic activities which are defined in regulation as extra-class periods of PE meaning those sessions organized for instruction and practice in skills, attitudes, and knowledge through participation in individual, group, and team activities organized on an intramural, extramural, or interschool athletic basis to supplement regular physical education class instruction.

Guidance for return to each type is described in the following sections.

Return to Physical Activities (PE class, Exercise, and Recess)

The first step in returning to physical activities in school is approval by the healthcare provider. The school may need to contact the healthcare provider to obtain more detailed instructions as to the level of activity the student may participate in. Students should not be excluded from recess but should be supervised to ensure they do not participate in exertional activities or activities that present risk of falls, collision, or impact.

Particularly when returning to PE class participation it is recommended that a gradual return to physical activities is implemented. At no time should a student suspected of or diagnosed with a

concussion be assigned cognitive activities (such as reading or writing) to substitute for PE class physical activities.

> There is more concern, appropriately, for re-injury in physical education than other classes. Students should be allowed to participate in individual, non-contact/collision physical activity when their symptoms at rest are below minimal as directed by a six on a 10-point Visual Analog Scale (VAS) and should cease activity if their symptoms during physical exertion increase two or more points on the VAS. Research has shown that mild aggravation of concussion symptoms is acceptable, and that exercise can actually promote recovery.[6, 7]

When developing a plan for gradual return to physical activities, other factors that may impact the student's tolerance of the activity should be considered:

- Environment: lighting and noise levels;
- Activity level: exertion level, risk of reinjury, and student interest; and
- Symptom exacerbation.

Once the student has successfully completed the gradual return to physical activities, the student may resume unrestricted physical activities with approval from a healthcare provider.

Return to Athletic Activities

In public schools, 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). In nonpublic schools, the student's treating physician has authority to clear student to participate in or return to extra-class activities. Current guidance states, "[i]t is reasonable for athletes to avoid vigorous exertion while they are recovering." [8,9] Table 3 provides a graduated return to sport framework.

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[6] Leddy JJ, Haider MN, Ellis MJ, et al. Early Subthreshold Aerobic Exercise for Sport-Related Concussion: A Randomized Clinical Trial. *JAMA pediatrics.* 2019;173(4):319-325.

[7] Leddy JJ, Haider MN, Ellis MJ, et al. Early Subthreshold Aerobic Exercise for Sport-Related Concussion: A Randomized Clinical Trial. *JAMA pediatrics.* 2019;173(4):319-325.

[8] Br J Sports Med 2017; **0:1**–10. doi:10.1136/bjsports-2017-097699McCrory P, et al. 2017, Consensus statement on concussion in sport—the 5th international conference on concussion in sport held in Berlin, October 2016 (bmj.com)

[9] Br J Sports Med 2017; **0:1**–10. doi:10.1136/bjsports-2017-097699McCrory P, et al. 2017, Consensus statement on concussion in sport—the 5th international conference on concussion in sport held in Berlin, October 2016 (bmj.com)

Table 3: Return-to-sport (RTS) strategy—each step typically takes a minimum of 24 hours[10]

Step	Exercise strategy	Activity at each step	Goal
1	Symptom-limited activity	Daily activities that do not exacerbate symptoms (e.g., walking).	Gradual reintroduction of work/school
2	Aerobic exercise* **2A—Light** (up to approximately 55% max HR) **then** **2B—Moderate** (up to approximately 70% max HR)	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 (e.g., 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 (e.g., 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 (i.e., an increase of no more than two 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 (i.e., 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 (i.e., more than two 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.

* max HR, predicted maximal heart rate according to age (i.e., 220-age) or as directed by the healthcare provider

[10] Patricios JS, Schneider KJ, Dvorak J, *et al*
Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport–Amsterdam, October 2022

The Concussion Management Team

Concussion management requires a coordinated, collective effort among school personnel along with parent(s)/guardian(s) to monitor an individual student's progress. They should advocate for academic and physical accommodations as appropriate, to reduce delays in a student's ability to return to full activities.

A school concussion management team can be a useful strategy to achieve coordination between all parties. Schools may choose to form a concussion management team to oversee and implement the school's concussion policies and protocols. Per the Concussion Management and Awareness Act, this team may include, but is not limited to:

- Student
- Parents/Guardians
- School Administration/ Pupil Personnel Services Staff
- Medical Director
- Private Healthcare provider and other Specialists
- School Nurse(s)
- Director of Physical Education and/or Athletic Director
- Certified Athletic Trainer
- Physical Education Teacher/Coaches
- Teachers

Regardless of whether the school has a formal concussion management team, school staff in collaboration with the private healthcare provider, the student, and the student's family play a substantial role in assisting the student to recovery. The following section outlines the vital role every member of the team contributes to ensuring students are healthy, safe, and achieving their maximum potential. The primary focus of all members should be the student's health and recovery.

Student

Students should be encouraged to communicate any symptoms promptly to school staff and/or parents/guardians, since a concussion is primarily diagnosed by reported and/or observed signs and symptoms. It is the information provided by the student about their signs and symptoms that guide the other members of the team in transitioning the student back to activities. The amount and type of feedback reported by the student will be dependent on age and other factors.

Students should:

- Be educated about the prevention of head injuries.
- Be familiar with signs and symptoms that they must report to the coach, certified athletic trainer, school nurse, parent/guardian, or other staff.
- Be made aware of the risk of concussion and be encouraged to tell their coach, parent/guardian, certified athletic trainer, school nurse or other staff members about injuries and symptoms they are experiencing.
- Be educated about the risk of severe injury, permanent disability, and even death that can occur with re-injury by resuming normal activities before recovering from a concussion.
- Follow instructions from their private healthcare provider.
- Be encouraged to ask for help and to inform teachers of difficulties they experience in class and when completing assignments.
- Encourage classmates and teammates to report injuries.
- Promote an environment where reporting signs and symptoms of a concussion is considered acceptable.

Parent/Guardian

Parents/guardians play an integral role in assisting their child and are the primary advocate for their child. When their child is diagnosed with a concussion, it is important that the parent/guardian communicates with both the healthcare provider and the school. Understandably, this is a stressful time for the parent/guardian as they are concerned about their child's well-being.

Parents/Guardians should:

- Be familiar with the signs and symptoms of concussions. This may be accomplished by reading pamphlets, web-based resources, and/or attending meetings prior to their child's involvement in interscholastic athletics.
- Be familiar with the Concussion Management and Awareness Act's requirement that any student believed to have suffered a concussion must immediately be removed from Athletic activities (interscholastic sports).
- Be familiar with any concussion policies or protocols implemented by the school and understand these policies are in place to protect their child.
- Be made aware that concussion symptoms that are not addressed can prolong concussion recovery.
- Provide any forms and written orders from the healthcare provider to the school in a timely manner.
- Monitor their child's physical and mental health as they transition back to full activity after sustaining a concussion.
- Report concerns to their child's private healthcare provider and the school, as necessary.
- Communicate with the school to assist in transitioning their child back to school after sustaining a concussion.
- Communicate with school staff if their child is experiencing significant fatigue or other symptoms at the end of the school day.
- Follow the private healthcare provider orders at home for return to activities.

School Administrator/ Pupil Personnel Services Staff (PPS)

The school administrator and/or their designee, such as PPS staff (school social worker, school psychologist, school counselor, school nurse and school attendance teacher), should ensure that the school's policies on concussion management are followed. The administrator may choose to designate a formal concussion management team to oversee that school policies are enforced, and protocols are implemented.

Administrators should:

- Review the school's concussion management policy with all staff.
- Arrange for professional development sessions regarding concussion management for staff and parent meetings.
- Provide emergency communication devices for school activities.
- Provide guidance to school staff on schoolwide policies and protocols for emergency care and transport of students suspected of sustaining a concussion.
- Develop plans to meet the needs of individual students diagnosed with a concussion in accordance with healthcare provider orders in consultation with the school nurse and/or athletic trainer, and in public schools in consultation with the medical director.
- Enforce school concussion management policies and protocols.
- Assign a staff member as a liaison to the parent/guardian. The liaison should contact the parent/guardian on a regular basis with information about their child's progress at school.
- Invite parent/guardian participation in determining their child's needs at school.
- Encourage parent/guardian to communicate to appointed school staff if their child is experiencing significant fatigue or other symptoms at the end of the day.
- Encourage parent/guardian to communicate with the private healthcare provider on the status of their child and their progress with return to school activity.
- Where appropriate, ask a parent/guardian to sign a Family Educational Rights and Privacy Act (FERPA) release for school staff to provide information regarding the student's progress to the private healthcare provider.

Director of School Health Services/Medical Director

The district director of school health services (a.k.a. medical director) is a physician or nurse practitioner that public school districts must employ pursuant to Education Law Article 19, §902. They oversee school health services and play a significant role in setting protocols and procedures related to identifying students who may have sustained a concussion, post-concussion management in school, and authorizing students to participate in interscholastic athletics.

The medical director should:

- Collaborate with school administration in developing concussion management policies and protocols.
- Assist school staff by acting as a liaison to the student's healthcare provider and contacting that provider as necessary to discuss or clarify orders and plan of care.
- Attend 504 and CSE meetings when requested by 504 or CSE director.
- **Review** all healthcare providers' written clearance for students to begin graduated physical and cognitive activity unless the medical director chooses to delegate this to the school nurse or certified athletic trainer. If this task is delegated, the medical director should provide concise written protocols for the school nurse or certified athletic trainer to follow when accepting a private healthcare provider's clearance. Such protocols should specify the type of symptoms, medical history, and concussion severity, etc. that the medical director will need to personally review. This protocol may include permitting the school nurse or certified athletic trainer to function as the medical director's delegate to inform appropriate school staff of the student's return to activity.
- **Clear** all students returning to extra-class Athletic activities (interscholastic sports) in accordance with Commissioner's regulations. This can be done at the discretion of the medical director either by reviewing a private healthcare provider's clearance, or personally assessing the student.
- Implement school policy on return to activities.
- Work with the Concussion Management Team to monitor the progress of individual students with protracted recovery, multiple concussions, and atypical recovery.
- Encourage school health personnel (school nurses, certified athletic trainers, and other licensed healthcare professionals) to collaborate and communicate with each other about any student who is suspected of having or is diagnosed with a concussion.
- Become educated in the use and interpretation of neurocognitive testing (e.g., IMPACT, Headminders, and ANAM), if the school utilizes such tests.
- Participate in professional development activities as needed to maintain knowledge base and keep practice current on concussion management.

Private Healthcare Providers/ Specialists

The private healthcare provider is vital to all the other Concussion Management Team members by providing orders and guidance that determine when the student can begin transitioning back to school and activities.

Due to the different laws that govern confidentiality of information, private healthcare providers and other specialists need to be aware that while they are governed by HIPAA (Health Insurance Portability and Accountability Act), schools are governed by FERPA. To send information to the school regarding the student, the provider will need parent/guardian consent. Likewise, a school must require a parent/guardian consent to release information to the provider. Further information on how these laws interact is available in the Joint Guidance on the Application of HIPAA and FERPA to Student Health Records (ed.gov)

The healthcare provider should:

- Provide orders regarding restrictions and monitoring for specific symptoms that the healthcare provider should be notified of by family and/or school staff members if they occur.
- Provide the school with a graduated return to both academic and physical activities schedule to follow or approve the use of the school's graduated return to activity schedule if deemed appropriate.
- Readily communicate with the school nurse, certified athletic trainer, or medical director to clarify orders.
- Provide written signed orders to the school within 48 hours of giving verbal orders to school healthcare professionals.
- Provide written clearance for return to full activities. For a student to return to academic and athletic activities (interscholastic sports) after he or she sustained a concussion during school athletic activities (interscholastic sports), an evaluation must be completed by, documented, and signed by a licensed physician to meet the requirements of the Concussion Management and Awareness Act.

School Nurse

The school nurse (RN) is often the person who communicates with the private healthcare provider, medical director, parent/guardian, and school staff. Often, they are the school staff member who collects written documentation and orders from the healthcare provider. The school nurse also plays an integral role in identifying a student with a potential concussion. Additionally, they assess the student's progress in returning to school activities based on private healthcare provider orders or school protocol.

The school nurse should:

- Perform baseline validated neurocognitive computerized tests if permitted by school policy and if credentialed in their use.
- Assess students who have suffered a significant fall or blow to the head or body for signs and symptoms of a concussion. Observe for late onset of signs and symptoms and refer as appropriate.
- Assess the student to determine if any signs and symptoms of concussion warrant emergency transport to the nearest hospital emergency room per school policy.
- Advise parents/guardians of students believed to have sustained a concussion to have the student evaluated by a healthcare provider. Alert parents/guardians of need for a physician evaluation if the concussion was sustained during athletic activities (interscholastic sports).
- Provide parents/guardians with both oral and/or written instructions on observing the student for concussive complications that warrant immediate emergency care.
- Assist in the implementation of the private healthcare provider's or other specialist's requests for accommodations.
- Use the private healthcare provider's or other specialist's orders to develop an emergency care plan for staff to follow.
- Monitor and assess the student's return to school activities, assessing the student's progress with each step and communicating with the private healthcare provider or other specialist, medical director, certified athletic trainer, parent/guardian, and appropriate school staff when necessary.
- Collaborate with the school concussion management team in creating accommodations as requested by the private healthcare provider or other specialist if it is determined that a 504 plan is necessary.
- Review a private healthcare provider's or other specialist's written statement to clear a student to return to academic and/or physical activities (in public schools - if the district's medical director has written a policy delegating this to the school nurse). Such protocols should specify the type of symptoms, medical history, and concussion severity, etc., that the medical director will need to personally review. This protocol may include permitting the school nurse to function as the medical director's designee to inform appropriate school staff of the student's return to activity.)
- Perform post-concussion assessments or use validated neurocognitive computerized tests or other assessment tools, if credentialed or trained in

their use and provide the results to the private healthcare provider and/or district medical director to aid them in determining the student's status.
- Educate students and staff in concussion management and prevention.
- Work collaboratively with other school personnel to ensure that the concussed student does not engage in activities at school that may complicate the student's condition prior to having written clearance by a healthcare provider, and to ensure that the student's teachers are made aware, on a need-to-know basis, of any academic limitations and physical/athletic activity restrictions.

School nurses must complete the Department-approved concussion management course* for school nurses every two (2) years. The Department has approved the following course for school nurses:

- HEADS UP to Healthcare Providers Online Training for School Health Professionals - CDC TRAIN - an affiliate of the TRAIN Learning Network powered by the Public Health Foundation

Please note- this course has pretest and post test questions and may take 1-2 hours to complete. Licensed healthcare professionals are encouraged to seek out further professional development on concussions.

**Note: This is not a NYS specific training video, therefore the scope of practice of certified athletic trainers and school nurses in NYS may differ from what is described in the training. Registered professional nurses, licensed practical nurses, and certified athletic trainers practicing in NYS must follow NYS laws regarding licensing and scope of practice.*

Director of Physical Education and/or Athletic Director

The director of physical education (PE) provides leadership and supervision for PE class instruction, intramural activities, and interscholastic athletic competition within a school or school's total physical education program. In some schools, there may be an athletic director solely in charge of the interscholastic athletic program. The director of physical education and/or the athletic director must be aware of school policies regarding concussion management. They should educate PE teachers, coaches, parents/guardians, and students about such policies. The director of PE and/or the athletic director often function as the liaison between school staff and coaches.

The director of PE and/or athletic director should:

- Ensure that pre-season consent forms include information from the NYSED website as required by the Concussion Management and Awareness Act, as well as information about the school's policies and protocols for concussion management.
- Offer annual educational programs to parents/guardians and student athletes about concussion prevention and management.
- Inform the school nurse, certified athletic trainer, or medical director of any student who is suspected of having a concussion.
- In public schools ensure that any student identified as potentially having a concussion is not permitted to participate in any athletic activities (interscholastic sports) until written clearance is received from the district medical director.
- Ensure that game officials, coaches, PE teachers, or parent/guardian are not permitted to determine whether a student with a suspected head injury can continue to play.
- Educate coaches each sports season on the school's policies on concussions and care of injured students during interscholastic athletics, including when to arrange for emergency medical transport.
- Ensure the school's sport governing body's policies are followed and enforced for interscholastic athletics [[e.g., NYSPHAA (New York State Public High School Athletic Association), PSAL (Public School Athletic League), or other NYS athletic associations].
- Support staff implementation of graduated return to athletics protocol.
- Enforce district or school policies on concussions including training requirements for coaches, PE teachers, and certified athletic trainers in accordance with Commissioner's regulation §136.5(b).
- If the public school district medical director has authorized the school nurse or certified athletic trainer to review and accept a private healthcare provider's clearance, that written policy should be made readily available to the athletic director, PE teachers, and coaches.

Certified Athletic Trainer

A certified athletic trainer under the supervision of a qualified physician can assist the medical director and director of PE by identifying a student with a potential concussion. The certified athletic trainer can also evaluate the student diagnosed with a concussion in their progress in return to athletic activities (interscholastic sports) based on private healthcare provider orders and/or school protocol. They also play an integral role in ensuring the student athlete receives appropriate post- concussion care as directed by the student's healthcare provider.

The certified athletic trainer should:

- Oversee student athletes taking baseline validated standardized computerized tests if permitted by school policy and if credentialed in their use.
- Remove from play student athletes who have suffered a significant fall or blow to the head or body. Sideline evaluations are to obtain information for the physician-they are not to determine if a student may return to play.
- Observe for signs and symptoms of a concussion including late onset of signs and symptoms and refer as appropriate.
- Evaluate the student to determine if any signs and symptoms of concussion warrant emergency transport to the nearest hospital emergency room per school policy.
- Refer parents/guardians of student athletes believed to have sustained a concussion to their healthcare provider for evaluation.
- Provide parents/guardians with both oral and/or written instructions on observing the student for concussive complications that warrant immediate emergency care.
- Assist in implementation of the private healthcare provider's or other specialist's requests for accommodations.
- Monitor the student's return to school activities, evaluating the student's progress with each step, and communicating with the private healthcare provider or other specialist, medical director, school nurse, parent/guardian, and appropriate school staff.
- Communicate with school personnel on a student's return to activity progress.
- Review a private physician's written statement to clear a student for return to activities (in public schools if the district's medical director has written a policy delegating this to the certified athletic trainer. Such protocols should specify the type of symptoms, medical history, and concussion severity, etc., that the medical director will need to personally review. This protocol may include permitting the school nurse or certified athletic trainer to function as the medical director's delegate to inform appropriate school staff of the student's return to activity).
- May perform post-concussion observations or oversee student athletes taking validated standardized computerized tests if credentialed or trained in their use and provide the results to the private healthcare provider and/or district medical director to aid them in determining the student's status.
- Educate students and staff in concussion management and prevention.

- Work collaboratively with the school nurse and other school personnel to ensure that the concussed student does not engage in activities at school that may complicate the student's condition prior to having written clearance by a healthcare provider, and to ensure that the student's teachers are made aware, on a need to know basis of any academic limitations and physical/athletic activity restrictions.

Certified athletic trainers in secondary schools must complete the Department approved concussion course* for certified athletic trainers every two (2) years. The Department has approved two courses for athletic trainers to choose from:

- HEADS UP to Healthcare Providers Online Training for School Health Professionals - CDC TRAIN - an affiliate of the TRAIN Learning Network powered by the Public Health Foundation; **OR**
- HEADS UP to Athletic Trainers: Online Concussion Training - CDC TRAIN - an affiliate of the TRAIN Learning Network powered by the Public Health Foundation

Athletic trainers are encouraged to seek out further professional development on concussions.

**Note: These are not NYS specific training videos, therefore the scope of practice of certified athletic trainers and school nurses in NYS may differ from what is described in the training. Registered professional nurses, licensed practical nurses, and certified athletic trainers practicing in NYS must follow NYS laws regarding licensing and scope of practice.*

Physical Education Teacher/ Coaches

Concussions often occur during athletic activities (interscholastic sports). Coaches are typically the only school staff at all interscholastic athletic practices and competitions. It is essential that coaches and physical education (PE) teachers are familiar with potential causes of concussions along with the signs and symptoms. Coaches and physical education teachers should always put the safety of the student first.

PE teachers and coaches should:

- Remove any student who has taken a significant blow to head or body or who presents with signs and symptoms of a head injury immediately from play because the Concussion Awareness Management Act requires immediate removal of any student believed to have sustained a concussion.
- Contact the school nurse or certified athletic trainer (if available) or parent/guardian for assistance with any student injury.
- Send any student exhibiting signs and symptoms of a more significant concussion (see page 8) to the nearest hospital emergency room via emergency medical services (EMS) or as per school policy.
- Inform the parent/guardian of the need for evaluation by a health care provider, or a physician if student injured during athletic activities. The coach should provide the parent/guardian with written educational materials on concussions along with the school's concussion management policy.
- Inform the PE director, certified athletic trainer, the school nurse, medical director and/or school administrator of the student's potential concussion. This is necessary to ensure that the student does not engage in activities at school that may complicate the student's condition prior to having written clearance by a healthcare provider.
- Ensure that students diagnosed with a concussion do not participate in any athletic activities (interscholastic sports) and/or physical activities until, the PE teacher/coach has received written authorization from the medical director or their designee in conjunction with the student's physician, that the student has been cleared to participate.
- Assist the medical director, school nurse, athletic trainer, or designated school staff in the gradual return to activity protocols in accordance with school policy.
- Ensure that students diagnosed with a concussion do not substitute mental activities for physical activities unless the healthcare provider clears the student to do so (e.g., 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 healthcare provider).

Complete the Department approved course on concussions for coaches and PE teachers every two years. The Department has approved two courses* for coaches and PE teachers to choose from:

- HEADS UP to Youth Sports: Online Training for Coaches - CDC TRAIN - an affiliate of the TRAIN Learning Network powered by the Public Health

Foundation; **OR**

- Concussion in Sports Course (nfhslearn.com)

**Note: These are not NYS specific training videos, therefore what unlicensed school personnel are permitted to do and the scope of practice of certified athletic trainers and school nurses in NYS may differ from what is described in the training. School personnel and licensed or certified health professionals in NYS must follow NYS laws and regulations.*

Teacher

Teachers can assist students in their recovery from a concussion by making accommodations that minimize aggravating symptoms so that the student has sufficient cognitive rest. Teachers should refer to school protocols and private healthcare provider orders in determining necessary academic accommodations. Section 504 plans may need to be considered for some students with severe symptoms requiring an extended time frame for accommodations (see page 15 for more information on 504 plans).

Teachers should:

- Review the school's concussion management policy.
- Attend professional development sessions regarding concussion management.
- Review the emergency care plan for the student with a concussion with the school nurse or medical director.
- Know signs and symptoms to observe for that warrant the student ceasing the activity and sending the student to the health office.
- Provide accommodations to the student in the classroom in alignment with the healthcare provider's orders and direction from administration.
- Communicate with the assigned school liaison or directly to the parent/guardian about observations of the student in the classroom, and/or recess including any concussive symptoms.
- Invite parent/guardian participation in determining their child's needs at school.

Table 4 provides some of the areas of difficulties a student with a concussion may have, along with suggested accommodations.

Table 4 - Concussion Related Cognitive Difficulties and Classroom Accommodations [13]

Problem Area	Problem Description	Accommodations
Expression	**Word Retrieval**: May have trouble thinking of specific words (word finding problems) or expressing the specifics of their symptoms or functional difficulties	• Allow students time to express themselves • Ask questions about specific symptoms and problems (i.e., are you having headaches?)
Comprehension	**Spoken:** • May become confused if too much information is presented at once or too quickly • May need extra time processing information to understand what others are saying • May have trouble following complex multi-step directions • May take longer than expected to respond to a question	• Speak slowly and clearly • Use short sentences • Repeat complex sentences when necessary • Allow time for students to process and comprehend • Provide both spoken and written instructions and directions

[13] *Adapted from the Center for Disease Control and Prevention,* Heads up; facts for physicians about mild traumatic brain injury (MTBI) (cdc.gov)

	Written: • May read slowly • May have trouble reading material in complex formats or with small print • May have trouble filling out forms	• Allow students extra time to read and complete forms • Provide written material in simple formats and large print when possible • Have someone read the items and fill out the forms for students who are having trouble •Provide word prompts •Use of multiple-choice responses need to be distinctly different.

More information on classroom accommodations can be found at:
Upstate Medical University Concussion in the Classroom

Helping Students Recover from a Concussion: Classroom Tips for Teachers

Resources

American Association of Neurological Surgeons
accessed 7/3/23

Brain Injury Association of New York State
accessed 7/3/2323

Brain Steps – Strategies Teaching Educators, Parents & Students
accessed 7/3/23

CDC Heads Up
accessed 7/3/2323

Helping Students Recover from a Concussion: Classroom Tips for Teachers
accessed 7/3/2323

Child Health Plus
accessed7/3/23

2022 Consensus Statement on Concussion in Sport - The 6th International Conference
accessed 7/3/23

2016 Consensus Statement on Concussion in Sport – The 5th International Conference
accessed 7/3/23

NYS Local Departments of Social Services
accessed 7/3/23

An Educator's Guide to Concussions in the Classroom (nationwidechildrens.org)
accessed 7/3/23

NYS Department of Health Traumatic Brain Injury
accessed 7/3/2323

Safety - New York State Public High School Athletic Association (nysphsaa.org)
accessed 7/3/2323

Upstate Medical University Concussion in the Classroom
accessed 7/3/2323