

Concussion Protocol*

This **School Division Concussion Protocol** is intended to help guide the management of students who may have a suspected concussion as a result of participation in school or school division activities.

Purpose

This protocol addresses the recognition, medical diagnosis, and management of students who may sustain a suspected concussion during school learning activities or during participation in sport, play, work, or other physical activities. It aims to ensure that students with a suspected concussion receive timely and appropriate care and proper management to allow them to return to their school and sport activities safely. The protocol outlines strategies for helping students to make a gradual return to learning and playing following a concussion.

This concussion protocol may not address every possible clinical scenario that can occur during school or school division activities, but includes critical elements based on the latest evidence and current expert consensus.

Intended Use

This protocol is intended for use by all individuals who interact with students inside and outside the context of school- and non-school-based learning and sport activities, including students, parents/guardians, coaches, officials, teachers, trainers, and licensed healthcare professionals. The concussion management principles described in this protocol should be applied to children and youth who sustain a suspected concussion during any school or school division activities and are returning to learning and playing.

Summary of Protocol Pathway

For a summary of the **School Division Concussion Protocol**, please refer to the **Concussion Pathway** figure at the end of this document.

* Source: Parachute Canada. [Canadian Guideline on Concussion in Sport](#). Toronto, ON: Parachute Canada, 2017. Available online at www.parachutecanada.org/injury-topics/item/canadian-guideline-on-concussion-in-sport. Adapted with permission.

1. Pre-season Education

Despite recent increased attention focusing on concussion, there is a continued need to improve concussion education and awareness. Optimizing the prevention and management of concussion depends highly on annual education of all sport stakeholders (students, parents/guardians, coaches, officials, teachers, trainers, licensed healthcare professionals) on current evidence-informed approaches that can prevent concussion and more serious forms of head injury and help identify and manage a student with a suspected concussion.

Concussion education should include information on

- the definition of concussion
 - possible mechanisms of injury
 - common signs and symptoms of concussion
 - steps that can be taken to prevent concussions and other injuries from occurring in sport and other activity
 - what to do when a student has suffered a suspected concussion or a more serious head injury
 - what measures should be taken to ensure proper medical assessment of concussion
 - the *Return-to-School Strategy* and the *Return-to-Sport Strategy*
 - return-to-sport medical clearance requirements following a concussion
- ▶ **Who:** Students, parents/guardians, coaches, officials, teachers, trainers, licensed healthcare professionals
- ▶ **How:** [*Pre-season Concussion Education Sheet*](#) (*Canadian Guideline on Concussion in Sport*)

All students and their parents/guardians are required to review the *Pre-season Concussion Education Sheet* prior to the first day of school. In addition to reviewing information on concussion, it is important that all sport stakeholders have a clear understanding of the **School Division Concussion Protocol**. For example, this can be accomplished through pre-season in-person orientation sessions for students, parents/guardians, coaches, teachers, and other sport and school stakeholders.

2. Head Injury Recognition

Although the formal diagnosis of concussion should be made following a medical assessment, all school and sport stakeholders, including students, parents/guardians, teachers, coaches, trainers, officials, and licensed healthcare professionals, are responsible for the recognition and reporting of students who may demonstrate visual signs of a head injury or who report concussion-related symptoms. This is particularly important because many sport, school, and recreation venues will not have access to on-site licensed healthcare professionals.

A concussion should be suspected

- in any student who sustains a significant impact to the head, face, neck, or body and demonstrates ANY of the visual signs of a suspected concussion or reports ANY symptoms of a suspected concussion as detailed in the *Concussion Recognition Tool 5*
- if any student reports ANY concussion symptoms to one of their peers, parents/guardians, teachers, or coaches, or if anyone witnesses a student exhibiting any of the visual signs of concussion

In some cases, a student may demonstrate signs or symptoms of a more severe head or spine injury, including convulsions, worsening headaches, vomiting, or neck pain. If a student demonstrates any of the “Red Flags” indicated by the *Concussion Recognition Tool 5*, a more severe head or spine injury should be suspected.

- ▶ **Who:** Students, parents/guardians, coaches, officials, teachers, trainers, licensed healthcare professionals
- ▶ **How:** [Concussion Recognition Tool 5 \(CRT5\)](#) (Concussion in Sport Group)

3. On-site Medical Assessment

Depending on the suspected severity of the injury, an initial assessment may be completed by emergency medical professionals or by an on-site licensed healthcare professional where available. In cases where a student loses consciousness or it is suspected a student might have a more severe head or spine injury, *Emergency Medical Assessment* by emergency medical professionals should take place (see 3a. below). If a more severe injury is not suspected, the student should undergo *Sideline Medical Assessment* or *Medical Assessment*, depending on whether there is a licensed healthcare professional present (see 3b. below).

3a. Emergency Medical Assessment

If a student is suspected of sustaining a more severe head or spine injury during a game, practice, or other activity, an ambulance should be called immediately to transfer the student to the nearest emergency department for further *Medical Assessment*.

Coaches, parents/guardians, teachers, trainers, and officials should not make any effort to remove equipment or move the student until an ambulance has arrived, and the student should not be left alone until the ambulance arrives. After the emergency medical services staff have completed the *Emergency Medical Assessment*, the student should be transferred to the nearest hospital for *Medical Assessment*. In addition, the student’s parents/guardians should be contacted immediately to inform them of the student’s injury.

- ▶ **Who:** Emergency medical professionals

3b. Sideline Medical Assessment

If a student is suspected of sustaining a concussion and there is no concern for a more serious head or spine injury, the student should be immediately removed from the field of play or setting in which the injury occurred.

If a licensed healthcare professional is present, the student should be taken to a quiet area and undergo *Sideline Medical Assessment* using the *Sport Concussion Assessment Tool 5 (SCAT5)* or the *Child SCAT5*. The *SCAT5* and *Child SCAT5* are clinical tools that should be used only by a licensed healthcare professional who has experience using these tools. It is important to note that the results of *SCAT5* and *Child SCAT5* testing can be normal in the setting of acute concussion. As such, these tools can be used by licensed healthcare professionals to document initial neurological status, but should not be used to make sideline return-to-sport decisions for students. Any student who is suspected of having sustained a concussion must not return to the activity, game, practice, or gym class, and must be referred to a medical doctor, nurse practitioner, or physician assistant for *Medical Assessment*.

If a student is removed from play or an activity following a significant impact but there are NO visual signs of a concussion and the student reports NO concussion symptoms, then the student can be returned to play or activity but should be monitored for delayed symptoms.

If there is no licensed healthcare professional present, the student should be referred immediately for *Medical Assessment* by a medical doctor, nurse practitioner, or physician assistant, and the student must not return to play or activity until receiving medical clearance.

- ▶ **Who:** Athletic therapist, physiotherapist, medical doctor, licensed healthcare professionals, nurse practitioner, physician assistant
- ▶ **How:** [*Sport Concussion Assessment Tool 5 \(SCAT5\)*](#) and [*Child Sport Concussion Assessment Tool 5 \(Child SCAT5\)*](#) (Concussion in Sport Group)

4. Medical Assessment

In order to provide comprehensive evaluation of students with a suspected concussion, the *Medical Assessment*

- must rule out more serious forms of traumatic brain and spine injuries
- must rule out medical and neurological conditions that can present with concussion-like symptoms
- must make the diagnosis of concussion based on findings of the clinical history and physical examination and the evidence-based use of adjunctive tests as indicated (i.e., CT scan)

In addition to nurse practitioners and physician assistants, medical doctors¹ who are qualified to evaluate patients with a suspected concussion include pediatricians, family medicine, sports medicine, emergency department, internal medicine, and rehabilitation (physiatrists) physicians, as well as neurologists and neurosurgeons.

In geographic regions of Manitoba with limited access to medical doctors (i.e., rural or northern communities), a licensed healthcare professional (i.e., nurse) with pre-arranged access to a medical doctor or nurse practitioner can facilitate this role. The *Medical Assessment* is responsible for determining whether or not the student has been diagnosed with a concussion. Students with a diagnosed concussion should be provided with a *Medical Assessment Letter* indicating a concussion has been diagnosed. Students who are determined not to have sustained a concussion must be provided with a *Medical Assessment Letter* indicating a concussion has not been diagnosed, and the student can return to school, work, and sport activity without restriction.

- ▶ **Who:** Medical doctor, nurse practitioner, physician assistant, nurse
- ▶ **How:** [*Medical Assessment Letter*](#) (*Canadian Guideline on Concussion in Sport*)

5. Concussion Management

When a student has been diagnosed with a concussion, it is important that the student's parents/guardians are informed. All students diagnosed with a concussion must be provided with a standardized *Medical Assessment Letter* that notifies them, as well as their parents/guardians/spouses, that they have been diagnosed with a concussion and may not return to any activities with a risk of concussion until medically cleared to do so by a medical doctor, nurse practitioner, or physician assistant. Because the *Medical Assessment Letter* contains personal health information, it is the responsibility of the student or their parents/guardians to provide this documentation to the student's coaches, teachers, or employers. It is also important for the student to provide this information to sport or school organization officials who are responsible for injury reporting and concussion surveillance where applicable.

Students diagnosed with a concussion should be provided with education about the signs and symptoms of concussion, strategies about how to manage their symptoms, information about the risks of returning to school and sport activity without medical clearance, and recommendations regarding a gradual return to learning and playing.

Students diagnosed with a concussion are to be managed according to their *Return-to-School Strategy* and their *Return-to-Sport Strategy* under the supervision of a medical doctor, nurse practitioner, or physician assistant. When available, students should be encouraged to work with the team athletic therapist or physiotherapist to

¹ Medical doctors, nurse practitioners, and physicians are the only healthcare professionals in Manitoba with licensed training and expertise to meet these needs; therefore, all students with a suspected concussion should undergo evaluation by one of these professionals.

optimize progression through their *Return-to-Sport Strategy*. Once students have completed their *Return-to-School Strategy* and their *Return-to-Sport Strategy* and are deemed to be clinically recovered from their concussion, the medical doctor or nurse practitioner can consider the student for a return to full sport, play, and other physical activities and issue a *Medical Clearance Letter*.

The stepwise progressions for the *Return-to-School Strategy* and the *Return-to-Sport Strategy* are outlined below. As indicated in stage 1 of the *Return-to-Sport Strategy*, reintroduction of daily, school, and work activities using the *Return-to-School Strategy* must precede return to sport, play, and other physical activity participation.

Return-to-School Strategy²

The following is an outline of the *Return-to-School Strategy* that should be used to help students, parents/guardians, and teachers to collaborate in allowing the students to make a gradual return to school and learning activities. Depending on the severity and type of the symptoms present, students will progress through the following stages at different rates. If the students experience new symptoms or worsening symptoms at any stage, they should go back to the previous stage.

Return-to-School Strategy*			
Stage	Aim	Activity	Goal of each step
1	Daily activities at home that do not give the student symptoms	Typical activities of the student during the day as long as they do not increase symptoms (i.e., reading, texting, screen time). Start at 5 to 15 minutes at a time and gradually build up	Gradual return to typical activities
2	School activities	Homework, reading, or other cognitive activities outside of the classroom	Increase tolerance to cognitive work
3	Return to school part-time	Gradual introduction of schoolwork. May need to start with a partial school day or with increased breaks during the day	Increase academic activities
4	Return to school full-time	Gradually progress	Return to full academic activities and catch up on missed school work

* Source: McCrory, P., et al. (2017). Consensus statement on concussion in sport – the 5th international conference on concussion in sport held in Berlin, October 2016. *British Journal of Sports Medicine*, 51(11), 838-847. Available online at <http://bjsm.bmj.com/content/51/11/838>.

² The return-to-school protocol refers to the concept of resting the brain and gradually returning to learning activities that require thinking, memorization, and concentration and/or that involve visual or auditory stimulation.

Return-to-Sport Strategy³

The following is an outline of the *Return-to-Sport Strategy* that should be used to help students, coaches, trainers, teachers, and medical professionals to partner in allowing the students to make a gradual return to sport, play, and other physical activities. An initial period of 24 to 48 hours of rest is recommended before starting the *Return-to-Sport Strategy*. In general, students should spend a minimum duration of 24 hours without symptom increases at each stage before progressing to the next one. If students experience new symptoms or worsening symptoms at any stage, they should go back to the previous stage. It is important that students return to full-time school activities before progressing to stages 5 and 6 of the *Return-to-Sport Strategy*. It is also important that all students provide their teacher/coach/school with a *Medical Clearance Letter* prior to returning to full contact sport and other activities.

Return-to-Sport Strategy*			
Stage	Aim	Activity	Goal of each step
1	Symptom-limiting activity	Daily activities that do not provoke symptoms	Gradual reintroduction of work/school activities
2	Light aerobic activity	Walking or stationary cycling at slow to medium pace. No resistance training	Increase heart rate
3	Sport-specific exercise	Running or skating drills. No head-impact activities	Add movement
4	Non-contact training drills	Harder training drills (i.e., passing drills). May start progressive resistance training	Exercise, coordination, and increased thinking
5	Full contact practice	Following medical clearance	Restore confidence and assess functional skills by coaching staff
6	Return to sport	Normal game play	

* Source: McCrory, P., et al. (2017). Consensus statement on concussion in sport – the 5th international conference on concussion in sport held in Berlin, October 2016. *British Journal of Sports Medicine*, 51(11), 838-847. Available online at <http://bjsm.bmj.com/content/51/11/838>.

- ▶ **Who:** Medical doctor, nurse practitioner, physician assistant, and team athletic therapist or physiotherapist (where available)
- ▶ **How:** *Return-to-School Strategy*
Return-to-Sport Strategy
[Medical Assessment Letter](#) (*Canadian Guideline on Concussion in Sport*)
[Medical Clearance Letter](#) (*Canadian Guideline on Concussion in Sport*)

³ The return-to-sport protocol refers to all physical activities (sport, play, and work) that require the body to move and to use energy.

6. Multidisciplinary Concussion Care

Most children and youth who sustain a concussion while participating in sport and other activities will make a complete recovery and will be able to return to full school and sport activities within 1 to 4 weeks of injury. However, approximately 15 to 30% of individuals will experience symptoms that persist beyond this time frame. Students who experience persistent post-concussion symptoms (>4 weeks for youth) may benefit from their family doctor or pediatrician making a referral to the Pan Am Concussion Program, a medically supervised multidisciplinary concussion clinic that has access to professionals with licensed training in traumatic brain injury that include experts in neurosurgery, sports medicine, neuropsychology, physiotherapy, and neurology.

Referral to a multidisciplinary clinic for assessment should be made on an individualized basis at the discretion of the student's medical doctor, nurse practitioner, or physician assistant.

- ▶ **Who:** Multidisciplinary medical team, medical doctor with clinical training and experience in concussion (e.g., a sports medicine physician, neurologist, or rehabilitation medicine physician), licensed healthcare professionals, nurse practitioner, physician assistant

7. Return to Sport

Students who have been determined not to have sustained a concussion and those who have been diagnosed with a concussion and have successfully completed their *Return-to-School Strategy* and their *Return-to-Sport Strategy* can be considered for return to full school and sport activities. The final decision to medically clear a student to return to full game activity should be based on the clinical judgment of the medical doctor, nurse practitioner, or physician assistant, taking into account the student's past medical history, clinical history, physical examination findings, and the results of other tests and clinical consultations where indicated (i.e., neuropsychological testing, diagnostic imaging). Prior to returning to full contact practice and game play, each student who has been diagnosed with a concussion must provide their coach/teacher/school with a standardized *Medical Clearance Letter* that specifies that a medical doctor, nurse practitioner, or physician assistant has personally evaluated the student and has cleared the student to return to sport activities.

In geographic regions of Manitoba with limited access to medical doctors (i.e., rural or northern communities), a licensed healthcare professional (i.e., nurse) with pre-arranged access to a medical doctor or nurse practitioner can provide this documentation. A copy of the *Medical Clearance Letter* should also be submitted to sports organization officials who have injury reporting and surveillance programs, where applicable.

Students who have been provided with a *Medical Clearance Letter* may return to full sport activities as tolerated. If the students experience any new concussion-like symptoms while returning to play, they should be instructed to stop playing immediately, notify their parents/guardians, coaches, trainer, or teachers, and undergo follow-up *Medical Assessment*.

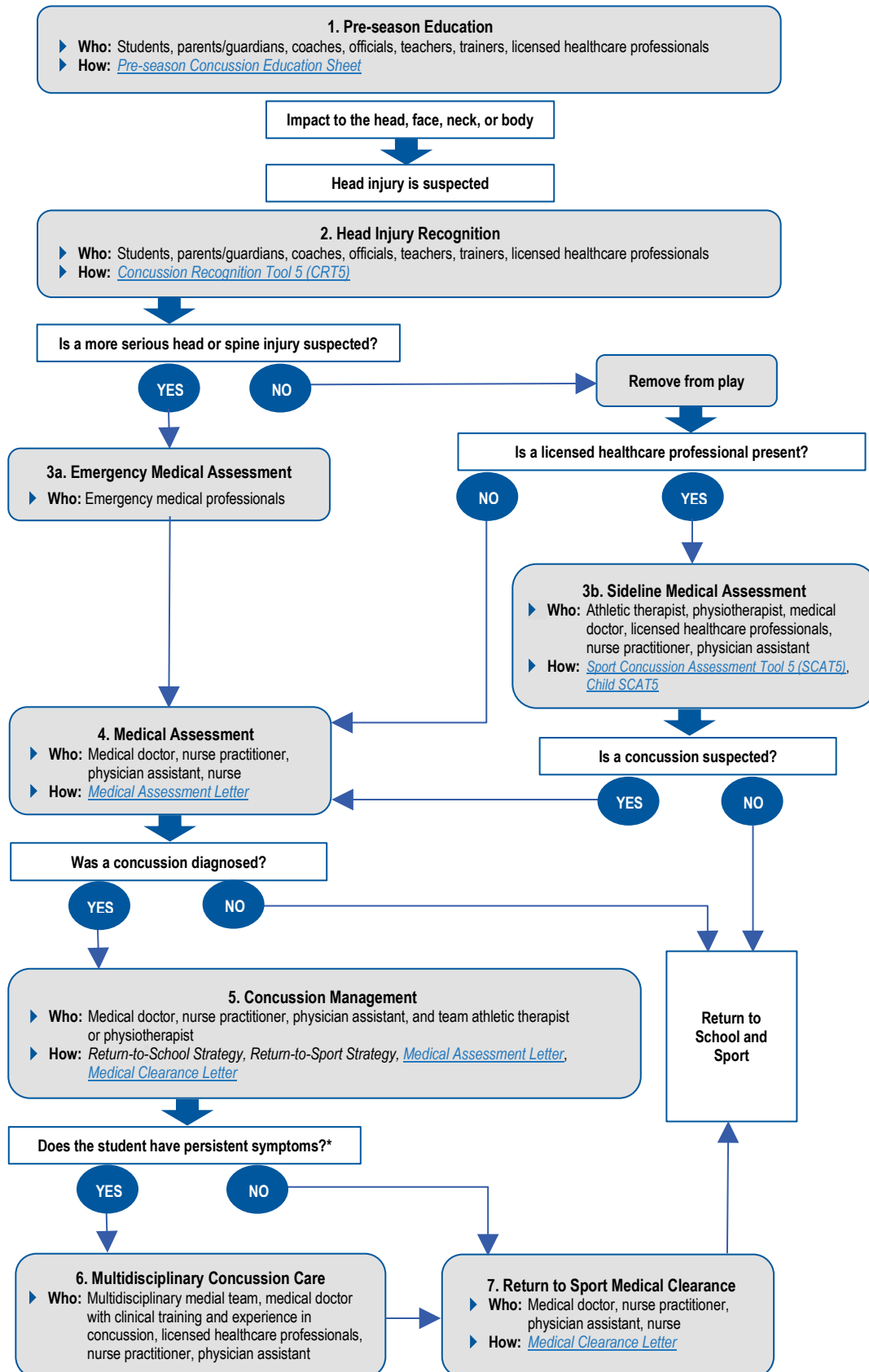
In the event that a student sustains a new suspected concussion, the **School Division Concussion Protocol** should be followed as outlined here.

- ▶ **Who:** Medical doctor, nurse practitioner, physician assistant, nurse
- ▶ **How:** [*Medical Clearance Letter*](#) (*Canadian Guideline on Concussion in Sport*)

Concussion Pathway

An overview of the **School Division Concussion Protocol** is provided in the **Concussion Pathway** diagram that follows.

Concussion Pathway



* Persistent symptoms: lasting >4 weeks in children and youth or >2 weeks in adults