St. Michaels University School

Outstanding preparation for higher learning and for life.

St. Michaels University School (SMUS) has developed the SMUS Concussion Protocol to help guide the management of students who sustain a suspected concussion as a result of participation in school activities. *Policy adapted from: Parachute. (2017). Canadian Guideline on Concussion in Sport. www.parachutecanada.org/guideline*

Contents

Purpose

This protocol covers the recognition, medical diagnosis, and management of students who may sustain a suspected concussion during a school activity. 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 activities and sports safely. This protocol may not address every possible clinical scenario that can occur during school activities or outside of school activities, but includes critical elements based on the latest evidence and current expert consensus.

Who should use this protocol?

This guideline is intended for use by all individuals who interact with students inside and outside the context of school and non-school based activities and organized sports activity, including students, parents/guardians, teachers, administrators, coaches, officials, student athletic therapists, trainers, and licensed healthcare professionals such as athletic therapists, medical doctors and nurse practitioners. This protocol is initiated and implemented under the direction of the SMUS Head Athletic Therapist in collaboration with all licensed healthcare professionals involved in the care of the individual student.

1. Concussion Awareness 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 stakeholders (students, parents/guardians, teachers, administrators, coaches, officials, student athletic therapists, trainers, and licensed healthcare professionals such as athletic therapists, medical doctors and nurse practitioners) 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
- steps that can be taken to prevent concussions and other injuries from occurring
- what to do when a student has suffered a suspected concussion or more serious head injury
- what measures should be taken to ensure proper medical assessment
- Return-to-School and Return-to-Sport Strategies for students diagnosed with concussion
- Return-to-Sport medical clearance requirements

All SMUS staff, coaches, student athletic therapists, students, and their parents/guardians are encouraged to review the Concussion Awareness Education Sheet prior to the first day of school. In addition to reviewing information on concussion, it is also important that all stakeholders have a clear understanding of the SMUS Concussion Protocol.

▸ Who: students, parents/guardians, teachers, administrators, coaches, officials, student athletic therapists, trainers, and licensed healthcare professionals such as certified athletic therapists, medical doctors, nurses and nurse practitioners

▸ How: Concussion Awareness Education Sheet (See Appendix B)

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, administrators, coaches, officials, student athletic therapists, trainers, and licensed healthcare professionals such as athletic therapists, medical doctors, nurses and nurse practitioners are responsible for the recognition and reporting of students who may demonstrate visual signs of a head injury or who report concussion-related symptoms.

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, student athletic therapist, certified athletic therapist, nurse, doctor 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, teachers, administrators, coaches, officials, student athletic therapists, trainers, and licensed healthcare professionals.

▸ How: Pocket Concussion Recognition Tool 5 (See Appendix C)

3. Initial Response

Depending on the suspected severity of the injury, an initial assessment may be completed by an on-site student athletic therapist, SMUS head athletic therapist, emergency medical professional or licensed healthcare practitioner.

3a. Emergency Response (Red Flag Procedure)

If a student is suspected of sustaining a more severe head or spine injury during a game, practice, or other school activity, an ambulance should be called immediately to transfer the student to the nearest emergency department for further medical assessment. Students, parents/guardians, teachers, administrators, coaches, officials, student athletic therapists, trainers, and licensed healthcare professionals such as athletic therapists, medical doctors, nurses and nurse practitioners should not make any effort to remove equipment or move the student until an ambulance has arrived unless

formally trained to do so and have the appropriate equipment readily available. The student must not be left alone until the ambulance arrives. The student's parents/guardians (or emergency contact) should be contacted immediately to inform them of the student's injury and that emergency medical services have been contacted.

▸ How: Pocket Concussion Recognition Tool 5 (Step 1: Red Flags) (See Appendix C)

3b. If No Red Flags Are Present

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 SMUS head athletic therapist, licensed healthcare professional or student athletic therapist 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 Child SCAT5 for those age 12 and under. The SCAT5 and Child SCAT5 are clinical tools that should only be used by a licensed medical 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 are be used by student athletic therapists and licensed healthcare professionals to document initial neurological status but should not be used to make sideline return-to-sport decisions.

Any student who is suspected of having sustained a concussion must not return to the activity (game, practice, physical education class, etc.) and must be referred to the SMUS head athletic therapist, medical doctor or nurse practitioner for medical assessment. The student must not be left alone until a parent/guardian arrives or until they are handed off to their house parent.

If a student is removed from an activity following a significant impact but there are NO visual signs of a concussion and the student reports NO concussion symptoms, the student can remain at school but should not participate in physical activity and should be evaluated and monitored by the SMUS head athletic therapist for delayed symptoms. The student's parents/guardians should be informed of the incident and the student should be monitored for 48 hours for emerging symptoms.

▸ How: Pocket Concussion Recognition Tool 5 (See Appendix C); Sport Concussion Assessment Tool 5 (SCAT5) (See Appendix D); Child Sport Concussion Assessment Tool 5 (Child SCAT5) (See Appendix E);

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,

• rule out medical and neurological conditions that can present with concussion-like symptoms, and

• 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 certified athletic therapists and nurse practitioners, medical doctors that are qualified to evaluate patients with a suspected concussion include pediatricians, family medicine, sports medicine,

emergency department and rehabilitation (physiatrists) physicians as well as neurologists and neurosurgeons formally educated on concussion best practices.

The medical assessment is responsible for determining whether the student has been diagnosed with a concussion or not. Those students who have been diagnosed with a concussion outside of the SMUS are required to provide the SMUS head athletic therapist the Medical Assessment Letter from the licensed medical professional. For those students who have been seen by our on-campus health centre physicians, information will be communicated to our SMUS head athletic therapist and disseminated to the appropriate individuals involved in the students care. Those students that are determined to have not sustained a concussion and evaluated outside the school must provide a Medical Assessment Letter to the SMUS head athletic therapist indicating a concussion has not been diagnosed and the student can return to school and sports activities without restriction. Without a Medical Assessment Letter, the students will fall into the Return-to-School and Return-to-Sport protocol strategies to ensure the safety of the student.

Because the Medical Assessment Letter contains personal health information, it is the responsibility of the student or their parent/guardian to provide this documentation to the SMUS head athletic therapist.

- Who: Medical doctor, nurse practitioner, SMUS head athletic therapist, student, parents/guardians

- How: Medical Assessment Letter (See Appendix F)

5. Concussion Management

When a student is diagnosed with a concussion, the student and their parents/guardians should be provided with education about the signs and symptoms of concussion, strategies about how to manage their symptoms, the risks of returning to sport without medical clearance and recommendations regarding a gradual return to school and physical activities.

Students diagnosed with a concussion are to be managed according to their Return-to-School and Return-to-Sport Strategy under the supervision of the SMUS head athletic therapist in collaboration with any other licensed healthcare provider involved in the student's care. Student-athletes should be encouraged to work with the SMUS head athletic therapist to optimize progression through their Return-to-School and Sport-Specific Return-to Sport Strategies to ensure evidence-based strategies. Once students have completed their Return-to-School and Return-to-Sport Strategies and are deemed to be clinically recovered from their concussion, the medical doctor or nurse practitioner can consider the athlete for a return to full sports activities in collaboration with the SMUS head athletic therapist.

Return-to-School Strategy

The SMUS head athletic therapist will facilitate the Return-to-School Strategy. This will help students, parents/guardians, the school, and healthcare professionals to collaborate allowing the student to make a gradual return to school activities. Each stage is a minimum of 24 hours. Depending on the severity and type of symptoms present, students will progress through the stages at different rates.

If the student experiences new symptoms or worsening symptoms at any stage, they should go back to the previous stage. An initial period of 24-48 hours of rest is recommended before starting the Return-to-School Strategy.

Return-to-Sport Strategy

The SMUS head athletic therapist will facilitate the Return-to-Sport Strategy. This will help students, parents/guardians, the school, student athletic therapists and healthcare professionals to collaborate allowing the student to make a gradual return to sport and physical activities. Each stage is a minimum of 24 hours. Depending on the severity and type of symptoms present, students will progress through the following stages at different rates.

An initial period of 24-48 hours of rest is recommended before starting the Return-to-Sport Strategy. If the student experiences 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 stage 5 and 6 of the Return-to- Sport Strategy. It is also important that all students provide the SMUS head athletic therapist with a final Medical Clearance Letter prior to returning to full sports activities.

▸ Who: SMUS head athletic therapist, student athletic therapists, students, parents/guardians, the school, and licensed healthcare professionals

▸ How: Return-to-School Strategy (See Appendix G), Return-to Sport Strategy (See Appendix H), How to Support Your Child (Appendix I), Learning Accommodations and Modifications (Appendix J); Medical Clearance Letter (Appendix K)

6. Multidisciplinary Concussion Care

Most students who sustain a concussion will make a complete recovery and be able to return to full school and physical activities within one to four 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) may benefit from a referral based on presentation of current symptoms. Referral for multidisciplinary care should be made on an individualized basis at the discretion of the student's licensed healthcare professionals involved in the student's care in collaboration with SMUS head athletic therapist.

▸ Who: Multidisciplinary medical team, SMUS head athletic therapist, medical doctor with clinical training and experience in concussion (e.g. a sports medicine physician, neurologist, or rehabilitation medicine physician), licensed healthcare professionals (See Appendix A)

7. Medical Clearance for Return to Sport

Students who have been diagnosed with a concussion and have successfully completed their Return-to-School and Return-to-Sport Strategies can be considered for return to full sports and physical activities. The final decision to medically clear a student to return to unrestricted activities should be based on the clinical judgment of the medical doctor or nurse practitioner in collaboration with the SMUS head athletic therapist 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 games/competition, the student or parent/guardian must provide the SMUS head athletic therapist with a Medical Clearance Letter specifying that a medical doctor or nurse practitioner has personally evaluated the student and has cleared them for return to sports.

Students who have been provided with a Medical Clearance Letter may return to full sport and physical activities as tolerated. If the student experiences any new concussion-like symptoms while returning to play, they should be instructed to stop playing immediately, notify the SMUS head athletic therapist, student athletic therapist, parents/guardians, teachers, administrators, or coaches, and undergo follow-up medical assessment.

If the student sustains a new suspected concussion, the SMUS Concussion Protocol should be followed as outlined here.

- **Who:** Medical doctor, nurse practitioner, SMUS head athletic therapist
- **How:** Medical Clearance Letter (See Appendix K)

Additional Resources

For more detailed concussion procedures for the school setting, please visit https://cattonline.com/lessons/school-professional-introduction/

Appendix A - Concussion Management Flow Chart

A significant impact or motion to the head or body that can cause the brain to move inside the skull

STOP

REMOVE FROM ACTIVITY IMMEDIATELY AND ASSESS FOR RED FLAGS

RED FLAGS

- Neck pain or tenderness
- Double vision
- Seizure or convulsion
- Weakness or tingling/burning in arms or legs
- Severe or increasing headache
- Loss of consciousness
- Deteriorating conscious state
- Vomiting
- Increasingly restless, agitated, or combative

IF YES TO ANY OF THE ABOVE:
Call an ambulance or seek immediate medical care

IF NO TO ALL RED FLAGS:
Assess for signs and symptoms of concussion

CONCUSSION SIGNS AND SYMPTOMS

- ☐ Headache
- ☐ Dizziness
- ☐ Nausea
- ☐ Blurred vision
- ☐ Light/Sound sensitivity
- ☐ Imbalance
- ☐ Ringing in the ears
- ☐ Seeing "stars"
- ☐ Irritability
- ☐ Fogginess
- ☐ Fatigue
- ☐ Difficulty concentrating
- ☐ Poor memory
- ☐ Neck pain
- ☐ Sadness
- ☐ Confusion

FOLLOW MEDICAL ADVICE, AND:

Follow initial recovery protocol of physical and cognitive rest (2 days max), including:

- ☐ Limited screen time (smartphones, computers, TV)
- ☐ Limited cognitive activity (reading, driving, schoolwork)
- ☐ Limited physical activity

Note: Sleep is important! Do not wake during the night if sleeping comfortably

IF YES TO ANY OF THE ABOVE:
SEEK MEDICAL ATTENTION from a licensed medical professional (physician/nurse practitioner*)
* If applicable in your area

IF NO SYMPTOMS:
Limit physical activity and watch for concussion signs and symptoms for up to 48 hours

IF SYMPTOMS OBSERVED WITHIN 48 HOURS

IF NO SYMPTOMS OBSERVED AFTER 48 HOURS

AFTER 48 HOURS:

Follow Return to Work strategy
Follow Return to Activity strategy
Follow Return to School strategy
Follow Return to Sport strategy

MENTAL HEALTH

During the course of recovery from a concussion, seek medical attention for mental health challenges as needed, such as:

- ☐ More emotional
- ☐ Irritability
- ☐ Sadness
- ☐ Nervousness or anxiousness
- ☐ Trouble falling asleep
- ☐ Depression

RESUME NORMAL ACTIVITY

Appendix B - Pre-Season Concussion Education Sheet

Pre-Season Concussion Education Sheet

WHAT IS A CONCUSSION?
A concussion is a brain injury that can't be seen on x-rays, CT or MRI scans. It affects the way an athlete thinks and can cause a variety of symptoms.

WHAT CAUSES A CONCUSSION?
Any blow to the head, face or neck, or somewhere else on the body that causes a sudden jarring of the head may cause a concussion. Examples include getting body-checked in hockey or hitting one's head on the floor in gym class.

WHEN SHOULD I SUSPECT A CONCUSSION?
A concussion should be suspected in any athlete who sustains a significant impact to the head, face, neck, or body and reports *ANY* symptoms or demonstrates *ANY* visual signs of a concussion. A concussion should also be suspected if an athlete reports ANY concussion symptoms to one of their peers, parents, teachers, or coaches or if anyone witnesses an athlete exhibiting ANY of the visual signs of concussion. Some athletes will develop symptoms immediately while others will develop delayed symptoms (beginning 24-48 hours after the injury).

WHAT ARE THE SYMPTOMS OF A CONCUSSION?
A person does not need to be knocked out (lose consciousness) to have had a concussion. Common symptoms include:

- Headaches or head pressure
- Dizziness
- Nausea and vomiting
- Blurred or fuzzy vision
- Sensitivity to light or sound
- Balance problems
- Feeling tired or having no energy
- Not thinking clearly
- Feeling slowed down
- Easily upset or angered
- Sadness
- Nervousness or anxiety
- Feeling more emotional
- Sleeping more or sleeping less
- Having a hard time falling asleep
- Difficulty working on a computer
- Difficulty reading
- Difficulty learning new information

WHAT ARE THE VISUAL SIGNS OF A CONCUSSION?
Visual signs of a concussion may include:

- Lying motionless on the playing surface
- Slow to get up after a direct or indirect hit to the head
- Disorientation or confusion or inability to respond appropriately to questions
- Blank or vacant stare
- Balance, gait difficulties, motor incoordination, stumbling, slow labored movements
- Facial injury after head trauma
- Clutching head

WHAT SHOULD I DO IF I SUSPECT A CONCUSSION?
If any athlete is suspected of sustaining a concussion during sports they should be immediately removed from play. Any athlete who is suspected of having sustained a concussion during sports must not be allowed to return to the same game or practice.

It is important that ALL athletes with a suspected concussion undergo medical assessment by a medical doctor or nurse practitioner, as soon as possible. It is also important that ALL athletes with a suspected concussion receive written medical clearance from a medical doctor or nurse practitioner before returning to sport activities.

WHEN CAN THE ATHLETE RETURN TO SCHOOL AND SPORTS?

It is important that all athletes diagnosed with a concussion follow a step-wise return to school and sports-related activities that includes the following Return-to-School and Return-to-Sport Strategies. It is important that youth and adult student-athletes return to full-time school activities before progressing to stage 5 and 6 of the Return-to-Sport Strategy.

Return-to-School Strategy[1]

Stage	Aim	Activity	Goal of each step
1	Daily activities at home that do not give the student-athlete symptoms	Typical activities during the day as long as they do not increase symptoms (i.e. reading, texting, screen time). Start at 5-15 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.

Sport-Specific Return-to-Sport Strategy[1]

Stage	Aim	Activity	Goal of each step
1	Symptom-limiting activity	Daily activities that do not provoke symptoms.	Gradual re-introduction 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, e.g. passing drills. May start progressive resistance training.	Exercise, coordination and increased thinking.
5	Full contact practice	Following medical clearance and complete return to school.	Restore confidence and assess functional skills by coaching staff.
6	Return to sport	Normal game play.	

HOW LONG WILL IT TAKE FOR THE ATHLETE TO RECOVER?

Most athletes who sustain a concussion will make a complete recovery within 1-2 weeks while most youth athletes will recover within 1-4 weeks. Approximately 15-30% of patients will experience persistent symptoms (>2 weeks for adults; >4 weeks for youth) that may require additional medical assessment and management.

[1]Source: McCrory 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. http://dx.doi.org/10.1136/bjsports-2017-

HOW CAN I HELP PREVENT CONCUSSIONS AND THEIR CONSEQUENCES?
Concussion prevention, recognition and management require athletes to follow the rules and regulations of their sport, respect their opponents, avoid head contact, and report suspected concussions.

TO LEARN MORE ABOUT CONCUSSIONS PLEASE VISIT:
Parachute Canada: **www.parachutecanada.org/concussion**

SIGNATURES (OPTIONAL): The following signatures certify that the athlete and his/her parent or legal guardian have reviewed the above information related to concussion.

_____	_____	_____
Printed name of athlete	Signature of athlete	Date
_____	_____	_____
Printed name of parent	Signature of parent	Date

Appendix C - Pocket Concussion Recognition Tool 5

CONCUSSION RECOGNITION TOOL 5 ©

To help identify concussion in children, adolescents and adults

Supported by

RECOGNISE & REMOVE

Head impacts can be associated with serious and potentially fatal brain injuries. The Concussion Recognition Tool 5 (CRT5) is to be used for the identification of suspected concussion. It is not designed to diagnose concussion.

STEP 1: RED FLAGS — CALL AN AMBULANCE

If there is concern after an injury including whether ANY of the following signs are observed or complaints are reported then the player should be safely and immediately removed from play/game/activity. If no licensed healthcare professional is available, call an ambulance for urgent medical assessment:

- **Neck pain or tenderness**
- **Double vision**
- **Weakness or tingling/ burning in arms or legs**
- **Severe or increasing headache**
- **Seizure or convulsion**
- **Loss of consciousness**
- **Deteriorating conscious state**
- **Vomiting**
- **Increasingly restless, agitated or combative**

Remember:

- In all cases, the basic principles of first aid (danger, response, airway, breathing, circulation) should be followed.
- Assessment for a spinal cord injury is critical.
- Do not attempt to move the player (other than required for airway support) unless trained to so do.
- Do not remove a helmet or any other equipment unless trained to do so safely.

If there are no Red Flags, identification of possible concussion should proceed to the following steps:

STEP 2: OBSERVABLE SIGNS

Visual clues that suggest possible concussion include:

- Lying motionless on the playing surface
- Slow to get up after a direct or indirect hit to the head
- Disorientation or confusion, or an inability to respond appropriately to questions
- Blank or vacant look
- Balance, gait difficulties, motor incoordination, stumbling, slow laboured movements
- Facial injury after head trauma

STEP 3: SYMPTOMS

- Headache
- "Pressure in head"
- Balance problems
- Nausea or vomiting
- Drowsiness
- Dizziness
- Blurred vision
- Sensitivity to light
- Sensitivity to noise
- Fatigue or low energy
- "Don't feel right"
- More emotional
- More Irritable
- Sadness
- Nervous or anxious
- Neck Pain
- Difficulty concentrating
- Difficulty remembering
- Feeling slowed down
- Feeling like "in a fog"

STEP 4: MEMORY ASSESSMENT

(IN ATHLETES OLDER THAN 12 YEARS)

Failure to answer any of these questions (modified appropriately for each sport) correctly may suggest a concussion:

- "What venue are we at today?"
- "Which half is it now?"
- "Who scored last in this game?"
- "What team did you play last week/game?"
- "Did your team win the last game?"

Athletes with suspected concussion should:

- Not be left alone initially (at least for the first 1-2 hours).
- Not drink alcohol.
- Not use recreational/ prescription drugs.
- Not be sent home by themselves. They need to be with a responsible adult.
- Not drive a motor vehicle until cleared to do so by a healthcare professional.

ANY ATHLETE WITH A SUSPECTED CONCUSSION SHOULD BE IMMEDIATELY REMOVED FROM PRACTICE OR PLAY AND SHOULD NOT RETURN TO ACTIVITY UNTIL ASSESSED MEDICALLY, EVEN IF THE SYMPTOMS RESOLVE

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Appendix D - Sport Concussion Assessment Tool 5

BJSM Online First, published on April 26, 2017 as 10.1136/bjsports-2017-097506SCAT5

To download a clean version of the SCAT tools please visit the journal online (http://dx.doi.org/10.1136/bjsports-2017-097506SCAT5)

SCAT5©

SPORT CONCUSSION ASSESSMENT TOOL – 5TH EDITION

DEVELOPED BY THE CONCUSSION IN SPORT GROUP

FOR USE BY MEDICAL PROFESSIONALS ONLY

supported by

Patient details

Name: _____

DOB: _____

Address: _____

ID number: _____

Examiner: _____

Date of Injury: _____ Time: _____

WHAT IS THE SCAT5?

The SCAT5 is a standardized tool for evaluating concussions designed for use by physicians and licensed healthcare professionals[1]. The SCAT5 cannot be performed correctly in less than 10 minutes.

If you are not a physician or licensed healthcare professional, please use the Concussion Recognition Tool 5 (CRT5). The SCAT5 is to be used for evaluating athletes aged 13 years and older. For children aged 12 years or younger, please use the Child SCAT5.

Preseason SCAT5 baseline testing can be useful for interpreting post-injury test scores, but is not required for that purpose.Detailed instructions for use of the SCAT5 are provided on page 7. Please read through these instructions carefully before testing the athlete. Brief verbal instructions for each test are given in italics. The only equipment required for the tester is a watch or timer.

Recognise and Remove

A head impact by either a direct blow or indirect transmission of force can be associated with a serious and potentially fatal brain injury. If there are significant concerns, including any of the red flags listed in Box 1, then activation of emergency procedures and urgent transport to the nearest hospital should be arranged.

Key points

- Any athlete with suspected concussion should be REMOVED FROM PLAY, medically assessed and monitored for deterioration. No athlete diagnosed with concussion should be returned to play on the day of injury.
- If an athlete is suspected of having a concussion and medical personnel are not immediately available, the athlete should be referred to a medical facility for urgent assessment.
- Athletes with suspected concussion should not drink alcohol, use recreational drugs and should not drive a motor vehicle until cleared to do so by a medical professional.
- Concussion signs and symptoms evolve over time and it is important to consider repeat evaluation in the assessment of concussion.
- The diagnosis of a concussion is a clinical judgment, made by a medical professional. The SCAT5 should NOT be used by itself to make, or exclude, the diagnosis of concussion. An athlete may have a concussion even if their SCAT5 is "normal".

Remember:

- The basic principles of first aid (danger, response, airway, breathing, circulation) should be followed.
- Do not attempt to move the athlete (other than that required for airway management) unless trained to do so.
- Assessment for a spinal cord injury is a critical part of the initial on-field assessment.
- Do not remove a helmet or any other equipment unless trained to do so safely.

1

Name: _____

DOB: _____

Address: _____

ID number: _____

Examiner: _____

Date: _____

IMMEDIATE OR ON-FIELD ASSESSMENT

The following elements should be assessed for all athletes who are suspected of having a concussion prior to proceeding to the neurocognitive assessment and ideally should be done on-field after the first first aid / emergency care priorities are completed.

If any of the "Red Flags" or observable signs are noted after a direct or indirect blow to the head, the athlete should be immediately and safely removed from participation and evaluated by a physician or licensed healthcare professional.

Consideration of transportation to a medical facility should be at the discretion of the physician or licensed healthcare professional.

The GCS is important as a standard measure for all patients and can be done serially if necessary in the event of deterioration in conscious state. The Maddocks questions and cervical spine exam are critical steps of the immediate assessment; however, these do not need to be done serially.

STEP 1: RED FLAGS

RED FLAGS:

- **Neck pain or tenderness**
- **Double vision**
- **Weakness or tingling/ burning in arms or legs**
- **Severe or increasing headache**
- **Seizure or convulsion**
- **Loss of consciousness**
- **Deteriorating conscious state**
- **Vomiting**
- **Increasingly restless, agitated or combative**

STEP 2: OBSERVABLE SIGNS

Witnessed ☐ Observed on Video ☐

Lying motionless on the playing surface	Y	N
Balance / gait difficulties / motor incoordination: stumbling, slow / laboured movements	Y	N
Disorientation or confusion, or an inability to respond appropriately to questions	Y	N
Blank or vacant look	Y	N
Facial injury after head trauma	Y	N

STEP 3: MEMORY ASSESSMENT MADDOCKS QUESTIONS[2]

"I am going to ask you a few questions, please listen carefully and give your best effort. First, tell me what happened?"

_____

_____

Mark Y for correct answer / N for incorrect

What venue are we at today?	Y	N
Which half is it now?	Y	N
Who scored last in this match?	Y	N
What team did you play last week / game?	Y	N
Did your team win the last game?	Y	N

Note: Appropriate sport-specific questions may be substituted.

STEP 4: EXAMINATION GLASGOW COMA SCALE (GCS)[3]

Time of assessment			
Date of assessment			
Best eye response (E)			
No eye opening	1	1	1
Eye opening in response to pain	2	2	2
Eye opening to speech	3	3	3
Eyes opening spontaneously	4	4	4
Best verbal response (V)			
No verbal response	1	1	1
Incomprehensible sounds	2	2	2
Inappropriate words	3	3	3
Confused	4	4	4
Oriented	5	5	5
Best motor response (M)			
No motor response	1	1	1
Extension to pain	2	2	2
Abnormal flexion to pain	3	3	3
Flexion / Withdrawal to pain	4	4	4
Localizes to pain	5	5	5
Obeys commands	6	6	6
Glasgow Coma score (E + V + M)			

CERVICAL SPINE ASSESSMENT

Does the athlete report that their neck is pain free at rest?	Y	N
If there is NO neck pain at rest, does the athlete have a full range of ACTIVE pain free movement?	Y	N
Is the limb strength and sensation normal?	Y	N

In a patient who is not lucid or fully conscious, a cervical spine injury should be assumed until proven otherwise.

Davis GA, *et al. Br J Sports Med* 2017;**0**:1–8. doi:10.1136/bjsports-2017-097506SCAT5

OFFICE OR OFF-FIELD ASSESSMENT

Please note that the neurocognitive assessment should be done in a distraction-free environment with the athlete in a resting state.

STEP 1: ATHLETE BACKGROUND

Sport / team / school: _____

Date / time of injury: _____

Years of education completed: _____

Age: _____

Gender: M / F / Other

Dominant hand: left / neither / right

How many diagnosed concussions has the athlete had in the past?: _____

When was the most recent concussion?: _____

How long was the recovery (time to being cleared to play) from the most recent concussion?: _____ (days)

Has the athlete ever been:

Hospitalized for a head injury?	Yes	No
Diagnosed / treated for headache disorder or migraines?	Yes	No
Diagnosed with a learning disability / dyslexia?	Yes	No
Diagnosed with ADD / ADHD?	Yes	No
Diagnosed with depression, anxiety or other psychiatric disorder?	Yes	No

Current medications? If yes, please list:

_____

_____

_____

_____

_____

_____

Name: _____

DOB: _____

Address: _____

ID number: _____

Examiner: _____

Date: _____

2

STEP 2: SYMPTOM EVALUATION

The athlete should be given the symptom form and asked to read this instruction paragraph out loud then complete the symptom scale. For the baseline assessment, the athlete should rate his/her symptoms based on how he/she typically feels and for the post injury assessment the athlete should rate their symptoms at this point in time.

Please Check: ☐ **Baseline** ☐ **Post-Injury**

Please hand the form to the athlete

	none	mild		moderate		severe	
Headache	0	1	2	3	4	5	6
"Pressure in head"	0	1	2	3	4	5	6
Neck Pain	0	1	2	3	4	5	6
Nausea or vomiting	0	1	2	3	4	5	6
Dizziness	0	1	2	3	4	5	6
Blurred vision	0	1	2	3	4	5	6
Balance problems	0	1	2	3	4	5	6
Sensitivity to light	0	1	2	3	4	5	6
Sensitivity to noise	0	1	2	3	4	5	6
Feeling slowed down	0	1	2	3	4	5	6
Feeling like "in a fog"	0	1	2	3	4	5	6
"Don't feel right"	0	1	2	3	4	5	6
Difficulty concentrating	0	1	2	3	4	5	6
Difficulty remembering	0	1	2	3	4	5	6
Fatigue or low energy	0	1	2	3	4	5	6
Confusion	0	1	2	3	4	5	6
Drowsiness	0	1	2	3	4	5	6
More emotional	0	1	2	3	4	5	6
Irritability	0	1	2	3	4	5	6
Sadness	0	1	2	3	4	5	6
Nervous or Anxious	0	1	2	3	4	5	6
Trouble falling asleep (if applicable)	0	1	2	3	4	5	6

Total number of symptoms:	of 22
Symptom severity score:	of 132
Do your symptoms get worse with physical activity?	Y N
Do your symptoms get worse with mental activity?	Y N
If 100% is feeling perfectly normal, what percent of normal do you feel?	

If not 100%, why?

_____

_____

_____

Please hand form back to examiner

STEP 3: COGNITIVE SCREENING

Standardised Assessment of Concussion (SAC)[4]

Name: _____

DOB: _____

Address: _____

ID number: _____

Examiner: _____

Date: _____

ORIENTATION

What month is it?	0	1
What is the date today?	0	1
What is the day of the week?	0	1
What year is it?	0	1
What time is it right now? (within 1 hour)	0	1
Orientation score		of 5

IMMEDIATE MEMORY

The Immediate Memory component can be completed using the traditional 5-word per trial list or optionally using 10-words per trial to minimise any ceiling effect. All 3 trials must be administered irrespective of the number correct on the first trial. Administer at the rate of one word per second.

Please choose EITHER the 5 or 10 word list groups and circle the specific word list chosen for this test.

I am going to test your memory. I will read you a list of words and when I am done, repeat back as many words as you can remember, in any order. For Trials 2 & 3: I am going to repeat the same list again. Repeat back as many words as you can remember in any order, even if you said the word before.

List	Alternate 5 word lists					Score (of 5) Trial 1	Trial 2	Trial 3
A	Finger	Penny	Blanket	Lemon	Insect			
B	Candle	Paper	Sugar	Sandwich	Wagon			
C	Baby	Monkey	Perfume	Sunset	Iron			
D	Elbow	Apple	Carpet	Saddle	Bubble			
E	Jacket	Arrow	Pepper	Cotton	Movie			
F	Dollar	Honey	Mirror	Saddle	Anchor			
					Immediate Memory Score			of 15
					Time that last trial was completed			

List	Alternate 10 word lists					Score (of 10) Trial 1	Trial 2	Trial 3
G	Finger Candle	Penny Paper	Blanket Sugar	Lemon Sandwich	Insect Wagon			
H	Baby Elbow	Monkey Apple	Perfume Carpet	Sunset Saddle	Iron Bubble			
I	Jacket Dollar	Arrow Honey	Pepper Mirror	Cotton Saddle	Movie Anchor			
					Immediate Memory Score			of 30
					Time that last trial was completed			

CONCENTRATION

DIGITS BACKWARDS

Please circle the Digit list chosen (A, B, C, D, E, F). Administer at the rate of one digit per second reading DOWN the selected column.

I am going to read a string of numbers and when I am done, you repeat them back to me in reverse order of how I read them to you. For example, if I say 7-1-9, you would say 9-1-7.

Concentration Number Lists (circle one)					
List A	List B	List C			
4-9-3	5-2-6	1-4-2	Y	N	0
6-2-9	4-1-5	6-5-8	Y	N	1
3-8-1-4	1-7-9-5	6-8-3-1	Y	N	0
3-2-7-9	4-9-6-8	3-4-8-1	Y	N	1
6-2-9-7-1	4-8-5-2-7	4-9-1-5-3	Y	N	0
1-5-2-8-6	6-1-8-4-3	6-8-2-5-1	Y	N	1
7-1-8-4-6-2	8-3-1-9-6-4	3-7-6-5-1-9	Y	N	0
5-3-9-1-4-8	7-2-4-8-5-6	9-2-6-5-1-4	Y	N	1
List D	List E	List F			
7-8-2	3-8-2	2-7-1	Y	N	0
9-2-6	5-1-8	4-7-9	Y	N	1
4-1-8-3	2-7-9-3	1-6-8-3	Y	N	0
9-7-2-3	2-1-6-9	3-9-2-4	Y	N	1
1-7-9-2-6	4-1-8-6-9	2-4-7-5-8	Y	N	0
4-1-7-5-2	9-4-1-7-5	8-3-9-6-4	Y	N	1
2-6-4-8-1-7	6-9-7-3-8-2	5-8-6-2-4-9	Y	N	0
8-4-1-9-3-5	4-2-7-9-3-8	3-1-7-8-2-6	Y	N	1
		Digits Score:			of 4

MONTHS IN REVERSE ORDER

Now tell me the months of the year in reverse order. Start with the last month and go backward. So you'll say December, November. Go ahead.

Dec - Nov - Oct - Sept - Aug - Jul - Jun - May - Apr - Mar - Feb - Jan	0 1
Months Score	of 1
Concentration Total Score (Digits + Months)	of 5

4

STEP 4: NEUROLOGICAL SCREEN

See the instruction sheet (page 7) for details of test administration and scoring of the tests.

Can the patient read aloud (e.g. symptom check-list) and follow instructions without difficulty?	Y	N
Does the patient have a full range of pain-free PASSIVE cervical spine movement?	Y	N
Without moving their head or neck, can the patient look side-to-side and up-and-down without double vision?	Y	N
Can the patient perform the finger nose coordination test normally?	Y	N
Can the patient perform tandem gait normally?	Y	N

BALANCE EXAMINATION

Modified Balance Error Scoring System (mBESS) testing[5]

Which foot was tested (i.e. which is the non-dominant foot) ☐ Left ☐ Right

Testing surface (hard floor, field, etc.) _____

Footwear (shoes, barefoot, braces, tape, etc.) _____

Condition	Errors
Double leg stance	of 10
Single leg stance (non-dominant foot)	of 10
Tandem stance (non-dominant foot at the back)	of 10
Total Errors	of 30

Name: _____

DOB: _____

Address: _____

ID number: _____

Examiner: _____

Date: _____

5

STEP 5: DELAYED RECALL:

The delayed recall should be performed after 5 minutes have elapsed since the end of the Immediate Recall section. Score 1 pt. for each correct response.

Do you remember that list of words I read a few times earlier? Tell me as many words from the list as you can remember in any order.

Time Started _____

Please record each word correctly recalled. Total score equals number of words recalled.

_____

_____

_____

Total number of words recalled accurately: of 5 or of 10

6

STEP 6: DECISION

Domain	Date & time of assessment:		
Symptom number (of 22)			
Symptom severity score (of 132)			
Orientation (of 5)			
Immediate memory	of 15 of 30	of 15 of 30	of 15 of 30
Concentration (of 5)			
Neuro exam	Normal Abnormal	Normal Abnormal	Normal Abnormal
Balance errors (of 30)			
Delayed Recall	of 5 of 10	of 5 of 10	of 5 of 10

Date and time of injury: _____

If the athlete is known to you prior to their injury, are they different from their usual self?

☐ **Yes** ☐ **No** ☐ **Unsure** ☐ **Not Applicable**

(If different, describe why in the clinical notes section)

Concussion Diagnosed?

☐ **Yes** ☐ **No** ☐ **Unsure** ☐ **Not Applicable**

If re-testing, has the athlete improved?

☐ **Yes** ☐ **No** ☐ **Unsure** ☐ **Not Applicable**

I am a physician or licensed healthcare professional and I have personally administered or supervised the administration of this SCAT5.

Signature: _____

Name: _____

Title: _____

Registration number (if applicable): _____

Date: _____

SCORING ON THE SCAT5 SHOULD NOT BE USED AS A STAND-ALONE METHOD TO DIAGNOSE CONCUSSION, MEASURE RECOVERY OR MAKE DECISIONS ABOUT AN ATHLETE'S READINESS TO RETURN TO COMPETITION AFTER CONCUSSION.

CLINICAL NOTES:

Name: _____
DOB: _____
Address: _____
ID number: _____
Examiner: _____
Date: _____

CONCUSSION INJURY ADVICE

(To be given to the person monitoring the concussed athlete)

This patient has received an injury to the head. A careful medical examination has been carried out and no sign of any serious complications has been found. Recovery time is variable across individuals and the patient will need monitoring for a further period by a responsible adult. Your treating physician will provide guidance as to this timeframe.

If you notice any change in behaviour, vomiting, worsening headache, double vision or excessive drowsiness, please telephone your doctor or the nearest hospital emergency department immediately.

Other important points:

Initial rest: Limit physical activity to routine daily activities (avoid exercise, training, sports) and limit activities such as school, work, and screen time to a level that does not worsen symptoms.

1) Avoid alcohol

2) Avoid prescription or non-prescription drugs without medical supervision. Specifically:

   a) Avoid sleeping tablets

   b) Do not use aspirin, anti-inflammatory medication or stronger pain medications such as narcotics

3) Do not drive until cleared by a healthcare professional.

4) Return to play/sport requires clearance by a healthcare professional.

Clinic phone number: _____

Patient's name: _____

Date / time of injury: _____

Date / time of medical review: _____

Healthcare Provider: _____

Contact details or stamp

INSTRUCTIONS

Words in *Italics* throughout the SCAT5 are the instructions given to the athlete by the clinician

Symptom Scale

The time frame for symptoms should be based on the type of test being administered. At baseline it is advantageous to assess how an athlete "typically" feels whereas during the acute/post-acute stage it is best to ask how the athlete feels at the time of testing.

The symptom scale should be completed by the athlete, not by the examiner. In situations where the symptom scale is being completed after exercise, it should be done in a resting state, generally by approximating his/her resting heart rate.

For total number of symptoms, maximum possible is 22 except immediately post injury, if sleep item is omitted, which then creates a maximum of 21.

For Symptom severity score, add all scores in table, maximum possible is 22 x 6 = 132, except immediately post injury if sleep item is omitted, which then creates a maximum of 21x6=126.

Immediate Memory

The Immediate Memory component can be completed using the traditional 5-word per trial list or, optionally, using 10-words per trial. The literature suggests that the Immediate Memory has a notable ceiling effect when a 5-word list is used. In settings where this ceiling is prominent, the examiner may wish to make the task more difficult by incorporating two 5–word groups for a total of 10 words per trial. In this case, the maximum score per trial is 10 with a total trial maximum of 30.

Choose one of the word lists (either 5 or 10). Then perform 3 trials of immediate memory using this list.

Complete all 3 trials regardless of score on previous trials.

"I am going to test your memory. I will read you a list of words and when I am done, repeat back as many words as you can remember, in any order." The words must be read at a rate of one word per second.

Trials 2 & 3 MUST be completed regardless of score on trial 1 & 2.

Trials 2 & 3:

"I am going to repeat the same list again. Repeat back as many words as you can remember in any order, even if you said the word before."

Score 1 pt. for each correct response. Total score equals sum across all 3 trials. Do NOT inform the athlete that delayed recall will be tested.

Concentration

Digits backward

Choose one column of digits from lists A, B, C, D, E or F and administer those digits as follows:

Say: *"I am going to read a string of numbers and when I am done, you repeat them back to me in reverse order of how I read them to you. For example, if I say 7-1-9, you would say 9-1-7."*

Begin with first 3 digit string.

If correct, circle "Y" for correct and go to next string length. If incorrect, circle "N" for the first string length and read trial 2 in the same string length. One point possible for each string length. Stop after incorrect on both trials (2 N's) in a string length. The digits should be read at the rate of one per second.

Months in reverse order

"Now tell me the months of the year in reverse order. Start with the last month and go backward. So you'll say December, November ... Go ahead"

1 pt. for entire sequence correct

Delayed Recall

The delayed recall should be performed after 5 minutes have elapsed since the end of the Immediate Recall section.

"Do you remember that list of words I read a few times earlier? Tell me as many words from the list as you can remember in any order."

Score 1 pt. for each correct response

Modified Balance Error Scoring System (mBESS)[5] testing

This balance testing is based on a modified version of the Balance Error Scoring System (BESS)[5]. A timing device is required for this testing.

Each of 20-second trial/stance is scored by counting the number of errors. The examiner will begin counting errors only after the athlete has assumed the proper start position. The modified BESS is calculated by adding one error point for each error during the three 20-second tests. The maximum number of errors for any single condition is 10. If the athlete commits multiple errors simultaneously, only one error is recorded but the athlete should quickly return to the testing position, and counting should resume once the athlete is set. Athletes that are unable to maintain the testing procedure for a minimum of five seconds at the start are assigned the highest possible score, ten, for that testing condition.

OPTION: For further assessment, the same 3 stances can be performed on a surface of medium density foam (e.g., approximately 50cm x 40cm x 6cm).

Balance testing – types of errors

1. Hands lifted off iliac crest
2. Opening eyes
3. Step, stumble, or fall
4. Moving hip into > 30 degrees abduction
5. Lifting forefoot or heel
6. Remaining out of test position > 5 sec

"I am now going to test your balance. Please take your shoes off (if applicable), roll up your pant legs above ankle (if applicable), and remove any ankle taping (if applicable). This test will consist of three twenty second tests with different stances."

(a) Double leg stance:

"The first stance is standing with your feet together with your hands on your hips and with your eyes closed. You should try to maintain stability in that position for 20 seconds. I will be counting the number of times you move out of this position. I will start timing when you are set and have closed your eyes."

(b) Single leg stance:

"If you were to kick a ball, which foot would you use? [This will be the dominant foot] *Now stand on your non-dominant foot. The dominant leg should be held in approximately 30 degrees of hip flexion and 45 degrees of knee flexion. Again, you should try to maintain stability for 20 seconds with your hands on your hips and your eyes closed. I will be counting the number of times you move out of this position. If you stumble out of this position, open your eyes and return to the start position and continue balancing. I will start timing when you are set and have closed your eyes."*

(c) Tandem stance:

"Now stand heel-to-toe with your non-dominant foot in back. Your weight should be evenly distributed across both feet. Again, you should try to maintain stability for 20 seconds with your hands on your hips and your eyes closed. I will be counting the number of times you move out of this position. If you stumble out of this position, open your eyes and return to the start position and continue balancing. I will start timing when you are set and have closed your eyes."

Tandem Gait

Participants are instructed to stand with their feet together behind a starting line (the test is best done with footwear removed). Then, they walk in a forward direction as quickly and as accurately as possible along a 38mm wide (sports tape), 3 metre line with an alternate foot heel-to-toe gait ensuring that they approximate their heel and toe on each step. Once they cross the end of the 3m line, they turn 180 degrees and return to the starting point using the same gait. Athletes fail the test if they step off the line, have a separation between their heel and toe, or if they touch or grab the examiner or an object.

Finger to Nose

"I am going to test your coordination now. Please sit comfortably on the chair with your eyes open and your arm (either right or left) outstretched (shoulder flexed to 90 degrees and elbow and fingers extended), pointing in front of you. When I give a start signal, I would like you to perform five successive finger to nose repetitions using your index finger to touch the tip of the nose, and then return to the starting position, as quickly and as accurately as possible."

References

1. McCrory et al. Consensus Statement On Concussion In Sport – The 5th International Conference On Concussion In Sport Held In Berlin, October 2016. British Journal of Sports Medicine 2017 (available at www.bjsm.bmj.com)
2. Maddocks, DL; Dicker, GD; Saling, MM. The assessment of orientation following concussion in athletes. Clinical Journal of Sport Medicine 1995; 5: 32-33
3. Jennett, B., Bond, M. Assessment of outcome after severe brain damage: a practical scale. Lancet 1975; i: 480-484
4. McCrea M. Standardized mental status testing of acute concussion. Clinical Journal of Sport Medicine. 2001; 11: 176-181
5. Guskiewicz KM. Assessment of postural stability following sport-related concussion. Current Sports Medicine Reports. 2003; 2: 24-30

CONCUSSION INFORMATION

Any athlete suspected of having a concussion should be removed from play and seek medical evaluation.

Signs to watch for

Problems could arise over the first 24-48 hours. The athlete should not be left alone and must go to a hospital at once if they experience:

- Worsening headache
- Drowsiness or inability to be awakened
- Inability to recognize people or places
- Repeated vomiting
- Unusual behaviour or confusion or irritable
- Seizures (arms and legs jerk uncontrollably)
- Weakness or numbness in arms or legs
- Unsteadiness on their feet.
- Slurred speech

Consult your physician or licensed healthcare professional after a suspected concussion. Remember, it is better to be safe.

Rest & Rehabilitation

After a concussion, the athlete should have physical rest and relative cognitive rest for a few days to allow their symptoms to improve. In most cases, after no more than a few days of rest, the athlete should gradually increase their daily activity level as long as their symptoms do not worsen. Once the athlete is able to complete their usual daily activities without concussion-related symptoms, the second step of the return to play/sport progression can be started. The athlete should not return to play/sport until their concussion-related symptoms have resolved and the athlete has successfully returned to full school/learning activities.

When returning to play/sport, the athlete should follow a stepwise, **medically managed exercise progression, with increasing amounts of exercise.** For example:

Graduated Return to Sport Strategy

Exercise step	Functional exercise at each step	Goal of each step
1. Symptom-limited activity	Daily activities that do not provoke symptoms.	Gradual reintroduction of work/school activities.
2. Light aerobic exercise	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, e.g., passing drills. May start progressive resistance training.	Exercise, coordination, and increased thinking.
5. Full contact practice	Following medical clearance, participate in normal training activities.	Restore confidence and assess functional skills by coaching staff.
6. Return to play/sport	Normal game play.	

In this example, it would be typical to have 24 hours (or longer) for each step of the progression. If any symptoms worsen while exercising, the athlete should go back to the previous step. Resistance training should be added only in the later stages (Stage 3 or 4 at the earliest).

Written clearance should be provided by a healthcare professional before return to play/sport as directed by local laws and regulations.

Graduated Return to School Strategy

Concussion may affect the ability to learn at school. The athlete may need to miss a few days of school after a concussion. When going back to school, some athletes may need to go back gradually and may need to have some changes made to their schedule so that concussion symptoms do not get worse. If a particular activity makes symptoms worse, then the athlete should stop that activity and rest until symptoms get better. To make sure that the athlete can get back to school without problems, it is important that the healthcare provider, parents, caregivers and teachers talk to each other so that everyone knows what the plan is for the athlete to go back to school.

Note: If mental activity does not cause any symptoms, the athlete may be able to skip step 2 and return to school part-time before doing school activities at home first.

Mental Activity	Activity at each step	Goal of each step
1. Daily activities that do not give the athlete symptoms	Typical activities that the athlete does during the day as long as they do not increase symptoms (e.g. reading, texting, screen time). Start with 5-15 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 school-work. 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 school activities until a full day can be tolerated.	Return to full academic activities and catch up on missed work.

If the athlete continues to have symptoms with mental activity, some other accomodations that can help with return to school may include:

- Starting school later, only going for half days, or going only to certain classes
- More time to finish assignments/tests
- Quiet room to finish assignments/tests
- Not going to noisy areas like the cafeteria, assembly halls, sporting events, music class, shop class, etc.
- Taking lots of breaks during class, homework, tests
- No more than one exam/day
- Shorter assignments
- Repetition/memory cues
- Use of a student helper/tutor
- Reassurance from teachers that the child will be supported while getting better

The athlete should not go back to sports until they are back to school/learning, without symptoms getting significantly worse and no longer needing any changes to their schedule.

Appendix E - Child Sport Concussion Assessment Tool 5

BJSM Online First, published on April 28, 2017 as 10.1136/bjsports-2017-097492childscat5

Child SCAT5©

SPORT CONCUSSION ASSESSMENT TOOL

FOR CHILDREN AGES 5 TO 12 YEARS

FOR USE BY MEDICAL PROFESSIONALS ONLY

supported by

Patient details

Name: _____

DOB: _____

Address: _____

ID number: _____

Examiner: _____

Date of Injury: _____ Time: _____

WHAT IS THE CHILD SCAT5?

The Child SCAT5 is a standardized tool for evaluating concussions designed for use by physicians and licensed healthcare professionals[1].

If you are not a physician or licensed healthcare professional, please use the Concussion Recognition Tool 5 (CRT5). The Child SCAT5 is to be used for evaluating Children aged 5 to 12 years. For athletes aged 13 years and older, please use the SCAT5.

Preseason Child SCAT5 baseline testing can be useful for interpreting post-injury test scores, but not required for that purpose. Detailed instructions for use of the Child SCAT5 are provided on page 7. Please read through these instructions carefully before testing the athlete. Brief verbal instructions for each test are given in italics. The only equipment required for the tester is a watch or timer.

Recognise and Remove

A head impact by either a direct blow or indirect transmission of force can be associated with a serious and potentially fatal brain injury. If there are significant concerns, including any of the red flags listed in Box 1, then activation of emergency procedures and urgent transport to the nearest hospital should be arranged.

Key points

- Any athlete with suspected concussion should be REMOVED FROM PLAY, medically assessed and monitored for deterioration. No athlete diagnosed with concussion should be returned to play on the day of injury.
- If the child is suspected of having a concussion and medical personnel are not immediately available, the child should be referred to a medical facility for urgent assessment.
- Concussion signs and symptoms evolve over time and it is important to consider repeat evaluation in the assessment of concussion.
- The diagnosis of a concussion is a clinical judgment, made by a medical professional. The Child SCAT5 should NOT be used by itself to make, or exclude, the diagnosis of concussion. An athlete may have a a concussion even if their Child SCAT5 is "normal".

Remember:

- The basic principles of first aid (danger, response, airway, breathing, circulation) should be followed.
- Do not attempt to move the athlete (other than that required for airway management) unless trained to do so.
- Assessment for a spinal cord injury is a critical part of the initial on-field assessment.
- Do not remove a helmet or any other equipment unless trained to do so safely.

1

IMMEDIATE OR ON-FIELD ASSESSMENT

The following elements should be assessed for all athletes who are suspected of having a concussion prior to proceeding to the neurocognitive assessment and ideally should be done on-field after the first first aid / emergency care priorities are completed.

If any of the "Red Flags" or observable signs are noted after a direct or indirect blow to the head, the athlete should be immediately and safely removed from participation and evaluated by a physician or licensed healthcare professional.

Consideration of transportation to a medical facility should be at the discretion of the physician or licensed healthcare professional.

The GCS is important as a standard measure for all patients and can be done serially if necessary in the event of deterioration in conscious state. The cervical spine exam is a critical step of the immediate assessment, however, it does not need to be done serially.

STEP 1: RED FLAGS

RED FLAGS:

- **Neck pain or tenderness**
- **Double vision**
- **Weakness or tingling/ burning in arms or legs**
- **Severe or increasing headache**
- **Seizure or convulsion**
- **Loss of consciousness**
- **Deteriorating conscious state**
- **Vomiting**
- **Increasingly restless, agitated or combative**

STEP 2: OBSERVABLE SIGNS

Witnessed ☐ Observed on Video ☐

Lying motionless on the playing surface	Y	N
Balance / gait difficulties / motor incoordination: stumbling, slow / laboured movements	Y	N
Disorientation or confusion, or an inability to respond appropriately to questions	Y	N
Blank or vacant look	Y	N
Facial injury after head trauma	Y	N

STEP 3: EXAMINATION
GLASGOW COMA SCALE (GCS)[2]

Time of assessment			
Date of assessment			
Best eye response (E)			
No eye opening	1	1	1
Eye opening in response to pain	2	2	2
Eye opening to speech	3	3	3
Eyes opening spontaneously	4	4	4
Best verbal response (V)			
No verbal response	1	1	1
Incomprehensible sounds	2	2	2
Inappropriate words	3	3	3
Confused	4	4	4
Oriented	5	5	5
Best motor response (M)			
No motor response	1	1	1
Extension to pain	2	2	2
Abnormal flexion to pain	3	3	3
Flexion / Withdrawal to pain	4	4	4
Localizes to pain	5	5	5
Obeys commands	6	6	6
Glasgow Coma score (E + V + M)			

Name: _____

DOB: _____

Address: _____

ID number: _____

Examiner: _____

Date: _____

CERVICAL SPINE ASSESSMENT

Does the athlete report that their neck is pain free at rest?	Y	N
If there is NO neck pain at rest, does the athlete have a full range of ACTIVE pain free movement?	Y	N
Is the limb strength and sensation normal?	Y	N

In a patient who is not lucid or fully conscious, a cervical spine injury should be assumed until proven otherwise.

OFFICE OR OFF-FIELD ASSESSMENT
STEP 1: ATHLETE BACKGROUND

Please note that the neurocognitive assessment should be done in a distraction-free environment with the athlete in a resting state.

Sport / team / school: _____

Date / time of injury: _____

Years of education completed: _____

Age: _____

Gender: M / F / Other

Dominant hand: left / neither / right

How many diagnosed concussions has the athlete had in the past?: _____

When was the most recent concussion?: _____

How long was the recovery (time to being cleared to play) from the most recent concussion?: _____ (days)

Has the athlete ever been:

Hospitalized for a head injury?	Yes	No
Diagnosed / treated for headache disorder or migraines?	Yes	No
Diagnosed with a learning disability / dyslexia?	Yes	No
Diagnosed with ADD / ADHD?	Yes	No
Diagnosed with depression, anxiety or other psychiatric disorder?	Yes	No

Current medications? If yes, please list: _____

STEP 2: SYMPTOM EVALUATION

The athlete should be given the symptom form and asked to read this instruction paragraph out loud then complete the symptom scale. For the baseline assessment, the athlete should rate his/her symptoms based on how he/she typically feels and for the post injury assessment the athlete should rate their symptoms at this point in time.

To be done in a resting state

Please Check: ☐ Baseline ☐ Post-Injury

Name: _____

DOB: _____

Address: _____

ID number: _____

Examiner: _____

Date: _____

2

Child Report[3]

	Not at all/ Never	A little/ Rarely	Somewhat/ Sometimes	A lot/ Often
I have headaches	0	1	2	3
I feel dizzy	0	1	2	3
I feel like the room is spinning	0	1	2	3
I feel like I'm going to faint	0	1	2	3
Things are blurry when I look at them	0	1	2	3
I see double	0	1	2	3
I feel sick to my stomach	0	1	2	3
My neck hurts	0	1	2	3
I get tired a lot	0	1	2	3
I get tired easily	0	1	2	3
I have trouble paying attention	0	1	2	3
I get distracted easily	0	1	2	3
I have a hard time concentrating	0	1	2	3
I have problems remember-ing what people tell me	0	1	2	3
I have problems following directions	0	1	2	3
I daydream too much	0	1	2	3
I get confused	0	1	2	3
I forget things	0	1	2	3
I have problems finishing things	0	1	2	3
I have trouble figuring things out	0	1	2	3
It's hard for me to learn new things	0	1	2	3
Total number of symptoms:				of 21
Symptom severity score:				of 63
Do the symptoms get worse with physical activity?			Y	N
Do the symptoms get worse with trying to think?			Y	N

Overall rating for child to answer:

	Very bad									Very good
On a scale of 0 to 10 (where 10 is normal), how do you feel now?	0	1	2	3	4	5	6	7	8	9	10

If not 10, in what way do you feel different?:

Parent Report

The child:

	Not at all/ Never	A little/ Rarely	Somewhat/ Sometimes	A lot/ Often
has headaches	0	1	2	3
feels dizzy	0	1	2	3
has a feeling that the room is spinning	0	1	2	3
feels faint	0	1	2	3
has blurred vision	0	1	2	3
has double vision	0	1	2	3
experiences nausea	0	1	2	3
has a sore neck	0	1	2	3
gets tired a lot	0	1	2	3
gets tired easily	0	1	2	3
has trouble sustaining attention	0	1	2	3
is easily distracted	0	1	2	3
has difficulty concentrating	0	1	2	3
has problems remember-ing what he/she is told	0	1	2	3
has difficulty following directions	0	1	2	3
tends to daydream	0	1	2	3
gets confused	0	1	2	3
is forgetful	0	1	2	3
has difficulty completing tasks	0	1	2	3
has poor problem solving skills	0	1	2	3
has problems learning	0	1	2	3
Total number of symptoms:				of 21
Symptom severity score:				of 63
Do the symptoms get worse with physical activity?			Y	N
Do the symptoms get worse with mental activity?			Y	N

Overall rating for parent/teacher/ coach/carer to answer

On a scale of 0 to 100% (where 100% is normal), how would you rate the child now?

If not 100%, in what way does the child seem different?

STEP 3: COGNITIVE SCREENING

Standardized Assessment of Concussion - Child Version (SAC-C)[4]

Name: _____

DOB: _____

Address: _____

ID number: _____

Examiner: _____

Date: _____

IMMEDIATE MEMORY

The Immediate Memory component can be completed using the traditional 5-word per trial list or optionally using 10-words per trial to minimise any ceiling effect. All 3 trials must be administered irrespective of the number correct on the first trial. Administer at the rate of one word per second.

Please choose EITHER the 5 or 10 word list groups and circle the specific word list chosen for this test.

I am going to test your memory. I will read you a list of words and when I am done, repeat back as many words as you can remember, in any order. For Trials 2 & 3: I am going to repeat the same list again. Repeat back as many words as you can remember in any order, even if you said the word before.

List	Alternate 5 word lists					Score (of 5) Trial 1	Trial 2	Trial 3
A	Finger	Penny	Blanket	Lemon	Insect			
B	Candle	Paper	Sugar	Sandwich	Wagon			
C	Baby	Monkey	Perfume	Sunset	Iron			
D	Elbow	Apple	Carpet	Saddle	Bubble			
E	Jacket	Arrow	Pepper	Cotton	Movie			
F	Dollar	Honey	Mirror	Saddle	Anchor			
					Immediate Memory Score			of 15
					Time that last trial was completed			

List	Alternate 10 word lists					Score (of 10) Trial 1	Trial 2	Trial 3
G	Finger Candle	Penny Paper	Blanket Sugar	Lemon Sandwich	Insect Wagon			
H	Baby Elbow	Monkey Apple	Perfume Carpet	Sunset Saddle	Iron Bubble			
I	Jacket Dollar	Arrow Honey	Pepper Mirror	Cotton Saddle	Movie Anchor			
					Immediate Memory Score			of 30
					Time that last trial was completed			

CONCENTRATION

DIGITS BACKWARDS

Please circle the Digit list chosen (A, B, C, D, E, F). Administer at the rate of one digit per second reading DOWN the selected column.

I am going to read a string of numbers and when I am done, you repeat them back to me in reverse order of how I read them to you. For example, if I say 7-1-9, you would say 9-1-7.

Concentration Number Lists (circle one)					
List A	List B	List C			
5-2	4-1	4-9	Y	N	0
4-1	9-4	6-2	Y	N	1
4-9-3	5-2-6	1-4-2	Y	N	0
6-2-9	4-1-5	6-5-8	Y	N	1
3-8-1-4	1-7-9-5	6-8-3-1	Y	N	0
3-2-7-9	4-9-6-8	3-4-8-1	Y	N	1
6-2-9-7-1	4-8-5-2-7	4-9-1-5-3	Y	N	0
1-5-2-8-6	6-1-8-4-3	6-8-2-5-1	Y	N	1
7-1-8-4-6-2	8-3-1-9-6-4	3-7-6-5-1-9	Y	N	0
5-3-9-1-4-8	7-2-4-8-5-6	9-2-6-5-1-4	Y	N	1
List D	List E	List F			
2-7	9-2	7-8	Y	N	0
5-9	6-1	5-1	Y	N	1
7-8-2	3-8-2	2-7-1	Y	N	0
9-2-6	5-1-8	4-7-9	Y	N	1
4-1-8-3	2-7-9-3	1-6-8-3	Y	N	0
9-7-2-3	2-1-6-9-	3-9-2-4	Y	N	1
1-7-9-2-6	4-1-8-6-9	2-4-7-5-8	Y	N	0
4-1-7-5-2	9-4-1-7-5	8-3-9-6-4	Y	N	1
2-6-4-8-1-7	6-9-7-3-8-2	5-8-6-2-4-9	Y	N	0
8-4-1-9-3-5	4-2-7-3-9-8	3-1-7-8-2-6	Y	N	1
		Digits Score:			of 5

DAYS IN REVERSE ORDER

Now tell me the days of the week in reverse order. Start with the last day and go backward. So you'll say Sunday, Saturday. Go ahead.

Sunday - Saturday - Friday - Thursday - Wednesday - Tuesday - Monday	0 1
Days Score	of 1
Concentration Total Score (Digits + Days)	of 6

4

STEP 4: NEUROLOGICAL SCREEN

See the instruction sheet (page 7) for details of test administration and scoring of the tests.

Can the patient read aloud (e.g. symptom check-list) and follow instructions without difficulty?	Y	N
Does the patient have a full range of pain-free PASSIVE cervical spine movement?	Y	N
Without moving their head or neck, can the patient look side-to-side and up-and-down without double vision?	Y	N
Can the patient perform the finger nose coordination test normally?	Y	N
Can the patient perform tandem gait normally?	Y	N

BALANCE EXAMINATION

Modified Balance Error Scoring System (BESS) testing[5]

Which foot was tested (i.e. which is the non-dominant foot) ☐ Left ☐ Right

Testing surface (hard floor, field, etc.) _____

Footwear (shoes, barefoot, braces, tape, etc.) _____

Condition	Errors	
Double leg stance	of 10	
Single leg stance (non-dominant foot, 10-12 y/o only)	of 10	
Tandem stance (non-dominant foot at back)	of 10	
Total Errors	5-9 y/o of 20	10-12 y/o of 30

Name: _____

DOB: _____

Address: _____

ID number: _____

Examiner: _____

Date: _____

5

STEP 5: DELAYED RECALL:

The delayed recall should be performed after 5 minutes have elapsed since the end of the Immediate Recall section. Score 1 pt. for each correct response.

Do you remember that list of words I read a few times earlier? Tell me as many words from the list as you can remember in any order.

Time Started _____

Please record each word correctly recalled. Total score equals number of words recalled.

_____

_____

_____

Total number of words recalled accurately: of 5 or of 10

6

STEP 6: DECISION

	Date & time of assessment:		
Domain			
Symptom number Child report (of 21) Parent report (of 21)			
Symptom severity score Child report (of 63) Parent report (of 63)			
Immediate memory	of 15 of 30	of 15 of 30	of 15 of 30
Concentration (of 6)			
Neuro exam	Normal Abnormal	Normal Abnormal	Normal Abnormal
Balance errors (5-9 y/o of 20) (10-12 y/o of 30)			
Delayed Recall	of 5 of 10	of 5 of 10	of 5 of 10

Date and time of injury: _____

If the athlete is known to you prior to their injury, are they different from their usual self?

☐ **Yes** ☐ **No** ☐ **Unsure** ☐ **Not Applicable**

(If different, describe why in the clinical notes section)

Concussion Diagnosed?

☐ **Yes** ☐ **No** ☐ **Unsure** ☐ **Not Applicable**

If re-testing, has the athlete improved?

☐ **Yes** ☐ **No** ☐ **Unsure** ☐ **Not Applicable**

I am a physician or licensed healthcare professional and I have personally administered or supervised the administration of this Child SCAT5.

Signature: _____

Name: _____

Title: _____

Registration number (if applicable): _____

Date: _____

SCORING ON THE CHILD SCAT5 SHOULD NOT BE USED AS A STAND-ALONE METHOD TO DIAGNOSE CONCUSSION, MEASURE RECOVERY OR MAKE DECISIONS ABOUT AN ATHLETE'S READINESS TO RETURN TO COMPETITION AFTER CONCUSSION.

For the Neurological Screen (page 5), if the child cannot read, ask him/her to describe what they see in this picture.

Name: _____

DOB: _____

Address: _____

ID number: _____

Examiner: _____

Date: _____

CLINICAL NOTES:

_____

_____

_____

_____

_____

_____

Concussion injury advice for the child and parents/carergivers

(To be given to the person monitoring the concussed child)

This child has had an injury to the head and needs to be carefully watched for the next 24 hours by a responsible adult.

If you notice any change in behavior, vomiting, dizziness, worsening headache, double vision or excessive drowsiness, please call an ambulance to take the child to hospital immediately.

Other important points:

Following concussion, the child should rest for at least 24 hours.

- The child should not use a computer, internet or play video games if these activities make symptoms worse.
- The child should not be given any medications, including pain killers, unless prescribed by a medical doctor.
- The child should not go back to school until symptoms are improving.
- The child should not go back to sport or play until a doctor gives permission.

Clinic phone number: _____

Patient's name: _____

Date / time of injury: _____

Date / time of medical review: _____

Healthcare Provider: _____

Contact details or stamp

INSTRUCTIONS

Words in *Italics* throughout the Child SCAT5 are the instructions given to the athlete by the clinician

Symptom Scale

In situations where the symptom scale is being completed after exercise, it should still be done in a resting state, at least 10 minutes post exercise.

At Baseline

- The child is to complete the Child Report, according to how he/she feels today, and
- The parent/carer is to complete the Parent Report according to how the child has been over the previous week.

On the day of injury

- The child is to complete the Child Report, according to how he/she feels now.
- If the parent is present, and has had time to assess the child on the day of injury, the parent completes the Parent Report according to how the child appears now.

On all subsequent days

- The child is to complete the Child Report, according to how he/she feels today, and
- The parent/carer is to complete the Parent Report according to how the child has been over the previous 24 hours.

For Total number of symptoms, maximum possible is 21

For Symptom severity score, add all scores in table, maximum possible is 21 x 3 = 63

Standardized Assessment of Concussion Child Version (SAC-C)

Immediate Memory

Choose one of the 5-word lists. Then perform 3 trials of immediate memory using this list.

Complete all 3 trials regardless of score on previous trials.

"I am going to test your memory. I will read you a list of words and when I am done, repeat back as many words as you can remember, in any order." The words must be read at a rate of one word per second.

OPTION: The literature suggests that the Immediate Memory has a notable ceiling effect when a 5-word list is used. (In younger children, use the 5-word list). In settings where this ceiling is prominent the examiner may wish to make the task more difficult by incorporating two 5–word groups for a total of 10 words per trial. In this case the maximum score per trial is 10 with a total trial maximum of 30.

Trials 2 & 3 MUST be completed regardless of score on trial 1 & 2.

Trials 2 & 3: *"I am going to repeat the same list again. Repeat back as many words as you can remember in any order, even if you said the word before."*

Score 1 pt. for each correct response. Total score equals sum across all 3 trials. Do NOT inform the athlete that delayed recall will be tested.

Concentration

Digits backward

Choose one column only, from List A, B, C, D, E or F, and administer those digits as follows:

"I am going to read you some numbers and when I am done, you say them back to me backwards, in reverse order of how I read them to you. For example, if I say 7-1, you would say 1-7."

If correct, circle "Y" for correct and go to next string length. If incorrect, circle "N" for the first string length and read trial 2 in the same string length. One point possible for each string length. Stop after incorrect on both trials (2 N's) in a string length. The digits should be read at the rate of one per second.

Days of the week in reverse order

"Now tell me the days of the week in reverse order. Start with Sunday and go backward. So you'll say Sunday, Saturday ... Go ahead"

1 pt. for entire sequence correct

Delayed Recall

The delayed recall should be performed after at least 5 minutes have elapsed since the end of the Immediate Recall section.

"Do you remember that list of words I read a few times earlier? Tell me as many words from the list as you can remember in any order."

Circle each word correctly recalled. Total score equals number of words recalled.

Neurological Screen

Reading

The child is asked to read a paragraph of text from the instructions in the Child SCAT5. For children who can not read, they are asked to describe what they see in a photograph or picture, such as that on page 6 of the Child SCAT5.

Modified Balance Error Scoring System (mBESS)[5] testing

These instructions are to be read by the person administering the Child SCAT5, and each balance task should be demonstrated to the child. The child should then be asked to copy what the examiner demonstrated.

Each of 20-second trial/stance is scored by counting the number of errors. The This balance testing is based on a modified version of the Balance Error Scoring System (BESS)[5].

A stopwatch or watch with a second hand is required for this testing.

"I am now going to test your balance. Please take your shoes off, roll up your pants above your ankle (if applicable), and remove any ankle taping (if applicable). This test will consist of two different parts."

OPTION: For further assessment, the same 3 stances can be performed on a surface of medium density foam (e.g., approximately 50cm x 40cm x 6cm).

(a) Double leg stance:

The first stance is standing with the feet together with hands on hips and with eyes closed. The child should try to maintain stability in that position for 20 seconds. You should inform the child that you will be counting the number of times the child moves out of this position. You should start timing when the child is set and the eyes are closed.

(b) Tandem stance:

Instruct or show the child how to stand heel-to-toe with the non-dominant foot in the back. Weight should be evenly distributed across both feet. Again, the child should try to maintain stability for 20 seconds with hands on hips and eyes closed. You should inform the child that you will be counting the number of times the child moves out of this position. If the child stumbles out of this position, instruct him/her to open the eyes and return to the start position and continue balancing. You should start timing when the child is set and the eyes are closed.

(c) Single leg stance (10-12 year olds only):

"If you were to kick a ball, which foot would you use? [This will be the dominant foot] *Now stand on your other foot. You should bend your other leg and hold it up (show the child). Again, try to stay in that position for 20 seconds with your hands on your hips and your eyes closed. I will be counting the number of times you move out of this position. If you move out of this position, open your eyes and return to the start position and keep balancing. I will start timing when you are set and have closed your eyes."*

Balance testing – types of errors

1. Hands lifted off iliac crest
2. Opening eyes
3. Step, stumble, or fall
4. Moving hip into > 30 degrees abduction
5. Lifting forefoot or heel
6. Remaining out of test position > 5 sec

Each of the 20-second trials is scored by counting the errors, or deviations from the proper stance, accumulated by the child. The examiner will begin counting errors only after the child has assumed the proper start position. The modified BESS is calculated by adding one error point for each error during the 20-second tests. The maximum total number of errors for any single condition is 10. If a child commits multiple errors simultaneously, only one error is recorded but the child should quickly return to the testing position, and counting should resume once subject is set. Children who are unable to maintain the testing procedure for a minimum of five seconds at the start are assigned the highest possible score, ten, for that testing condition.

Tandem Gait

Instruction for the examiner - Demonstrate the following to the child:

The child is instructed to stand with their feet together behind a starting line (the test is best done with footwear removed). Then, they walk in a forward direction as quickly and as accurately as possible along a 38mm wide (sports tape), 3 metre line with an alternate foot heel-to-toe gait ensuring that they approximate their heel and toe on each step. Once they cross the end of the 3m line, they turn 180 degrees and return to the starting point using the same gait. Children fail the test if they step off the line, have a separation between their heel and toe, or if they touch or grab the examiner or an object.

Finger to Nose

The tester should demonstrate it to the child.

"I am going to test your coordination now. Please sit comfortably on the chair with your eyes open and your arm (either right or left) outstretched (shoulder flexed to 90 degrees and elbow and fingers extended). When I give a start signal, I would like you to perform five successive finger to nose repetitions using your index finger to touch the tip of the nose as quickly and as accurately as possible."

Scoring: 5 correct repetitions in < 4 seconds = 1

Note for testers: Children fail the test if they do not touch their nose, do not fully extend their elbow or do not perform five repetitions.

References

1. McCrory et al. Consensus Statement On Concussion In Sport – The 5th International Conference On Concussion In Sport Held In Berlin, October 2016. British Journal of Sports Medicine 2017 (available at www.bjsm.bmj.com)
2. Jennett, B., Bond, M. Assessment of outcome after severe brain damage: a practical scale. Lancet 1975; i: 480-484
3. Ayr, L.K., Yeates, K.O., Taylor, H.G., Brown, M. Dimensions of postconcussive symptoms in children with mild traumatic brain injuries. Journal of the International Neuropsychological Society. 2009; 15:19–30
4. McCrea M. Standardized mental status testing of acute concussion. Clinical Journal of Sports Medicine. 2001; 11: 176-181
5. Guskiewicz KM. Assessment of postural stability following sport-related concussion. Current Sports Medicine Reports. 2003; 2: 24-30

CONCUSSION INFORMATION

If you think you or a teammate has a concussion, tell your coach/trainer/parent right away so that you can be taken out of the game. You or your teammate should be seen by a doctor as soon as possible. YOU OR YOUR TEAMMATE SHOULD NOT GO BACK TO PLAY/SPORT THAT DAY.

Signs to watch for

Problems can happen over the first 24-48 hours. You or your teammate should not be left alone and must go to a hospital right away if any of the following happens:

- New headache, or headache gets worse
- Neck pain that gets worse
- Becomes sleepy/drowsy or can't be woken up
- Cannot recognise people or places
- Feeling sick to your stomach or vomiting
- Acting weird/strange, seems/feels confused, or is irritable
- Has any seizures (arms and/or legs jerk uncontrollably)
- Has weakness, numbness or tingling (arms, legs or face)
- Is unsteady walking or standing
- Talking is slurred
- Cannot understand what someone is saying or directions

Consult your physician or licensed healthcare professional after a suspected concussion. Remember, it is better to be safe.

Graduated Return to Sport Strategy

After a concussion, the child should rest physically and mentally for a few days to allow symptoms to get better. In most cases, after a few days of rest, they can gradually increase their daily activity level as long as symptoms don't get worse. Once they are able to do their usual daily activities without symptoms, the child should gradually increase exercise in steps, guided by the healthcare professional (see below).

The athlete should not return to play/sport the day of injury.

NOTE: An initial period of a few days of both cognitive ("thinking") and physical rest is recommended before beginning the Return to Sport progression.

Exercise step	Functional exercise at each step	Goal of each step
1. Symptom-limited activity	Daily activities that do not provoke symptoms.	Gradual reintroduction of work/school activities.
2. Light aerobic exercise	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, e.g., passing drills. May start progressive resistance training.	Exercise, coordination, and increased thinking.
5. Full contact practice	Following medical clearance, participate in normal training activities.	Restore confidence and assess functional skills by coaching staff.
6. Return to play/sport	Normal game play.	

There should be at least 24 hours (or longer) for each step of the progression. If any symptoms worsen while exercising, the athlete should go back to the previous step. Resistance training should be added only in the later stages (Stage 3 or 4 at the earliest). The athlete should not return to sport until the concussion symptoms have gone, they have successfully returned to full school/learning activities, and the healthcare professional has given the child written permission to return to sport.

If the child has symptoms for more than a month, they should ask to be referred to a healthcare professional who is an expert in the management of concussion.

Graduated Return to School Strategy

Concussion may affect the ability to learn at school. The child may need to miss a few days of school after a concussion, but the child's doctor should help them get back to school after a few days. When going back to school, some children may need to go back gradually and may need to have some changes made to their schedule so that concussion symptoms don't get a lot worse. If a particular activity makes symptoms a lot worse, then the child should stop that activity and rest until symptoms get better. To make sure that the child can get back to school without problems, it is important that the health care provider, parents/caregivers and teachers talk to each other so that everyone knows what the plan is for the child to go back to school.

Note: If mental activity does not cause any symptoms, the child may be able to return to school part-time without doing school activities at home first.

Mental Activity	Activity at each step	Goal of each step
1. Daily activities that do not give the child symptoms	Typical activities that the child does during the day as long as they do not increase symptoms (e.g. reading, texting, screen time). Start with 5-15 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 school-work. 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 school activities until a full day can be tolerated.	Return to full academic activities and catch up on missed work.

If the child continues to have symptoms with mental activity, some other things that can be done to help with return to school may include:

- Starting school later, only going for half days, or going only to certain classes
- More time to finish assignments/tests
- Quiet room to finish assignments/tests
- Not going to noisy areas like the cafeteria, assembly halls, sporting events, music class, shop class, etc.
- Taking lots of breaks during class, homework, tests
- No more than one exam/day
- Shorter assignments
- Repetition/memory cues
- Use of a student helper/tutor
- Reassurance from teachers that the child will be supported while getting better

The child should not go back to sports until they are back to school/learning, without symptoms getting significantly worse and no longer needing any changes to their schedule.

Appendix F - Medical Assessment Letter

CATT | CONCUSSION AWARENESS TRAINING TOOL

CLEAR FORM

Medical Assessment Letter

Medical Office, please complete:	
M.D. / N.P. Name	
Medical License #	
Email / Contact #	
Date of event / injury	
Date of assessment	

To Whom It May Concern:

Any individual who sustains a blow or impact to the head, face, neck or body and demonstrates any visual signs of concussion or reports any of the symptoms of concussion is recommended to be assessed by a licensed medical professional. Accordingly, I have personally completed a medical assessment on this patient.

Name of Patient: _____

Results of the Medical Assessment

☐ This patient has not been diagnosed with a concussion or other injury and can return, with full participation to work, school, or physical activities without restriction.

☐ This patient has not been diagnosed with a concussion but the assessment led to the following diagnosis and recommendations:

☐ This patient HAS been diagnosed with a concussion. *See below for concussion management protocol.*

☐ This patient has been instructed to avoid all activities that could potentially place them at risk of another concussion or head injury, or activities with implications for the safety of others (e.g., driving, dangerous job duties, and contact sports) until a licensed physician or nurse practitioner provides a Medical Clearance Letter.

Yours Sincerely,

Signature _____ M.D / N.P. (Please circle appropriate designation)[1]

Stamp

1 Depending upon physician or nurse practitioner access, the Medical Assessment Letter may be completed by a nurse with access to a licensed physician or nurse practitioner. Forms completed by other health care professionals (e.g., physiotherapists, chiropractors, and other allied health care professionals) should not be accepted. It is recommended that this document be provided to the patient without charge.

Concussion Management

The goal of concussion management is to allow complete recovery through a safe and gradual return to work, school and physical activities following a staged approach. *Note: a patient's progess through the return to activity stages is unique to the individual.* After Stage 2, if new or worsening symptoms are experienced, the patient may need to return to the previous stage for 24 hours and consider reassessment by their physician/nurse practitioner. For more detailed information on management and resources, please refer to the Concussion Awareness Training Tool (CATT) at cattonline.com.

Stage 1: Initial Rest

In the first 24-48 hours the patient has been instructed to have complete physical and cognitive rest prior to initiating a return to work or activity.

- ☐ Not yet completed
- ☐ Completed on (dd/mm/yyyy) _____
- ☐ Time period has passed

Stage 2: Prepare to return to activity at home

The patient can begin the return to activity process at home by undertaking brief familiar tasks until no new or worsening concussion symptoms are experienced.

- ☐ Not yet completed
- ☐ Completed on (dd/mm/yyyy) _____
- ☐ Time period has passed

Stage 3 & 4: Prepare to return to work, school, and physical activity and gradually resume daily activities

The patient can initiate a graduated return to work, school, and physical activities on a part-time basis, by increasing and gradually resuming usual activities (supported with accommodations, modifications, and restrictions as needed) as tolerated and only at a level that does not bring on new or worsening concussion symptoms.

- ☐ Not yet completed
- ☐ Completed on (dd/mm/yyyy) _____
- ☐ Time period has passed

Restrictions/Accommodations	Details	Timeline

Stage 5 & 6: Full return to work, school, and physical activities

The patient can return with full participation to work, school, and physical activities.

- ☐ Not yet completed
- ☐ Completed on (dd/mm/yyyy) _____
- ☐ Time period has passed

Restrictions/Accommodations	Details	Timeline

Yours Sincerely,

Signature _____ M.D / N.P. (Please circle appropriate designation)[2]

Stamp

2 Depending upon physician or nurse practitioner access, the Medical Assessment Letter may be completed by a nurse with access to a licensed physician or nurse practitioner. Forms completed by other health care professionals (e.g., physiotherapists, chiropractors, and other allied health care professionals) should not be accepted. It is recommended that this document be provided to the patient without charge.

Appendix G - Return to School

Return to School

Name: Date:

AT HOME

☐ STAGE 1:

Physical & cognitive rest

- Basic board games, crafts, talk on phone
- Activities that do not increase heart rate or break a sweat

Limit/Avoid:

- Computer, TV, texting, video games, reading

No:

- School work
- Sports
- Work
- Driving until cleared by a health care professional

Rest

When symptoms start to improve OR after resting for 2 days max, **BEGIN STAGE 2**

☐ STAGE 2:

Start with light cognitive activity:

Gradually increase cognitive activity up to 30 min. Take frequent breaks.

Prior activities plus:

- Reading, TV, drawing
- Limited peer contact and social networking

Contact school to create *Return to School* plan.

When light cognitive activity is tolerated:

Introduce school work.

Prior activities plus:

- School work as per *Return to School* plan

Communicate with school on student's progression.

No:

- School attendance
- Sports
- Work

Gradually add cognitive activity including school work at home

Tolerates 30 min. of cognitive activity, introduce **school work at home**

Tolerates 60 min. of school work in two 30 min. intervals, **BEGIN STAGE 3**

AT SCHOOL

☐ STAGE 3:

Back to school part-time

Part-time school with maximum accommodations.

Prior activities plus:

- School work at school as per *Return to School* plan

No:

- P.E., physical activity at lunch/recess, homework, testing, sports, assemblies, field trips

Communicate with school on student's progression.

School work only at school

Tolerates 120 min. of cognitive activity in 30-45 min. intervals, **BEGIN STAGE 4**

☐ STAGE 4:

Part-time school

Increase school time with moderate accommodations.

Prior activities plus:

- Increase time at school
- Decrease accommodations
- Homework – up to 30 min./day
- Classroom testing with adaptations

No:

- P.E., physical activity at lunch/recess, sports, standardized testing

Communicate with school on student's progression.

Increase school work, introduce homework, decrease learning accommodations

Tolerates 240 min. of cognitive activity in 45-60 min. intervals, **BEGIN STAGE 5**

☐ STAGE 5:

Full-time school

Full days at school, minimal accommodations.

Prior activities plus:

- Start to eliminate accommodations
- Increase homework to 60 min./day
- Limit routine testing to one test per day with adaptations

No:

- P.E., physical activity at lunch/recess, sports, standardized testing

Work up to full days at school, minimal learning accommodations

Tolerates school full-time with no learning accommodations **BEGIN STAGE 6**

☐ STAGE 6:

Full-time school

Full days at school, no learning accommodations.

Prior activities plus:

- Attend all classes
- All homework
- Full extracurricular involvement
- All testing

No:

- full participation in P.E. or sports until *Return to Sport* protocol completed and written medical clearance provided

Full academic load

Return to School protocol completed; focus on ***RETURN TO SPORT***

Note: A student is tolerating an activity if symptoms are not exacerbated.

Adapted from the Return to Learn protocol by G.F. Strong School Program (Vancouver School Board), Adolescent and Young Adult Program, G.F. Strong Rehabilitation Centre.

This tool is a guideline for managing a student's return to school following a concussion and does not replace medical advice. Timelines and activities may vary by direction of a health care professional.

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Appendix H - Return to Sport

Return to Sport

Name:

Date:

☑ STAGE 1:	☐ STAGE 2:	☐ STAGE 3:	☐ STAGE 4:	☐ STAGE 5:	☐ STAGE 6:
No sporting activity Physical and cognitive rest until symptoms start to improve OR after resting for 2 days max.	**Light aerobic exercise** Walking, swimming, stationary cycling. No resistance training. The pace of these activities should be at the point where you are still able to have a conversation.	**Sport-specific exercise** Skating drills (ice hockey), running drills (soccer). No head-impact activities.	**Non-contact drills** Progress to complex training drills (e.g. passing drills). May start resistance training.	**Full-contact practice** Following medical clearance participate in normal training activities.	**Back in the game** Normal game play
Recovery	**Increase heart rate**	**Add movement**	**Exercise, coordination, cognitive load**	**Restore confidence; assess functional skills**	**Note: Premature return to contact sports (full practice and game play) may cause a significant setback in recovery.**
Symptoms improve or 2 days rest max? **Yes:** Move to stage 2 **No:** Continue resting Time & Date completed:	**No new or worsening symptoms for 24 hours?** **Yes:** Move to stage 3 **No:** Return to stage 1 Time & Date completed:	**No new or worsening symptoms for 24 hours?** **Yes:** Move to stage 4 **No:** Return to stage 2 Time & Date completed:	**Symptom-free for 24 hours?** **Yes:** Move to stage 5 **No:** Return to stage 3 Time & Date completed:	**Symptom-free for 24 hours?** **Yes:** Move to stage 6 **No:** Return to stage 4 Time & Date completed:	

If new or worsening symptoms are experienced at any stage, go back to the previous stage for at least 24 hours. You many need to move back a stage more than once during the recovery process.

Medical clearance required before moving to stage 5

BOTH TOOLS CAN BE USED IN PARALLEL; HOWEVER, RETURN TO SCHOOL SHOULD BE COMPLETED BEFORE RETURN TO SPORT IS COMPLETED

This tool is a guideline for managing an individual's return to sport following a concussion and does not replace medical advice. Timelines and activities may vary by direction of a health care professional.

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Appendix I - How to Support Your Child

Your Role as A Parent in Your Child's Recovery

As the parent or guardian, you have a central role in supporting your child's return to school. You are the advocate for your child between any medical professionals, St. Michaels University School (SMUS) and any other organization your child is involved in.

SMUS has a detailed concussion policy that is implemented and managed by the SMUS head athletic therapist (SMUSAT) in collaboration with all other licensed medical professionals involved in your child's care. It is your responsibility to report a non-school related concussion or suspected concussion to the AT. For concussions that occur at school, you are responsible for responding to the school and for ensuring your child is assessed as soon as possible by the SMUSAT or other licensed medical professionals where required.

SMUS Head Athletic Therapist:
Kim Oslund MSc, Dip SIM, CAT(C)
kim.oslund@smus.ca
(250) 519-7511

The SMUSAT will follow up with your child and communicate recommendations during the recovery process. It is also your responsibility to maintain communication with the SMUSAT to discuss how your child is coping with returning to school, such as coping with homework, workload, etc. In addition, you should provide the SMUSAT with any directions from your child's medical professional that might be important for the school to know.

The SMUSAT and the parent have important roles to play in the development and implementation of your child's Return to School Plan. You and your child should also work collaboratively with the school to create a plan that includes:

- How your child's needs will be met at school
- The learning accommodations needed to support your child
- What school work can be done at home

Your child's Return to School Plan should include how to monitor the plan's effectiveness, including:

- Mode and frequency of follow up and communication between you and the SMUSAT — this could be using school agendas, email, and phone calls
- Mode and frequency of communication between the SMUSAT and the teachers
- Timing and scheduling of regular meetings to discuss your child's progress and make adjustments as needed
- How your child's academic progress will be monitored
- How your child's emotional adjustment is monitored, by whom, and what actions to take should there be concerns
- Any issues that develop and what strategies will be implemented to address those issues

Once the plan is created, you should help support your child's progress by following the Return to School plan at home and communicating with the SMUSAT about how your child is tolerating the plan.

You are responsible for completing any paperwork the school requests you to complete. This may include getting a medical assessment letter and the required written medical clearance letter from your child's licensed medical professional to participate in physical activity as outlined in the Return to School and Return to Sport protocols.

Each child's recovery is unique. Most will make academic progress independently, but some children may benefit from temporary learning support or tutoring to guide their progress. This will be determined on an as needed basis.

Most students who sustain a concussion will make a complete recovery and be able to return to full school and physical activities within one to four 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) may benefit from a referral based on presentation of current symptoms. Referral for multidisciplinary care should be made on an individualized basis at the discretion of the student's licensed healthcare professionals involved in the student's care in collaboration with the SMUSAT.

For the most up to date information on concussions and what to expect please use the following link:

https://cattonline.com/parent-caregiver/

Appendix J - Learning Accommodations and Modifications

LEARNING ACCOMMODATIONS AND MODIFICATIONS FOR STUDENTS FOLLOWING A CONCUSSION

For more information about learning accommodations, see the Resources section of the Concussion Toolkit for School Professionals.

CLEAR FORM

PHYSICAL

HEADACHES:

- ☐ Provide opportunities to ensure student stays hydrated
- ☐ Allow frequent rest breaks with equipment as needed (ear/headphones, music, relaxation tapes, etc.)
- ☐ Limit or restrict noisy classes (music, woodworking, auto mechanics, foods/home economics, etc.)
- ☐ Limit or restrict noisy environments (assemblies, cafeteria, hallways, etc.)
- ☐ Allow the use of noise-cancelling ear plugs/headphones
- ☐ Allow sunglasses/hat in classroom
- ☐ Seat student away from window
- ☐ Dim light, pull shades

TIRES EASILY:

- ☐ Limit time spent doing school work
- ☐ Allow frequent rest breaks with equipment as needed (ear/headphones, music, relaxation tapes, etc.)
- ☐ Allow student to leave class/school early
- ☐ Allow student to start school later in the day
- ☐ Modify the student's attendance requirements, classes, and/or timetable
- ☐ Reduce backpack weight
- ☐ Schedule activities/subjects during student's best time of day

SENSITIVE TO LIGHT:

- ☐ Allow sunglasses/hat or blue light-blocking glasses
- ☐ Seat student away from window
- ☐ Dim light, pull shades
- ☐ Reduce exposure to computers, smart boards, videos
- ☐ Reduce brightness on screens

SENSITIVE TO NOISE:

- ☐ Limit or restrict noisy classes (music, woodworking, auto mechanics, foods/home economics, etc.)
- ☐ Limit or restrict noisy environments (assemblies, cafeteria, hallways, etc.)
- ☐ Provide a quiet work space (library, learning support or counselling room, etc.)
- ☐ Provide a quiet place for lunch, recess
- ☐ Allow the use of noise-cancelling earplugs/headphones
- ☐ Allow student to leave class early to avoid noisy hallways

DIZZINESS/BALANCE PROBLEMS:

- ☐ Allow student to leave early to avoid crowded hallway
- ☐ Limit standing for long periods and allow student to sit or lie down as needed

COGNITIVE

COGNITIVE FATIGUE:

- ☐ Limit time focusing on schoolwork
- ☐ No new learning
- ☐ Allow frequent rest breaks
- ☐ Reduce workload
- ☐ Decrease academic expectations
- ☐ Prioritize essential schoolwork
- ☐ Reduce repetition of work
- ☐ Allow for extra time to complete work, tests
- ☐ Provide shorter assignments, tests
- ☐ Allow alternative forms of testing (quiet space, oral, one-to-one, open-book, technology, etc.)
- ☐ Provide smaller chunks to learn
- ☐ Chunk information into smaller pieces
- ☐ Provide audio alternative for reading
- ☐ Schedule high cognitive demand tasks to be followed by less demanding work

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COGNITIVE

DIFFICULTY CONCENTRATING:

- [ ] Provide a quiet place to work
- [ ] Limit time focusing on schoolwork
- [ ] Decrease distractions
- [ ] Work on one task at a time
- [ ] Chunk information into smaller pieces
- [ ] Allow for extra time to complete work
- [ ] Provide class notes
- [ ] Allow alternative forms of testing (quiet space, oral, one-to-one, open-book, technology, etc.)
- [ ] Provide shorter assignments, tests
- [ ] Provide or support use of assistive technology and software
- [ ] Provide extra support or learning assistance (TA, LA teacher, parent, peer, etc.)
- [ ] Allow preferential seating (front of class, away from windows, doors, other distractions, etc.)
- [ ] Limit or restrict noisy classes (music, woodworking, auto mechanics, foods/home economics, etc.)
- [ ] Limit or restrict noisy environments (assemblies, cafeteria, hallways, etc.)

DIFFICULTY REMEMBERING:

- [ ] Provide written instructions for tasks, homework
- [ ] Use peer tutor or partner
- [ ] Check comprehension
- [ ] Provide class notes/allow class notes for testing
- [ ] Provide or support use of assistive technologhy and software
- [ ] Use student agenda, communication book
- [ ] Chunk information into smaller pieces
- [ ] Provide extra support or learning assistance (TA, LA teacher, parent, peer, etc.)
- [ ] Use recognition rather than recall for testing
- [ ] Use repetition
- [ ] Use visual reminders (schedules, checklists, calendars, sticky notes, etc.)
- [ ] Use visual cues (highlighting, underlining, pictures/diagrams, colour coding, etc.)
- [ ] Use memory strategies (categorizing, associations, chunking, rehearsal, mnemonics, visualization, etc.)

EMOTIONAL

SAD/DEPRESSED/FRUSTRATED:

- [ ] Allow time for socialization
- [ ] Listen to and validate student's concerns
- [ ] Provide reassurance
- [ ] Use proactive behaviour management to encourage healthy lifestyle
- [ ] Provide safe place for student when feeling overwhelmed
- [ ] Ensure student has ready access to support services (school counsellor, school psychologist, etc.)
- [ ] Provide extra support or learning assistance (TA, LA teacher, parent, peer, etc.)
- [ ] Provide student and parent/caregiver with mental health and substance use resources
- [ ] Schedule regular check-ins with student
- [ ] Schedule regular check-ins with parent/caregiver

ANXIETY:

- [ ] Set appropriate goals with the student
- [ ] Allow student to leave class when needed
- [ ] Set a signal for the student when they need to leave the classroom
- [ ] Listen to and validate student's concerns
- [ ] Provide reassurance
- [ ] Provide safe space for student when feeling overwhelmed
- [ ] Ensure student has ready access to support services (school counsellor, school psychologist, etc.)
- [ ] Reduce workload
- [ ] Provide extra support or learning assistance (TA, LA teacher, parent, peer, etc.)
- [ ] Allow alternative forms of testing (quiet space, oral, one-to-one, open-book, technology, etc.)
- [ ] Decrease academic expectations
- [ ] Prioritize essential schoolwork
- [ ] Allow for extra time to complete work, tests
- [ ] Schedule regular check-ins with student
- [ ] Schedule regular check-ins with parent/caregiver

Version 3: Updated September 2019

Based on the Return to Learn protocol by G.F. Strong School Program (Vancouver School Board), Adolescent and Young Adult Program, G.F. Strong Rehabilitation Centre

Appendix K - Medical Clearance Letter

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CLEAR FORM

Medical Clearance Letter

Medical Office, please complete:	
M.D. / N.P. Name	
Medical License #	
Email / Contact #	
Date of Clearance Letter	

M.D. / N.P. / Patient please complete:	
Date of Concussion	
Date of Concussion Diagnosis	
Organization/Individual Requesting Medical Clearance	

To Whom It May Concern:

Patients with a concussion should be assessed and managed by a medical professional. The goal of concussion management is to support the patient's complete recovery from concussion by promoting a safe and gradual return to activity following a staged approach. For more detailed information and resources, please refer to the Concussion Awareness Training Tool (CATT) at cattonline.com.

As part of the strategy, this patient had previously been instructed to avoid all activities that could potentially place them at risk of another concussion or head injury until a medical clearance letter is provided (due to organizational requirements, dangerous job duties, contact sports, etc.). This patient has explained the organizational requirements and the duties/ activities they participate in, and I have personally completed a medical clearance on this patient.

Name of Patient: _____

Note that the patient's recovery is individual. After Stage 2, if new or worsening concussion symptoms are experienced the patient has been instructed to return to the previous stage of the strategy for 24 hours.

☐ This patient can return with full participation to work, school, or physical activities **without restriction**.

☐ This patient can return to work, school, or physical activities **with the following restriction(s)**:

Restriction(s) Physical & Cognitive	Details	Timeline

☐ This patient can return with full participation to work, school, or physical activities **without accommodation**.

☐ This patient can return to work, school, or physical activities **with the following accommodation(s)**:

Accommodation(s) Physical & Cognitive	**Details**	**Timeline**

Your understanding and support are critical components in this patient's continuing recovery.

Yours Sincerely,

Signature _____ M.D / N.P. (Please circle appropriate designation)[1]

Stamp

1 Depending upon physician or nurse practitioner access, the Medical Clearance Letter may be completed by a nurse with access to a licensed physician or nurse practitioner. Forms completed by other health care professionals (e.g., physiotherapists, chiropractors, and other allied health care professionals) should not be accepted. It is recommended that this document be provided to the patient without charge.

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