



Concussion Resources for Coaches



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The Concussion Awareness Training Tool (CATT) is a series of online educational modules and resources with the goal of standardizing concussion recognition, diagnosis, treatment, and management. Good concussion management may decrease the risk of brain damage and potentially reduce long-term health issues.

Developed by Dr. Shelina Babul, Associate Director/Sports Injury Specialist with the BC Injury Research and Prevention Unit, BC Children's Hospital, CATT is based upon the established principles of the Consensus Statement on Concussion in Sport. The 2017 Berlin Concussion in Sport Group Consensus Statement builds on the principles outlined in previous concussion statements and aims to develop better understanding of sport-related concussion.

Research and evidence on concussions is evolving and the knowledge base is continually changing. As a result, this website is updated on a regular basis to provide current information, tools, and resources to support concussion recognition, diagnosis, treatment, and management.

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Table of Contents

CATT Concussion Information Sheet	4
An overview of concussion recognition, response, and management. This resource should be read by coaches, parents or caregivers, and players or participants prior to the beginning of a sport season.	
CATT Concussion Pathway	6
A pathway guiding appropriate recognition, response, and management following a suspected concussion incident.	
CATT Preseason Education Signoff Sheet	7
An optional signature page for players/participants and parents/caregivers acknowledging that they have reviewed the CATT Concussion Information Sheet.	
CATT Concussion Incident Report	8
A tool used to document the details of a suspected concussion incident. A completed copy of this document should be given to a player/participant's parent/caregiver, and should be brought to all medical appointments.	
Parachute Medical Assessment Letter	11
A form completed by a licenced medical professional during an athlete's initial medical assessment. This form indicates whether or not a concussion has been diagnosed, and provides outlines for Return to School and Return to Sport according to the Canadian Guideline on Concussion in Sport.	
CATT Return to Sport	13
A tool providing a gradual, six-stage stepwise strategy for returning to sport following a concussion.	
Parachute Medical Clearance Letter	14
A form completed by a licensed medical professional prior to an athlete's return to full contact practice and gameplay that clears the individual to participate in specific activities.	
Additional Resources	15

What You Need to Know About Concussion

This information sheet provides a brief overview on the appropriate care for an individual with a concussion. It outlines the three key steps in dealing with concussion (i.e. recognize, respond and manage) in order to assist your players/athletes in their recovery from this injury. The information included here is meant to supplement what is included in the CATT online courses. Visit cattonline.com to take a knowledge course.

Recognize

A concussion occurs when there is a significant impact to the head or body that causes the brain to move inside the skull. Common causes of concussion include **falls, motor vehicle crashes, and sport and recreational-related activities**.

There is no way to know for certain whether a particular event will lead to a concussion—a relatively minor impact may result in a concussion while a higher-magnitude hit may not. It is important to note that if there is a history of concussion, even a minor hit can trigger symptoms. Signs can be observed while symptoms are experienced by the individual.

The signs and symptoms of concussion in **individuals** include, but are not limited to:

- 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

Concussion signs to watch for in an **infant or toddler** may include:

- Crankiness and irritability (beyond their usual)
- Any sudden changes in sleeping pattern, eating or playing pattern
- Not interested in their favourite toys or activities
- Forgets a new skill (e.g., toilet training)
- Listless
- Loss of balance, unsteady walking
- Not eating or nursing
- Cannot be comforted

Respond










Following a potential concussion-causing event, the individual should be removed from activity immediately and assessed for **Red Flags**.

If any of the **Red Flags** are present, call an ambulance or seek immediate medical care.

If no **Red Flags** are present:

- Do not leave the individual alone
- Notify an emergency contact person, parent or caregiver
- Continue to monitor for Red Flags and signs and symptoms of concussion
- Do not let the individual return to their activity
- Do not give the individual any immediate medication
- Do not let the individual leave by themselves
- Do not let the individual drive or ride a bike

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

The individual should be monitored for up to 48 hours before assuming that a concussion has not occurred, including monitoring throughout the night following the initial injury. Only wake the individual if you have concerns about their breathing, changes in skin colour, or how they are sleeping. Call an ambulance or seek immediate medical care if the individual is slow to wake or shows any of the **Red Flags**. Within 48 hours:

- If any signs are detected or symptoms are experienced, seek medical attention from a licensed medical professional such as a physician or nurse practitioner (if applicable in your area).
- If no signs or symptoms appear, the individual can return to normal activity but should be monitored for several days. If no signs or symptoms appear, chances are that a concussion was not sustained. If unsure, see a medical professional for guidance.

Manage

A concussion can have a significant impact on physical, cognitive, and emotional functioning. The recovery process involves balancing activities such that they do not trigger or worsen symptoms—the key is finding the “sweet spot.”

The recovery process is best done in collaboration with key individuals, such as medical professionals, family members, friends, employers, teachers and school staff, and coaches.

The first and most important step in recovery from a concussion is to rest for a maximum of 2 days. The individual will need both physical and cognitive rest in order to allow the brain to heal.

- Physical rest includes participation in activities that do not result in an increased heart rate or breaking a sweat. Restrict: exercise, sports, running, biking, rough play, etc.
- Cognitive activity should be limited, minimizing activities that require concentration and learning. Restrict: reading, electronics (computers, smartphones, video games, TV), work/schoolwork, playing musical instruments, listening to loud music, etc.

REMEMBER:

Recovery is a fluctuating process. The individual can be doing well one day but not the next.

Once symptoms start to improve, or after a maximum of 2 days of rest, the individual should begin a step-wise process to return to regular activity, including school, work, sports, etc.

Symptoms should decrease over the course of time. If you are worried that the individual is not improving, follow-up with a licensed medical professional, such as a physician or nurse practitioner (if applicable in your area).

On average, an adult takes 7 to 10 days to recover from concussion, while children and youth typically take 2 to 4 weeks. While most concussions resolve within 3 months, persistent symptoms have the potential to cause long-term difficulties. Individuals dealing with symptoms lasting longer than 2 weeks in adults and longer than 4 weeks in children and youth may require additional medical assessment and multidisciplinary management.

REMEMBER:

CATT resources to support the recovery process include:

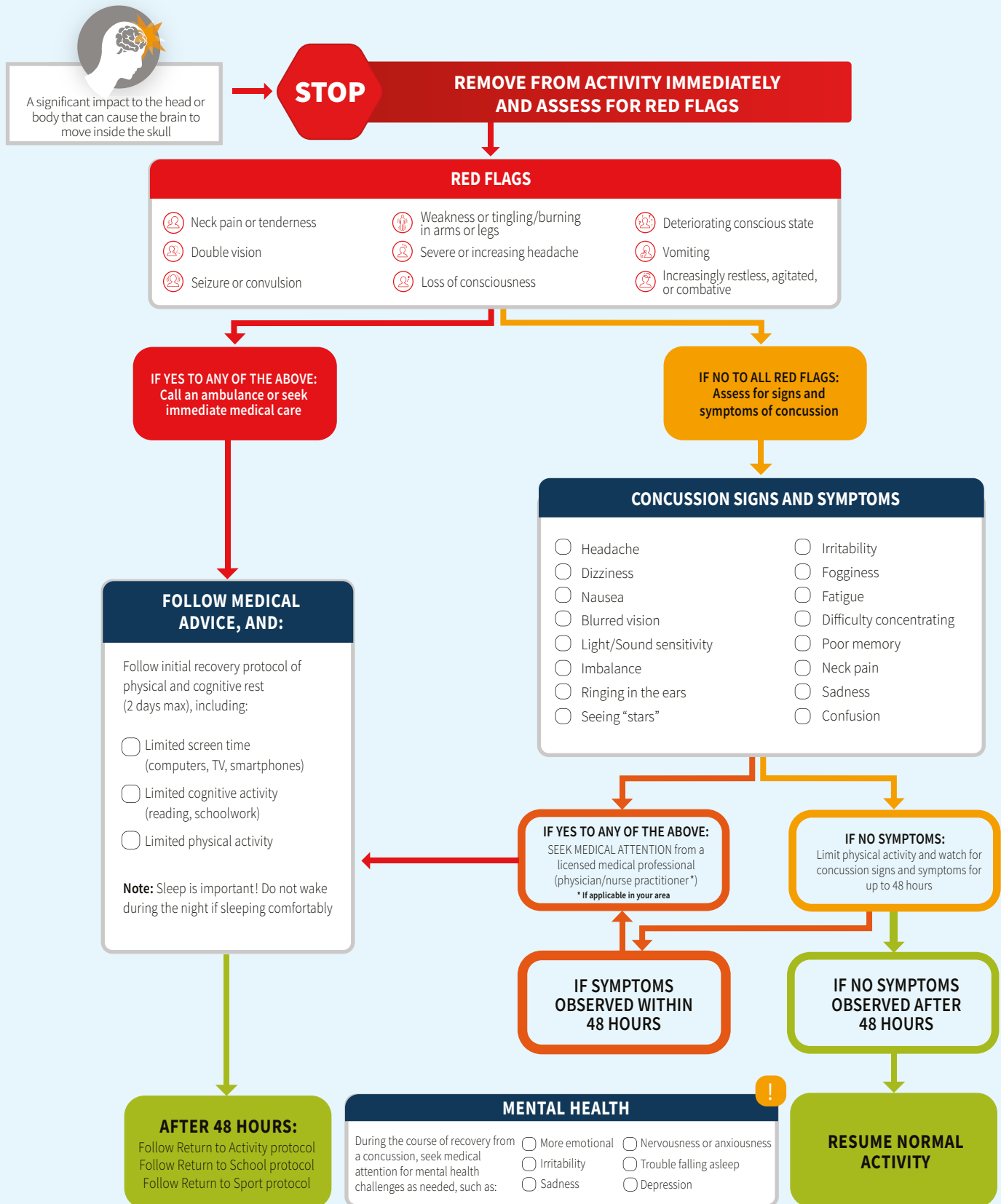
- **Return to Activity**
- **Return to School**
- **Return to Sport**

The recovery period may be influenced by:

- Prior concussions
- History of headaches or migraines
- Learning disabilities
- Mental health issues
- ADHD
- Use of drugs or alcohol
- Returning to activities too soon
- Lack of family or social supports

Proper management of a concussion can reduce the risk of complications. It is important that the individual has successfully returned to school or work before fully returning to sport and physical recreation activities. Returning to activity too early may result in more severe symptoms and potentially long-term problems.

CATT Concussion Pathway





Concussion Awareness Training Tool (CATT) Preseason Education Signoff Sheet

The following signatures certify that the player or participant and his or her parent or caregiver (if applicable) have reviewed and understand the information included in the *CATT Concussion Information Sheet*.

Name of Player or Participant
(please print)

Signature

Date

Name of Parent or Caregiver
(please print)

Signature

Date

For more information on concussion, please visit cattonline.com.

CONCUSSION INCIDENT REPORT

DATE OF INCIDENT:	TIME OF INCIDENT:	NAME OF INDIVIDUAL:	AGE:
NAME OF PARENT/GUARDIAN: (IF UNDER 18 YEARS OF AGE)		NAME OF PERSON MONITORING PERSON AT SCENE:	
CONTACT INFORMATION:		CONTACT INFORMATION:	

What happened? Blow to the head Hit to the body

AT THE SCENE OF THE INCIDENT

STEP 1: DETERMINE IF THIS IS A MEDICAL EMERGENCY

A) FOLLOW BASIC FIRST AID

Danger
Response
Airway
Breathing
Circulation

B) IF THERE IS SERIOUS INJURY OR ANY OF THE RED FLAGS:










- Call 911
- Do not move the individual
- Stay with the injured individual and monitor them until Emergency Services arrives
- If the individual is wearing a helmet, do not remove it unless you are trained to do so

STEP 2: REMOVE THE INDIVIDUAL FROM PLAY OR ACTIVITY

If the injury is NOT an emergency, **remove the individual from activity** and do not let them return to play that day. The child needs to be seen by a doctor as soon as possible. While the child is waiting to be taken to a doctor, follow instructions in Step 3 (next page).

RED FLAG SYMPTOMS

If someone shows any of the following Red Flag Symptoms, **CALL 911** immediately.

-  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 3: MONITOR THE INDIVIDUAL

Do not leave the individual alone. If they are a child, ensure they are with a responsible adult at all times. In addition to the Red Flags, watch the following signs and symptoms and check off any that appear.

A) RECORD WHAT YOU SEE

Loss of consciousness	Balance problems	Dazed, blank, or vacant look	Comments:
Lying motionless on ground	Uncoordinated movement	Confusion	
Slow to get up	Grabbing or clutching head		

B) RECORD WHAT THE INDIVIDUAL IS SAYING

Headache	Double or fuzzy vision	Difficulty concentrating	Comments:
Dizzy	Sick	Numbness in arms or legs	
Confused	Don't feel right	Tired or drowsy	

C) ASK THESE QUESTIONS TO TEST MEMORY

Failure to answer any of these questions correctly may suggest a concussion. Repeat periodically and tick response.

5 to 12 years old	Time	Correct	Incorrect	Time	Correct	Incorrect	Time	Correct	Incorrect
Where are we now?									
Is it before or after lunch?									
What did you have last lesson/class?									
What is your teacher's name?									

13 years old and over	Time	Correct	Incorrect	Time	Correct	Incorrect	Time	Correct	Incorrect
What venue are you at today?									
Which half/period/quarter is it now?									
Who scored last in this game?									
What team did you play last week/game?									
Did your team win the last game?									

STEP 4: REFER TO PARENT/GUARDIAN

The parent or guardian should take the child to a doctor for assessment as soon as possible. Ideally this should be done on the same day as the injury and may require taking the child to an Emergency Department if they are unable to access their own doctor.

AT HOME

Do not leave the individual alone. Keep them in a calm environment. They should not return to sport or activity, and should be seen by a medical professional and/or monitored for delayed symptoms for 48 hours. **Do not give them any medication within the first 24-48 hours unless directed by a doctor.** There is evidence that some medications can worsen concussion symptoms and could increase potential risks associated with brain injuries.

MONITOR FOR SIGNS AND SYMPTOMS

If the individual shows one of the following symptoms, seek medical attention as soon as possible.










Thinking and Remembering	Emotional and Mood
Not thinking clearly	Easily upset or angered
Feeling slowed down	Sad
Unable to concentrate	Nervous or anxious
Unable to remember new information	More emotional
Physical	Sleep
Headache	Sleeping more than usual
Fuzzy or blurry vision	Sleeping less than usual
Nausea and vomiting	Having a hard time falling asleep
Dizziness	
Sensitivity to light or noise	
Balance problems	
Feeling tired or having no energy	

CONTINUE TO MONITOR AND RECORD INFORMATION

Signs and symptoms can be delayed for several hours or even days following a concussion incident. Problems caused by a head injury can get worse later that day or night. Your child should not be left alone in the first 24 hours. If your child's symptoms are getting worse or they develop new symptoms seek medical attention as soon as possible.

RED FLAG SYMPTOMS

If someone shows any of the following Red Flag Symptoms, **CALL 911** immediately.

-  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

THE FIRST NIGHT

An individual with a suspected concussion should not be left alone initially. On the first night, the individual should NOT BE WOKEN UP, but should be monitored throughout the night for anything out of the ordinary.

Only wake the individual if you have concerns about their breathing, changes in skin colour, or how they are sleeping. **Call 911 if the person is slow to wake or shows any of the Red Flag symptoms.** If they are sleeping normally, let them sleep to allow the brain to rest. Sleep is an important part of the recovery process.

You know the individual best. If they are showing any unusual behaviour, seek medical attention.

Medical Assessment Letter

Date: _____ Athlete's Name: _____

To whom it may concern,

Athletes who sustain a suspected concussion should be managed according to the *Canadian Guideline on Concussion in Sport*. Accordingly, I have personally completed a Medical Assessment on this patient.

Results of Medical Assessment

- ☐ This patient has not been diagnosed with a concussion and can resume full participation in school, work, and sport 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.

The goal of concussion management is to allow complete recovery of the patient's concussion by promoting a safe and gradual return to school and sport activities. The patient has been instructed to avoid all recreational and organized sports or activities that could potentially place them at risk of another concussion or head injury. Starting on _____ (date), I would ask that the patient be allowed to participate in school and low-risk physical activities as tolerated and only at a level that does not bring on or worsen their concussion symptoms. The above patient should not return to any full contact practices or games until the coach has been provided with a *Medical Clearance Letter* provided by a medical doctor or nurse practitioner in accordance with the *Canadian Guideline on Concussion in Sport*.

Other comments:

Thank-you very much in advance for your understanding.

Yours Sincerely,

Signature/print _____ M.D. / N.P. (circle appropriate designation)*

**In rural or northern regions, the Medical Assessment Letter may be completed by a nurse with pre-arranged access to a medical doctor or nurse practitioner. Forms completed by other licensed healthcare professionals should not otherwise be accepted.*

We recommend that this document be provided to the athlete without charge.

Return-to-School Strategy¹

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

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 Strategy¹

The following is an outline of the *Return-to-Sport Strategy* that should be used to help athletes, coaches, trainers, and medical professionals to partner in allowing the athlete to make a gradual return to sport activities. Activities should be tailored to create a sport-specific strategy that helps the athlete return to their respective sport.

An initial period of 24-48 hours of rest is recommended before starting their *Sport-Specific Return-to-Sport Strategy*. If the athlete experiences new symptoms or worsening symptoms at any stage, they should go back to the previous stage. It is important that youth and adult student-athletes return to full-time school activities before progressing to stage 5 and 6 of the *Sport-Specific Return-to-Sport Strategy*. It is also important that all athletes provide their coach with a *Medical Clearance Letter* prior to returning to full contact sport activities.

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.	

¹Source: 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->

Return to Sport

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.

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	
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: _____ _____	Note: Premature return to contact sports (full practice and game play) may cause a significant setback in recovery.

If new or worsening symptoms are experienced at any stage, go back to the previous stage for at least 24 hours. You may 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

www.cattonline.com



CONCUSSION AWARENESS
TRAINING TOOL

BC INJURY research and prevention unit
www.injuryresearch.bc.ca

Medical Clearance Letter

Date: _____ Athlete's Name: _____

To whom it may concern,

Athletes who are diagnosed with a concussion should be managed according to the *Canadian Guideline on Concussion in Sport* including the *Return-to-School* and *Return-to-Sport Strategies* (see page 2 of this letter). Accordingly, the above athlete has been medically cleared to participate in the following activities as tolerated effective the date stated above (please check all that apply):

- ☐ **Symptom-limiting activity (cognitive and physical activities that don't provoke symptoms)**
- ☐ **Light aerobic activity (Walking or stationary cycling at slow to medium pace. No resistance training)**
- ☐ **Sport-specific exercise (Running or skating drills. No head impact activities)**
- ☐ **Non-contact practice (Harder training drills, e.g. passing drills. May start progressive resistance training. Including gym class activities without a risk of contact, e.g. tennis, running, swimming)**
- ☐ **Full-contact practice (Including gym class activities with risk of contact and head impact, e.g. soccer, dodgeball, basketball)**
- ☐ **Full game play**

What if symptoms recur? Any athlete who has been cleared for physical activities, gym class or non-contact practice, and who has a recurrence of symptoms, should immediately remove himself or herself from the activity and inform the teacher or coach. If the symptoms subside, the athlete may continue to participate in these activities as tolerated.

Athletes who have been cleared for full contact practice or game play must be able to participate in full-time school (or normal cognitive activity) as well as high intensity resistance and endurance exercise (including non-contact practice) without symptom recurrence. Any athlete who has been cleared for full-contact practice or full game play and has a recurrence of symptoms, should immediately remove himself or herself from play, inform their teacher or coach, and undergo medical assessment by a medical doctor or nurse practitioner before returning to full-contact practice or games.

Any athlete who returns to practices or games and sustains a new suspected concussion should be managed according to the *Canadian Guideline on Concussion in Sport*.

Other comments:

Thank-you very much in advance for your understanding.

Yours Sincerely,

Signature/print _____ M.D. / N.P. (circle appropriate designation)*

**In rural or northern regions, the Medical Clearance Letter may be completed by a nurse with pre-arranged access to a medical doctor or nurse practitioner. Forms completed by other licensed healthcare professionals should not otherwise be accepted.*

We recommend that this document be provided to the athlete without charge.

Additional Resources

BJSM – The Concussion Recognition Tool 5th Edition (CRT5) (2017)

<http://bjsm.bmj.com/content/bjsports/51/11/872.full.pdf>

CATT – Return to School Protocol (2017)

<https://cattonline.com/wp-content/uploads/2017/10/CATT-Return-to-School-V11.pdf>

Parachute – Concussion Guide for Coaches and Trainers (2018)

<http://horizon.parachutecanada.org/wp-content/uploads/2014/10/Concussion-Coaches.pdf>

Parachute – Statement on Concussion Baseline Testing in Canada (2017)

<http://www.parachutecanada.org/downloads/injurytopics/BaselineTestingStatement-Parachute.pdf>

Parachute – Canadian Guideline on Concussion in Sport (2017)

http://www.parachutecanada.org/downloads/injurytopics/Canadian_Guideline_on_Concussion_in_Sport-Parachute.pdf

Parachute – Sport-Specific Return to Sport Protocols (2018) [LINK]

<https://cattonline.com/resources/?filter=coach,protocols-and-guidelines>

For more information and resources on concussion, please visit cattonline.com.