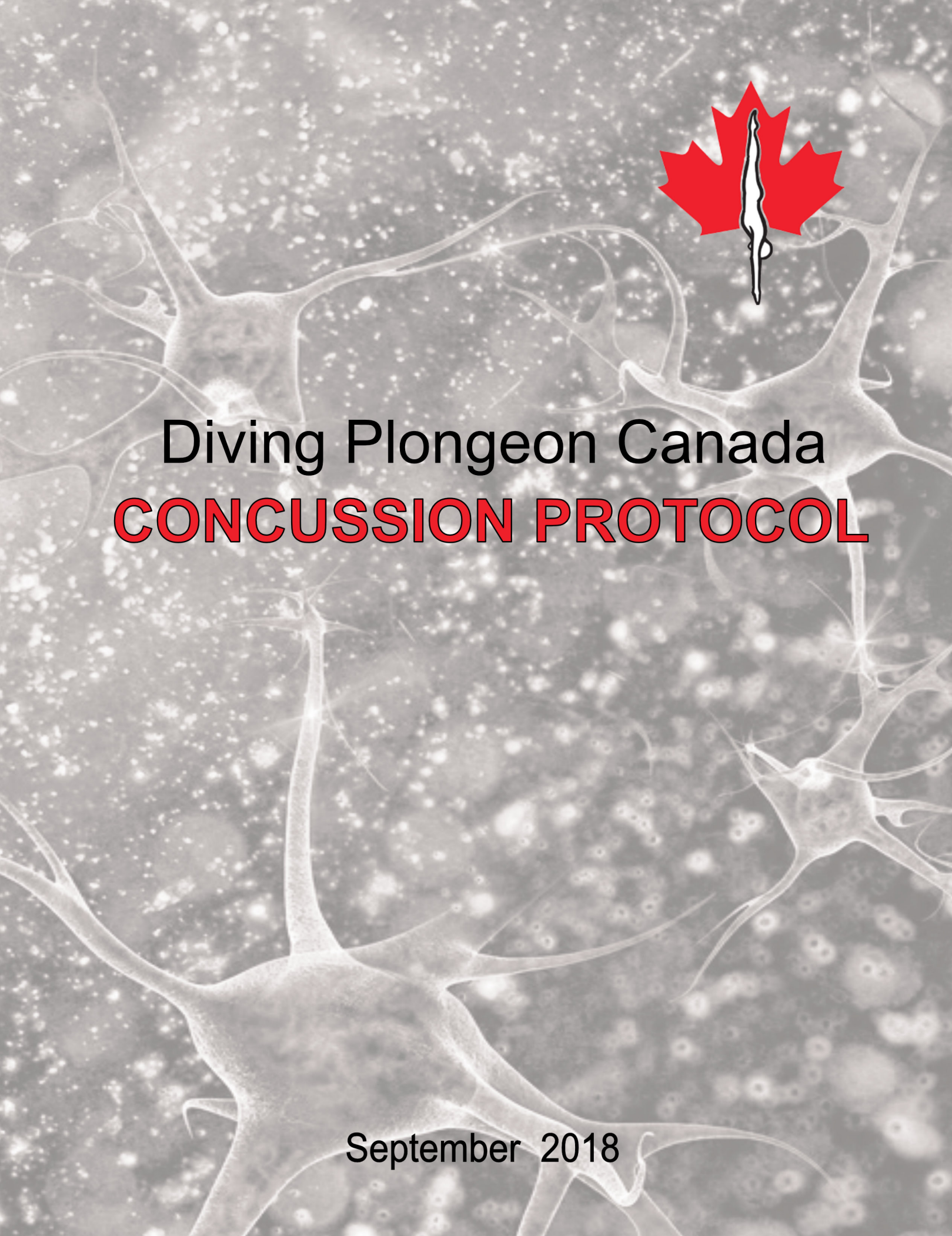

Diving Plongeon Canada

CONCUSSION PROTOCOL

September 2018

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1. Introduction

The **Diving Plongeon Canada Concussion Protocol** has been developed to help guide the management of athletes who may have a suspected concussion as a result of participation in Diving Plongeon Canada activities.

This protocol contains the information to convey at the start of every season, as well as the identificaiton, medical diagnosis and management of athletes who may have sustained a concussion during a sport activity. It aims to ensure that athletes who may have sustained a concussion receive timely and appropriate care and that the injury be properly managed to allow a safe return to their sporting activities

This protocol may not address every possible clinical scenario but was created to act as a starting point which includes the latest critical evidenced-based elements and most current expert consensus. This protocol is intended for use by all individuals who interact with athletes inside and outside the context of school and non-school based organized sports activity, including athletes, parents, coaches, officials, teachers, trainers and licensed healthcare professionals.

For a summary of the Diving Plongeon Canada Concussion Protocol please refer to the Diving Plongeon Canada Sport Concussion Pathway at the end of this document.

2. Pre-season Education

Despite recent increased attention focusing on concussion there is a continued need to improve concussion education and awareness.

Optimizing the prevention and management of concussion is closely linked to the yearly education of all stakeholders (athletes, parents, coaches, officials, teachers, trainers and licensed healthcare professionals).

This education is based on on current evidence-informed approaches that can help prevent concussions and more serious forms of head injury and help identify and manage an athlete with a suspected concussion.

Concussion education should include information on:

- the definition of concussion;
- possible mechanisms linked to injury;
- common signs and symptoms;
- steps that can be taken to prevent concussions and other injuries from occurring in sport;
- what to do when an athlete has suffered a possible concussion or more serious head injury;
- what measures should be taken to ensure proper medical assessment;
- *Return-to-School* and *Return-to-Diving Strategies*, and;
- return to sport medical clearance requirements

All parents and athletes are required to read and submit a signed copy of the *Pre-season Concussion Education Sheet* to their coach prior to the first practice of the season.

In addition to reviewing the information on concussion, it is also important that all sport stakeholders have a clear understanding of the **Diving Plongeon Canada Concussion Protocol.** To this end, a pre-season in-person orientation sessions for athletes, parents, coaches and other sport stakeholders can be planned.

An example of Pre-season Concussion Education Sheet can be found at the end of this document.

3. Head Injury Recognition

Although the formal diagnosis of concussion should only be made following a medical assessment, all sport stakeholders including athletes, parents, teachers, coaches, teachers, officials and licensed healthcare professionals are responsible for the identification and reporting of athletes who may demonstrate visual signs of a head injury or who report concussion-related symptoms.

This is particularly important givent that the vast majority of sport and recreation venues will not have access to on-site licensed healthcare professionals.

A concussion should be suspected:

- in any athlete who sustains a significant impact to the head, face, back of the 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 (CRT5)
- if a diver 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.
- In some cases, an athlete may demonstrate signs or symptoms of a more severe head or spine injury including convulsions, worsening headaches, vomiting or neck pain. If an athlete demonstrates any of the '**RED FLAGS**' indicated in the Concussion Recognition Tool 5 (CRT5), a more severe head or spine injury should be suspected, and Emergency Medical Assessment should be pursued.

4. Onsite Medical Assesment

Depending on the suspected severity of the injury, an initial assessment may be completed by emergency medical professionals or by an on-site licensed healthcare professional where available. In cases where an athlete loses consciousness or it is suspected an athlete might have a more severe head or spine injury, Emergency Medical Assessment by emergency medical professionals should take place **(see 4a below).** If a more severe injury is not suspected, the athlete should undergo Sideline Medical Assessment or Medical Assessment, depending on if there is a licensed healthcare professional present **(see 4b below).**

4a. Emergency Medical Assesment

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

Coaches, parents, teachers, trainers and officials should not make any effort to remove equipment or move the athlete and wait until the ambulance arrives. After the emergency medical services staff has completed the Emergency Medical Assessment, the athlete should be transferred to the nearest hospital for a Medical Assessment. In the case of youth under 18 years of age, the athlete's parents should be contacted immediately to inform them of their child's injury. For athletes over 18 years of age, their emergency contact person should be contacted if one has been provided.

4b. Sideline Medical Assesment

If an athlete is suspected of sustaining a concussion and there is no concern for a more serious head or spine injury, the player should be immediately removed from the field of play.

Scenario 1: If a licensed healthcare professional is present
The athlete should be taken to a quiet area and undergo Sideline Medical Assessment using the Sport Concussion Assessment Tool 5 (SCAT5) or the Child Sport Concussion Assessment Tool 5 (Child SCAT5). The SCAT5 and Child SCAT5 are clinical tools that should only be used by a licensed healthcare professional experienced in their use. It is important to note that the results of SCAT5 and Child SCAT5 testing can be normal in the case of an acute concussion. As such, these tools can be used by licensed healthcare professionals to document initial neurological status but should not be used to make sideline return-to-sport decisions in young athletes. Any young athlete who is suspected of having sustained a concussion must not return to training or competition and must be referred for Medical Assessment.
If a young athlete is removed from competition or training following a significant impact and has undergone assessment by a licensed healthcare professional, but there are NO visible signs of a concussion, the athlete can then return to training or competition but should be monitored for delayed symptoms.

In the case of national team-affiliated athletes removed from competition or training due to a suspected concussion, the therapist, licensed sport physiotherapist or medical doctor providing medical coverage for the sporting event may make the determination that a concussion has not occurred based on the results of a Medical Assessment. In these cases, the athlete may be returned to the competition or practice without a *Medical Clearance Letter* from a licensed physician, but this situation should be clearly communicated to the coaching staff. Athletes cleared to return to training or competition should be monitored for delayed symptoms. If the athlete develops any delayed symptoms the athlete should be removed and undergo medical assessment by a medical doctor or nurse practitioner.

Scenario 2: If there is no licensed healthcare professional present
The athlete should be referred immediately for medical assessment by a medical doctor or nurse practitioner, and the athlete may not return to training or competition until medical clearance is obtained.

5. Medical Assesment

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

to nurse practitioners, medical doctors[1] that are qualified to evaluate patients with a suspected concussion include: pediatricians; family medicine, sports medicine, emergency department, internal medicine, and rehabilitation (physiatrists) physicians, neurologists and neurosurgeons.

In geographic regions of Canada with limited access to medical doctors (i.e. rural or northern communities), a licensed healthcare professional (i.e. nurse) with pre-arranged access to a medical doctor or nurse practitioner can facilitate this role. The medical assessment can determine whether the athlete has suffered a concussion or not. Athletes with a diagnosed concussion should be provided with a *Medical Assessment Letter* confirming the concussion diagnosis. Athletes that are determined to not have sustained a concussion will be allowed to resume their sport but must obtain a doctor's note allowing them to return their sporting activities, including training and competitions.

An example of Medical Assessment Letter can be found at the end of this document.

6. Concussion Management

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

Athletes diagnosed with a concussion 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 sport activities. Athletes diagnosed with a concussion are to be managed according to their *Return-to-School and Return-to-Diving Strategy* under the supervision of a medical doctor or nurse practitioner. When available, athletes should be encouraged to work with the team athletic therapist or physiotherapist to optimize progression through their *Return-to-Diving Strategy.* Once the athlete has completed their *Return-to-School and Return-to-Diving Strategy* and are

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

deemed to be clinically recovered from their concussion, the medical doctor or nurse practitioner can prepare the athlete for a full return to sports and school activities and issue a *Medical Clearance Letter.*

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

An example of Medical Clearance Letter as well as a Symptom Follow-up Sheet can be found at the end of this document.

6a. Return-to-School Strategy

The following is an outline of the *Return-to-School Strategy* that should be used to help student-athletes, parents and teachers to collaborate 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. Athletes should also be encouraged to ask their school if they have a school-specific Return-to-Learn Program in place to help student-athletes make a gradual return to school.

Children and teens should return to school activities very gradually and at their own pace. See Recommendations for children and youth regarding concussion on p.23 of this document.

Stage		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

6b. Return-to-Diving Strategy

The following is an outline of the *Return-to-Diving 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. An initial period of 24-48 hours of rest is recommended before starting any concussion protocol. It is important that youth and adult student-athletes return to full-time school activities before progressing to *Return-to-Diving Strategy*. It is also important that all athletes provide their coach with a *Medical Clearance Letter* prior to returning to resuming training.

The **Table of Steps to Return to Post Concussion Training** (on the next page) needs to be applied in conjuction with the **Rules for Implementing the Table to Return to Post Concussion** and with the **Concussion Management Protocol for Trainers**.

Table of Steps to Return to Post Concussion Training

Designed by Marie-Claude Saint-Amour, Pht, dip. Physio of sport, FCAMPT (Version 3-1)

Day	Physical preparation	Dry land	Dry board and Trampo	Pool deck and in the water	1 meter	3 meters	Tower
1	Rest	Rest	Rest	Rest	Rest	Rest	Rest
2	Stationary bike (low intensity)	Stretching Core/stabilization training Proprioceptive exercises (low intensity)					
3	Stationary bike (moderate intensity) Swimming (low intensity 20 minutes) Muscle training (low intensity)	Stretching/core exercises Proprioceptive exes on balance boards/ground Simulations (no jump)					
4	Warm up (out of water) Progress muscle training	Armstand against the wall Jumps (Intensity: 50-75%) Simulations (no jump) Vestibular stimulation (twist on the floor, rolls) Coordination exercises (agility ladder, etc)		Head down postion in water Torpedo in the water			
5	Warm up (out of water) Normal muscle training	Armstand Jumps (Intensity: 100%) Hurdle Simulations with jump Vestibular (twist floor/standing, cartwheel, rolls) Coordination exercises (agility ladder, etc)	Dry board: 100/200 (no hurdle or approach) 100/200 with hurdle/approach Trampo: 100 (non continuous) 100 with approach	No hurdle jump Front/back fall Head down in deep water	No hurdle jump Front/back fall	No hurdle jump	100/200 3m/5m
6		Armstand (done repeatedly) Continuous jumps (Intensity: 100%) without rest More complex vestibular/coordination exercises	Trampo: continuous jumps Dry board: 100 with multiple bounce	101/201/301/401	101/201/301/401 (without hurdle and with hurdle)	100/200 with hurdle/approach Front/back fall	Front/back fall 3m/5m 100/200 7m/10m
7		102-202-302-402	102-202-302-402 without and with hurdle/approach	102-202-302-402 610-621 small tower	102-202-302-402	101/201/301/401 no hurdle	101/201/301/401 3m/5m Front/back fall 7m
8		Dryland repetitive twists	X01 and X03 (landing on the back) 5122-5221	5201-5101	103-203-403-303	101/201/301/401 (without hurdle and with hurdle)	101/201/301/401 7m Front/back fall 10m
9			104-204-304-404	520X-510X	104-204-304-404	103-203-403-303	103-203-403-303 5m/7m 611-621 3m/5m 101/201/301/401 7m/10m
10					10X-20X-30X-40X 5122-5221-5321	105-205-305-405	105-205-305-405 5m/7m 612-622 3m/5m 103-203-403-303 7m/10m
11					51XX-52XX-53XX	5132-5231-5331 10X-20X-30X-40X	105-205-305-405 7m/10m 6XX 3m/5m 612-622 7m/10m 5122-5221-5321 3m 5132-5231-5331 3m/5m
12						51XX-52XX-53XX	10X-20X-30X-40X 7m/10m 5132-5231-5331 7m-10m 51XX-52XX-53XX 3m/5m
13							6XX 7m/10m 61XX-62XX 3m/5m 51XX-52XX-53XX 7m/10m
14							61XX-62XX 7m/10m

Rules for Implementing the Table of Steps to Return to Post Concussion Training

Designed by Marie-Claude Saint-Amour, Pht, dip. Physio of sport, FCAMPT
Version 3, 2018

I. A complete rest period of 24-48h after the injury occurred is recommended. If symptoms are getting better after the initial rest period, the athlete can then start the Return-to-School Strategy while closely monitoring and keeping symptoms under control (activities should not bring on or worsen their symptoms). Once symptoms are under control, the athlete can start the Return-to-Diving Strategy.

II. **Get the approval from the team physician (or other physician) before resuming training.**

III. **Never start step #2 when there are still some symptoms, whatever they are.**

IV. Monitor the athlete to make sure there is no recurrence of symptoms during movements/exercises and during the first 24hr following training.

V. If during a step the athlete has symptoms that reoccur, he/she must stop training right away and rest for 24hr starting when symptoms will have disappeared. Then, he/she will be allowed to resume the protocol at the step prior to where symptoms occurred and go on when there are no symptoms.

VI. In each step of the protocol, when starting new movements, only try to do 3 or 4 repetitions. We want a gradual exposure to increased stress on the brain. The items which were permitted in the prior step can be done without any restriction.

VII. With children and youth/teenagers (<18 year old), the Return-to-School Strategy should be very gradual and may be longer (see ***point 6a*** of this document for recommendations) which means the period of time before going back to sport specific activities may be longer than with adults. Once the child is cleared to go back to physical activities, each step of the Return-to-Diving Strategy can last between 2 and 4 days, instead of 24h recommended for adults (at the physician's discretion). Children and teenagers should definitely not return to sport until they have successfully returned to school. Early introduction of symptom-limited physical activity is recommended.

VIII. If an athlete suffers from a second or third concussion, return to diving using the protocol should be even more gradual than for a first concussion. Each step of the protocol should then last between 2 and 4 days, rather than 24 hrs.

The protocol to return to diving is not based on the difficulty of the dive itself. It is mostly based on the amount of stress put on the brain during the execution of the dive. Therefore, it is possible that during the protocol, some technically easier dives will be permitted later in the process even if they are more simple to execute. It is simply that the amount of stress put on the brain is greater or that the motor command in those dives (ex: arm stands) is more complex.

Glossary

Warm-up	The main goal is to increase the body temperature by doing exercise
Fall	No hurdle or no jump while entering water head first
Head down position in water	Full body immersion in the water with head facing down (the athlete must not dive to take that position, he/she must assume this position directly in the water)
Hurdle/Approach	Walk on the springboard/platform
Simulations	Sequence of diving motion on the floor (arm movement, opening...) with mental visualization
Torpedo	Full body immersion in the water. The athlete is then asked to push off the wall of the pool to propel himself/herself (on the stomach and back)
Muscle training	Muscle training will progress will taking exercise intensity, volume and complexity into consideration. For example, in step 3 of the protocol, the athlete can begin light muscle training. In that case, the weights must be adapted to limit intensity, volume and complexity of the effort. If one of these elements needs to be increased, we need to lessen the two others. So, if the complexity of the exercise increases, intensity and volume shall be decreased to compensate.

Concussion Management Protocol for Coaches

Designed by Marie-Claude Saint-Amour, Pht, dip. Physio of sport, FCAMPT, 2018

Here are the different steps coaches should follow:

I. When an athlete complains of headache, dizziness, nausea or of any other symptom **or** that he/she missed a dive (flat), remove the athlete from training/competition.
II. Ask him/her about the different symptoms he/she is experiencing (headache, dizziness, nausea, dazzling, ringing in the ears, feeling of being in a fog, etc…).
III. **If any symptom is present**, remove from training or competition.
IV. If the team physiotherapist/physician is present on pool deck or nearby, ask him/her to see the athlete.
V. Explain to the athlete that he/she must be resting **COGNITIVELY** (no computer, no reading, nothing demanding concentration) and **PHYSICALLY** until he/she sees the team physician. A temporary school break may be necessary for adequate brain rest.
VI. Make an appointment with the team physician as soon as possible for a more detailed evaluation. If the team physician is not available the next day, ask the diver to see the team physiotherapist. He/she will be able to communicate with the team physician to transmit his/her detailed evaluation.
VII. Explain to family members what happened and give them general advice following a concussion.
VIII. Following the all-clear from the physician for a return to diving, the athlete will be allowed to return gradually to training according to the steps in the concussion protocol. Duration of each step will depend on the athlete's age, previous history of concussion and how the athlete responds while on the protocol.
IX. A neuropsychological test may be considered when the athlete reaches step 3 or 4.

General advice following a concussion:

- Never leave the athlete alone during the first 24hrs following the incident.
- It is recommended that the athlete remains awake for a few hours following the incident (but it is not necessary to wake him up during the night).
- There is no medication proven beneficial to minimize symptoms or treat concussions more quickly.
- The athlete must rest cognitively and physically, it's the only way to heal! If needed, the athlete could temporarily be removed from school.
- The athlete should try to sleep between 12 to 14hrs a day to allow his/her brain to rest (including naps).
- The athlete should not use drugs or alcohol in the days following the incident.

When should the athlete go to the emergency room, even if he/she has already seen a physician?

- Increasing headache
- Increasing drowsiness

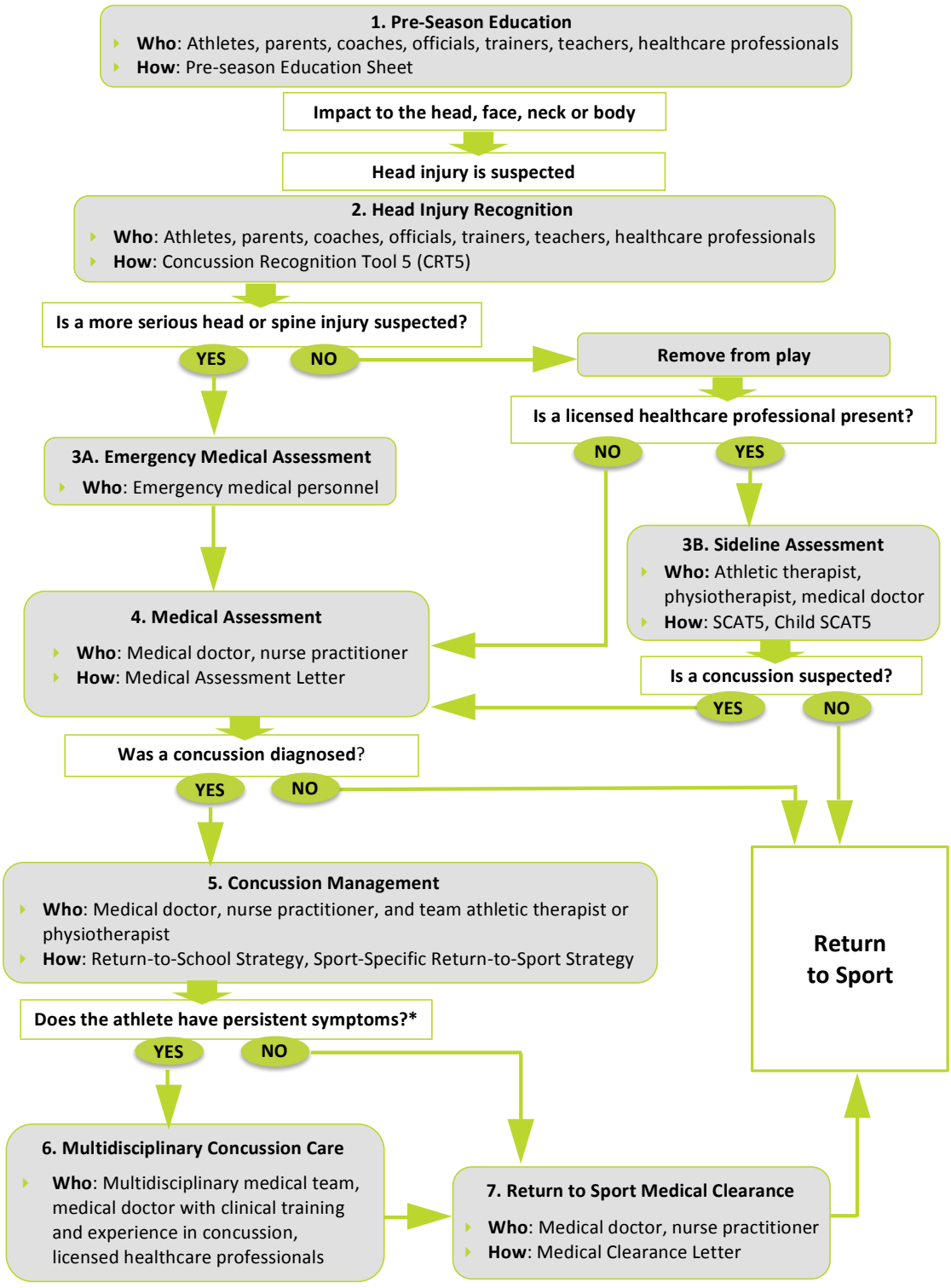
- Increasing confusion (incoherent speech, disorientation…)
- Two sessions of vomiting or more (3 if a child) in the 24hrs following a concussion
- Bleeding or liquid dripping from nose or ears
- Convulsions/epilepsy
- Any new neurological symptom (weakness in the leg/arm, loss of balance, double vision, speech trouble…)
- Excessive crying (child)

7. Multidisciplinary Concussion Care

Most athletes who sustain a concussion while participating in sport will make a complete recovery and be able to return to their full school and sport schedule within 1 to 4 weeks of injury. However, approximately 15-30% of individuals will experience symptoms that persist beyond this time frame. If possible, individuals who experience persistent post-concussion symptoms (>4 weeks for young athletes, >2 weeks for adult athletes) may benefit from a referral to a medically supervised multidisciplinary concussion clinic that has access to professionals with licensed training in traumatic brain injury that may include experts in sport medicine, neuropsychology, physiotherapy, occupational therapy, neurology, neurosurgery, and rehabilitation medicine.

Referral to a multidisciplinary clinic for assessment should be made on an individualized basis at the discretion of an athlete's medical doctor or nurse practitioner. If access to a multidisciplinary concussion clinic is not available, a referral to a medical doctor with clinical training and experience in concussion (e.g. a sport medicine physician, neurologist, or rehabilitation medicine physician) should be considered for the purposes of developing an individualized treatment plan. Depending on the clinical presentation of the individual, this treatment plan may involve a variety of health care professionals with areas of expertise that address the specific needs of the athlete based on the assessment findings.

Diving Plongeon Canada Concussion Pathway



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

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, trainers 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
- ☐ Clutching head
- ☐ Blank or vacant stare
- ☐ Balance, gait difficulties, motor incoordination, stumbling, slow labored movements
- ☐ Facial injury after head trauma
- ☐ Disorientation or confusion or inability to respond appropriately to questions

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 training or competition. Any athlete who is suspected of having sustained a concussion during sports must not be allowed to return to the same event 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 the Return-to-Diving Strategy.

Return-to-School Strategy

Stage		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

Return-to-Diving Strategy

Designed by Marie-Claude Saint-Amour, Pht, dip. Physio of sport, FCAMPT

Version 3-1, January 2016

See the complete Return-to-Diving Strategy on point 6b of *Diving Plongeon Canada's Concussion Management* document

Day	Physical preparation	Dry land	Dry board and Trampo	Pool deck and in the water	1 meter	3 meters	Tower
1	Rest	Rest	Rest	Rest	Rest	Rest	Rest
2	Stationary bike (low intensity)	Stretching Core/stabilization training Proprioceptive exercises (low intensity)					
3	Stationary bike (moderate intensity) Swimming (low intensity 20 minutes) Muscle training (low intensity)	Stretching/core exercises Proprioceptive exes on balance boards/ground Simulations (no jump)					
4	Warm up (out of water) Progress muscle training	Armstand against the wall Jumps (Intensity: 50-75%) Simulations (no jump) Vestibular stimulation (twist on the floor, rolls) Coordination exercises (agility ladder, etc)		Head down postion in water Torpedo in the water			
5	Warm up (out of water) Normal muscle training	Armstand Jumps (Intensity: 100%) Hurdle Simulations with jump Vestibular (twist floor/standing, cartwheel, rolls) Coordination exercises (agility ladder, etc)	Dry board: 100/200 (no hurdle or approach) 100/200 with hurdle/approach Trampo: 100 (non continuous) 100 with approach	No hurdle jump Front/back fall Head down in deep water	No hurdle jump Front/back fall	No hurdle jump	100/200 3m/5m
6		Armstand (done repeatedly) Continuous jumps (Intensity: 100%) without rest More complex vestibular/coordination exercises	Trampo: continuous jumps Dry board: 100 with multiple bounce	101/201/301/401	101/201/301/401 (without hurdle and with hurdle)	100/200 with hurdle/approach Front/back fall	Front/back fall 3m/5m 100/200 7m/10m
7		102-202-302-402	102-202-302-402 without and with hurdle/approach	102-202-302-402 610-621 small tower	102-202-302-402	101/201/301/401 no hurdle	101/201/301/401 3m/5m Front/back fall 7m
8		Dryland repetitive twists	X01 and X03 (landing on the back) 5122-5221	5201-5101	103-203-403-303	101/201/301/401 (without hurdle and with hurdle)	101/201/301/401 7m Front/back fall 10m
9			104-204-304-404	520X-510X	104-204-304-404	103-203-403-303	103-203-403-303 5m/7m 611-621 3m/5m 101/201/301/401 7m/10m
10					10X-20X-30X-40X 5122-5221-5321	105-205-305-405	105-205-305-405 5m/7m 612-622 3m/5m 103-203-403-303 7m/10m
11					51XX-52XX-53XX	5132-5231-5331 10X-20X-30X-40X	105-205-305-405 7m/10m 6XX 3m/5m 612-622 7m/10m 5122-5221-5321 3m 5132-5231-5331 3m/5m
12						51XX-52XX-53XX	10X-20X-30X-40X 7m/10m 5132-5231-5331 7m-10m 51XX-52XX-53XX 3m/5m
13							6XX 7m/10m 61XX-62XX 3m/5m 51XX-52XX-53XX 7m/10m
14							61XX-62XX 7m/10m

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.

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

Medical Assessment Letter

Name of Athlete: _____ Date: _____

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.*

Medical Clearance Letter

Name of Athlete: _____ Date: _____

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.*

Symptom Follow-Up Sheet

Designed by Marie-Claude Saint-Amour, Pht, dip. Physio of sport, FCAMPT

Name of Athlete :_____

Date : _____ Examiner : _____

Post-MTBI Symptoms.

Check with the diver the list of symptoms below. Ask the athlete to rate the severity of each symptom using the 0 to 6 severity scale.

Scale of assessment of post-traumatic cranio-cerebral symptoms

	None		Moderate				Severe		None		Moderate				Severe
Dizziness	0	1	2	3	4	5	6	Emotional Liability	0	1	2	3	4	5	6
Headache	0	1	2	3	4	5	6	Irritability	0	1	2	3	4	5	6
Nausea	0	1	2	3	4	5	6	Sadness	0	1	2	3	4	5	6
Vomiting	0	1	2	3	4	5	6	Nervousness	0	1	2	3	4	5	6
Balance problems	0	1	2	3	4	5	6	Numbness	0	1	2	3	4	5	6
Difficulty falling asleep	0	1	2	3	4	5	6	Feeling Slowed Down	0	1	2	3	4	5	6
Falling asleep earlier than usual	0	1	2	3	4	5	6	Feeling dazed and confused	0	1	2	3	4	5	6
Drowsiness	0	1	2	3	4	5	6	Difficulty focusing	0	1	2	3	4	5	6
Sensivity to light	0	1	2	3	4	5	6	Loss of memory	0	1	2	3	4	5	6
Sensitivity to sound	0	1	2	3	4	5	6	Others	0	1	2	3	4	5	6

Additional Online Resources

Guidelines for Children and Youth regarding concussion
https://www.thechildren.com/departments-and staff/departments/department-of-concussions

Canadian Guidelines on Concussion in Sports (Parachute)
http://www.parachutecanada.org/downloads/injurytopics/Canadian_Guideline_on_Concussion_in_Sport-Parachute.pdf

Concussion Recognition Tool 5 (CRT5)
http://www.parachutecanada.org/downloads/resources/CRT5.pdf

Sport Concussion Assessment Tool (SCAT5)
http://www.parachutecanada.org/downloads/injurytopics/SCAT_5.pdf

Child Sport Concussion Assessment Tool (Child SCAT5; child aged 5-12 years old)
http://www.parachutecanada.org/downloads/injurytopics/Child_SCAT5.pdf

Education Summary Sheets

for Coaches
http://www.parachutecanada.org/downloads/resources/Concussion-Coaches.pdf

for Athletes
http://www.parachutecanada.org/downloads/resources/Concussion-Athletes.pdf

for Parents and Caregivers
http://www.parachutecanada.org/downloads/resources/Concussion-Parents-Caregivers.pdf

Online Training and Learning Opportunities

Concussion Education Application (for Apple, Android and Web version)
http://www.parachutecanada.org/concussion/whattodo

Making HeadWay Concussion E-Learning
https://www.coach.ca/-p153487

Concussion Awareness Training Tool - https://cattonline.com/