

Concussion Protocol Harmonization Project: Guide for updating a harmonized protocol

Purpose

This tool will help you understand how to update your harmonized protocol to be aligned with the Canadian Guideline on Concussion in Sport, 2nd edition (2024).

How to use this tool

Updates are listed for each of the seven areas of the harmonized protocol:

- **Required changes** identify where a recommendation or tool has changed.
- **Suggested changes** identify ways the protocol template has been improved based on use and feedback. Suggested changes do not reflect changes to evidence.

Use these to update your organization's harmonized protocol to the current version.

If your organization does not have a previous harmonized protocol (i.e., a protocol aligned with the first edition of the Canadian Guideline on Concussion in Sport, 2017), use the **Canadian Harmonized Sport Concussion Protocol Template** instead of this tool.

More information

Visit www.parachute.ca/guideline

1. Pre-Season Education

Required changes: None

2. Head Injury Recognition

Required changes:

- Replace Concussion Recognition Tool 5 (CRT5) with Concussion Recognition Tool 6 (CRT6)

Suggested changes:

- Clearer communication of when to suspect a concussion:

A concussion should be suspected if an athlete sustains an impact to the head, face, neck or body and:

- **demonstrates one or more observable signs** of a suspected concussion (as detailed in the Concussion Recognition Tool 6), OR
- **reports one or more symptoms** of suspected concussion (as detailed in the Concussion Recognition Tool 6).

This includes cases where the impact wasn't witnessed, but anyone witnesses the athlete exhibiting one or more observable signs of suspected concussion or the athlete reports one or more symptoms of suspected concussion to one of their peers, parents/caregivers, coaches or teachers.

- Add guidance on delayed signs and symptoms:

Delayed signs and symptoms

If an athlete is removed from play following an impact for cautionary reasons, but there are no observable signs or symptoms of a suspected concussion, then the athlete can be returned to play but should be monitored for delayed symptoms for up to 48 hours.

- Add guidance on red flags (this is in addition to guidance in 3a. Emergency medical assessment):

Red flag symptoms

In some cases, an athlete may show signs or symptoms that potentially indicate a more severe head or spine injury, including loss of consciousness, convulsions, worsening headaches, repeated vomiting or neck pain (see a detailed list in the Concussion Recognition Tool 6).

If an athlete demonstrates any red flags, a more severe head or spine injury should be suspected, principles of first aid should be followed and emergency medical assessment should be pursued.

3. Onsite Medical Assessment

3a. Emergency Medical Assessment

Required changes: None

3b. Sideline Medical Assessment

Required changes:

- Replace Sport Concussion Assessment Tool 5 (SCAT5) with Sport Concussion Assessment Tool – 6th Edition (SCAT6)
- Replace Child Sport Concussion Assessment Tool 5 (SCAT5) with Child Sport Concussion Assessment Tool – 6th Edition (Child SCAT6)

4. Medical Assessment

Required changes:

- Update Medical Assessment Letter (use Medical Assessment Letter Template 2024)

Suggested changes:

- Add acknowledgement that scope of practice for licensed healthcare professionals can vary by province and territory.

Scope of practice for licensed healthcare professionals can vary by province and territory. Of note:

- In Manitoba, physician assistants can diagnose concussion.
- In Quebec, nurse practitioners cannot diagnose concussion. The role of physiotherapists in the assessment and management of concussion is specified. [Learn more](#)

5. Concussion Management

Return-to-School Strategy

Required changes:

- Replace “If the student-athlete experiences new symptoms or worsening symptoms at any stage, they should go back to the previous stage” with:

It is common for a student’s symptoms to worsen slightly with activity. This is acceptable as they progress through steps so long as the symptom exacerbation is:

- **mild:** Symptoms worsen by only one to two points on a zero-to-10 scale, and
- **brief:** Symptoms settle back down to pre-activity levels within an hour.

If the student’s symptoms worsen more than this, they should pause and adapt activities as needed.

- Replace the Return-to-School Strategy table with:

Step	Activity	Description	Goal of each step
1	Activities of daily living and relative rest (first 24 to 48 hours)	<ul style="list-style-type: none"> ○ Typical activities at home (e.g. preparing meals, social interactions, light walking) that do not result in more than mild and brief worsening of symptoms ○ Minimize screen time 	Gradual reintroduction of typical activities
After a maximum of 24 to 48 hours after injury, progress to step 2.			
2	School activities with encouragement to return to school (as tolerated)	<ul style="list-style-type: none"> ○ Homework, reading or other light cognitive activities at school or at home ○ Take breaks and adapt activities if they result in more than mild and brief worsening of symptoms ○ Gradually resume screen time, as tolerated 	Increase tolerance to cognitive work and connect socially with peers
If the student can tolerate school activities, progress to step 3.			
3	Part-time or full days at school with accommodations (as needed)	<ul style="list-style-type: none"> ○ Gradually reintroduce schoolwork ○ Build tolerance to the classroom and school environment over time. Part-time school days with access to breaks throughout the day and other accommodations may be required ○ Gradually reduce accommodations related to the concussion and increase workload 	Increase academic activities.
If the student can tolerate full days without accommodations for concussion, progress to step 4.			

4	Return to school full-time	<ul style="list-style-type: none"> ○ Return to full days at school and academic activities, without accommodations related to the concussion ○ For return to sport and physical activity, including physical education class, refer to the Return-to-Sport Strategy 	Return to full academic activities.
Return to school is complete.			

Table adapted from: Patricios, Schneider et al., 2023; Reed, Zemek et al., 2023

Return-to-Sport Strategy

Important: Please take note that the recommended timing for medical clearance has changed.

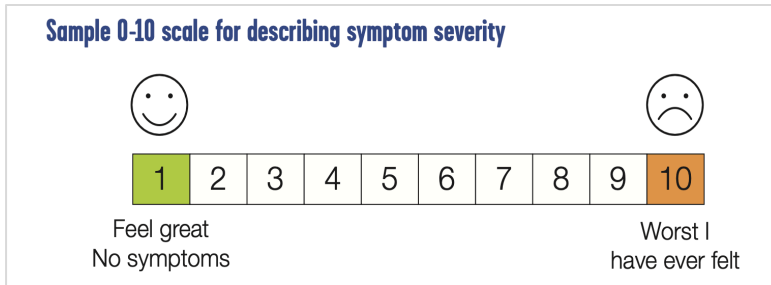
Required changes:

- Replace “An initial period of 24-48 hours of rest is recommended before starting the *Sport-Specific Return-to-Sport Strategy*. The athlete should spend a minimum duration of 24 hours without symptom increases at each stage before progressing to the next one. 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” with:

The athlete should spend a minimum of 24 hours at each step before progressing on to the next. It is common for an athlete’s symptoms to worsen slightly with activity. This is acceptable as they progress through steps 1 to 3 of return to sport, so long as symptom exacerbation is:

- **mild:** symptoms worsen by only one to two points on a zero-to-10 scale, and
- **brief:** symptoms settle back down to pre-activity levels within an hour.

If the athlete’s symptoms worsen more than this, they should stop the activity and try resuming the next day at the same step.



Before progressing to step 4 of the sport-specific Return-to-Sport Strategy, athletes must:

- successfully complete all steps of the Return-to-School Strategy (if applicable), and
- provide their coach with a Medical Clearance Letter indicating they have been medically cleared to return to activities with risk of falling or contact.

If the athlete experiences concussion symptoms after medical clearance (i.e., during steps 4 to 6), they should return to step 3 to establish full resolution of symptoms. Medical clearance will be required again before progressing to step 4.

- Replace the Return-to-Sport Strategy table with:

Step	Activity	Activity details	Goal of each step
1	Activities of daily living and relative rest (first 24 to 48 hours)	<ul style="list-style-type: none"> ○ Typical activities at home (e.g. preparing meals, social interactions, light walking) that do not result in more than mild and brief worsening of symptoms ○ Minimize screen time 	Gradual reintroduction of typical activities.
After a maximum of 24 to 48 hours after injury, progress to step 2.			
2	2A: Light effort aerobic exercise	<ul style="list-style-type: none"> ○ Start with light aerobic exercise, such as stationary cycling and walking at a slow to medium pace ○ May begin light resistance training that does not result in more than mild and brief worsening of symptoms ○ Exercise up to approximately 55% of maximum heart rate ○ Take breaks and modify activities as needed 	Increase heart rate.
	2B: Moderate effort aerobic exercise	<ul style="list-style-type: none"> ○ Gradually increase tolerance and intensity of aerobic activities, such as 	

		<p>stationary cycling and walking at a brisk pace</p> <ul style="list-style-type: none"> ○ Exercise up to approximately 70% of maximum heart rate ○ Take breaks and modify activities as needed 	
If the athlete can tolerate moderate aerobic exercise, progress to step 3.			
3	Individual sport-specific activities, without risk of inadvertent head impact	<ul style="list-style-type: none"> ○ Add sport-specific activities (e.g., running, changing direction, individual drills) ○ Perform activities individually and under supervision from a teacher, parent/caregiver or coach ○ Progress to where the athlete is free of concussion-related symptoms, even when exercising 	Increase the intensity of aerobic activities and introduce low-risk sport-specific movements
Medical clearance			
If the athlete has completed return to school (if applicable) and has been medically cleared, progress to step 4.			
4	Non-contact training drills and activities	<ul style="list-style-type: none"> ○ Progress to exercises with no body contact at high intensity, including more challenging drills and activities (e.g., passing drills, multi-athlete training and practices) 	Resume usual intensity of exercise, co-ordination and activity-related cognitive skills.
If the athlete can tolerate usual intensity of activities with no return of symptoms, progress to step 5.			
5	Return to all non-competitive activities, full-contact practice and physical education activities	<ul style="list-style-type: none"> ○ Progress to higher-risk activities including typical training activities, full-contact sport practices and physical education class activities ○ Do not participate in competitive gameplay 	Return to activities that have a risk of falling or body contact, restore confidence and assess functional skills by coaching staff
If the athlete can tolerate non-competitive, high-risk activities, progress to step 6.			
6	Return to sport	Unrestricted sport and physical activity	
Return to sport is complete.			

- Update Medical Clearance Letter (use Medical Clearance Letter Template 2024)

Suggested changes:

- Develop a sport-specific version of the return-to-sport strategy or update your existing sport-specific return to sport strategy using the **Sport-Specific Return to Sport Strategy Adaptation Tool 2024**.

6. Multidisciplinary (Interdisciplinary) Concussion Care

Required changes:

- Update the definition of persisting symptoms to “longer than four weeks” (this applies to all ages; no differentiation in typical recovery time for youth and adults)

Suggested changes:

- Replace “multidisciplinary” with “interdisciplinary”
- Add:

Care of persisting symptoms should follow the management recommendations in Canada’s clinical practice guidelines:

- [Pediatric guidelines \(children and youth under 18\)](#)
- [Adult guidelines \(18 and older\)](#)

7. Return to Sport

Required changes:

- Add:

Athletes who have been diagnosed with a concussion can be considered for medical clearance to return to sport activities with risk of contact or fall once they have successfully completed:

- all steps of the Return-to-School Strategy (if applicable), and
 - steps 1 to 3 of the Sport-specific Return-to-Sport Strategy.
- Replace “Athletes who have been provided with a *Medical Clearance Letter* may return to full sport activities as tolerated. If the athlete experiences any new concussion-like symptoms while returning to play, they should be instructed to stop playing immediately, notify their parents, coaches, trainer or teachers, and undergo follow-up *Medical Assessment*” with:

Athletes who have been provided with a Medical Clearance Letter may progress through steps 4, 5 and 6 of the Sport-specific Return-to-Sport Strategy to gradually return to full, unrestricted sport activities. If the athlete experiences any new concussion-like symptoms during these steps, they should be instructed to stop the activity and return to step 3 to establish the full resolution of symptoms. Medical clearance is required again before progressing to step 4. This information should be provided to the appropriate people (e.g., coach, trainer, teacher).

Sport Concussion Pathway (diagram)

Required changes:

- In 2. Head Injury Recognition, change Concussion Recognition Tool 5 to Concussion Recognition Tool 6
- In 3B. Sideline Assessment, change SCAT5, Child SCAT5 to SCAT6, Child SCAT6
- Replace persisting symptoms definition with: *Persisting symptoms: lasting longer than 4 weeks

Suggested change:

- In 6. Multidisciplinary Concussion Care, change “multidisciplinary” to “interdisciplinary”

Note: If you require an editable version of the pathway diagram, please email Stephanie Cowle, scowle@parachute.ca