



SURF CANADA CONCUSSION PROTOCOL

* Adapted from: Parachute (2017). Canadian Guideline on Concussion in Sport

Purpose

1. Surf Canada has developed the Surf Canada Concussion Protocol to help guide the management of athletes who may have a suspected concussion because of their participation in Surf Canada activities. This protocol covers the recognition, medical diagnosis, and management of athletes who may sustain a suspected concussion during a Surf Canada training event or competition and its key purpose is to ensure that athletes with a suspected concussion receive timely and appropriate care and proper management to allow them to return to the sport safely.

This protocol may not address every possible clinical scenario that can occur during Surf Canada related activities but includes critical elements based on the latest evidence and current expert consensus.

Scope and Application

2. This protocol is intended for use by all individuals who interact with Surf Canada athletes including athletes, parents, coaches, officials, trainers, licensed healthcare professionals and educators. For a summary of the Surf Canada Concussion Protocol, please refer to Appendix A – Surf Canada Sport Concussion Pathway.

Protocol

3. **Education:** Surf Canada recognizes the need to educate Surf Canada athletes, parents, coaches, officials, team support staff and volunteers on: concussion prevention (based on current evidence-informed approaches); more serious forms of head injury and; how to identify and manage an athlete with a suspected concussion. A concussion education sheet will be made available to Surf Canada members and participants at the start of each season.
4. **Recognition and Reporting:** All Surf Canada stakeholders share in the responsibility for the recognition and reporting of athletes who may demonstrate visual signs of a head injury or who report concussion-related symptoms. A concussion should be suspected:
 1. in any athlete 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
 2. 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

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 by the Concussion Recognition Tool 5, a more severe head or spine injury should be suspected, and **Emergency Medical Assessment**¹ should be pursued.

¹ **Emergency Medical Assessment:** *If an athlete is suspected of sustaining a more severe head or spine injury during an activity or event, an ambulance should be called immediately. No effort to remove equipment or move the athlete should be made and the athlete should not be left alone 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 Medical Assessment. In the case of The publication of Surf Canada policies will be in the English and French languages. In the case of conflicting interpretations, the English version will prevail.*



5. **Onsite Medical Assessment:** 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**¹ by emergency medical professionals should take place. 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:

- a) **Sideline Medical Assessment:** If an athlete is suspected of sustaining a concussion and there is no concern for a more serious head or spine injury, the athlete should be immediately removed from the field of play.
- **If a licensed healthcare professional experienced in the use of the Sport Concussion Assessment Tools (SCAT5 or Child SCAT5) is present:** the athlete should be taken to a quiet area and undergo a Sideline Medical Assessment using the appropriate assessment tool.
 - If a youth athlete has undergone assessment by a licensed healthcare professional and there are NO visual signs of a concussion and the athlete reports NO concussion symptoms, then the athlete can return to participation but should be monitored for delayed symptoms. Any youth athlete who is suspected of having sustained a concussion must not return to participation and must be referred for Medical Assessment.
 - In the case of national team-affiliated athletes (age 18 years and older), an experienced certified athletic therapist, physiotherapist or medical doctor providing medical coverage for the event may make the determination that a concussion has not occurred based on the results of the Sideline Medical Assessment. In these cases, the athlete may be returned to participation without a **Medical Clearance Letter** (See Appendix B) but, this should be clearly communicated to the coaching staff. Athletes that have been cleared to return to participation should be monitored for delayed symptoms. If the athlete develops any delayed symptoms the athlete should be removed from play and undergo medical assessment by a medical doctor or nurse practitioner.
 - **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 must not return to play until receiving medical clearance (Appendix B).
- b) **Medical Assessment:** In addition to nurse practitioners, medical doctors 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, a licensed healthcare professional (i.e. nurse) with pre-arranged access to a medical doctor or nurse practitioner can facilitate this role.

The medical assessment is responsible for determining whether the athlete has been diagnosed with a concussion or not. In order to provide 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 with concussion-like symptoms, and must make the diagnosis of concussion based on findings of the

youth (under 18 years of age), the athlete's parents should be contacted immediately to inform them of the athlete's injury. For athletes over 18 years of age, their emergency contact person should be contacted if one has been provided.



clinical history and physical examination and the evidence-based use of adjunctive tests as indicated (i.e CT scan).

Athletes with a diagnosed concussion should be provided with a ***Medical Assessment Letter*** indicating a concussion has been diagnosed. Athletes that are determined to have not sustained a concussion must be provided with a ***Medical Assessment Letter*** indicating a concussion has not been diagnosed and the athlete can return to school, work and sports activities without restriction.

6. Concussion Management

- a) When an athlete has been diagnosed with a concussion they 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 their coaches or team support staff.
- b) 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.
- c) Athletes diagnosed with a concussion are to be managed according to the Return-to-School and Return-to-Sport 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-Sport Strategy. Once the athlete is 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 and issue a Medical Clearance Letter.
- d) The progressions for Return-to-School and Return-to-Sport Strategies are outlined below. The Return-to-School Strategy must precede a return to sport participation.

Return-to-School Strategy

This should be used to help 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 symptoms present athletes will progress through the stages at different rates. If the athlete experiences new symptoms or worsening symptoms at any stage, they should go back to the previous stage. Athletes should be encouraged to ask their school if they have a Return-to-Learn Program in place.



Return-to-School Strategy

Stage	Aim	Activity	Goal of each step
1	Daily activities at home that do not give the 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

McCroery 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.

Surf Canada - Return-to-Sport Strategy

This 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 the 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 athletes who are students return to full-time school activities before progressing to stage 5 and 6 of the Return-to-Sport Strategy.

Team Canada Surfing: Surf Specific Return to Sport Concussion Guidelines



STAGE	AIM	TIMELINE	ACTIVITY	GOAL OF EACH STEP
1	No activity; complete rest	24-48 hours symptom free Day 1-2	Complete physical and cognitive rest. Brief period of rest during the acute phase (24–48 hours) after injury. Athletes encouraged to become gradually and progressively more active while staying below their cognitive and physical symptom-exacerbation thresholds (Berlin 2016).	Gradual reintroduction of work/school activities. ➤ 24-48 hours symptom free, move on to step 2
2	Light aerobic exercise	5-15 minute exercise periods Day 3-6	Light exercise (exercise bike, walking, light jogging, light swimming) Sport specific balance exercises + stretching HR Target: <70% maximum heart rate, 15 minutes max/session. Avoid: weight lifting, jumping, hard running, high intensity swimming, surfing.	Increase heart rate ➤ 24 hours symptom free move to stage 3
3	Sport-specific exercise	45 minute exercise periods Day 4-7	Swimming, light weight lifting, surf specific resistance exercises, paddling on board in pool or controlled environment, symptom-free breath hold training HR Target: <80% maximum heart rate, 45 minutes max/session. *To avoid further head injury, limited to no exposure to the ocean or other unpredictable environments.	Add movement; more intense, not full return to surfing ➤ 24 hours symptom free move to stage 4 with medical clearance Note: medical clearance required prior to return to surfing
4	Full intensity practice	60 minute sessions Day 5-10	Surfing knee to chest high waves. HR Target: <90% maximum heart rate, 60 minute sessions. Avoid maneuvers or crowded breaks.	Exercise, coordination and increased surf specific thinking ➤ 24 hours symptom free move to stage 5,
5	Full intensity sport (Non-competition)	Day 6-10	Full return to pre-injury surfing Practice full intensity, including maneuvers, all wave sizes and all break conditions.	24 hours symptom free, move on to step 6
6	Return to sport	Day 7-10	Full competition	Full return to competitive surfing

*NOTE: An initial period of 24–48 hours of both relative physical rest and cognitive rest is recommended before beginning the RTS progression. There should be at least 24 hours (or longer) for each step of the progression. If any symptoms worsen during exercise, 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). If symptoms are persistent (eg, more than 10–14 days in adults or more than 1 month in children), the athlete should be referred to a healthcare professional who is an expert in the management of concussion. Source: 5th international conference on concussion in sport held in Berlin, October 2016.

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7. Multidisciplinary Concussion Care

Athletes who experience persistent post-concussion symptoms (>4 weeks for youth, >2 weeks for adults) may benefit from referral (if available) to a medically supervised multidisciplinary concussion clinic in traumatic brain injury that include experts in a variety of discipline areas. Referral should be made on an individualized basis at the discretion of an athlete's medical doctor or nurse practitioner. If access to such a 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.

8. Return to Sport

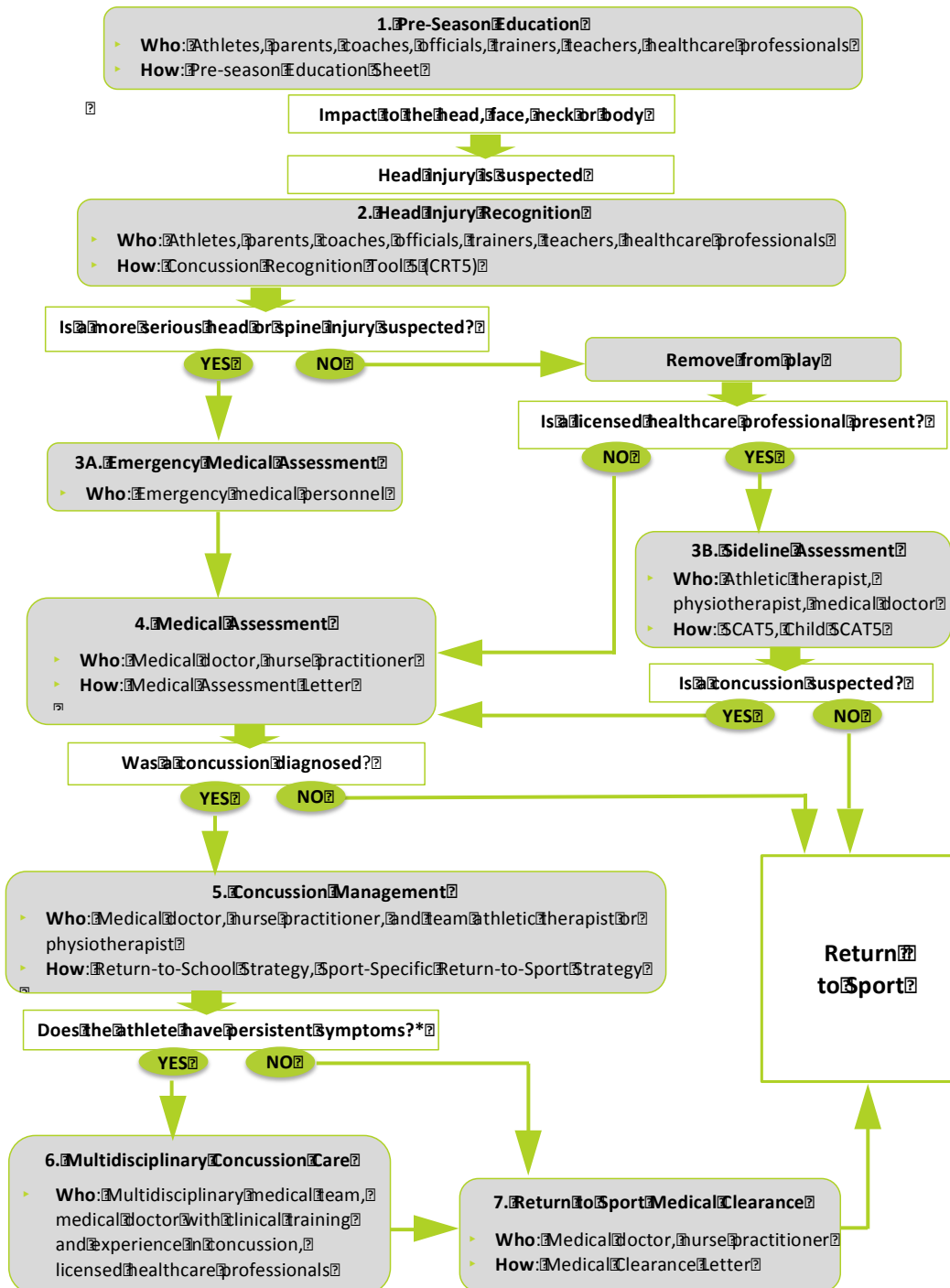
Athletes who have been determined to have not sustained a concussion and those that have been diagnosed with a concussion and have successfully completed their Return-to-School and Return-to-Sport Strategies can be considered for return to full sports activities. Prior to returning fully to the sport, the athlete must provide their coach with a Medical Clearance Letter (Appendix C).

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.

If an athlete sustains a new suspected concussion, the Surf Canada Concussion Protocol should be followed as outlined.



Appendix A Surf Canada Concussion Pathway



*Persistent symptoms: Lasting 2-4 weeks in children & youth or 2-4 weeks in adults

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Appendix B
Surf Canada – 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 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.



Appendix C

Surf Canada – 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):

- No Activity – complete physical and cognitive rest
- Light aerobic exercise - Increase HR < 70% (15 min. max. per session) (light exercise – exercise bike, walking, light jogging, light swimming – sport specific balance exercises & stretching)
- Surf specific exercise – HR<80% - 45 min.max. per session (swimming, light weight lifting, surf specific resistance exercises, paddling on board in pool or controlled environment, symptom-free breath hold training)
- Full intensity practice - - HR<90% - 60 minute sessions (surfing knee to chest high waves; avoid maneuvers or crowded break conditions)
- Full intensity sport (non-competition) – full return to pre-injury surfing. Practice full intensity, including maneuvers, all wave sizes and all break conditions.
- Return to sport – full competition

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 participation in training or competition must be able to participate in full-time school (or normal cognitive activity) as well as high intensity resistance and endurance exercise without symptom recurrence. Any athlete who has been cleared for full participation in training or competition 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 participation.

Any athlete who returns to full participation in training or competition 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.

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Return-to-School Strategy²

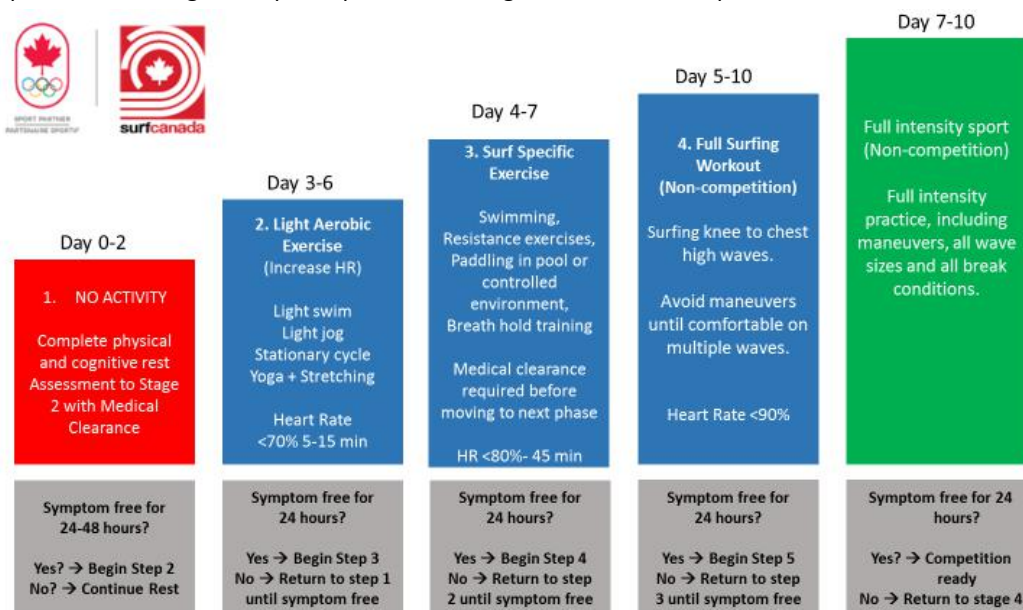
The following is an outline of the *Return to School Strategy* that should be used to help athletes, parents, and teachers to collaborate in allowing the athlete to make a gradual return to school activities. Depending on the severity and type of symptoms present, athletes will progress through the following stages at different rates. If the 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 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-Surf 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 the Return-to-Surf 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 athletes who are students return to full-time school activities before progressing to stage 5 and 6 of the Return-to-Surf Strategy. It is also important that all athletes provide their coach with a *Medical Clearance Letter* prior to returning to full participation in surfing activities and competitions.



² 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.



Team Canada Surfing: Surf Specific Return to Sport Concussion Guidelines

Return to Surf Protocol developed by: Aidan McParland, MSc. – M.D. student – UofT;
Dr. Kathryn Schneider (University of Calgary); Dr Ron Norman (Chiropractic)

Stage	Aim	Timeline	Activity	Goal of each step
1	No activity; complete rest	24-48 hours symptom free Day 1-2	Complete physical and cognitive rest. Brief period of rest during the acute phase (24–48 hours) after injury. Athletes encouraged to become gradually and progressively more active while staying below their cognitive and physical symptom-exacerbation thresholds.	Gradual reintroduction of work/school activities. ➤ 24-48 hours symptom free, move on to step 2
2	Light aerobic exercise	5-15-minute exercise periods Day 3-6	Light exercise (exercise bike, walking, light jogging, light swimming), sport specific balance exercises + stretching HR Target: <70% maximum heart rate, 15 minutes max/session. Avoid: weight lifting, jumping, hard running, high intensity swimming, surfing.	Increase heart rate ➤ 24 hours symptom free move to stage 3
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4	Full intensity practice	60-minute sessions Day 5-10	Get back in the water! Surfing knee to chest high waves. HR Target: <90% maximum heart rate, 60-minute sessions. Avoid maneuvers or crowded breaks.	Exercise, coordination and increased surf specific thinking ➤ 24 hours symptom free move to stage 5,
5	Full intensity sport (Non-competition)	Day 6-10	Full return to pre-injury surfing Practice full intensity, including maneuvers, all wave sizes and all break conditions.	24 hours symptom free, move on to step 6
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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
- Severe or increasing headache
- Deteriorating conscious state
- Double vision
- Seizure or convulsion
- Vomiting
- Weakness or tingling/numbness in arms or legs
- Loss of consciousness
- 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 do so.
- 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
- Disorientation or confusion, or an inability to respond appropriately to questions
- Balance, gait difficulties, motor incoordination, stumbling, slow laboured movements
- Slow to get up after a direct or indirect hit to the head
- Blank or vacant look
- Facial injury after head trauma

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STEP 3: SYMPTOMS

- Headache
- Blurred vision
• More emotional
- "Pressure in head"
• Sensitivity to light• More irritable
- Balance problems
• Sensitivity to noise• Difficulty remembering
- Nausea or vomiting
• Fatigue or low energy• Feeling slowed down
- Drowsiness
• "Don't feel right"• Neck Pain
- Dizziness
• "Who scored last in this game?"• 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?"
- "What team did you play last week/game?"
- "Which half is it now?"
- "Did your team win the last game?"
- "Who scored last in this 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.

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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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