



# Concussion Guide

## for Athletes & Parents

### What is a concussion?

Concussion is a mild form of brain injury that causes temporary disturbance in how the brain functions. It is caused by movement of the brain within the skull, from either a direct blow to the head or elsewhere on the body with an 'impulsive' force transmitted to the head. Most concussions occur without loss of consciousness.

A concussion typically results in immediate, short-lived impairment of brain function that resolves spontaneously. As signs and symptoms may evolve over minutes to hours, it is important to monitor an injured surfer for 24 to 48 hours post-injury.

Concussions can have more serious affects on a young, developing brain and need to be addressed correctly.

### Signs & Symptoms

PHYSICAL	THINKING	EMOTIONAL	SLEEP
<ul style="list-style-type: none"><li>• Headache</li><li>• Neck pain</li><li>• Sensitivity to light/ noise</li><li>• Visual problems</li><li>• Dizziness</li><li>• Balance issues</li><li>• Nausea</li><li>• Vomiting</li></ul>	<ul style="list-style-type: none"><li>• Memory issues</li><li>• Difficulty concentrating</li><li>• Confusion</li><li>• Feeling slowed down</li><li>• Feeling "in a fog"</li><li>• Trouble thinking clearly</li></ul>	<ul style="list-style-type: none"><li>• Anxiety</li><li>• Nervousness</li><li>• Depression</li><li>• Sadness</li><li>• Irritability</li><li>• More emotional</li></ul>	<ul style="list-style-type: none"><li>• Fatigue</li><li>• Low energy</li><li>• Sleeping more or less</li><li>• Difficulty falling asleep</li></ul>

It is important to recognize a concussion to allow the brain adequate time to rest and heal. Coaches, teammates, parents, and community members can all help recognize concussion symptoms. If ANY of the above symptoms are present, the surfer MUST be removed from play and assessed by a medical doctor or nurse practitioner.

If a surfer returns to training or competition too early, symptoms may drag on, and put the athlete at risk for a second concussion or other significant injury.

If any of the **RED FLAGS** below are present, refer to the emergency department:

- 🚩 Double vision
- 🚩 Severe headache
- 🚩 Seizure or convulsion
- 🚩 Vomiting
- 🚩 Prolonged loss of consciousness
- 🚩 Bruising around the eyes or ears
- 🚩 Burning in the arms or legs
- 🚩 Increased confusion

# So, you have had a concussion; what now?

## Do

### REST

Concussion results in a very low energy state in the brain. Physical and cognitive rest is important for the first 24 to 48 hours.

### SLEEP

If there are no Red Flags, then get a good night's sleep. Take naps, if needed.

### EAT RIGHT

Proper nutrition can give you energy and play a role in recovery.

### FOLLOW PROTOCOLS

Guided return to school and play protocols (see below) can help you make a full recovery. Follow the direction of your healthcare provider.

## Don't

### PLAY SPORTS

Do not participate in sport before full recovery, with clearance from your healthcare provider.

### WORK OR STUDY

Take some time off from school or work until you feel better.

### DRIVE

Do not drive for at least 24 hours. Wait until you feel better.

### TAKE PAIN MEDICATION

Pain medication can "mask" symptoms and make it difficult to assess the severity of concussion. Talk to your doctor first.

### DRINK ALCOHOL OR TAKE DRUGS

These can make you feel worse and mask symptoms.



# Recovery

Most people feel back to normal within **10 to 14 days** after injury and make a full recovery within 3 to 4 weeks. Children as well as people with a history of concussions or mental health problems, such as anxiety or depression, may take longer to recover.

Symptoms may occur throughout recovery, but **this is normal**.

Following concussion, a step-by-step approach to recovery can help surfers safely return to school and sport. Each step must be separated by 24 hours. This protocol should be overseen by a licensed healthcare practitioner with concussion training.

1. Complete rest (cognitive and physical x 24-48 hours) \*surfer must be symptom free 24+ hours to progress to stage 2
2. Light aerobic exercise
3. Surf-specific exercise
4. Full surf workout
5. Full intensity surf (non-competition)
6. Return to full competition

*Never return to play if you still have symptoms!*

**A surfer who returns to sport before full recovery from the first concussion is at high risk of sustaining another concussion, with symptoms that may be increased and prolonged.**

# Team Canada: 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.

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



# Team Canada: Return-to-Surf 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.

STAGE	AIM	TIMELINE	ACTIVITY	GOAL OF EACH STEP
1	No activity; complete rest	24-48 hrs symptom free  Day 1-2	<b>Complete physical &amp; cognitive rest</b> <ul style="list-style-type: none"> <li>Brief period of rest during the acute phase (24-48 hrs) after injury. Athletes become gradually and progressively more active while staying below their cognitive and physical symptom exacerbation thresholds (Berlin 2016).</li> </ul>	<b>Gradual reintroduction of work/school activities</b> <ul style="list-style-type: none"> <li>24-48 hrs symptom free, move to stage 2</li> </ul>
2	Light aerobic exercise	5-15 minute exercise periods  Day 3-6	<ul style="list-style-type: none"> <li>Light exercise (exercise bike, walking, light jogging, light swimming). Sport specific balance exercises &amp; stretching</li> <li>HR target, 70% max. heart rate, 15 min. max. per session</li> <li>Avoid: weightlifting, jumping, hard running, high intensity swimming, surfing</li> </ul>	<b>Increase heart rate</b> <ul style="list-style-type: none"> <li>24 hrs symptom free, move to stage 3</li> </ul>
3	Sport-specific exercise	45 minute exercise periods  Day 4-7	<ul style="list-style-type: none"> <li>Swimming, light weightlifting, surf specific resistance exercises, paddling on board in good or controlled environment, symptom free breath hold training</li> <li>HR target, 90% max. heart rate, 60 min. sessions</li> <li>Avoid manoeuvres or crowded breaks</li> </ul>	<b>Add movement, more intense, not full return to surfing</b> <ul style="list-style-type: none"> <li>24 hrs symptom free, move to stage 4 with medical clearance</li> <li>Note: Medical clearance is required prior to returning to surfing.</li> </ul>
4	Full intensity practice	60 minute sessions  Day 5-10		<b>Exercise, coordination and increased surf specific thinking</b> <ul style="list-style-type: none"> <li>24 hrs symptom free – move to stage 5</li> </ul>
5	Full intensity sport (Non-competition)	Day 6-10		<ul style="list-style-type: none"> <li>24 hrs symptom free – move to stage 6</li> </ul>
6	Return to Sport	Day 7-10	<ul style="list-style-type: none"> <li>Full competition</li> </ul>	<ul style="list-style-type: none"> <li>Full return to competitive surfing</li> </ul>

*\*NOTE: An initial period of 24-48 hours of both physical rest and cognitive rest is recommended before starting 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 persist (ie. 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 (Berlin, October 2016)*