



# Skate Australia Concussion Guidelines

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## *Introduction*

Forces strong enough to cause concussion are common in all roller sports. Even though helmets are worn in most disciplines, the risk of concussion is still present. Skate Australia takes the safety of all its participants seriously and has based the following guidelines on the information provided by the Zurich Consensus (2008) on Concussion in Sport. These guidelines have been designed to be used by Physicians and Healthcare Professionals, as well as coaches, managers, players and parents. The guidelines are designed to be easily understood by all and to ensure that players who sustain a concussion are managed effectively to protect their health in the long term. Skate Australia believes that the health and safety of all participants is more important than anything else and as such Skate Australia demands that every precaution be taken before a participant who has suffered a concussion returns to practice or games.

## *What is a Concussion?*

Concussion is defined as a complex process affecting the brain caused either by a direct or indirect blow to the head, face, neck or elsewhere on the body with an “impulsive” force transmitted to the head. It typically results in the rapid onset of short-lived impairment that resolves spontaneously. Concussion results in a graded set of symptoms that may or may not involve a loss of consciousness. Resolution of the symptoms typically follows a sequence however it is important to note that in a small percentage of cases post-concussive symptoms may be prolonged. Concussion reflects a functional rather than structural injury and neuro-imaging is typically normal.

## *Signs and Symptoms of Concussion*

The common signs and symptoms indicating a player or participant may have sustained a concussion are listed in the below table. If a player or participant shows any of the signs or symptoms listed in the table as a result of a direct blow to the head, neck or face, a concussion may be suspected.

Table 1: Early signs and symptoms of concussion

Indicator	Evidence
Symptoms	Headache, dizziness, “feeling in a fog”
Physical signs	Loss of consciousness, vacant expression, vomiting, inappropriate playing behaviour, unsteady on legs, slowed reactions
Behavioural changes	Inappropriate emotions, irritability, feeling nervous or anxious
Cognitive impairment	Slowed reaction times, confusion/disorientation, poor attention and concentration, loss of memory for events up to and/or after the concussion
Sleep disturbance	Drowsiness

It should be noted that any of the symptoms of concussion can first present at any time after the incident but typically in the first 24-48 hours.

### *Diagnosis and Management of Concussion*

A flow chart has been created to indicate what should happen if a participant has suspected concussion, it includes the situation both when a Physician and/or Healthcare Professional is present and not present as it can be difficult to have trained professionals attend every event. Participants must be removed from play and must not resume play if they are suspected of having concussion.

#### *Physician and/or Healthcare Professional present*

If an injury occurs with the potential to cause a head injury or concussion where a Physician or Healthcare Professional is present the participant will be examined and if any of the signs or symptoms in Table 1 are identified and/or the player fails to answer correctly any of the memory questions in the Pocket Scat 2 (Appendix 2) the participant must be removed from competition for a further medical evaluation.

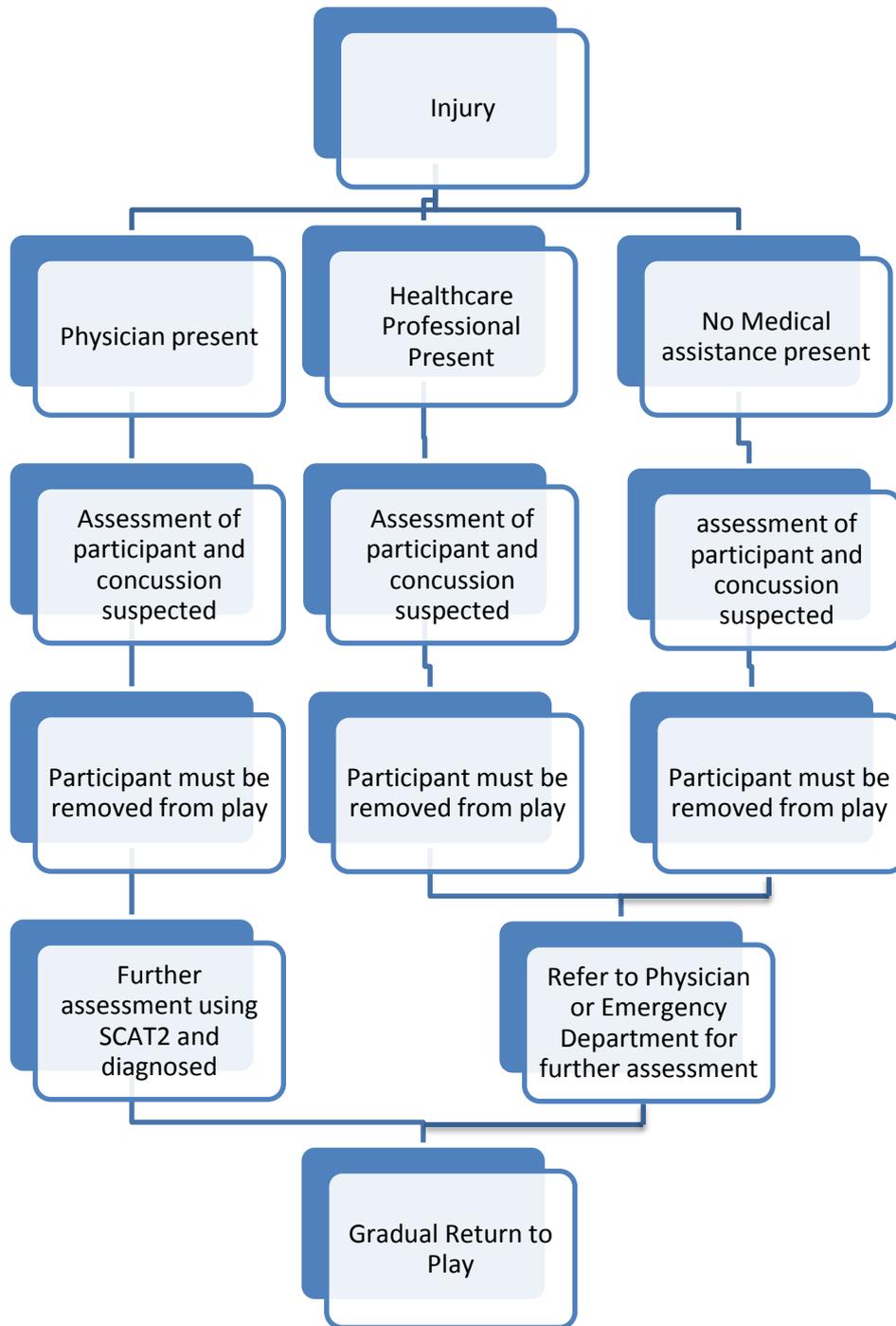
Emergency management procedures must be used in the safe removal of participant from area of play. If there is a possibility of a cervical spine injury the participant should only be moved by Healthcare Professionals with appropriate spinal care training. If a Medical Professional is present, they may use the SCAT 2 (Appendix 1) or other tools of diagnostic to assist in the comprehensive medical evaluation of a participant.

#### *Physician and/or Healthcare Professional not present*

If a participant is injured they may display signs of disorientation to their surrounding and there is no Physician or Healthcare Professional present, fellow participants, Officials, managers, coaches and parents who see the participant displaying any of the signs listed in Table 1 after the injury must do their best to remove the participant from play in a safe and controlled manner.

The participant must not be left alone or be allowed to drive a vehicle after the injury. If a Physician is not present at the event the participant must be referred to a Physician for assessment as soon as possible. The Pocket Scat 2 (Appendix 2) can be used in the assessment of the participant and to assist in identifying a suspected concussion.

*Diagnosis and Management*



## *Modifying Factors*

There is a number of factors that can influence and adjust the investigation and management of concussion, in particular the gradual return to play of the participant. In some cases they may predict the likely chance of prolonged or reoccurring symptoms.

Table 2: Modifying Factors

<b>Factors</b>	<b>Modifier</b>
<b>Symptoms</b>	Number Duration (>10 days) Severity
<b>Signs</b>	Prolonged loss of consciousness (>1 min) Amnesia
<b>Sequelae</b>	Concussive convulsions
<b>Temporal</b>	Frequency – repeated concussions over time Timing – injuries close together in time “Recency” – recent concussion or traumatic brain injury
<b>Threshold</b>	Repeated concussions occurring with progressively less impact force or slower recovery after each successive concussion
<b>Age</b>	Child (<10 years) and adolescent (10 to 18 years)
<b>Co- and premorbidities</b>	Migraine, depression or other mental health disorders, attention deficit hyperactivity disorder (ADHD), learning disabilities, sleep disorders
<b>Medication</b>	Psychoactive drugs, anticoagulants
<b>Behaviour</b>	Dangerous style of play
<b>Sport</b>	High risk activity, contact and collision sport, high sporting level

Whilst these guidelines do apply to all age groups, extra care needs to be taken with children and adolescents due to the increased risks and dangers associated with concussion in the developing brain. It is recommended that participants <18 years be directed to specialised paediatric Medical Practitioners for assessment and treatment who will advise on the return to play process, however, a more conservative gradual return to play approach is recommended. It is also recommended that a child or adolescent must not return to play without clearance from a Physician.

## *Gradual Return to Play*

The main point of concussion management is to provide physical and cognitive rest until there are no remaining symptoms. Any activities that require concentration and attention should be avoided until all symptoms have been absent for a minimum of 24 hours, this period must be without medication that may mask the symptoms like headache tablets, anti-depressants or caffeine.

Table 3: GRTP Protocol

Rehabilitation stage	Functional exercise at each stage of rehabilitation	Objective of each stage
<b>1.No activity, minimum 24 hours following the injury where managed by a Physician, otherwise minimum 14 days</b>	Complete physical and cognitive rest	Recovery
<b>2. Light aerobic exercise during 24-hour period</b>	Walking, swimming or stationary cycling keeping intensity below 70% of Max heart rate.	Increase HR
<b>3. Sport-specific exercise during 24-hour period</b>	Skating drills	Add movement
<b>4. Non-contact training drills during 24-hour period</b>	Progression to more complex drills e.g. passing drills	Exercise, coordination, and cognitive
<b>5.Contact practice</b>	Following medical clearance participate in normal training activities.	Restore confidence and assess functional skills by coaching staff
<b>6. Return to play</b>	Normal game play	

### *When managed by a Physician*

If the participants recovery is being managed by a Physician (with assistance of a Healthcare Professional), it is possible for the participant to return to play after a minimum of six days having successfully following and completing each stage of the Gradual Return to Play (GRTP) protocol. This protocol applies to all situations including tournaments.

Before an injured participant can restart exercises they must be symptom free for a 24 hour period before they can move on to the next stage of the GRTP protocol. Participants can move on to the next stage if they show no symptoms of concussion in the 24 hour period.

In cases where the participant completes each stage without any symptoms the participant would be cleared to return to full play within a week. If during the return to play process the participant shows a return of any symptoms, the participant must return to the previous stage followed by a further 24 hour rest period.

### *When participant is not managed by Physician*

If a participant has a suspected or diagnosed concussion but they do not have access to a Physician to manage the participants return to play, the process must not commence till after a 14day rest period from any sport or physical activity and there is no further symptoms of concussion present.

It is ideal that the process be observed by someone familiar with the participant as it is important to be able to identify any abnormal signs displayed by the participant. Like when managed by a Physician, if the participant experiences any symptoms when exercising after the 14 day rest period they return to the pervious stage of the protocol and attempt to progress to the next stage again after a 24 hour period passes without any symptoms.

It is normal that participants will want to return to play as soon as possible following a concussion. Caution must be exercised by all involved to ensure all the symptoms have resolved, the return to play protocols are followed and the advice of Physician (and in some cases Healthcare Professionals) are strictly adhered to. In doing so, can ensure a participants long term health and longevity in the sport.

### *Definitions*

Physician - A doctor of medicine

Healthcare Professional - An appropriately qualified and practising physiotherapist, nurse, paramedic, sports trainer who has been trained in the identification symptoms and the management of a concussion.

Participant- A skater participating in any discipline of roller sports.

## Attachments

### Attachment 1: SCAT 2 Assessment

**SCAT2**  
Sport Concussion Assessment Tool 2

**Symptom Evaluation**

How do you feel?  
The doctor will ask you the following questions about how you feel now.

Headache	0-3	0-3	0-3	0-3
Pressure in head	0-3	0-3	0-3	0-3
Nausea	0-3	0-3	0-3	0-3
Balance problems	0-3	0-3	0-3	0-3
Blurred vision	0-3	0-3	0-3	0-3
Sensitivity to light	0-3	0-3	0-3	0-3
Sensitivity to noise	0-3	0-3	0-3	0-3
Feeling slowed down	0-3	0-3	0-3	0-3
Feeling like a fog	0-3	0-3	0-3	0-3
Loss of consciousness	0-3	0-3	0-3	0-3
Difficulty concentrating	0-3	0-3	0-3	0-3
Difficulty remembering	0-3	0-3	0-3	0-3
Changes in sleep	0-3	0-3	0-3	0-3
Changes in appetite	0-3	0-3	0-3	0-3
Changes in behavior	0-3	0-3	0-3	0-3
Changes in personality	0-3	0-3	0-3	0-3
Changes in social skills	0-3	0-3	0-3	0-3
Changes in mood	0-3	0-3	0-3	0-3
Changes in energy	0-3	0-3	0-3	0-3
Changes in attention	0-3	0-3	0-3	0-3
Changes in memory	0-3	0-3	0-3	0-3
Changes in personality	0-3	0-3	0-3	0-3
Changes in social skills	0-3	0-3	0-3	0-3
Changes in mood	0-3	0-3	0-3	0-3
Changes in energy	0-3	0-3	0-3	0-3
Changes in attention	0-3	0-3	0-3	0-3
Changes in memory	0-3	0-3	0-3	0-3

**What is the SCAT2?**

The SCAT2 is a validated instrument for assessing acute concussion and is used to identify athletes who need further medical attention. It is used to identify athletes who need further medical attention. It is used to identify athletes who need further medical attention.

**Cognitive & Physical Evaluation**

**1 Symptom scale**

**2 Physical signs exam**

**3 Balance examination**

**4 Coordination examination**

**5 Cognitive assessment (Standardized Assessment of Concussion (SAC))**

**Symptom scale**

Headache	0-3	0-3	0-3	0-3
Pressure in head	0-3	0-3	0-3	0-3
Nausea	0-3	0-3	0-3	0-3
Balance problems	0-3	0-3	0-3	0-3
Blurred vision	0-3	0-3	0-3	0-3
Sensitivity to light	0-3	0-3	0-3	0-3
Sensitivity to noise	0-3	0-3	0-3	0-3
Feeling slowed down	0-3	0-3	0-3	0-3
Feeling like a fog	0-3	0-3	0-3	0-3
Loss of consciousness	0-3	0-3	0-3	0-3
Difficulty concentrating	0-3	0-3	0-3	0-3
Difficulty remembering	0-3	0-3	0-3	0-3
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Changes in behavior	0-3	0-3	0-3	0-3
Changes in personality	0-3	0-3	0-3	0-3
Changes in social skills	0-3	0-3	0-3	0-3
Changes in mood	0-3	0-3	0-3	0-3
Changes in energy	0-3	0-3	0-3	0-3
Changes in attention	0-3	0-3	0-3	0-3
Changes in memory	0-3	0-3	0-3	0-3

**Physical signs exam**

Loss of consciousness	0-3
Amnesia	0-3
Balance	0-3
Blurred vision	0-3
Changes in personality	0-3
Changes in social skills	0-3
Changes in mood	0-3
Changes in energy	0-3
Changes in attention	0-3
Changes in memory	0-3

**Cognitive assessment (Standardized Assessment of Concussion (SAC))**

**1. Orientation**

**2. Attention**

**3. Verbal fluency**

**4. Delayed word recognition**

**5. Serial 7's**

**6. Symbol digit matching**

**7. Letter fluency**

**8. Digit span**

**9. Trail making**

**10. Stroop test**

**11. Balance**

**12. Coordination**

**13. Cognitive**

**14. Physical**

**15. Total score**

**Athlete Information**

**Signs to watch for**

- Headache
- Nausea
- Balance problems
- Blurred vision
- Sensitivity to light
- Sensitivity to noise
- Feeling slowed down
- Feeling like a fog
- Loss of consciousness
- Difficulty concentrating
- Difficulty remembering
- Changes in sleep
- Changes in appetite
- Changes in behavior
- Changes in personality
- Changes in social skills
- Changes in mood
- Changes in energy
- Changes in attention
- Changes in memory

**Return to play**

- No symptoms
- Normal physical exam
- Normal cognitive exam
- Normal balance exam
- Normal coordination exam
- Normal cognitive exam
- Normal physical exam

**Concussion injury advice**

The patient has been diagnosed with a concussion. It is important that recovery will be rapid. The patient will need monitoring for a few days. The patient will need monitoring for a few days. The patient will need monitoring for a few days.

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**Return to play**

- No symptoms
- Normal physical exam
- Normal cognitive exam
- Normal balance exam
- Normal coordination exam
- Normal cognitive exam
- Normal physical exam

**Concussion injury advice**

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Attachment2: Pocket SCAT2



**Pocket SCAT2**

Concussion should be suspected in the presence of **any** **one** or **more** of the following symptoms (such as headache) or physical signs (such as unsteadiness) or impaired brain function (e.g. confusion) or abnormal behaviour.

**1. Symptoms**  
Presence of any of the following signs & symptoms may suggest a concussion.

- Loss of consciousness
- Seizure or convulsion
- Amnesia
- Headache
- "Pressure in head"
- Neck pain
- Nausea or vomiting
- Dizziness
- Blurred vision
- Balance problems
- Sensitivity to light
- Sensitivity to noise
- Feeling slowed down
- Feeling like "in a fog"
- "Don't feel right"
- Difficulty concentrating
- Difficulty remembering
- Fatigue or low energy
- Confusion
- Drowsiness
- Mood emotional
- Irritability
- Sadness
- Numbness or tingling

**2. Memory function**  
Failure to answer all questions correctly may suggest a concussion.

- "At what venue are we all today?"
- "Which half is it now?"
- "Who scored last in this game?"
- "What team did you play last week / game?"
- "Did your team win the last game?"

**3. Balance testing**  
**Instructions for tandem stance**  
"Now stand heel-to-heel with your **non-dominant** foot in back. Your weight should be evenly distributed across both feet. You should try to maintain stability for 20 seconds with your hands on your hips and your eyes closed. I will be counting the number of times you move out of this position. If you stumble out of this position, open your eyes and return to the start position and continue balancing. I will start timing when you are set and have closed your eyes."

Observe the athlete for 20 seconds. If they make more than 3 errors (such as lift feet, hand off their hips, open their eyes, lift their feet too far, stumble, or fall, or remain out of the start position for more than 5 seconds) then this may suggest a concussion.

**Any athlete with a suspected concussion should be IMMEDIATELY REMOVED FROM PLAY, urgently assessed medically, should not be left alone and should not drive a motor vehicle.**