



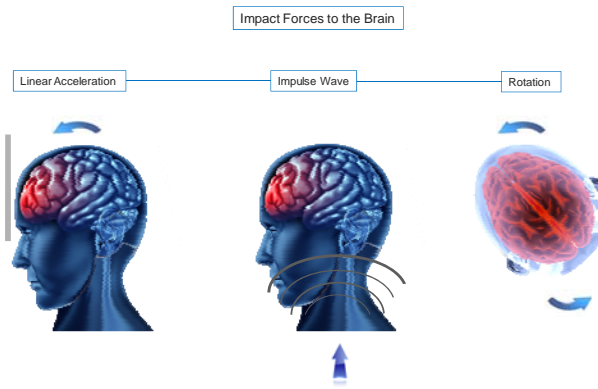
National Alpine Committee Concussion Policy 2013

The National Alpine Committee (NAC) Concussion Policy is based on current international consensus opinion¹⁻³. The welfare of all winter sport athletes in Australia depends on concussion being recognised and correctly managed by a medical doctor. These policy guidelines should be adhered to at all times.



What is concussion:

[Concussion](#) is a disturbance in the brain's ability to acquire and process information. The reduced function of the brain represents damage to nerve cells (neurons). The neurons can be damaged by a direct blow to the head, which cause the brain to rotate and/or move forward and backward. Indirect impact to the body can transfer an impulsive force to the brain which damages neurons.



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The effect that this has on the athlete can vary from person to person, depending on which part of the brain is affected. The impact can cause concussion signs visible to those who witnessed the collision.

Concussion should be suspected if these [signs](#) are observed ⁴

- Unresponsiveness
- Upper limb muscle rigidity
- Upper limb spontaneous movement
- A fit / seizure soon after contacting the surface
- Balance difficulty
- Slow responses
- Vacant stare
- Confusion
- Disorientation
- Holding the head
- Facial injury
- Speech slurring

Minutes to hours after the impact injury the athlete may complain of ⁴:

- Headache
- Nausea / Vomiting
- Blurred vision
- Memory loss / difficulty

- Dizziness
- Tiredness
- Not feeling right
- Sensitive to bright light & loud noise

Days to weeks after the impact the athlete could have/feel ⁴:

- Sleep difficulty
- Persistent low grade headache
- Poor attention & concentration
- Sad or irritable or frustrated
- Tired easily
- Lethargic, low motivation
- Slow reaction time

Take Home Message

An athlete does not have to lose consciousness to have a concussion.

How common is concussion in snow sports:

Head injuries constitute 16-27% of injuries in children & adolescents participating in snow sports. ^{5,6} The incidence of concussion among snowboarding and skiing participants is high. The incidence in snowboarders has been reported as 100 per 1000 snowboarder-exposures. ⁷ Concussions account for 62 - 66 % of head injuries in winter sports admitted to a level 1 trauma centre. ⁸ Adolescents (13-18 yrs) have higher concussion rates than children (< 12 years). ⁸



Why worry about it:

It is recognised that most concussions get better in 7 to 10 days.⁹ However, ignoring concussion signs and symptoms or not recognizing them, can result in potential catastrophic [consequences](#). Acute brain swelling, traditionally referred to as “Second Impact Syndrome” is usually fatal. Prolonged symptoms, recurrent concussion, learning difficulties, personality problems have also been reported.⁹

What should parents, coaches and support staff do before the season:

Prepare for the sports season by studying up on concussion. Have the resources with you that allow easy recognition of possible concussion. Have easy access to a check list of the warning signs of structural brain injury. Know where the closest emergency department or medical practice is in relation to your current location. It is highly recommended that [baseline computerised brain function](#) testing is completed preseason for the following reasons:

- Is a useful screening test for brain function.
- Readily accessible and affordable.
- Is easy to administer and takes less than 10 minutes to complete.
- Detects when impaired brain function lags behind complete subjective symptom recovery.
- Measures reaction time.

- Can detect if cognitive decline occurs in players with previous concussions.
- Identifies players with significant cognitive deficit or delayed brain function recovery that need formal neuropsychological testing.
- Is one component to the doctor's overall clinical assessment and judgement.
- Athletes may under report their symptoms in order to keep playing.
- Younger players may not recognise the symptoms of concussion.
- Can be of medicolegal support in any concussion case review.

What should parents, coaches and other staff do at the event:

Ensure the correct use of helmet head protection. Identify suspected concussion. Any athlete with suspected concussion must be withdrawn from the event or training immediately. Furthermore, no athlete with concussion should be return to the same event or practice that day. ALL athletes with concussion or suspected of concussion need an urgent medical assessment. In the days or weeks following concussion, an athlete should not be allowed to return to events or train until they have had medical clearance from a medical doctor.

Take Home Message

Any athlete with suspected concussion should be removed from the event and not return to sport or training that day.
All athletes with suspected concussion should see a medical doctor as soon as possible.

Basic first aid principles apply. Protect the athlete's neck and secure an open airway. Urgent hospital referral is necessary for any athlete who has lost consciousness as a result of a blow to the head or body. Indications for urgent [referral to hospital](#) include:

- Fractured skull
- Penetrating skull trauma
- Loss of consciousness

- Deterioration in conscious state following injury
- Increasing confusion
- Worsening headache post injury
- Persistent vomiting
- Any convulsive movements
- Focal neurological signs
- More than one episode of concussive injury in a match or training session
- All children with head injuries
- High-risk patients (eg hemophilia, anticoagulant use)
- High-risk injury mechanism (eg high velocity impact, missile injury)
- Inadequate post injury supervision



See a medical doctor as soon as possible:

A concussed athlete should see a medical doctor with experience in managing concussion. The medical doctor should see the athlete on a number of occasions, performing serial assessments. ³At the first visit, the doctor will do a full neurological examination and document current symptoms. It is recommended that balance testing and computerised neuropsychological testing document the recovery process. Recovery from concussion may take longer in younger players (under 18), therefore a conservative approach to playing sport again should be followed.

Rehabilitation of concussion in snow sports:

Initial [balance and visual training](#) can start within days of the concussion. Balance training and reaction times drills are fundamental to skiers safely returning to the slopes. It is believed poor balance is implicated in concussion in the first place. ⁷

How does the athlete get back to snow sport:

Athletes should only return to activity when symptoms have gone away and cognitive function has returned to normal. Once the athlete feels well, exercise can follow on from vision and balance training. Progression of [exercise challenge](#) can occur every 24 hours. If athletes start to feel unwell during or after exercise, they should rest for 24 hours and then attempt the same exercise challenge. Only when an athlete has completed all the stages of exercise challenge can they obtain written medical clearance from a medical doctor. The athlete should give this medical clearance to their coach. It is the coaches' responsibility to forward the medical clearance to NAC. Always start a comeback from concussion with low speed, low risk ski training drills under supervision.

Ski & Snowboard Australia Concussion Clinics

MELBOURNE

[Emergency Sports Medicine Clinic Saturday 1p.m. – 7 p.m.](#)

[LifeCare Prahran Sports Medicine Centre](#)

Dr's Freytag, Scotney, James, Zimmerman, Down

316/320-324 Malvern Rd, Prahran VIC 3181

Tel: 03 9529 8899

[Peak Sports Medicine – Australian Winter Olympic Centre](#)

Dr's Braun, Trease, Naidu

Level 2 Icehouse

105 Pearl River Road, Docklands VIC 3008

Tel: 03 9034 4888

[LifeCare Ashwood Sports Medicine](#)

Dr's Fuller, Ball, Down

330 High Street, Ashburton VIC 3147

Tel: 03 9885 8961

Sports and Musculoskeletal Radiologists

Dr George Koulouris

Ground Floor 3-6/100 Victoria Parade

East Melbourne VIC 3002

Tel: 03 9667 1667

SYDNEY

[Dr Caron Jander Ski & Snowboard Australia Concussion Clinic](#)

507-509 Pittwater Rd

Brookvale NSW 2096

Tel: 02 9938-4433

ALBURY

[OccMedi Ski & Snowboard Australia Concussion Clinic](#)

Dr G Boothby & A Milliken

566 Macauley Street, Albury NSW 2640

Tel: 02 6021 5555

Resources available for Parents & Coaches:

Sports Medicine Australia (SMA)

[Sports Concussion Australasia™ www.sportsconcussionaustralasia.com](http://www.sportsconcussionaustralasia.com)

Axon Sports Computerised Brain Function Test

[FirstResponder App](#)

[Concussion Card Key Tag](#)

Concussion Recognition Tool (CRT)

Resources available for Doctors:

SCAT3 / Child SCAT3

References available on request.

SSA Concussion Management Flowchart

SKI ACCIDENT



Loss of Consciousness

YES

- Protect neck
- Basic first aid
- Call ambulance
- Transfer hospital



NO

Structural Head Injury

YES

- Call ambulance
- Transfer hospital
- Brain Scan



NO

Concussion Signs and Symptoms

YES

- Immediately stop skiing
- See a medical doctor



NO

MONITOR for >72 HOURS

If no symptoms develop, **return to ski**

If symptoms persist, **see a medical doctor**

