

### **IF UNSURE, DO NOT MOVE** WHEN IN DOUBT, SIT THEM OUT



BACKGROUND	<ul> <li>Concussion is a serious injury that occurs frequently:</li> <li>There are an estimated 36,000 head injuries in New Zealand per year.</li> <li>In 2004, ACC figures indicated that it paid over \$100 million a year for post-acute treatment and rehabilitation of claimants with concussion and TBI.</li> <li>Note this excludes costs incurred during the acute phase of care. ACC also supports the operation of Emergency Departments through funds to DHBs. However, it is not possible to identify the proportion of this funding that is used for treating people with TBI.</li> <li>In 2022, ACC received claims for 6,440 sports related concussion injuries.</li> <li>ONLY 21% (7,350 per year) of all head injuries in New Zealand are sustained through sport related activity.</li> <li>It is estimated that there is a 30% under reporting of concussion.</li> <li>Between 2009 - 2013 sports related concussion claims with ACC totalled \$76 million.</li> <li>46% (3,381 per year) of sports head injuries are classified as 'mild with a high risk of complications'.</li> <li>The highest number of sport-related concussions occur in team-based sports (e.g., rugby, football, basketball) and from biking and equestrian activities</li> <li>11% of sports related concussion claimants had multiple</li> </ul>
	concussions within a two year period. This protocol is prepared specifically for our community and is not a medical document. It incorporates the latest and best practice guidelines developed at the Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport–Amsterdam, October 2022, and uses ideas developed by Axis Sports Medicine and ACC Sport Concussion in New Zealand: National Guidelines Updated February 2025. A standardised approach to increasing awareness of the recognition and management of concussion will minimise the likelihood that individuals have a poor outcome from the injury, supports best practice and

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provides confidence to parents/ caregivers of young people involved in sport.

**General Principles** 

- Early removal and early access to care reduces recovery time.
- Extra caution is required for child, adolescent and female athletes as they take longer to recover.
- Everyone has a role to play in supporting the recognition and management of concussion.

The latest National Concussion Guidelines (2025) for the NZ context state that clearance by a health practitioner is strongly recommended before returning to contact-based and sport-specific training, or full competition.

The following requirements must be met for an individual to return to **sport-specific training**.

The individual:

- a) has returned to and is tolerating full time work or learning.
- b) is symptom free and has completed supervised rehabilitation
- c) is a minimum of 14 days post-injury (Day 0 = Day of injury).

The following factors should be satisfied for a **return to competitive sport/play:** 

- a) The individual remains symptom free during rehabilitation and graduated return to education/work and sport protocol.
- b) The individual is at a minimum of 21 days post-injury.
- c) Whilst not mandated, it is still advisable for the individual to have received clearance from a health practitioner experienced in concussion management.

Our guideline pertains to adults, children, and adolescents. All cases of suspected concussion should be assessed by an appropriately trained medical professional. Please note in NZ a hospital, general practitioner, or nurse practitioner can diagnose a concussion and the later two clear a person for return to work or return to sport following a diagnosed concussion.

Concussion, and persons welfare in general, is everyone's responsibility, *If Unsure, Do Not Move and When in Doubt, Sit Them Out.* Everyone

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needs to act in the best interest of the person's safety and welfare by taking responsibility for the <u>recognition</u> and <u>removal</u> and <u>referral</u> and <u>recovery</u> of persons who sustain a concussion. We should all ensure that concussion is appropriately managed as per this protocol.

It is acknowledged that concussion is not well understood, and more research is required to identify both the short and long term consequences of this brain injury.

This policy is based on the current best practice and will be reviewed in line with international consensus statements and ACC guidelines.

#### **Guideline Summary:**

#### Recognise, Remove, Refer, Recover, Re-evaluate, Re-consider

Members of the player's and athlete's whānau and wider community (parents, coaches, team-mates, sporting organisations) have an important role to play in recognising the signs and symptoms of concussion.

- If a suspected concussion occurs, after checking for neck injury, safely remove from play/activity immediately and seek assessment by a health practitioner
- Because diagnosis may be difficult to diagnose and relies on clinical judgement, Individuals must NOT return to sport/activity on the day of a suspected concussion
- For immediate concerns an ambulance should be called.
- Individuals suspected of suffering a concussion must have an assessment with a health practitioner for confirmation or exclusion of a concussion and consideration of other diagnoses and lodgement of a concussion injury with ACC
- Concussions may occur without having any loss of consciousness (you do not need to be 'knocked out').
- Extra caution is required for child and adolescent athletes.
- It may take several hours (or even days) post injury for some or all of the symptoms of concussion to emerge.
- Non-medical personnel have a very important role to play in recognising the signs and symptoms of concussion, and it is important that they know what to do.
- Concussion can present in a similar manner to other catastrophic conditions with delayed onset of symptoms.

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- Treatment is most effective when initiated early.
- The effects of concussion can interfere with the person's ability to learn in the classroom or to function well at work or home or return to sport.
- Return to learn/work/sport will often need to be graduated and demands altered to reflect level of function, this can be guided by an experienced physiotherapist in conjunction with a medical practitioner
- Typical management includes physical and cognitive rest for 24-48 hours (including reduced electronic screen use), prior to initiating a graduated programme of progressive physical and cognitive activity.
- Strong evidence supports the benefits of gentle and graduated aerobic exercise, at a level that does not worsen symptoms during the activity, as an early intervention treatment within a recovery plan.
- Return to learn/work and social activities and non-contact training should be achieved, and medical clearance IS STRONGLY RECOMMENDED, before any return to play
- Where symptoms are prolonged (e.g. >4 weeks) or graduated activity has not been tolerated, the person needs to be referred to a health practitioner that can review the diagnosis, taking into consideration the potential traumatic and non-traumatic causes for ongoing symptoms (e.g a doctor, sports and exercise physician, neuropsychologist, experienced physiotherapist, nurse practitioner). You should ensure the person has registered with ACC for support.
- The health practitioner may refer the person to ACC concussion services if they meet certain criteria. This is a service that offers comprehensive support (experienced Physiotherapist, Occupational Therapy, Neuropsychologist) to guide symptom management and return to activity
- Once returned to activity individuals should still be monitored by stakeholders to ensure they are continue to tolerate the return to work, school, or sport

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PURPOSE

# **WSM Group Concussion Protocol**

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The purpose of this WSM Group Concussion Protocol is to:

- 1. Provide a codesigned document that all stakeholders agree to abide by, and refer to, to improve the assessment and management of concussion in our community
- 2. Increase awareness of concussion within our whanau in the community - school students, teachers, sport co-ordinators, principals, players, officials, coaches, parents/caregivers, supporters, employees and employers, and our community in general
- 3. Provide agreed guiding principles and general advice regarding the identification and management of concussion
- 4. Mandate the process by which a person may continue to participate in or return to learn, work, activity or sport following a suspected concussion.

WSM Group has adopted the Consensus Statement on Concussion in Sport: 6th International Conference on Concussion in Sport–Amsterdam, October 2022.

"This Statement is not intended as a clinical practice directive or legal standard of care and should not be interpreted as such. The information conveyed is provided in good faith and without warranties of any kind, either expressed or implied. It does not constitute medical, legal or other professional advice or services. This document is only a guide and is of a general nature, consistent with the reasonable practice of an HCP. Individual assessment, treatment, management and advice will depend on the facts and circumstances specific to each individual case. Given the many different cultures, resources, healthcare systems and other factors to be considered when managing athletes at risk of or who have sustained a concussion, the summary of evidence and recommendations from this Statement can be used and adapted to inform local and regional processes

This Concussion Protocol will be reviewed by WSM Group and will be modified according to the development of new knowledge.

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General return to education/work and Sport protocol

Day 0 = Day of the injury/concussion

#### Graduated return to education/work & sport protocol

	-														
Stage 1	Days 1-2		Relative rest for 24-48 hours (i.e light activities of daily living that do not provoke symptoms are ok)												
			Minimize screen time												
			<ul> <li>Gentle exercise</li> <li>(i.e. walking around the house)</li> </ul>												
Stage 2		Minimum of 24 hours between stages before progressing	Gradually introduce daily activities												
			Activities away from school/work (introduce TV, increase reading, games etc)     Exercise — light physical activity (e.g. short walks outside) Increase tolerance for mental & exercise activities												
									Stage 3						
Symptoms should be	Increase study/work-related activities with rest periods														
progressively improving. If symptoms worsen drop back a stage	Increase intensity of exercise guided by symptoms														
	Stage 4		Return to work/study & sport training <ul> <li>Part time return to work/education</li> <li>Start training activity without risk of head impact</li> </ul>												
								Stage 5	Earliest		Return to normal work/study & sport-specific training				
									Day 14		Completion of Stages 1-4 AND				
			Fully reintegrated into work or school AND												
			Symptom free												
			<ul> <li>AND ≥ Day 14 post-injury → reintegration into full sport-specific training can occur</li> </ul>												
Stage 6	Earliest		Return to sports competition												
	Day 21		Completion of Stage 5 AND												
			Symptom free during sports training												
			<ul> <li>AND ≥ Day 21 post-injury</li> </ul>												
			<ul> <li>AND whilst not mandated, it is strongly recommended for the individual to have received clearance from a health practitioner experienced in concussion management.</li> </ul>												

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POLICY

#### The WSM Group Concussion Protocol

- a) Applies to, Schools, Clubs, workplaces, and other identified stakeholders within our community
- b) Applies to all concussion injuries
- c) Forms part of the agreement to which all stakeholders are bound
- d) Does not limit or restrict the application of the protocol and in particular, the code of conduct for behaviour or conduct of stakeholders and
- e) May be supplemented or varied from time to time by WSM Group

Stakeholders will be educated on the signs, symptoms and management of concussion and concussed persons encouraged to be honest with stakeholders and report any new symptoms as they develop.

#### Definition

Concussion is a brain injury and is defined as "a traumatic brain injury induced by biomechanical forces either directly or indirectly upon the head".

(McCrory P, Meeuwisse WH, Dvorak J, et al. Consensus statement on concussion in sport: the 5th International Conference on Concussion in Sport, Berlin, November 2016).

More simply, a concussion may be defined as a transient alteration in the mental state that may, or may not, result in a loss of consciousness.

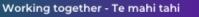
There are several features that are important to highlight. These are:

- a) A concussion is not always caused by a blow to the head. It may be caused by a direct blow to the head, face, neck, or elsewhere on the body with an 'impulsive' force transmitted to the head.
- b) A concussion can involve concomitant injuries to structures other than the brain, including to the neck, face, eyes, ears, and other parts of the body
- c) A person does not need to be knocked out to have sustained a concussion. Only approximately 10% of concussions present with a loss of consciousness.

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- d) A concussion typically results in the rapid onset of short-lived impairment of neurological function that resolves spontaneously.
- e) Concussion can be difficult to diagnose.
- f) Whenever a person has an injury which affects the neck or head, and who becomes confused or acts abnormally, they are very likely to have been concussed.

#### **SIGNS OF CONCUSSION -IF UNSURE, DO NOT MOVE** WHEN IN DOUBT SIT THEM OUT!

#### Recognise, Remove & Refer

When a possible concussion occurs, it is important to act and to get help. The most important steps in the early identification of concussion are to recognise the possibility of a concussion injury, recognise the severity of the concussion, and SAFELY remove the participant from the situation (whether it be at home or work, or sport or activity)

Non-medical personnel have a very important role in observing for possible concussions injuries and its effects (e.g. behaviour/symptoms), and should take responsibility for MANAGING AND SAFELY removing the person from the situation.

#### **IF UNSURE, DO NOT MOVE** WHEN IN DOUBT SIT THEM OUT!

#### Immediate visual indicators of concussion include:

- a) Loss of consciousness or responsiveness
- b) Lying motionless on the ground and/or slow to get up
- c) A dazed, stunned, blank or vacant expression
- d) Appearing confused or disorientated
- e) Appearing unsteady on feet, balance problems or falling over
- f) Grabbing or clutching of the head or
- g) Impact seizure or convulsion

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#### Concussion can also include one or more of the following symptoms:

- a) Symptoms; headache, dizziness, 'feeling in a fog'.
- b) Behavioural changes; inappropriate emotions, irritability, feeling nervous or anxious.
- c) Cognitive impairment; slowed reaction times, confusion/disorientation - not aware of location or event, day or score, poor attention and concentration, loss of memory for events up to and/or after the concussion.
- d) Balance problems including dizziness, light-headedness, or vertigo.
- e) Blurred or double vision.
- f) Stomach-ache, stomach pain, nausea

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## How do you feel?

"You should score yourself on the following symptoms, based on how you feel now".

	none	mild		moderate		severe	
Headache	0	1	2	3	4	5	6
"Pressure in head"	0	1	2	3	4	5	6
Neck Pain	0	1	2	3	4	5	6
Nausea or vomiting	0	1	2	3	4	5	6
Dizziness	0	1	2	3	4	5	6
Blurred vision	0	1	2	3	4	5	6
Balance problems	0	1	2	3	4	5	6
Sensitivity to light	0	1	2	3	4	5	6
Sensitivity to noise	0	1	2	3	4	5	6
Feeling slowed down	0	1	2	3	4	5	6
Feeling like "in a fog"	0	1	2	3	4	5	6
"Don't feel right"	0	1	2	3	4	5	6
Difficulty concentrating	0	1	2	3	4	5	6
Difficulty remembering	0	1	2	3	4	5	6
Fatigue or low energy	0	1	2	3	4	5	6
Confusion	0	1	2	3	4	5	6
Drowsiness	0	1	2	3	4	5	6
Trouble falling asleep	0	1	2	3	4	5	6
More emotional	0	1	2	3	4	5	6
Irritability	0	1	2	3	4	5	6
Sadness	0	1	2	3	4	5	6
Nervous or Anxious	0	1	2	3	4	5	6

Total number of symptoms (Maximum possible 22) Symptom severity score (Maximum possible 132)

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The Unconscious Person - THIS IS IMPORTANT – THEY MUST <u>NOT BE MOVED</u> - OR ONLY MOVED WITH CAUTION BY EXPERIENCED PERSONS OR TO PRESERVE LIFE – CALL AN AMBULANCE

If the person is injured and / or unconscious apply first aid principles.

- DRSABC (Danger, Response, Send for Help, Airway, Breathing, Circulation).
- Treat all unconscious persons as though they have a spinal injury.
- An unconscious person MUST ONLY be moved by personnel trained in spinal immobilisation techniques.
- Do not remove any equipment until trained personnel are present, unless the equipment is threatening loss of life
- Urgent hospital care is necessary if there is concern regarding the risk of structural head or neck injury call 111.

#### Immediate Referral (Red Flags)

A person with the following MUST NOT be moved and AN AMBULANCE CALLED

Report of extreme neck pain and/or spinal cord symptoms – numbness, tingling, muscle weakness

A person with any of the following should be seen in hospital

- Persistent confusion
- Double vision
- Deterioration after being injured increased drowsiness, headache or vomiting
- Child
- Personal medical history of bleeding disorder / clotting disorder
- Personal history of regular medication use that could result in prolonged bleeding (e.g. Warfarin, Aspirin).

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If at any time, if there is any doubt, the person should be referred to hospital for an immediate assessment.

All persons who have been withdrawn from competition due to a suspected concussion should seek medical review by a qualified medical practitioner as soon as possible to confirm diagnosis, and are not to return to activity until medically cleared

#### **Remove From Further Competition**

#### A person should never return to activity on the day of a suspected or confirmed concussive injury.

A person with a suspected or confirmed concussion, with no red flags, should be immediately removed from training or an event and should NOT be returned to activity until they are assessed by a qualified medical doctor.

Persons with a suspected concussion should not be left alone, at least for the first 24-48 hours, should not drive a motor vehicle and should not consume alcohol.

They MUST also be in the care of a responsible person who is aware that they have sustained a concussion.

Only qualified medical practitioners can diagnose a concussion or provide advice as to whether the person can return to activity. All persons should be referred for a medical assessment. If you suspect a concussion has occurred, then an assessment can include by a suitably experienced physiotherapist if available; the physiotherapist can provide initial management advice but is required to refer to the GP or nurse practitioner to get a concussion diagnosed.

It is suggested that all schools, clubs/events, and community sites should have a list of local medical doctors, emergency departments, and concussion rehabilitation services.

A checklist of the appropriate services could include:

- Local doctors or medical centre
- Local hospital emergency department
- Ambulance services (111)
- local concussion rehabilitation services

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#### **Medical Assessment**

A qualified medical practitioner should:

- a) Diagnose whether a concussion has occurred based on clinical judgement
- b) Evaluate the injured person for concussion using the <u>BIST</u>
- c) Advise the person as to medical management and rehabilitation
- d) Advise the person as to when it is appropriate to begin a Graduated Return to Learn, Work, Play, Activity or Sport Program following accepted criteria
- e) Whilst returning the person to school or work, an accepted Graduated Return to Activity Sport Program can also be enacted. However, there will not be a full return to sport until they have achieved a full return to work or school and cleared by a medical practitioner. WSM Group endorses the <u>BIST</u> as a validated means of assessing concussion by a medical practitioner

We recommend all stakeholders in the community become familiar with the symptoms evaluated in <u>The Pocket Concussion Recognition Tool 6</u>, and all medical practitioners be familiar with <u>BIST</u>.

#### Recovery

Concussions may resolve in a short (7 - 10 day) period. However, some require specific rehabilitation techniques early and some people will have more long-lasting symptoms. The recovery frame may be longer in children and adolescents.

As a result, the return to learn, activity, and sport process should be more conservative for children and adolescents. It should be stressed that there is no arbitrary time for recovery and that decisions regarding a return to learn, activity or sport need to be individualised.

Prior to embarking on a return to work, contact activity or sport programme, a person must have no symptoms at rest and must have had a clearance from a medical doctor.

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It is *strongly suggested* that any person who has sustained a concussion, or possible concussion, is also reviewed within 2 days by a clinician with expertise in managing concussion (for example a physiotherapist competent in concussion management and rehabilitation), and who will liaise with the person's GP, work, school and whānau.

It is *highly recommended* that any person who has any symptoms which persist for more than two weeks for adults and adolescents (>12yrs age) and more than four weeks for children (<12yrs age), have a further review from a clinician with expertise in managing concussion (for example a physiotherapist competent in concussion management, Sport and Exercise Medicine Physician, Neurologist, or Neurosurgeon).

#### **Return to Learn or Work**

Following a concussion, the person should follow a graduated return to Learn, Work or Activity program preferably under the guidance of a suitably qualified medical practitioner, and a physiotherapist experienced in concussion rehabilitation, and prior to any return to contact activity or sport

> Return to Learn Return to School Return to Work

#### **Return to Activity or Sport**

Following a concussion and a successful return to Learn, Work (and limited activity) the person needs to obtain clearance from a qualified medical practitioner, prior to resuming full return to contact activity or sport.

Graduated Return to Activity or Sport Program

It is important to note that as well as the ACC guidelines, different sports have different rules and return to play guidelines. Each individual international sports federation may have specific rules which must be reviewed prior to return to play for that particular sport (e.g. International Rugby Board rules for New Zealand Rugby).

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Advance to the next stage no more quickly than every 24 hours and only if symptoms of concussion are not reproduced with each level of increasing activity.

#### The following points are important considerations:

- If concussion symptoms return at any stage of the person's return to learn, activity, work or sport the person must inform the managing medical professional of their symptoms and rest for a minimum of 24 hours before resuming at the level prior to that where symptoms recurred.
- Return to activity should be particularly cautious where children and adolescents are concerned.
- The safety of the person is the priority and must NOT be compromised.
- The decision regarding the timing of return to work, sport/contact activity MUST always be made by a medical doctor.

In some cases, symptoms may be prolonged or graded activity may not be tolerated.

If recovery is not being made within the first week, then evaluation by a medical professional competent in concussion management, physiotherapist, GP, A+E or specialist may be warranted to determine if there are other aspects of the concussion that could respond to rehabilitation.

Referral to the ACC fully funded Concussion Service can also be considered.

#### Enforcement

This protocol reflects best practice in the management of concussion. It is everyone's responsibility to ensure that they are applied. All stakeholders are encouraged to promote these guidelines and to ensure that they are applied appropriately.

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## IF UNSURE, DO NOT MOVE WHEN IN DOUBT, SIT THEM OUT



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#### Initial Referral Letter from Physiotherapist for a Concussion Medical Assessment

Date: Name: DoB:

Dear colleague,

Stakeholders have agreed that people in our community who sustain a suspected concussion should be managed according to the WSM Group Concussion Protocol. The above patient presented to myself, and I am concerned that they may have sustained a concussion in addition to a neck injury.

Accordingly, I have registered a claim with ACC for a neck sprain.

However, I have referred the patient to you so that you may assess, manage as indicated, and if you agree, please add a concussion Read code (s60) to this claim (claim number \_\_\_\_\_\_) that has already been registered.

I am happy to continue their treatment but I am unable to rehabilitate a suspected concussion until the concussion diagnosis has been confirmed by a medical practitioner or nurse practitioner and the s60 Read code added to the claim.

I have informed them that they need to contact their medical centre to make an appointment for your opinion and to get a concussion diagnosis confirmed. They have also given consent for you to contact them directly to make an appointment.

I would be grateful if you could please urgently assess the patient and following that if you could please complete the WSM Group Initial Medical Assessment Letter and manage appropriately.

Once I receive this, then I may begin appropriate rehabilitation.

The goal of concussion management is to allow complete recovery of the patient's concussion by promoting a coordinated, safe, and gradual return to school, work, activity, and sport, in line with the WSM Group Concussion Protocol.

Thank you for your assistance

Physiotherapist

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DoB:

#### **Initial Medical Assessment Letter**

Date:	Name:

To whom it may concern,

People who sustain a suspected concussion should be managed according to the WSM Group concussion protocol. Accordingly, I have personally completed a Medical Assessment on this patient.

Results of Medical Assessment (mark that which applies)

- € This patient **HAS** been diagnosed with a concussion and should
  - o see a physiotherapist experienced in concussion
  - o NOT return to contact activity or sport until cleared by a medical practitioner
- € 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: (please indicate which apply)
  - o should see a physiotherapist for assessment and rehabilitation of their musculoskeletal injuries and ongoing management
  - o \_\_\_\_\_\_(other please detail)
- € I have completed an <u>ACC Concussion Services Contract referral</u>
- € They have been referred to a specialist

The goal of concussion management is to allow complete recovery of the patient's concussion by promoting a safe and gradual return to school, work, activity, and sport. The patient has been instructed to avoid all work, activities, or sports that could potentially place them at risk of another concussion or head injury.

Starting on \_\_\_\_\_\_(date), the patient is allowed to participate in school, work and low-risk physical activities as tolerated, but only at a level that does not bring on or worsen their concussion symptoms.

They should **NOT** return to full work hours, any full contact practice, activity or sport until a further medical review and they have been provided with the Medical Clearance Letter in accordance with the WSM Group concussion protocol. Athletes and their parents/caregivers should also check the return to play strategy of their sport governing body to ensure they meet the necessary requirements. If the person does not recover as anticipated, then referral to the ACC Concussion Services contract would be indicated.

Other comments:

Thank-you very much in advance for your understanding. Yours Sincerely,

Signature/print

\_M.D. / N.P. (circle designation)

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#### **Referral to the ACC Concussion Services Contract Request**

Date: \_\_\_\_\_Name: \_\_\_\_\_\_DoB: \_\_\_\_\_DoB: \_\_\_\_\_

To whom it may concern,

People who sustain a suspected concussion should be managed according to the WSM Group concussion protocol. Those who have many barriers identified require an interdisciplinary team (IDT) approach.

It is our opinion that this client requires a more intensive rehabilitation plan involving the IDT.

If you agree with this recommendation, could you please complete the ACC883 Concussion service referral form on your own system or follow this link and return the ACC883 by email to us. We will be able to send this directly to Active+ so they can establish eligibility, and if indicated, commence the programme and involve the IDT.

I will keep you informed of their progress.

Thank you for your assistance

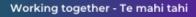
Physiotherapist

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#### **Medical Clearance Letter**

Date: \_\_\_\_\_\_ DoB: \_\_\_\_\_\_ DoB: \_\_\_\_\_\_

To whom it may concern

People who are diagnosed with a concussion should be managed according to the agreed WSM Group Concussion Protocol including the Return to School, Return to Work and Return to Activity or Sport strategies. They should **NOT** return to full work hours, any full contact practice, activity or sport until a medical review and they have been provided with the Medical Clearance Letter in accordance with the WSM Group concussion protocol. The above person can (please check all that apply):

- € Continue with symptom-limiting everyday activities (cognitive and physical activities that don't provoke symptoms)
- € Undertake light aerobic activity. Walking or stationary cycling at pace that don't provoke symptoms. No resistance training
- € Continue sport-specific exercise. Running, dribbling, kicking, or shooting drills that don't provoke symptoms. No head impact activities
- € Continue non-contact practice. Harder training drills, e.g. jumping, plyometrics or passing drills, or progressive resistance training, including gym that don't provoke symptoms, and without a risk of contact
- € Return to full school or work hours
- € Return to full-contact practice, Including gym activities with risk of contact and head impact
- € Resume full game play
- € Or alternatively, this person has not yet recovered as anticipated, and a referral to the ACC Concussion Services contract is indicated which I have organised

NB: Any person who has been medically cleared for work, physical activities, gym or non-contact practice, but who has a recurrence of symptoms, should immediately remove themselves from the activity and inform their employer, teacher, coach, parent, and whānau and see their medical practitioner.

Any person who has been cleared for full contact practice or game play must first be able to participate in full-time school (or normal cognitive activity), and work, as well as high intensity resistance and endurance exercise (including non-contact practice) without symptom recurrence.

Any person who returns successfully to work, practice, activity or sport and sustains a new suspected concussion should again be managed according to the WSM Group concussion protocol.

Other comments:





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A concussion protocol can only be deemed as successful if it is readily available and appropriate for all of our community.

To achieve this will require an approach underpinned by principles of Kaupapa Māori. As part of the stakeholder engagement we wish to understand whānau views and experiences through wānanga (focus groups) and partnerships which prioritise whanaungatanga (relationship) and manaakitanga (respect and care). Please feel free to provide your feedback.

These perspectives will be considered using Māori methods of noho puku (self-reflection), whanaungatanga (relational linkage) and kaitiakitanga (guardianship).

We do not wish to have a document that produces as a result only a 'therapeutic connection'; instead, we wish to have meaningful connections with all stakeholders to the protocol.

For this protocol and subsequent rehabilitation encounters to be meaningful, three layers of connection are acknowledged.

- wairua (spirit) refers to the intuitive feel and atmosphere that underpinned and surrounded interactions and hononga (connection) which both underpin and surround interactions. These elements interweave and thread all subsequent layers, creating an atmosphere which permeates and encases interactions, supporting meaningful connection.
- the importance of whānau identity and collectivism, and whanau engagement being valued, incorporating Whanaungatanga to feel to be known personally, and Whakawhiti korero, interactive and collaborative conversations
- relational aspects are important within the lived experience, and relationships of reciprocity that are mana-enhancing and grounded in trust.

These layers are interwoven, and together serve as a framework for meaningful connections to our protocol.

(Informed from Wilson, B. J., Bright, F. A., Cummins, C., Elder, H., & Kayes, N. M. (2021). 'The wairua first brings you together': Māori experiences of meaningful connection in neurorehabilitation. *Brain Impairment*, 1-15.)

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