



Australian Government
Australian Sports Commission



AIS

AUSTRALIAN CONCUSSION GUIDELINES FOR YOUTH AND COMMUNITY SPORT

A collaboration between the Australian Institute of Sport, Australasian College of Sport & Exercise Physicians,
Sports Medicine Australia and Australian Physiotherapy Association

Aligned with the UK Department of Culture, Media and Sport and NZ Government Accident Compensation Corporation

Australian Institute of Sport | February 2024



“If in doubt, sit them out”

CONTENTS

| | |
|---|-----------|
| Introduction | 3 |
| What is concussion? | 4 |
| What causes concussion? | 4 |
| Onset of symptoms | 4 |
| How to recognise concussion | 5 |
| What to do next: Immediate management of concussion | 6 |
| Graded return to sport framework for community and youth | 8 |
| Examples of return to sport timeframes | 11 |
| Protocol for those with multiple suspected concussions | 12 |
| Concussion officer for community/school environments | 13 |
| Additional resources | 15 |



“If in doubt, sit them out”

INTRODUCTION

These guidelines are intended to provide information on how to recognise concussion and manage concussion from the time of injury through to a safe return to education, work and playing sport. This information is intended for the general public and for individuals participating in underage and community sports – primary school age and upwards – where Healthcare Practitioners are less likely to be available to diagnose and monitor individuals with concussion.

There has been growing concern in sporting communities about the potential health ramifications for athletes from repeated head trauma (RHT) and sport-related concussion (referred to as concussion here on). Concussion affects athletes at all levels of sport, from the part-time recreational athlete to the full-time professional. If managed appropriately, most episodes of concussion resolve over a short period of time, with or without medical intervention. Complications can occur, however, including prolonged duration of symptoms and increased susceptibility to further injury. Chronic traumatic encephalopathy (CTE) is a neurodegenerative pathology associated with a history of RHT. There are a growing number of case studies and case series which document CTE neuropathological change (CTE-NC) in retired athletes with a history of RHT.

Over recent years there has been elevated public awareness of concussion and increased focus on the importance of diagnosing and managing the condition promptly, safely, and appropriately.

Sport administrators, healthcare practitioners (HCPs), coaches, parents/guardians/caregivers, and athletes are seeking information regarding the timely recognition and appropriate management of concussion. There is a need for clear, unequivocal, and reliable information to be readily accessible to all members of the community. There is a need for clarity and consistency of message in order to optimise safety across all levels of sports.

This document provides a general overview of concussion identification and management and the role community members should play. For more in-depth information and references, refer to the [AIS Concussion and Brain Health Position Statement \(CBHPS24\)](#). However, this information should not be interpreted as a guideline for clinical practice or legal standard of care.








These guidelines are based on current evidence and examples of best practice taken from other sports and organisations around the world. In partnership with THE New Zealand Accident Care Commission (ACC) and the UK Department of Culture, Media and Sport (DCMS), these guidelines enable a strong international consensus that provides clarity and consistency of message, enhancing the safety of all community sport participants. These guidelines are aligned with the [UK Government’s Concussion Guidelines for Non-Elite \(Grassroots\) Sport, released in April 2023](#).

These concussion guidelines are recommended for youth (aged under 19 years) sport settings, and for community adult sport.

What is concussion?

Concussion is a brain injury resulting in a disturbance of brain function. It affects the way a person thinks, feels and remembers things. Concussion can affect an individual in a variety of ways, including:

| | | | | |
|--|---|---|---|---|
|  <p>PHYSICAL</p> |  <p>COGNITIVE</p> |  <p>EMOTIONAL</p> |  <p>SLEEP</p> |  <p>FATIGUE</p> |
| <p>Headaches, dizziness, vision changes</p> | <p>Feeling 'foggy', slowed down</p> | <p>Short tempered, sad, or a general change of personality</p> | <p>Not being able to sleep or sleep more than normal</p> | <p>Low energy</p> |



What causes concussion?

A concussion occurs through a collision with another person or object where biomechanical forces to the head, or anywhere on the body transmit an impulsive force to the head/brain. In most cases, this results in transient neurological impairment. It should be noted that concussion can also occur with relatively minor 'knocks'.

Onset of symptoms

Concussion is often an evolving injury, with symptoms changing over hours or days following the injury. There are often adverse effects on balance and cognitive function. Recovery times following concussion vary between athletes. Physiological recovery may take longer than measures of clinical recovery, and the average time taken to resolve symptoms may vary according to sex, age, presence of pre-injury medical conditions, and para-athlete status. While these guidelines apply to all in community and youth settings, additional information regarding certain individual characteristics can be found in the [CBHPS24](#).

HOW TO RECOGNISE CONCUSSION

The **Concussion Recognition Tool 6 (CRT6)** may be used as an aid to the on field recognition of concussion (see additional links section on page 12). If any of the following visible clues (signs) or symptoms are present following an injury, the individual should be assumed to have concussion and must be immediately removed from play or training and must not return to activity that day.

The **CRT6** is a simplified summary of the key signs and symptoms and 'red flags' that should raise a concern about a possible concussion. 20 symptoms listed in the **CRT6** are:

- > Headache
- > "Pressure in head"
- > Balance problems
- > Nausea or vomiting
- > Drowsiness
- > Dizziness
- > Blurred vision
- > Sensitivity to light
- > Sensitivity to noise
- > Fatigue or low energy
- > "Don't feel right"
- > More emotional
- > More irritable
- > Sadness
- > Nervous or anxious
- > Neck pain
- > Difficulty concentrating
- > Difficulty remembering
- > Feeling slowed down
- > Feeling like "in a fog"

The individual with suspected concussion should be reviewed by a Health Care Practitioner (HCP) at the earliest opportunity and should commence a graded return to sport and learning activities. The AIS Concussion Referral & Return Form provides important information to a healthcare practitioner following the suspected concussion of an athlete. The form outlines clear return to sport protocols, and the requirements for clearance for return to contact activities.

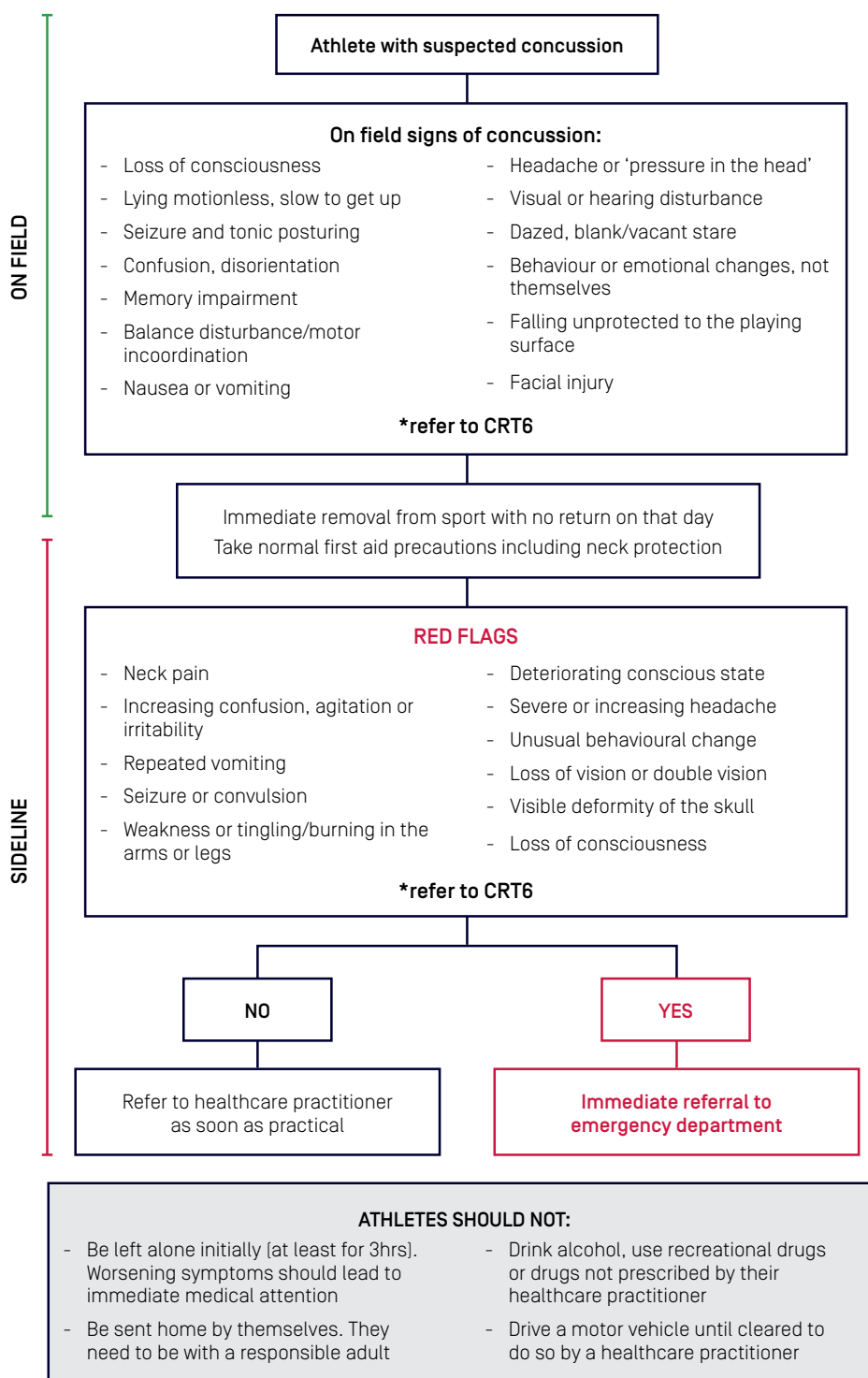
Concussion is an evolving condition. Therefore, signs and symptoms can change or be delayed, reflecting the changing underlying physiological injury status of the brain. In some instances, it will be obvious that there has been a significant injury where the athlete immediately suffers a loss of consciousness, has a seizure or has significant balance difficulties. However, signs and symptoms of concussion can be variable, non-specific, subtle, and may be difficult to detect. Symptoms that are initially subtle can become more significant in the hours and days following the injury and require repeat/serial evaluations. Owing to delays in presentation, it may take up to 48 hours following a head contact to exclude a diagnosis of concussion. Parents/caregivers, teachers, coaches and attending healthcare practitioners need to be alert to behaviour that is unusual or out of character.



WHAT TO DO NEXT: IMMEDIATE MANAGEMENT OF CONCUSSION

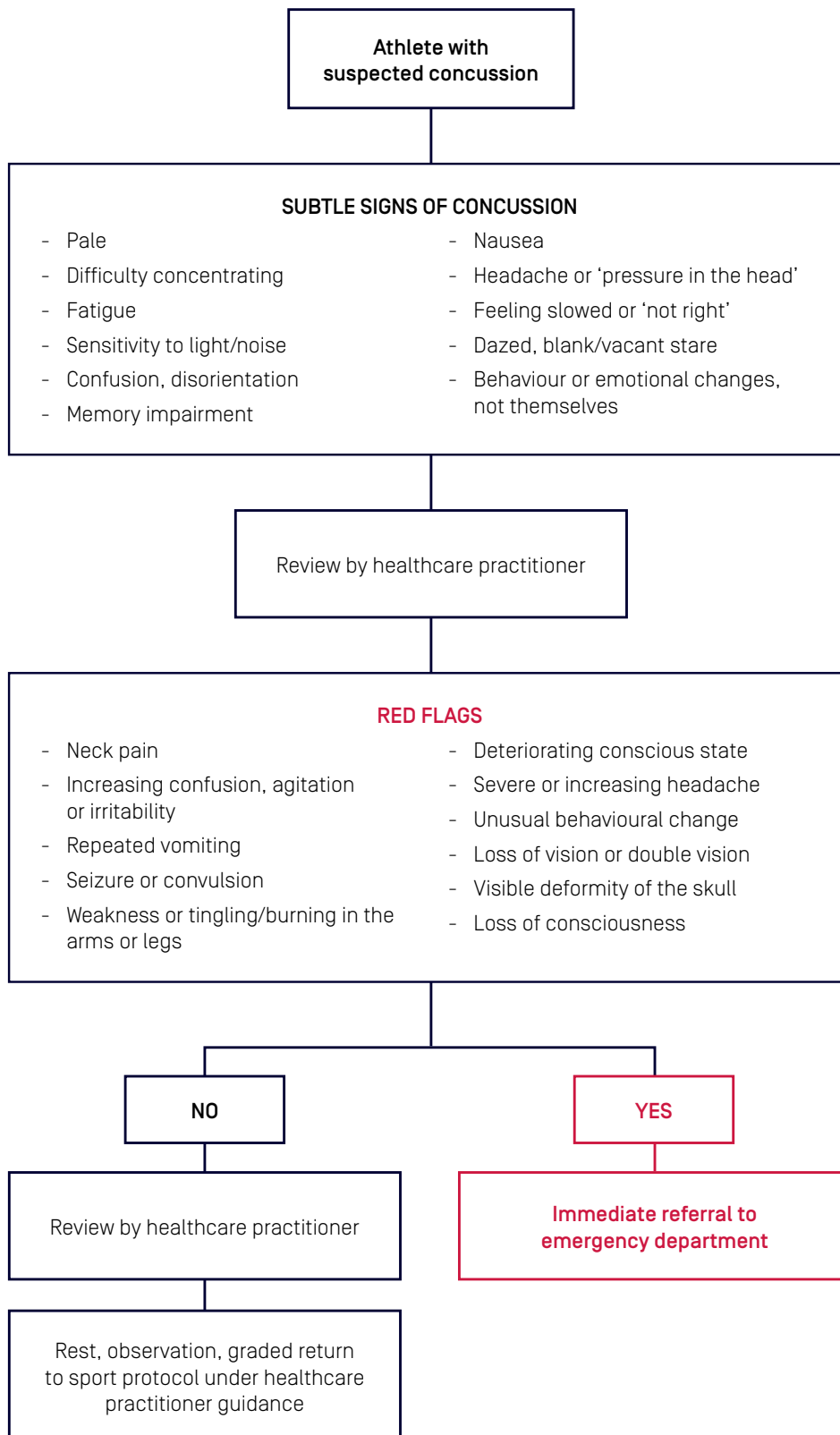
Immediately following a suspected concussion, it is important to exclude 'red flags' (signs that suggest the athlete should go straight to hospital). Once 'red flags' have been excluded, the athlete should be referred to a health care practitioner. Return to sport and learning activities commences with a short period of rest of 24-48 hours, followed by a gradual return to sport and/or learn process. Relative rest involves providing rest for both the body (physical rest) and the brain (cognitive rest).

Figure 1: Non-healthcare practitioner at sporting event where there is a suspicion of concussion (for parents, coaches, teachers, team-mates, support staff)



Sometimes concussion is not detected or suspected at the time of injury. The athlete may present two or three days later at home, or at school, with subtle changes in behaviour. It is important that teachers, coaches, parents, school mates and team mates understand the subtle symptoms and signs that can suggest someone has suffered concussion.

Figure 2: Non-healthcare practitioner in a school or home setting where there is a suspicion of concussion (for parents, coaches, teachers, team-mates, support staff)



GRADED RETURN TO SPORT FRAMEWORK FOR COMMUNITY AND YOUTH

The risk of complications from concussion is increased if a player is permitted to return to sport before they have fully recovered. It is important that athletes do not return to contact activities or competition, until they have fully recovered. The graded return to sport framework (GRTSF) for community and youth assists athletes/coach/parents/teachers with concussion management through the recovery process and time frames for a safe return to sport/learn.

The AIS return to sport protocol for community and youth sport includes;

- > Introduction of light exercise after an initial 24-48 hours of relative rest.
- > Several checkpoints to be cleared prior to progression.
- > Gradual reintroduction of learning and work activities. As with physical activity, cognitive stimulation such as using screens, reading, undertaking learning activities should be gradually introduced after 48 hours.
- > At least 14 days symptom free (at rest) before return to contact/collision training. The temporary exacerbation of mild symptoms with exercise is acceptable, as long as the symptoms quickly resolve at the completion of exercise, and as long as the exercise-related symptoms have completely resolved before resumption of contact training.
- > A minimum period of 21 days until the resumption of competitive contact/collision sport.
- > Consideration of all symptom domains (physical, cognitive, emotional, fatigue, sleep) throughout the recovery process.
- > Return to learn and work activities should take priority over return to sport. That is, while graduated return to learn/work activities and sport activities can occur simultaneously, the athlete should not return to full contact sport activities until they have successfully completed a fully return to learn/work activities.



Reintroduction of daily activities is appropriate if the activities do not severely exacerbate symptoms following the initial 24-48hour period of rest. Early resumption of activities of daily living is associated with improved symptom resolution and shorter recovery time.

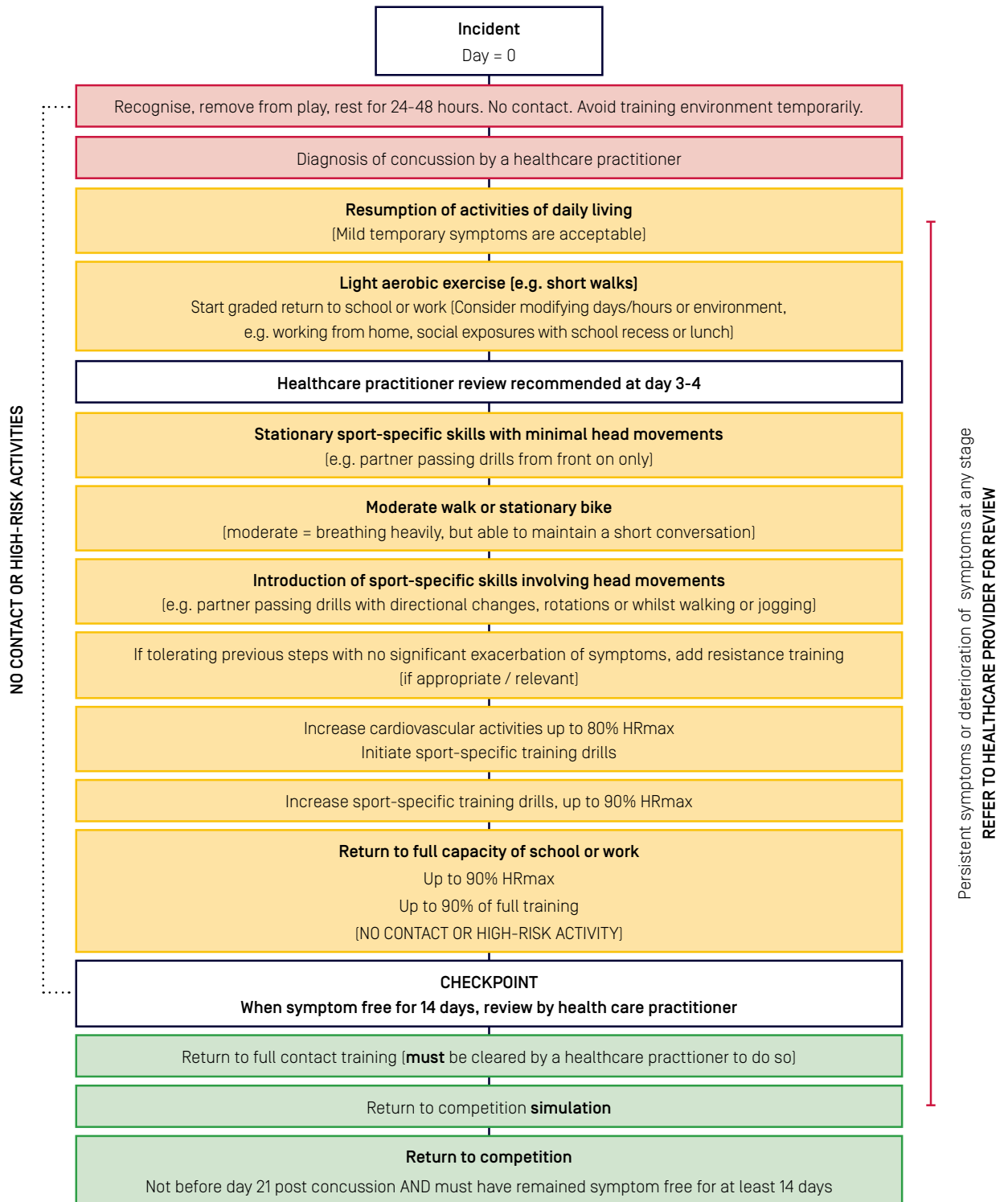
After the initial period of relative rest, graded return to school and/or work is advised. Concussion is an evolving injury and symptoms can change over time in one or more domains. All affected domains may not be evident during the early stages of the graded return. Care should be taken when returning to activities that involve multiple domains, such as school or work, with dosage and environment considered.

Recent studies encourage initiation of low-intensity exercise 24-48 hours post-concussion irrespective of the presence of low-level symptoms. Mild and brief exacerbation of symptoms may occur during progression through the GRTSF. This is acceptable as long as the exacerbations are temporary, that is, the symptoms return to baseline before the next exercise session. Mild is defined as an increase of no more than 2 points on a 10 point scale and brief is no more than 1 hour duration of exacerbation from pre-exercise symptoms. If there is moderate or severe exacerbation of symptoms or symptoms persist until the next scheduled bout of activity [considered prolonged symptoms] then a review with a HCP is recommended.

Children and adolescents take longer to recover from concussion than adults. A more conservative approach should be taken with those aged under 19 years of age. **The GRTSF requires those under 19 years of age and those without a dedicated HCP to guide recovery, to be symptom free for 14 days (at rest) before return to contact training, and not return to competitive contact sport until a minimum of 21 days from the time of concussion.** To be clear, that is *not* 14 days *from the time of concussion*. It is *14 days from when the athlete becomes symptom-free*. The day of the concussive incident is deemed *day 0* of the GRTSF. This recommendation allows for the individual case variability in symptom duration. It ensures that the most vulnerable individuals have demonstrated a clear capacity to perform all normal activities of daily living, including non-contact exercise, without symptoms, before they return to the field of play.



Figure 3: Graded return to sport framework for community and youth sport



Some high-performance athletes may have access to appropriately trained Healthcare Practitioners experienced in multi system concussion rehabilitation. These athletes may be cleared earlier if their sports concussion protocol allows. Refer to the graded return to sport framework for advanced care settings. Note, athletes aged under 19 years should NOT have access to earlier clearance available in advanced care settings.

Examples of return to sport timeframes

Note:

- > Day of concussive incident is considered 'Day 0'
- > Examples below assume a sport where competition occurs weekly on a Saturday
- > The 14 day symptom free period does not start until the first day that the athlete is symptom free

Key:

| |
|------------------|
| Incident |
| Symptomatic |
| Symptom-free |
| Contact training |
| Full competition |

| Athlete symptom-free on day 3 (Tuesday of the 1st week) | | | | |
|---|--------------|--------------|-----------|-----------|
| Saturday | 5. Saturday | 12. Saturday | Saturday | Saturday |
| Sunday | 6. Sunday | 13. Sunday | Sunday | Sunday |
| Monday | 7. Monday | 14. Monday | Monday | Monday |
| 1. Tuesday | 8. Tuesday | Tuesday | Tuesday | Tuesday |
| 2. Wednesday | 9. Wednesday | Wednesday | Wednesday | Wednesday |
| 3. Thursday | 10. Thursday | Thursday | Thursday | Thursday |
| 4. Friday | 11. Friday | Friday | Friday | Friday |

| Athlete symptom-free on day 7 (Saturday of second week) | | | | |
|---|--------------|---------------|-----------|-----------|
| Saturday | 1. Saturday | 8. Saturday | Saturday | Saturday |
| Sunday | 2. Sunday | 9. Sunday | Sunday | Sunday |
| Monday | 3. Monday | 10. Monday | Monday | Monday |
| Tuesday | 4. Tuesday | 11. Tuesday | Tuesday | Tuesday |
| Wednesday | 5. Wednesday | 12. Wednesday | Wednesday | Wednesday |
| Thursday | 6. Thursday | 13. Thursday | Thursday | Thursday |
| Friday | 7. Friday | 14. Friday | Friday | Friday |

Protocol for those with multiple suspected concussions

An athlete with a history of multiple concussions is at risk of experiencing prolonged symptoms before return to sport. Those who suffer from multiple concussions within a short period of time should be managed more conservatively and be assessed by a clinical management team with specific training and expertise in concussion. *Multiple concussions can be a minimum of two concussions within a 3-month period, or a minimum of three concussions in a 12-month period.* If this occurs, the individual should follow a more conservative return to sport protocol. There is no evidence regarding specific time frames for return to sport following multiple concussions. The timeframes will be influenced by factors such as the severity of the most recent injury, the number of previous concussions and the general medical history of the athlete. A recommended starting point for return to sport after second concussion within three months, would be 28 days symptom-free before return to contact training and a minimum of six weeks from the time of the most recent concussion until return to competitive contact.

In situations where more than two concussions have occurred within a 12-month period, consideration needs to be given to missing a season of contact / collision sport.



Concussion officer for community/school environments

All community members should be aware of the concussion management protocols and pathways relevant to their sport and community, including their role in the identification and management of concussion. It is recommended that clubs and schools introduce a 'concussion officer' to oversee the management of concussion. A 'concussion officer' is a single point of contact and manages the coordination of matters related to concussion. A 'concussion officer' is not a concussion expert and is not expected to diagnose concussion. Analogous to the role of a 'fire warden', the 'concussion officer' ensures that anyone diagnosed with concussion follows the organisation's agreed concussion protocol. The designated person can be any member of the affiliated community. Their job is to be the recipient of information in relation to concussion and to ensure that the concussion protocol is enacted. It is recommended that a 'whole of community' concussion policy or protocol is adopted. This needs to be effectively socialised and communicated to all stakeholders, to ensure it is adapted successfully.

Figure 4: Systems for managing the concussed student in the school environment

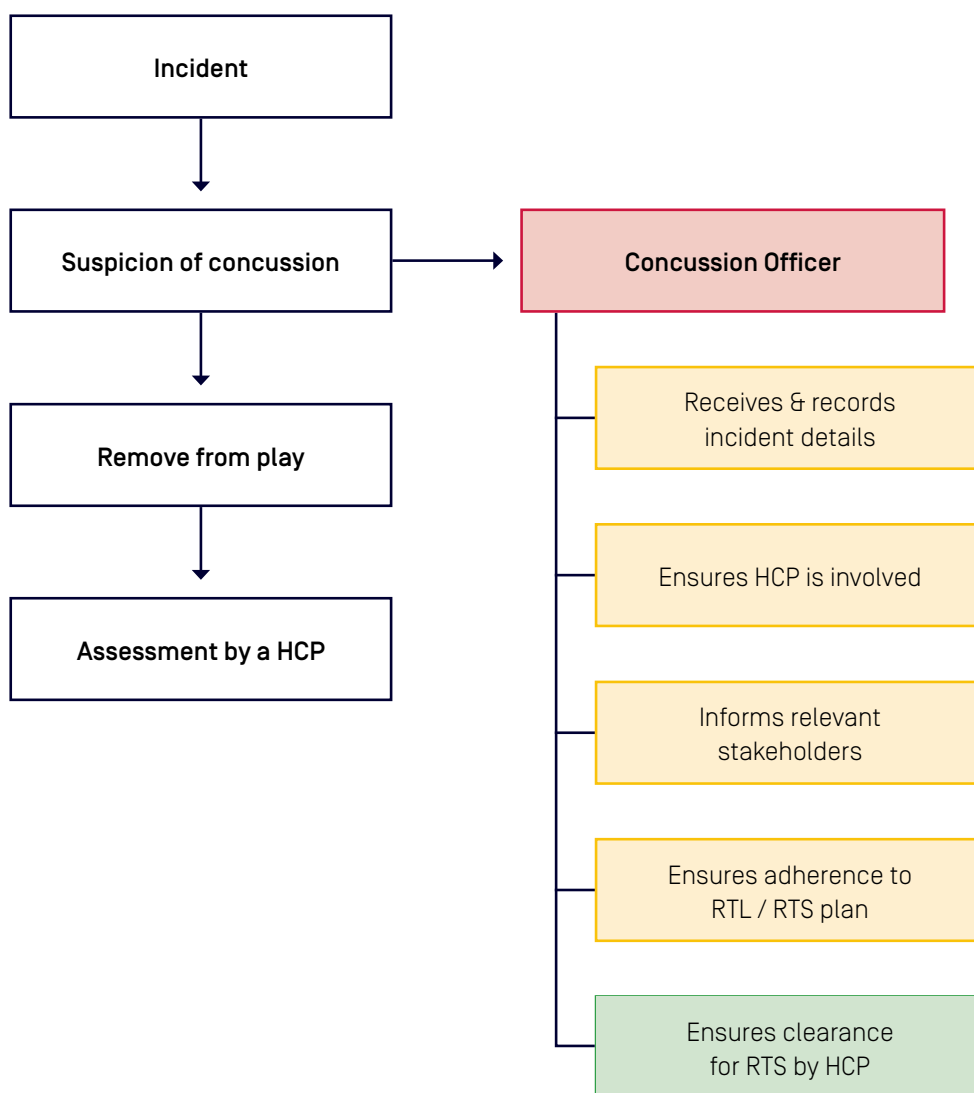
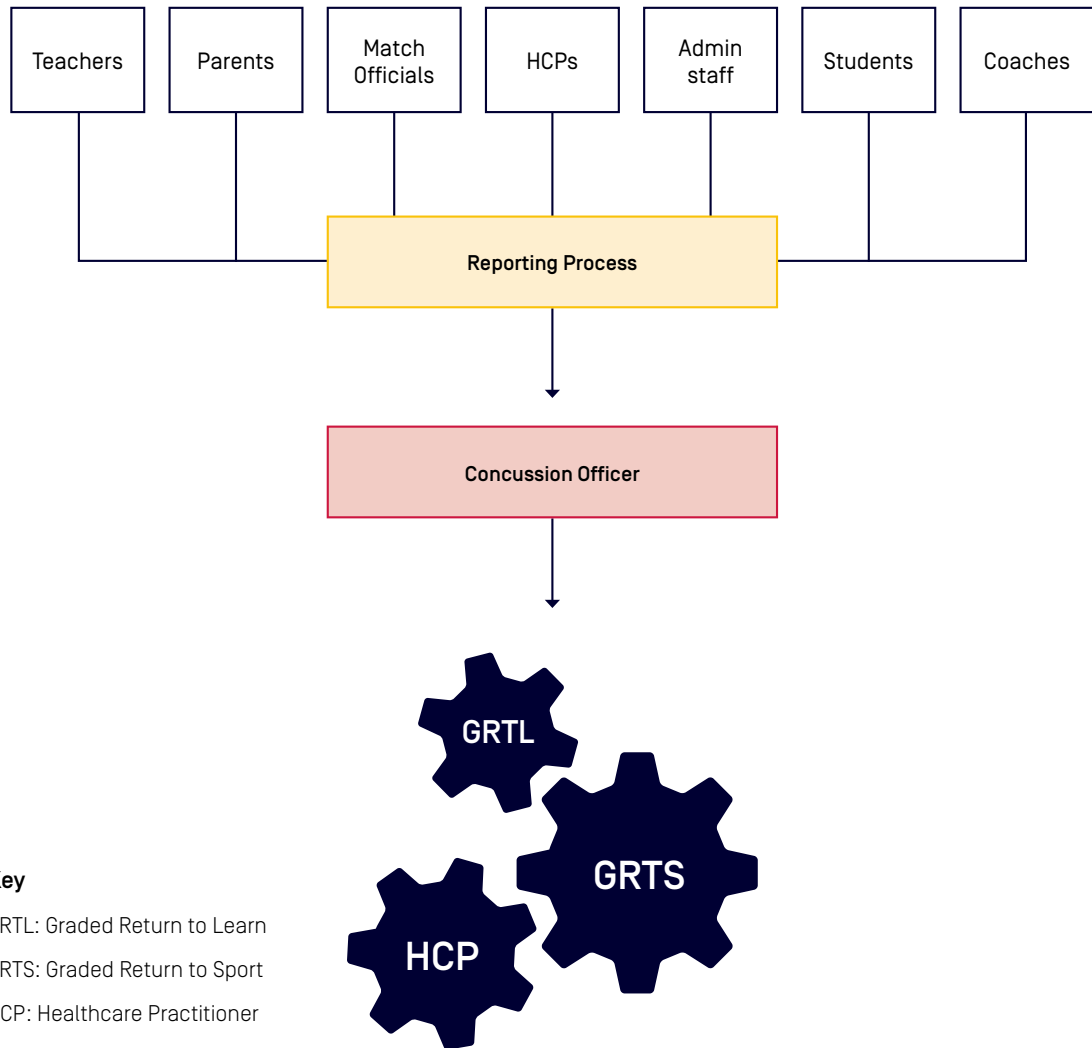


Figure 5: Systems for managing the concussed student in the school environment



“Everyone has a responsibility to report a suspected concussion”

ADDITIONAL RESOURCES

- > [AIS Concussion and Brain Health Position Statement 2024](#)
- > [Concussion in Sport Australia | Australian Sports Commission](#)
- > [Connectivity: Sport-Related Concussion Short Course](#)
- > [UK Government's Concussion Guidelines for Non-Elite \(Grassroots\) Sport](#)
- > [Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport](#)
- > [Concussion Recognition Tool 6 \(CRT6\)](#) (For use by non-healthcare practitioners)
- > [Sport Concussion Assessment Tool 6 \(SCAT6\)](#) (For use by healthcare practitioners)
- > [Sport Concussion Office Assessment Tool 6 \(SCOAT6\)](#) (For use by healthcare practitioners)
- > [BJSM Para-Sport Concussion Consensus Paper](#)
- > [Concussion referral and return form](#)





Australian Government

Australian Sports Commission

ALS.gov.au



@theAIS #theAIS