



# CONCUSSION GUIDELINES

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# WHAT IS A CONCUSSION?

A concussion is described as a traumatic brain injury resulting from a direct blow to the head, neck, or body, causing an impulsive force to be transmitted to the brain.

This event triggers a series of neurophysiological changes, potentially leading to symptoms like headaches, dizziness, and cognitive disturbances.

## WHEN TO SUSPECT A CONCUSSION

**Symptoms** of concussion **may present immediately** or may still present **over 72 hours later**.

Category	Signs and Symptoms of Concussion
Physical Symptoms	Headaches, dizziness, nausea, balance problems, visual disturbances, sensitivity to light or noise, feeling sluggish
Cognitive Symptoms	Confusion, disorientation, difficulty concentrating, memory disturbances
Emotional Symptoms	Irritability, sadness, more emotional, nervousness or anxiety
Sleep Disturbances	Sleeping more than usual, sleeping less than usual, trouble falling asleep
Other Signs	Ataxia (lack of muscle coordination), amnesia, behavioural changes

It is important that these symptoms continue to improve over the following weeks. If the player still has symptoms after one month, they need to be further assessed.



# WHAT TO DO IF YOU SUSPECT A CONCUSSION?

During Game / Practice

1

## REMOVE THE PLAYER FROM THE FIELD IMMEDIATELY

- If there is loss of consciousness, assume that there is a neck injury, stabilise the head and neck and stretch the player off.
- Do not allow the player to return to practice or match.

2

## SEEK MEDICAL ATTENTION

- At the majority of sports fixtures and practices, health care providers are available (school nurses, paramedics, biokineticists, etc.). They will assist in screening for a possible concussion or additional injury.

To reiterate, they cannot make the diagnosis of a concussion and need to refer you to the appropriate doctor within 72 hours.

3

## REPORT INJURIES TO SCHOOL AUTHORITIES

- The school and coaches need to be aware of the injury and can assist with this standard of procedure.

4

## ACTIONS TAKEN AT HOME

- Students should be in the presence of a responsible adult for 48 hours.
- Record and monitor the symptoms of concussion, including headache, nausea, dizziness, fatigue, sleep disturbances, memory lapses, mood swings, poor concentration, or any other feeling that concerns you.
- Monitor for symptoms that may indicate a worsening head injury (see next section - *"When is it more than a concussion?"*)
- Complete rest & sleep will help with recovery.

### DO NOT:

- Consume alcohol
- Take excessive amounts of painkillers (follow doctor's orders)
- Place yourself in an environment of loud noise and excessive light
- Study
- Work at the computer
- Exercise until evaluated by a doctor.





# IF SYMPTOMS START DEVELOPING AT HOME

- Use the CRT6 tool (attached in appendix)
- Use one of the computer based tools (eg. SportGait, Neuroflex, Sway) to assist in screening. (Once again, as a reminder, these tools cannot diagnose. If it indicates a concussion, you will need to confirm this with a full concussion assessment with the doctor. If the tool indicates there is no concussion, it does not mean the student is cleared to play.)
- Follow the instructions on page 3, from numbers 2-4

## WHEN IS IT MORE THAN A CONCUSSION?

Any player who has or develops the following:

- Fractured skull
- Penetrating skull trauma
- Deterioration in conscious state following injury
- Increasing confusion
- Worsening intense headache post injury
- Persistent vomiting
- Any convulsive movements
- Focal neurological signs - paralysis or paraesthesia
- Where assessment is difficult (e.g.: an intoxicated patient)
- High-risk patients (e.g. hemophilia, anticoagulant use)

**If any of the above symptoms are present, the player should go directly to the hospital.**





# HOW TO DIAGNOSE A CONCUSSION

The diagnosis of a concussion is currently a **clinical diagnosis** by medical personnel trained in dealing with head injuries (i.e. a **medical doctor** or physiotherapist with extensive neurological training). A concussion is a head injury, and therefore it is important that the doctor rule out worse injuries.

A physician who has completed all necessary **training with World Rugby** is the one who should make the diagnosis. There are constant updates to how we diagnose and manage these conditions, and so they need to be up to date in order to correctly manage the injury.

Please find the updated list of physicians on the Concussion South Africa website.

<https://www.sportsconcussion.co.za/medical-team/>

It is advisable to be assessed **within the first 72 hours**, but it can still be assessed up to 1 week after injury.

**Computer based testing** (including phone apps) and G-force gum guards can assist the doctor in making the final diagnosis, however, these **cannot be used as stand alone tools**.

Standard **MRI or CT scan cannot be used for the diagnosis**. These scans are ordered to rule out any suspicion of a worse head injury.



# WHY IS THE DIAGNOSIS OF A CONCUSSION IMPORTANT?

1

## PREVENTION OF FURTHER INJURY

Early diagnosis helps in implementing immediate measures to prevent further brain injury. Continuing physical or cognitive activities without addressing a concussion can exacerbate the condition, leading to prolonged recovery or more severe brain injuries.

2

## PREVENTING CUMULATIVE EFFECTS

Repeated concussions or receiving another concussion before fully recovering from the first can lead to cumulative brain damage. Proper diagnosis and adherence to a management plan are crucial in preventing the potentially severe long-term effects associated with repeated brain injuries, such as chronic traumatic encephalopathy (CTE).

3

## BRAIN SAFETY

Concussions can affect cognitive functions, physical abilities, and emotional health. Without proper management, individuals are at risk of facing long-term health issues, including memory problems, concentration issues, and even mental health challenges.

4

## GUIDED RETURN TO ACTIVITIES

Management of a concussion includes a guided and gradual return to study, work, or sports activities, minimising the risk of recurrence or worsening of symptoms. This process ensures that an individual can safely resume their daily activities without compromising their health.

5

## LEGAL & ETHICAL CONSIDERATIONS

In sports, there are legal and ethical considerations regarding the health and safety of athletes. Proper diagnosis and management of concussions are essential to fulfilling these obligations and protecting the welfare of athletes.



# DIAGNOSIS OF CONCUSSION MADE. WHAT NEXT?



## STEP 1: INITIAL REST & SYMPTOM-LIMITED ACTIVITY

An initial period of 24-48 hours of rest is recommended following a concussion. After this period, if symptoms allow, the individual may begin engaging in symptom-limited activities (under supervision of a biokineticist or physiotherapist).

## STEP 2: RETURN TO LEARN

The RTL process is a critical component of concussion management, especially for students and young athletes. It outlines a **gradual, stepwise approach** to helping an individual who has suffered a concussion **safely return to academic activities**. This process acknowledges that cognitive exertion, similar to physical exertion, can exacerbate concussion symptoms. Therefore, a careful balance must be maintained to ensure recovery while gradually reintegrating into academic life. Here's an overview of the RTL process:

- i. Immediate Post-Injury Period:** Initially, after a concussion, it's recommended to minimize cognitive strain. This might involve staying home from school and avoiding activities that require concentration or could exacerbate symptoms, such as screen time, reading, and writing.
- ii. Symptom-Limited Activities:** As symptoms start to improve, the individual can begin engaging in light cognitive activities that do not worsen symptoms. This might include activities like reading or screen time for short periods, with breaks as needed.
- iii. Gradual Reintegration into Academic Work:** The next step involves gradually increasing cognitive workload. This might start with partial days at school or reduced workload, depending on the individual's symptoms. Accommodations might include extended time for assignments, rest periods during the day, or permission to wear sunglasses if light sensitivity is an issue.
- iv. Increased Academic Demands:** As the individual continues to show improvement and can tolerate more cognitive exertion without worsening symptoms, they can take on more schoolwork and spend longer periods at school.
- v. Full Return to Academic Activities:** The final goal is for the individual to resume their full academic workload without exacerbations of concussion symptoms.

Throughout the RTL process, communication between healthcare providers, school officials, teachers, and parents is crucial to ensure that the student receives the necessary support and accommodations.

It's essential to recognise that the RTL process is flexible and should be tailored to the individual's specific needs, symptoms, and recovery trajectory.

Symptoms should always be the primary factor in determining how quickly to move through the RTL steps, with the student's health and wellbeing coming first.

The systematic review revealed that the vast majority of athletes (93%) of all ages have a full RTL with no additional academic support by 10 days.





## STEP 3: GRADUATED RETURN TO PLAY (GRTP)

**NB: SARU statement (March 2024): No player to return before 21 days after injury**

The Return to Sport (RTS) process after a concussion is a gradual, step-by-step protocol to safely reintegrate athletes into sports. For a detailed description, please see the appendix:

### **Step 1 - Symptom-Limited Activity:** *Eg: Activities of daily living, but minimal screen time*

- Light activities that don't worsen symptoms. These can be started after the 48 hour rest period.

### **Step 2 - Light Aerobic Exercise:** *Eg: Gentle jogging/cycling on an exercise bike*

- Introduce slight aerobic exertion to increase heart rate without worsening symptoms. This may only be started after 24 hours of Step 1, and under supervision (biokineticist or physiotherapist).

### **Step 3 - Sport-Specific Exercise:** *Eg: Dribbling with a ball*

Progress to sport-specific exercises without any contact or risk of head impact.

*This may only be started after:*

- 24 hours of Step 2
- Under supervision (biokineticist or physiotherapist)
- Athlete is symptom free.

These exercises include directed treatment of brain

- Targeted treatment by biokineticist or physiotherapist.
- This may involve balancing exercises or neck mobility treatments.

### **Step 4 - Non-Contact Training Drills:** *Eg: Game play without contact or heading*

Increase complexity with drills that mirror normal training but still avoid any contact.

- Can only progress if symptom free and after 24 hours.  
**No progression until assessed by medical personnel**
- Players who need to be assessed by a medical doctor (with experience in sports-related concussion)
- Any player with a second concussion within 12 months
- A history of multiple concussions,
- Players with unusual presentations
- Prolonged recovery

All other players should ideally be assessed by a doctor, however, if resources do not allow, they can be assessed by the school's alternative provider (biokineticist or physiotherapist).

**No progression to Step 5 until 20 days after injury.** Therefore, the first four steps should not be rushed. It will not change the time period.

### **Step 5 - Full Contact Practice:** *Eg: Game play with contact and light heading*

- After medical clearance, participate in normal practice to assess readiness for game play.
- 24 hours and no symptoms to progress to the next step.

### **Step 6 - Return to Play:**

- Full return to competitive play is allowed if the athlete remains symptom-free during and after contact practice.
- Each step requires at least 24 hours, with progression based on the absence of symptoms. If symptoms recur, the athlete steps back to the previous level and only progresses when symptom-free. The process emphasises individual care, with a healthcare professional's clearance needed before fully returning to sports.



# UPDATES TO THE CONCUSSION CONSENSUS STATEMENT

The updated consensus statement highlights the importance of

1. Recognising concussions early,
2. Employing prevention strategies such as policy changes to reduce collisions (eg. tackle height)
3. Using tools like the Concussion Recognition Tool-6 (CRT6) and the Sport Concussion Assessment Tool-6 (SCAT6) for initial assessment and management
4. Importance of managing concussions with a focus on a gradual return to learn and sport activities, guided by symptoms and the professional assessment of healthcare providers

## RESOURCES

1. Patricios, J. S., Schneider, K. J., Dvorak, J., Ahmed, O. H., Blauwet, C., Cantu, R. C., Davis, G. A., Echemendia, R. J., Makdissi, M., McNamee, M., Broglio, S., Emery, C. A., Feddermann-Demont, N., Fuller, G. W., Giza, C. C., Guskiewicz, K. M., Hainline, B., Iverson, G. L., Kutcher, J. S., ... Meeuwisse, W. (2023). Consensus statement on concussion in sport: The 6th International Conference on Concussion in Sport-Amsterdam, October 2022. *British Journal of Sports Medicine*, 57(11), 695–711. <https://doi.org/10.1136/bjsports-2023-106898>
2. <https://www.sportsconcussion.co.za/>
3. <https://www.world.rugby/the-game/player-welfare/medical/concussion/concussion-guidelines>
4. <https://inside.fifa.com/social-impact/campaigns/concussion>

## CRT6 ASSESSMENT TOOL

Please use download for better quality:

<https://www.sportsconcussion.co.za/sportconcussion/wp-content/uploads/2023/07/CRT6-v5.pdf>

