https://my.boksmart.com www.BokSmart.com http://www.sportsconcussion.co.za/

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BokSmart Information Pack on Concussion

The following Documents are prepared for the purpose of educating and circulating to all the players, parents, or families of those participating in Rugby at your School or Club.

This will assist them in making better 'player safety' decisions with regards to their own/son/daughter/spouse's medical management, care at home, and ultimately making best practice informed return to play decisions.

Please ensure that everyone is aware of World Rugby and SARU's requirements in terms of best practice identification, treatment, and management of these types of injuries.

We are dealing with the BRAIN here, NOT a muscle!

For more information on Concussion go to www.BokSmart.com/Concussion, https://www.springboks.rugby/general/boksmart-medical-protocol-concussion-blue-card/, www.sportsconcussion.co.za, and https://passport.world.rugby/player-welfare-medical/concussion-management-for-the-general-public/.

Concussion Pack Content

1. Concussion Advice Sheet

2. Concussion identification and management.

3. Concussion Blue Card infographic.

4. When can a player safely return to play.

5. Individualised Rehabilitation Infographic.

6. Returning to Learning.

7. Concussion Prevention.

8. Echemendia et al 2023 The CRT6 Tool.

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CONCUSSION ADVICE SHEET

🤯 What Is a Concussion?

A concussion is a type of brain injury that happens when you get a bump to the body or hit to the head—or even if your head hits the ground or something else. You don't have to be knocked out for it to be serious.

Basically, your brain gets shaken up a bit, and that can mess with how it works for a while. Most of the time, these effects can happen quickly, don't last long and get better on their own. But sometimes, symptoms can stick around or worsen, so it's important that you're checked out by medical staff who know how to manage concussions properly.

🚨 What You Might Feel After a Concussion

Here are some common things you might notice if you've had a concussion:

- **Body stuff**: Headaches, feeling sick, dizzy, super tired, sensitive to light, or struggling when you try to exercise
- **Balance & brain**: Feeling off-balance, having trouble focusing, forgetting things, or finding it hard to read or use your phone/computer
- **Emotions**: Mood swings, feeling irritable or easily annoyed, or even acting a bit more aggressive than usual
- **Sleep**: Sleeping a lot more than usual, or not being able to fall asleep at all
- **Activity issues**: Sometimes, symptoms pop up (or get worse) when you try to be active too soon

🚨 What Should I Watch Out For? (RED FLAGS)

After a concussion, a medic might decide you're okay to head home—but it's very important that you're **not left alone**. Make sure a responsible adult is with you just in case anything changes.

It's normal to still feel a bit off when you leave, but your symptoms **shouldn't get worse**. If any of the following signs show up or start to increase, don't wait—**get medical help immediately** or go to the hospital:

- 😵 You lose consciousness (even briefly)
- 🧠 You seem more confused or less alert than before
- ⚡ You have a seizure or convulsions
- 🤯 Your headache gets really bad or keeps getting worse
- 😣 You have neck pain or tenderness
- 👀 You see double or your vision is weird
- 💥 You feel weakness, tingling, or burning in your arms or legs
- 🤢 You're vomiting repeatedly
- 😠 You become restless, aggressive, or agitated
- 💀 You notice any strange bump or dent in your skull

If you're seeing these RED FLAGS —**don't wait it out. Get help**. It's always better to be safe when it comes to head injuries.

😴 Can I Go to Sleep After a Concussion?

Totally. It's completely normal to feel sleepy or tired after a concussion. If a medic has checked you out and everything looks stable for a couple of hours after the injury, it's **safe for you to rest or sleep**.

The only thing we ask is that you're not left alone—**someone should stay with you**, just in case anything changes. And no, you don't need to be woken up every hour. Let yourself rest.

🚫 Things to Avoid While You're Recovering

Here's what *not* to do while you're healing. These things can slow down your recovery or make symptoms worse:

- No **coffee, energy drinks**, or other stimulants
- Skip any **supplements** you normally take—check with a doctor before restarting them
- Stay away from **alcohol** for at least 48 hours, and until your doctor says it's safe
- **Don't drive** (car, motorcycle, or even a bicycle) until cleared
- **No exercising**—even light training—until your doctor gives the go-ahead
- Keep **screen time short**: answer a few phone messages or emails but avoid binge-watching, gaming, or long sessions at the computer
- Cut down on reading too if it gives you headaches or makes you feel worse

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💊 Can I Take Something for the Pain?

Only if a doctor says it's okay. In most cases, we recommend sticking to plain old **paracetamol** (like Panado) if you're in pain.

Stay away from:

- **Anti-inflammatory** meds (like Voltaren, Brufen, or Cataflam)
- Anything with **codeine** in it (like Myprodol)

These can interfere with your recovery, so check with your doctor first.

🍽️ Can I Eat After the Game or Practice?

Yes, if you're hungry—go ahead and eat. Just know that feeling a bit nauseous or tired is common, and it might affect your appetite.
Don't force it. Eat when your body feels ready.

🩺 How Long Will I Be Monitored?

You'll need to **follow up with a doctor** after your concussion—this part is really important.

Here's what to expect:

- You can still do basic daily things and maybe some gentle walking, but **no heavy training** until your doctor gives the okay
- **Return-to-play** is different for every player—your doctor will decide when it's safe
- You might do some extra checks (like balance tests, neck exams, or brain function tools like NeuroFlex®) during follow-ups
- Your doctor can also help figure out if **school or work** needs to be adjusted—like less screen time or extra time for tests or tasks

Recovery isn't one-size-fits-all, so go at *your* pace with your medical team guiding the way.

🧠 Still Not Feeling 100%? Here's What You Can Do

It's totally normal for some symptoms—like headaches or difficulty focusing—to stick around for a bit, especially when you're trying to read or use a screen. Concussions can make it hard to concentrate, study, or even just sit through class or get through a work shift.

If that's happening to you, don't tough it out—talk to your doctor **and** your teachers or lecturers. There are support options available to help you get through this time, like:

1. **Short-term changes** to your work, school or study schedule:
    - Starting later or finishing earlier
    - Studying or working in a quieter, low-stimulation space
    - Taking breaks from screens and limiting reading time

2. **Academic flexibility**, like:
    - More time to complete tests or assignments
    - Deferring assessments if needed

You might need to share a bit of info about your condition with your school or university to set this up—but it's worth it. Your health comes first.

Want to learn more about how we manage sport-related concussions? Check out these resources:

🌐 sportsconcussion.co.za
🌐 neuroflex.io
🌐 yourbrainhealth.net

👩‍⚕️ Important Concussion Contacts

👩‍⚕️ Who	📜 Name	☎️ Tel No.	🌙 After-Hours	🌐 Email / Website
🧑‍⚕️ Doctor				
🏥 Hospital				
🏫 School / Club Nurse				
☎️ BokSmart Spineline (ER24)	—	**0800 678 678**	**0800 678 678**	www.boksmart.com
🧠 Sports Concussion SA	—	**011 304 7724**	**082 574 6918**	www.sportsconcussion.co.za 📧 sportsconcussion@mweb.co.za

REFERENCES:

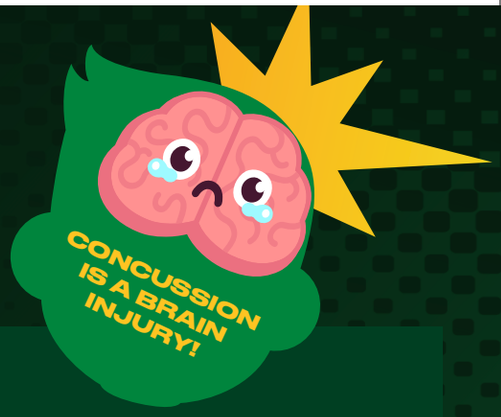
- Patricios JS, Schneider KJ, Dvorak J, et al. Consensus Statement On Concussion In Sport: The 6th International Conference on Concussion In Sport–Amsterdam, October 2022. Br J Sports Med 2023;57:695–711.

- Echemendia RJ, Burma JS, Bruce JM, et al. Acute Evaluation Of Sport-Related Concussion And Implications For The Sport Concussion Assessment Tool (Scat6) For Adults, Adolescents and Children: A Systematic Review. Br J Sports Med 2023;57:722–735.

- World Rugby Player Welfare https://playerwelfare.worldrugby.org

- NCAA Concussion fact sheet for students http://fs.ncaa.org/docs/health_safety/confactsheetsa.pdf

CONCUSSION MANAGEMENT



PREVENTION

5Es

1. **EDUCATE** your team, club or school on concussions
2. **ENFORCE** the laws, protocols and policies in your players
3. **ENHANCE** your players' protection against concussion by preparing them properly for rugby
4. **EQUIP** your players with the right information about what works and what does not
5. **EVALUATE** your concussion prevention process and policies yearly to ensure that you remain up to date with what is expected at the time

IDENTIFICATION

6Rs

1. **RECOGNISE** concussions
2. **REMOVE** the player
3. **REFER** them to a medical doctor to clear them of any complications, NOT for going back to rugby
4. **REST** them completely for the first 24-48 hours
5. **RECOVER** until sign and symptom free
6. **RETURN** them to play, once they have gone through the rugby specific return to sport or 'individualised rehabilitation' process without any hiccups

MANAGEMENT

MEDICAL CLEARANCE STEPS:

1. Medical doctor clearance of complications straight after event.
2. Clearance to start the GRTS or 'individualised rehabilitation' Stages 4–6 and only once all symptoms have cleared.
3. Clearance to progress to full contact after completion of Stage 4 of GRTS or 'individualised rehabilitation'.

MADDOCKS' QUESTIONS

QUESTIONS YOU NEED TO ASK TO PLAYERS 13 YEARS OF AGE AND OLDER:

- What venue are we at?
- What team are you playing?
- What half is it?
- Who scored last in this game?
- Who did you play last week/game?
- Did your team win the last game?

QUESTIONS YOU NEED TO ASK CHILDREN AGED 5-12:

- Where are we now?
- Is it before or after lunch?
- What did you have last lesson/class? or Who scored last in this game?
- What is your teacher's/coach's name?

WHERE THERE IS ANY HESITATION, UNCERTAINTY OR ONE CANNOT VERIFY THE INFORMATION, HAVE THE PLAYER PERMANENTLY REMOVED FROM THE GAME OR TRAINING SESSION, AND SUSPECT A CONCUSSION.

SIGNS AND SYMPTOMS

WHAT YOU NEED TO LOOK FOR:

- Dazed, vacant or blank expression
- Lying motionless on the ground or very slow to get up
- Unsteady on feet
- Balance problems or falling over
- Poor coordination
- Loss of consciousness or lack of responsiveness
- Confused or not aware of plays or events
- Grabbing or clutching the head
- Convulsions
- More emotional or irritable

WHAT THE PLAYER MIGHT TELL YOU:

- Headache
- Dizziness
- Confusion or feeling slowed down
- Struggling with or blurred vision
- Nausea or vomiting
- Fatigue
- Drowsy, feeling in a fog or difficulty concentrating
- A feeling of pressure in the head
- Sensitivity to light or noise
- Memory loss for events before, during or after the game or practice

MONITORING: CONCUSSION REGISTER

1. Must be done by a responsible person at School or Club
2. Step by Step monitoring of progression through the rugby-specific GRTS or 'Individualised Rehabilitation' process
3. Recordal of medical steps and processes

NAME OF PLAYER	SURNAME OF PLAYER	TEAM PLAYED FOR	DIVISION	AGE	DATE OF BIRTH	COACH	DATE OF CONCUSSION/ SUSPECTED CONCUSSION	DATE OF MEDICAL ASSESSMENT TO RULE OUT COMPLICATIONS	NAME OF MEDICAL DOCTOR	COMPULSORY RECOVERY STAND-DOWN PERIOD AWAY FROM CONTACT-RUGBY	MEDICAL CLEARANCE RECEIVED TO ENTER STAGES 4-6 OF 'INDIVIDUALISED REHABILITATION'	DATE OF MEDICAL ASSESSMENT CLEARANCE RECEIVED	DATE OF COMPLETION OF GRTS OR 'INDIVIDUALISED REHABILITATION' PROCESS	PROCESS SIGNED OFF & ACKNOWLEDGED BY COACH	DATE RETURNED TO FULL MATCH PLAY (MINIMUM OF 21 DAYS)
Yster	Nkosi	Senior Adult	B	24	May 14, 2000	A.F. Rigter	August 1, 2024	August 2, 2024	Dr Con Cussion	2 weeks	Yes	August 15, 2024	August 20, 2024	Yes	August 22, 2024

THE REFEREE SPOTLIGHT
BLUE CARD

SA RUGBY CONCUSSION REGULATIONS

https://www.springboks.rugby/general/boksmart-legislation

BLUE CARD CONCUSSION PROCESS

1. Referee or Medical professional recognises a potential concussion event
2. Referee then signals Blue Card to the player
3. Visual cue to all watching –> Concussion or suspected concussion
4. Player is permanently removed from the field of play
5. Player is logged onto the Club or School's submitted Team Sheet as a Concussion
6. Referee to submit Blue Card report to the Provincial Rugby Union
7. Referee, Coach, Team management, Player, Parent or Family member logs the Blue Card onto the SA Rugby Online software **bluecard.footprintapp.net**
8. All contact persons listed when logging the Blue Card on the App will receive emailed advice on the required GRTS processes to follow with the player
9. All Blue Card concussion events recorded on the App will be stored on a national database
10. Sport Concussion SA's information: **011-3047724, 0825746918,** Email: **sportsconcussion@mweb.co.za** will also be emailed to them should they wish to access Medical Doctors who are sufficiently knowledgeable in Concussion management for rugby union

The following are 11 OBVIOUS SIGNS & SYMPTOMS that you as a referee, coach or medical support staff simply cannot miss, and cannot allow players presenting with any of these to continue in a match or practice. THESE ARE IMMEDIATE BLUE CARDS!

THOSE SIGNS AND SYMPTOMS TYPICALLY SEEN ON-FIELD:

1. Confirmed loss of consciousness; this is clear and obvious, the player was knocked out
2. Suspected loss of consciousness, or from what you saw happen on the field, where you have a strong suspicion of the player having lost consciousness
3. Convulsions or fits after making contact
4. Tonic posturing, abnormal muscle contractions or muscle stiffening
5. Balance disturbance, ataxia, stumbling or falling over
6. Clearly dazed, dinged or unable to think or react properly

THOSE ADDITIONAL SIGNS AND SYMPTOMS TYPICALLY IDENTIFIED DURING AN ON-FIELD ASSESSMENT:

7. The player is clearly not orientated in time, place or person or doesn't know what time it is, where they are or who they are talking to
8. Definite signs of confusion in the player
9. Definite changes in behaviour for that player
10. Oculomotor signs for e.g. spontaneous nystagmus or rapid involuntary eye movements
11. On-field identification of regular signs or symptoms of concussion as highlighted in your pocket BokSmart Concussion Guides

LAW 3.22 (C): The referee decides *(with or without medical advice)* that it would be inadvisable for the player to continue. The referee orders that player to leave the playing area.

LAW 3.24: 'If, at any point during a match, a player is concussed or has suspected concussion, that player must be immediately and permanently removed from the playing area. This process is known as "RECOGNISE AND REMOVE".'

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WWW.BOKSMART.COM

CHRIS BURGER PETRO JACKSON PLAYERS FUND

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Return to play following a concussion.

Why is it so important to return to play at the appropriate time?

Returning too soon following a concussion may have serious short- and long-term consequences including:

- More serious brain injury and even death
- Persisting symptoms lasting weeks or months
- A greater risk of further concussions
- A higher risk of injuries to muscles, tendons and ligaments
- Interference with studies (school and university) and work
- Poor performance on the rugby field
- Potential longer-term brain effects including memory loss and emotional disturbances.

Mandatory time off from contact-rugby!

Unless advised by a specialist medical doctor with expertise in concussion management for Rugby Union, the following minimum stand-down periods away from contact-rugby are prescribed for players suspected of sustaining a concussion in rugby:

Players *18 and younger* – time off from ***contact-rugby*** for a minimum of 2 weeks, followed by a period of Individualised Rehabilitation (see protocol below). Players may only return to match play at **21 days**.

Players *19 and older* – time off from ***contact-rugby*** for a minimum of 2 weeks, followed by a period of Individualised Rehabilitation (see protocol below). Players may only return to match play at **21 days**.

These minimum periods away from ***contact-rugby*** only apply if the player no longer has **ANY** symptoms of concussion remaining.

Note: It is recommended that, in all cases of suspected concussion, the player be referred to a medical professional.

The Individualised Rehabilitation Protocol

Individualised Rehabilitation Protocol – each Stage progression is a minimum of 24 hours. The day the player sustained the suspected or confirmed concussion is considered ***'Day ZERO'***. Operationally, *Stages 1-3* of the individualised rehabilitation, forms part of the two-week stand-down period away from contact-rugby. During these stages, the player may still experience some symptoms. *Stages 4-6* begins after completion of Stages 1-3 *and* the 2-week contact-rugby stand-down period. Stages 4-6 prepare the player gradually for contact fitness and to get them ready to play again. To start Stages 4-6, the player must have no symptoms remaining.

Stage	Rehabilitation	Objective	Exercise Allowed
1	Symptom-limited Activity (relative rest)	Recovery. Gradual reintroduction of work/school	• Complete body and brain rest for the first 24-48 hours. • Daily activities that do not exacerbate symptoms (e.g., walking).
2	Aerobic exercise **2A—Light** (up to approximately 55% max HR) **then** **2B—Moderate** (up to approximately 70% max HR)	Increase heart rate.	• Stationary cycling or walking at slow to medium pace. • May start light resistance training that does not result in more than mild and brief exacerbation* of concussion symptoms.
3	Individual sport-specific exercise **Note**: If sport-specific training involves any risk of inadvertent head impact; medical clearance should occur prior to Stage 3	Add movement, change of direction.	• Sport-specific training away from the team environment (e.g., running, change of direction and/or individual training drills away from the team environment). • No activities at risk of head impact. • Running drills.
Stages 4–6 should begin after the resolution of any symptoms, abnormalities in cognitive function and any other clinical findings related to the current concussion, including with and after physical exertion.			
4	Non-contact training drills.	Resume usual intensity of exercise, coordination and increased thinking	• Exercise to high intensity including more challenging training drills (e.g., passing drills, multiplayer training). • Can integrate into a team environment. • May start *progressive* resistance training. • Player MUST be medically cleared at the end of this Stage before going to Full-contact training or Stage 5. • If player remains sign and symptom-free for the full 24 hours, they then move onto Stage 5.
5	Full Contact Practice.	Restore confidence and assess functional skills by coaching staff.	• Participate in normal training activities. • If player remains sign and symptom-free for the full 24 hours, they then move onto Stage 6.
6	Return To Match Play / Sport.	Recover. Normal game play.	• Player rehabilitated and can be progressively re-introduced into full match play.

***Mild and brief exacerbation of symptoms (i.e., an increase of no more than 2 points on a 0–10-point scale for less than an hour when compared with the baseline value reported prior to physical activity).**

Athletes may begin Stage 1 (i.e., symptom-limited activity – relative rest) within 24 hours of injury, then moving to Stages 2 and 3 within the 14-day or 2-week stand-down period away from contact-rugby, with progression through each subsequent Stage thereafter typically taking a minimum of 24 hours.

If more than mild exacerbation of symptoms (i.e., more than 2 points on a 0–10 scale) occurs during Stages 1–3, the athlete should stop and attempt to exercise the next day.

Athletes experiencing concussion-related symptoms during Stages 4–6 should return to Stage 3 to establish full resolution of symptoms with exertion before engaging in at-risk activities.

Written determination of readiness to Return To Sport (RTS) should be provided by a medical doctor before unrestricted RTS as directed by local laws and/or sporting regulations.

Max HR, predicted maximal heart rate according to age (i.e., 220-age).

Notes:

- ***A player may only start the individualised rehabilitation Stages 4–6 once cleared by a medical doctor and all symptoms have cleared before, during, and after exercise in all three Stages 1-3.***
- ***In individualised rehabilitation Stages 4–6 a player may only progress to the next stage if no symptoms occur*** **before, *during, and after exercise in each stage.***
- ***A player must again be cleared by a medical doctor before starting full-contact training.***

Summary of Individualised Rehabilitation Criteria for ALL Amateur Rugby Players with Suspected or Confirmed Concussions.

AGE GROUP	COMPULSORY STAND-DOWN PERIOD AWAY FROM CONTACT-RUGBY POST CONCUSSION		*INDIVIDUALISED REHABILITATION*		NUMBER OF MISSED FULL WEEKS
Players 18 and younger *Players 19 and older*	Minimum of ***2 weeks*** (14 days) off from ***contact-rugby,*** while starting the ***individualised rehabilitation Stages 1-3***, can even be longer if any signs or symptoms remain.	**CAUTION! individualised rehabilitation Stages 4-6 can be started only if the player is symptom free and off medication that modifies symptoms of concussion. MEDICAL CLEARANCE REQUIRED**	***Individualised rehabilitation Stages 4-6*** with progression to each next Stage if no symptoms experienced before, during, or after exercise, with a minimum duration of **24 hours** per Stage.	**CAUTION! Contact Sport should be authorized only if the player is symptom free and off medication. MEDICAL CLEARANCE REQUIRED**	**<u>*Earliest* Return To Sport</u> = 2 weeks (14 days) stand-down period away from *contact-rugby* post injury + *individualised rehabilitation.* (May only be cleared for Play earliest on *Day 21* post injury)**
	**Any player with a history of multiple concussions ***, players with unusual presentations or prolonged recovery should be assessed and managed by health care providers (multidisciplinary) with experience in sports-related concussions. However, the medical doctor clearance is non-negotiable and must always be provided before entering the *individualised rehabilitation Stages 4-6,* and before starting full-contact training, regardless of who is available to manage or monitor the *individualised rehabilitation* process.**				

EXCEPTIONS:
Exceptions to SA Rugby's and World Rugby's Concussion protocols are only allowed where a player has accessed an 'Advanced Level of Concussion Care' clinical setting.

The two-week stand-down period away from contact-rugby (Stages 1-3) and the completion of the individualised rehabilitation programme Stages 4-6, as defined above are compulsory, regardless of whether the Player has become symptom free, unless the Player has successfully accessed an 'advanced level of concussion care' and has been medically cleared and managed for an earlier return to rugby.

An 'advanced level of concussion care' has been defined in the World Rugby Concussion Guidance and has been agreed upon on an individual basis by the World Rugby Chief Medical Officer and the South African Rugby Union.

Advanced Level of Concussion Care

The following, World Rugby approved protocol, allows players who are removed from play with a suspected concussion to be evaluated by an SA Rugby or World Rugby recognised Advanced Care Concussion Doctor (ACCD), following a robust and multimodal evaluation consistent with that offered at the highest level of the game. This may allow for return to full contact rugby/match play before 21 days but no sooner than 14 days.*

Medical Centres and Healthcare Professionals qualifying to oversee Advanced Concussion Care must provide or have access to:

- *A medical doctor who has experience in concussion management, has completed the World Rugby online module:* Concussion Management for Medical Practitioners and Healthcare Professionals *(it is important to do the latest version as it has been updated to reflect the newest SCAT), and who is approved by the Chief Medical Officer of World Rugby and SA Rugby's General Manager: Medical as an Advanced Care Concussion Doctor (ACCD), and*
- *Scientifically validated computerised technology such as neurocognitive testing (e.g. Impact or Neuroflex), and*
- *Access to brain imaging including CT and MRI scans, and*
- *Access to a wider support network of clinicians who may assist in the diagnosis of concussion, other neurological and mental health disorders including but not limited to, a neurologist, neurosurgeon, psychologist, physiotherapist, and optometrist.*

All Advanced Care facilities should provide support to SA Rugby's Blue Card system *and will be listed under their specific provincial region on the Sports Concussion SA (*SCSA*) website. They will also have the support of the international* Your Brain Health *network.*

All players are encouraged to enter an Advanced Care pathway and to seek optimal concussion management but, if a return sooner than 21 days is to be considered, the following criteria must be fulfilled:

1. *No Criteria 1 signs** are present.*
2. *The player does not have a significant history of concussion as defined by World Rugby***.*
3. *The player has not sustained a concussion that season.*
4. *The team doctor completes a Concussion Risk Stratification on the player.*
5. *The player requires a preseason baseline performed in the last 12 months (preferably SCAT6 and/or computerised cognitive/Neuroflex test).*
6. *Following a confirmed or suspected concussion a player needs to undergo a SCAT6 within 48 hours but no later than 72 hours post the injury.*
7. *All the baseline data, post-match SCAT6 results, and any video footage of the event is reviewed by the SA Rugby / World Rugby recognised ACCD.*
8. *A multimodal clinical face-to-face evaluation (SCOAT6 or similar) is undertaken by the appointed ACCD. Follow-up consultations can be via tele-conference call.*
9. *The Graduated Return-To-Play or 'Individualised Rehabilitation' (pg10) process is followed, with the player being asymptomatic during Stages 4-6.*

**** An SA Rugby or World Rugby recognised ACCD***

- *Are medical doctors, with experience and expertise in managing concussion, and are listed on the Sports Concussion South Africa website.*

*****Criteria 1 Signs.***

Players who are removed from play because the following signs and symptoms are evident will be noted as a confirmed concussion and will only be permitted to play after 21 days.

The following concussion signs are referred to as Criteria 1 signs:

- *Confirmed loss of consciousness.*
- *Suspected loss of consciousness.*
- *Convulsion.*
- *Tonic posturing.*
- *Balance disturbance/ataxia.*
- *Clearly dazed and/or confused.*

- *The player is clearly not orientated in time, place or person or doesn't know what time it is, where they are or who they are talking to.*
- *Definite changes in behaviour for that player.*
- *Oculomotor signs for e.g. spontaneous nystagmus or rapid involuntary eye movements.*

******Concussion History Definition:***

1. *Concussed within last 3 months.*
2. *Three or more concussions in the last 12 months.*
3. *Five or more career concussions.*
4. *Reduced impact threshold noted. *****
5. *Any previous concussion complicated by psychological issues.*
6. *Previous concussion with prolonged recovery (>21 days).*

*******Reduced impact threshold describes where the team doctor, player or ACCD deem that in prior concussions the player sustained a concussion from impacts where a concussion was not normally expected.***

Document Compiled by Professor Jon Patricios, Dr Leigh Gordon, Dr Pierre Viviers, Clint Readhead

THE GRADUATED RETURN TO SPORT (GRTS) OR 'INDIVIDUALISED REHABILITATION' PROTOCOL

EACH STAGE PROGRESSION IS A **MINIMUM OF 24 HOURS.**

PLEASE USE A **COMMON SENSE** APPROACH. You don't need a handbook to identify a suspected concussion. If you suspect one, take the player off, it's really that simple.

STAGES 1-3

Operationally, Stages 1-3 of the individualised rehabilitation, forms part of the **two-week stand-down period** away from contact-rugby. During these stages, the player **may still experience some symptoms**. **The day the player sustained the suspected or confirmed concussion is considered 'Day 0'**.

STAGES 4-6

Stages 4-6 begins after completion of Stages 1-3 and the 2-week contact-rugby stand-down period. Stages 4-6 **prepare the player gradually for contact fitness** and to get them ready to play again. To start Stages 4-6, the player must have **no symptoms remaining**.

STAGE	REHABILITATION	OBJECTIVE	EXERCISE ALLOWED
1	SYMPTOM-LIMITED ACTIVITY (RELATIVE REST)	RECOVERY. GRADUAL REINTRODUCTION OF WORK/SCHOOL	• Complete body and brain rest for the first 24-48 hours • Daily activities that do not exacerbate symptoms (e.g., walking)
2	AEROBIC EXERCISE (20 MINUTES) 2A—LIGHT (UP TO APPROXIMATELY 55% MAX HR) THEN 2B—MODERATE (UP TO APPROXIMATELY 70% MAX HR)	INCREASE HEART RATE	• Stationary cycling or walking at slow to medium pace • May start light resistance training that does not result in more than mild and brief exacerbation* of concussion symptoms
3	INDIVIDUAL SPORT-SPECIFIC EXERCISE (25-30 MINUTES). NOTE: IF SPORT-SPECIFIC TRAINING INVOLVES ANY RISK OF INADVERTENT HEAD IMPACT; MEDICAL CLEARANCE SHOULD OCCUR PRIOR TO STAGE 3	ADD MOVEMENT, CHANGE OF DIRECTION	• Sport-specific training away from the team environment (e.g., running, change of direction and/or individual training drills away from the team environment) • No activities at risk of head impact • Running drills
STAGES 4–6 SHOULD BEGIN AFTER THE RESOLUTION OF ANY SYMPTOMS, ABNORMALITIES IN COGNITIVE FUNCTION AND ANY OTHER CLINICAL FINDINGS RELATED TO THE CURRENT CONCUSSION, INCLUDING WITH AND AFTER PHYSICAL EXERTION			
4	NON-CONTACT TRAINING DRILLS	RESUME USUAL INTENSITY OF EXERCISE, COORDINATION AND INCREASED THINKING	• Exercise to high intensity including more challenging training drills (e.g., passing drills, multiplayer training) • Can integrate into a team environment • May start progressive resistance training • Player MUST be medically cleared at the end of this Stage before going to Full-contact training or Stage 5 • If player remains sign and symptom-free for the full 24 hours, they then move onto Stage 5
5	FULL-CONTACT PRACTICE	RESTORE CONFIDENCE AND ASSESS FUNCTIONAL SKILLS BY COACHING STAFF	• Participate in normal training activities • If player remains sign and symptom-free for the full 24 hours, they then move onto Stage 6
6	RETURN TO MATCH PLAY/SPORT	RECOVER. NORMAL GAME PLAY	• Player rehabilitated and can be progressively re-introduced into full match play

Mild and brief exacerbation of symptoms (i.e., an increase of no more than 2 points on a 0–10-point scale for less than an hour when compared with the baseline value reported prior to physical activity).

Athletes may begin Stage 1 (i.e., symptom-limited activity – relative rest) within 24 hours of injury, then moving to Stages 2 and 3 within the 14-day or 2-week stand-down period away from contact-rugby, with progression through each subsequent Stage thereafter typically taking a minimum of 24 hours.

If more than mild exacerbation of symptoms (i.e., more than 2 points on a 0–10 scale) occurs during Stages 1–3, the athlete should stop and attempt to exercise the next day.

Athletes experiencing concussion-related symptoms during Stages 4–6 should return to Stage 3 to establish full resolution of symptoms with exertion before engaging in at-risk activities.

Written determination of readiness to Return To Sport (RTS) should be provided by a medical doctor before unrestricted RTS as directed by local laws and/or sporting regulations.

Max HR, predicted maximal heart rate according to age (i.e., **220-age**).

NOTES:

- A player may only start the individualised rehabilitation Stages 4–6 once cleared by a medical doctor and all symptoms have cleared before, during, and after exercise in all three Stages 1-3
- In individualised rehabilitation Stages 4–6 a player may only progress to the next stage if no symptoms occur before, during, and after exercise in each stage
- A player must again be cleared by a medical doctor before starting full-contact training

EARLIEST RETURN TO SPORT:

= 2 weeks (14 days) stand-down period away from contact-rugby post injury + individualised rehabilitation. (May only be cleared for play earliest on Day 21 post injury)

COMPULSORY STAND-DOWN PERIOD AWAY FROM CONTACT-RUGBY POST CONCUSSION	CAUTION!	INDIVIDUALISED REHABILITATION	CAUTION!	NUMBER OF MISSED FULL WEEKS
Minimum of **2 weeks** (14 days) off from **contact-rugby**, while starting the **individualised rehabilitation Stages 1-3**, can even be longer if any signs or symptoms remain	**CAUTION! Individualised rehabilitation Stages 4-6 can be started only if the player is symptom free and off medication that modifies symptoms of concussion. MEDICAL CLEARANCE REQUIRED**	**Individualised rehabilitation Stages 4-6** with progression to each next Stage if no symptoms experienced before, during, or after exercise, with a minimum duration of **24 hours** per Stage	**CAUTION! Contact Sport should be authorized only if the player is symptom free and off medication. MEDICAL CLEARANCE REQUIRED**	**Earliest Return To Sport = 2 weeks (14 days) stand-down period away from contact-rugby post injury + individualised rehabilitation.** (May only be cleared for play earliest on **Day 21** post injury)

CAUTION: Any player with a history of multiple concussions, players with unusual presentations or prolonged recovery should be assessed and managed by health care providers (multidisciplinary) with experience in sports-related concussions.

However, the medical doctor clearance is non-negotiable and must always be provided before entering the **individualised rehabilitation** Stages 4-6, and before starting full-contact training, regardless of who is available to manage or monitor the **individualised rehabilitation** process.

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RETURNING TO LEARNING (RTL) AFTER CONCUSSION

🧠 WHAT'S GOING ON IN THE BRAIN AFTER A CONCUSSION?

When someone gets a concussion, their brain gets **shaken up** — not in a way you can see on a scan, but deep down at the **tiny cell level**.

🧬 What happens?

- The brain's cells and nerves get a bit **banged up**.
- There's a **chemical mess** going on inside — things aren't working like they should.
- **Signals** between brain cells aren't being sent properly.
- The brain struggles to get the **energy** it needs to do its job.

⚡ Think of it like this:

The brain is like a phone with low battery. You're trying to run lots of apps (like schoolwork or thinking hard), but the phone's lagging and overheating. Trying to "push through" makes it worse.

💥 This leads to symptoms like:

- Trouble concentrating
- Feeling tired quickly
- Struggling to learn or remember things

🏫 Why this matters in school or university:

You can't *see* these brain changes, so it's easy for teachers or lecturers to forget that the brain needs **real rest**, just like an injured ankle or muscle.

📚 Physical rest gets more attention, but **mental rest is just as important** for healing the brain.

🎓 WHAT DOES THIS MEAN FOR STUDENTS?

🧠 A recovering brain needs a break

After a concussion, the brain isn't working at full power. So, it's totally normal for students to:

- Struggle with **learning new things**
- Have a hard time **remembering stuff** they once knew
- Feel **overwhelmed** in class or during tests

📚 Too much too soon = more problems

Piling on schoolwork, writing tests, and doing big assignments too soon can:

- Make **symptoms** come back or get **worse**
- **Slow down** recovery
- Leave you feeling more **frustrated**

Think of it like this:
🏃 A pulled hamstring can't go straight back to sprinting — it needs time to heal.
🧠 The brain is no different. It also needs time to slowly ease back into learning.

👩‍⚕️ 👩‍🏫 Everyone's recovery looks different

There's no "one-size-fits-all" plan. Doctors, teachers, and lecturers should **work together** to support each student in a way that matches their unique needs.

⚖️ Finding the right balance

Yes, rest is important. And getting back to work might lead to some symptoms; this can be expected. But falling too far behind in school can also be **stressful**, which isn't good for the brain either.

It's all about finding that sweet spot:

- Do a little bit at a time
- Take regular breaks
- Stop when symptoms pop up
- Do some light exercise (go for a walk, gently ride a stationary bike)

🕒 How long does it take?

Most students feel able to function within **a few days,** but it may take up to **3 weeks**.

If it's taking longer, it might be time to check in with:

- 🩺 Your Doctor
- 🧑‍⚕️ A Neuropsychologist
- 🧘 A Physiotherapist
- 👓 An Optometrist

🏡 HOW TO HELP YOUR BRAIN HEAL AT HOME

Your brain is like a battery — after a concussion, it needs time to **recharge**. Here's how to give it the best chance to recover while you're at home:

🛋️ First 48 hours = Chill mode

- Go easy on things like texting, gaming, social media, or binge-watching.
- A little is okay — just don't overdo it.

📚 Keep it simple

- Only do brain-heavy stuff if it's essential (like light homework or quick reading).
- Save the big projects and late-night study marathons for later.

🧘 Create a calm study space

- Find a **quiet spot** with **low lighting** — your brain will thank you.
- Avoid noisy or bright environments while studying or reading.

⏱️ Take breaks often

- Every 20 minutes, **step away** for a breather.
- Even just stretching or closing your eyes for a bit helps.

🗒️ Stay organised

- Make a **to-do list** for the day so you don't get overwhelmed.
- Break big tasks into smaller chunks.

🩺 Track your symptoms

- Let your doctor know if your symptoms get worse or show up after studying or concentrating.
- This helps them adjust your recovery plan if needed.

🏫 AT SCHOOL OR UNIVERSITY:

🧠 How to Make It Easier on Your Brain

Going back to school after a concussion can be tough — but with a few smart adjustments, you can ease back in without making things worse.

🤕 Still feeling rough? Take time off

If you've got symptoms like:

- Headaches
- Sensitive eyes
- Nausea
- Dizziness

➡️ Take the **first 48 hours off** school or varsity to rest.

📖 Ready to return? Test your brain first

Before going back, check if you can handle **30–45 minutes** of reading or studying without your symptoms getting worse.

🗣️ Talk to your people

Let these folks know what's going on:

- Teachers or lecturers
- School nurse or psychologist
- Head teacher or course coordinator

They can help support you!

📉 Do less, but do what matters

- Cut down on your class load.
- Focus on the most important subjects first.

🕓 Take "brain breaks" during the day

- Schedule short breaks into your school or varsity day to **rest and recharge**.

🤓 Avoid the chaos

- Stay away from **bright lights** and **noisy spots** if they make your symptoms worse.
- Avoid drinking alcohol.

📝 Ask for help

- Get a classmate to **take notes** for you.
- Ask for **extra time** on tests or assignments.

📋 Loop your doctor in

- Ask your doctor to **update your teachers or lecturers** — and even your coaches — on your recovery and what you should/shouldn't be doing.

🤝 FINALLY – HEALING WORKS BEST AS A TEAM EFFORT

Concussion recovery isn't something you should tackle alone — especially when you're young and in a busy learning environment that can **stress out an already tired brain**.

Recognising this is the first step to getting better.

👥 After a thorough medical assessment, the best results happen when everyone works together:

- **You** (the student/player)
- **Parents**
- **Coaches**
- **Teachers / Lecturers**
- **School nurses / Psychologists**
- **Doctors or medical staff**

When everyone's on the same page, it's way easier to **spot problems early**, make smart adjustments, and help you **heal properly**.

📈 The goal? A slow, safe return to:

- 💻 **Learning** — without overwhelming your brain
- 🏃 **Sports or training** — when it's safe to do so

Recovery isn't a race. With the right support crew, you'll get back to doing what you love — **the right way, at the right time**.

Want to learn more about how we manage sport-related concussions? Check out these resources:

🌐 sportsconcussion.co.za

🌐 neuroflex.io

🌐 yourbrainhealth.net

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- NCAA Concussion fact sheet for students: http://fs.ncaa.org/docs/health_safety/confactsheetsa.pdf

👨‍⚕️ IMPORTANT CONCUSSION CONTACTS

👩‍⚕️ Who	📄 Name	☎️ Tel No.	🌙 After-Hours	🌐 Email / Website
👨‍⚕️ Doctor				
🏥 Hospital				
🏫 School / Club Nurse				
☎️ BokSmart Spineline (ER24)	—	**0800 678 678**	**0800 678 678**	www.boksmart.com
🧠 Sports Concussion SA	—	**011 304 7724**	**082 574 6918**	www.sportsconcussion.co.za 📧 sportsconcussion@mweb.co.za

https://my.boksmart.com www.BokSmart.com http://www.sportsconcussion.co.za/

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How Can Concussion Be Prevented?

Why is prevention important?

Concussion is a brain injury which should be identified, treated and managed correctly. Failure to do so can potentially have **serious short and long-term consequences.** Reducing the incidence or rate of concussion is important for rugby players' health, well-being and ongoing participation in the game.

Can all concussions be prevented?

Concussion is a brain injury that occurs as a result of a direct or indirect blow to the brain.

Rugby is a collision sport with many high speed, high impact contact events between the players! Considering there are 2 teams of 15 players on the field, having frequent anticipated and unexpected collisions, within a dynamic ever-changing environment, it becomes very difficult to control the safety aspects of ALL contact situations between players. As a result, concussions will never be completely prevented.

However a number of important intervention strategies may help reduce the probability (chance) and incidence (rate) of concussions.

Equally important is a secondary prevention strategy to **avoid further concussions** in a player who has already suffered a concussive head injury. That is why **"Recognising and Removing"** is so essential for player well-being. It is also important to follow the most appropriate best practice concussion management protocols and individualised rehabilitation return to play guidelines before returning to full match play (details available here: www.BokSmart.com/Concussion and here: https://my.boksmart.com/Documents/BokSmart#ConcussionManagement).

Five "E's" of Concussion Prevention – Educate, Enforce, Enhance, Equip and Evaluate

***E*ducate**

- The more you know about concussion, the more you can do to prevent concussions!
- Understand the impact and significance of concussion.
- Learn how to identify a concussed player and what YOU can do.
- Identify those situations which may place players at potential risk of concussion and be aware.
- Follow best practice principles in managing concussions in your players.
- Use the freely available BokSmart Concussion Guides, Concussion Recognition Tool 6 (CRT6), and BokSmart Concussion Resources in your club or school.
    - www.BokSmart.com/Concussion and https://my.boksmart.com/Documents/BokSmart#ConcussionManagement
- Go online to the World Rugby *Player Welfare* site for their Concussion education modules:
    - https://www.world.rugby//the-game/player-welfare/medical/concussion/

***E*nforce**

- Play strictly by the laws of the game of rugby union.
- Forbid dangerous tackles and players flying in or diving recklessly into rucks.
- Ensure that ALL coaches and referees are BokSmart Certified at all times, carry their BokSmart Concussion Guides or Concussion Recognition Tool 6 (CRT6) with them (on their mobile phones) while working with players, and understand the principles of concussion prevention, identification, treatment, and management.
- Enforce the mandated 'Individualised rehabilitation' return to play protocol and stand down periods away from contact-rugby on all of your players who have suspected or confirmed concussions:
    - www.BokSmart.com/Concussion and https://my.boksmart.com/Documents/BokSmart#ConcussionManagement

***E*nhance**

- Improve and work only on safe and effective tackling techniques. Do this often!
    - https://www.youtube.com/watch?v=yqyTsHatXZY
- The tackle phase contributes to around 61% of all concussions.
- The tackler is almost four times more susceptible to concussion than the ball carrier, and alone contributes to about 49% of all concussions, so perfecting tackle technique is crucial for preventing concussions.
- Tackle technique is often not good in younger developing rugby players, and still requires a lot of coaching and individual practice; this makes younger players more susceptible to getting it wrong on match day and getting concussed!
- Good tackling technique takes time to perfect; regular practicing of safe and effective tackling techniques should therefore start at a young age so that it eventually becomes instinctive.
- Local research has shown that concussion rates also increase as game time progresses in a match. This could be due to fatigue, as fatigue reduces tackle technique proficiency.
- So essentially, the fitter you are for rugby, the easier it is to maintain good tackle technique and reduce the risk of getting concussed!
- Therefore, make sure that you are well conditioned and are fit enough for the game of rugby to be able to compete safely in contact situations with good technique up until the final whistle!
    - https://www.springboks.rugby/media/taifea1z/aspects-of-physical-conditioning-for-rugby.pdf
    - https://www.springboks.rugby/media/ewvborcf/physical-conditioning-for-rugby-players.pdf
- It is also important to occasionally practice tackling under fatigued conditions to reinforce safer tackling techniques under these circumstances!
- Specifically strengthen the neck by referring to BokSmart's guidelines! This should be done throughout the year!
    - https://www.springboks.rugby/media/4afpkbof/practical-guidelines-neck-injury-prevention.pdf
    - https://www.springboks.rugby/media/utrmbkhz/safe-necks-exercises-infographic.pdf
- Practice and coach safe rucking techniques, practices, and principles, especially for those players already in the ruck. These players are potentially more vulnerable and exposed to concussions than the players entering the ruck.

***E*quip**

- Although mouth guards do not always reduce the incidence of concussion, players should use them to prevent injuries to teeth, gums, and the tongue. It is preferable to have a mouth guard fitted by a dentist.
- The use of rugby headgear may help reduce friction injuries to the ears ("cauliflower ears") as well as cuts to the scalp but do not prevent concussions.
- In other sports such as cycling, cricket and horse-riding hard helmets are useful in preventing concussion.

***E*valuate**

- Ensure that your school or club has a concussion policy and action plan in place for suspecting, identifying, treating, and managing concussions.
- Reassess this policy at the end of every season and align it with the updated BokSmart protocols.
- For SARU's Concussion Regulation go to the following links:
    - https://www.springboks.rugby/general/boksmart-legislation/ or on MyBokSmart at https://my.boksmart.com/Documents/BokSmart#ImportantRegulations
- Send all players with a **suspected concussion** for medical evaluation before allowing them to participate again.
- Ensure that all ***suspected and diagnosed*** concussions undergo the complete graduated '*individualised rehabilitation*' return to play protocol before returning to rugby.

Conclusion

Concussions occur in many sporting and non-sporting situations. Preventing all concussions is impossible. However, adequate conditioning, all-year round neck strengthening, good tackle and ruck techniques, abiding by the laws of the game, appropriate use of equipment and a concussion policy that players, coaches, referees and supporters understand, will significantly help reduce the risks.

References and Useful Resources

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Heads-Up factsheet. www.cdc.gov/concussion/headsup/youth.html

BokSmart, unpublished data McFie et al. 2014

The Concussion Recognition Tool 6 (CRT6)

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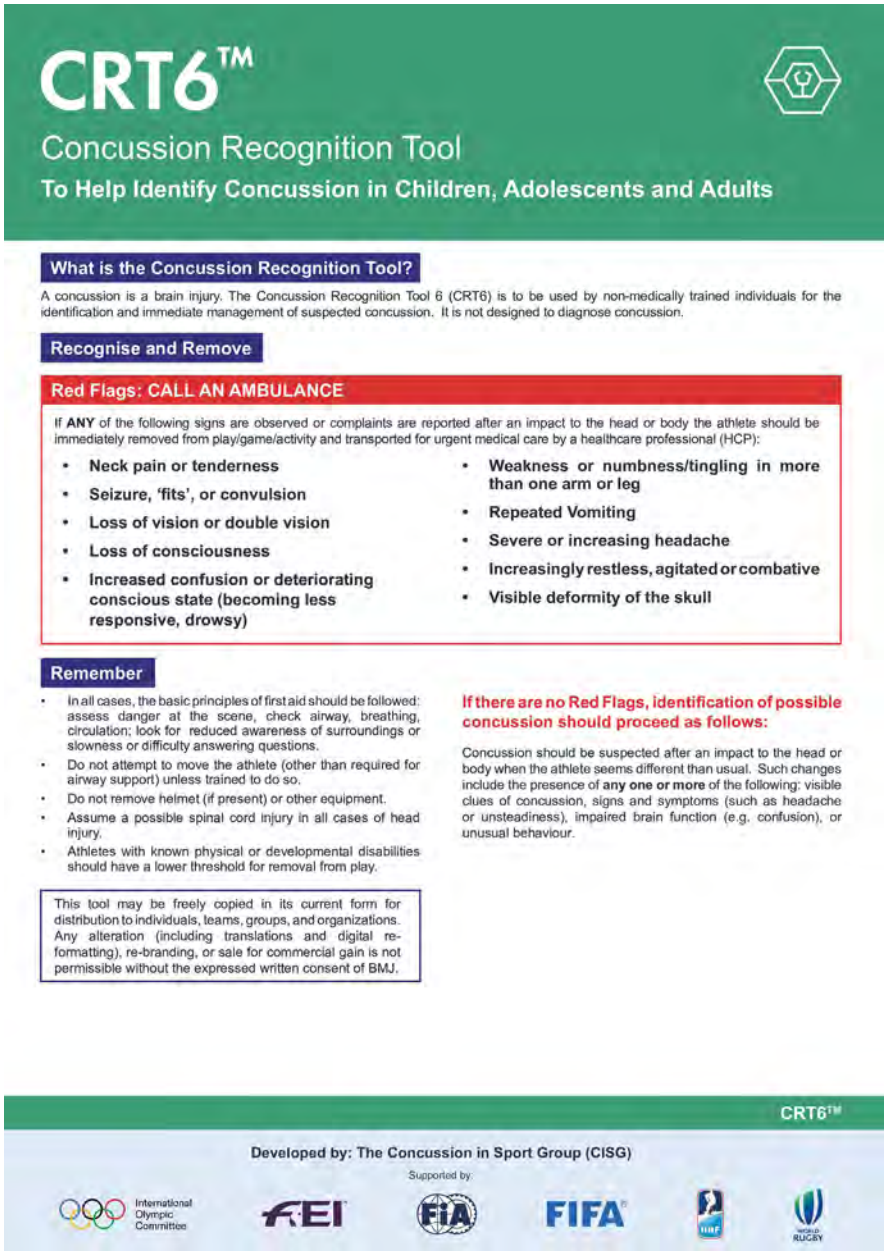

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Concussion Recognition Tool 6 - CRT6™

CRT6 Concussion Recognition Tool

To Help Identify Concussion in Children, Adolescents and Adults

1: Visible Clues of Suspected Concussion

Visible clues that suggest concussion include:

- Loss of consciousness or responsiveness
- Lying motionless on the playing surface
- Falling unprotected to the playing surface
- Disorientation or confusion, staring or limited responsiveness, or an inability to respond appropriately to questions
- Dazed, blank, or vacant look
- Seizure, fits, or convulsions
- Slow to get up after a direct or indirect hit to the head
- Unsteady on feet / balance problems or falling over / poor coordination / wobbly
- Facial injury

2: Symptoms of Suspected Concussion

Physical Symptoms
Headache
"Pressure in head"
Balance problems
Nausea or vomiting
Drowsiness
Dizziness
Blurred vision
More sensitive to light
More sensitive to noise
Fatigue or low energy
"Don't feel right"
Neck Pain

Changes in Emotions
More emotional
More Irritable
Sadness
Nervous or anxious

Changes in Thinking
Difficulty concentrating
Difficulty remembering
Feeling slowed down
Feeling like "in a fog"

Remember, symptoms may develop over minutes or hours following a head injury.

3: Awareness

(Modify each question appropriately for each sport and age of athlete)

Failure to answer any of these questions correctly may suggest a concussion:

"Where are we today?"

"What event were you doing?"

"Who scored last in this game?"

"What team did you play last week/game?"

"Did your team win the last game?"

Any athlete with a suspected concussion should be - IMMEDIATELY REMOVED FROM PRACTICE OR PLAY and should NOT RETURN TO ANY ACTIVITY WITH RISK OF HEAD CONTACT, FALL OR COLLISION, including SPORT ACTIVITY until ASSESSED MEDICALLY, even if the symptoms resolve.

Athletes with suspected concussion should **NOT**:

- Be left alone initially (at least for the first 3 hours). Worsening of symptoms should lead to immediate medical attention.
- Be sent home by themselves. They need to be with a responsible adult.
- Drink alcohol, use recreational drugs or drugs not prescribed by their HCP
- Drive a motor vehicle until cleared to do so by a healthcare professional

British Journal of Sports Medicine

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CMB reports affiliations with the Cleveland Browns (National Football League) and Cleveland Monsters (American Hockey League), a board position in the Sports Neuropsychology Society, and occasional expert consulting fees. JMB reports being a part-time employee of the NHL. JMB's institution has received funding from Genzyme, and EyeGuide supporting his work, and he has served as a paid consultant to Med-IQ and Sporting KC. JSB reports receiving methods author funding for this review and Alexander Graham Bell Canada Graduate Scholarships-Doctoral Program. GAD is a member of the Scientific Committee of the 6th International ConsensusConference on Concussion in Sport; an honorary member of the AFL Concussion Scientific Committee; Section Editor, Sport and Rehabilitation, NEUROSURGERY; and has attended meetings organised by sporting organisations including the NFL, NRL, IIHF, IOC and FIFA; however has not received any payment, research funding, or other monies from these groups other than for travel costs. RJE is a paid consultant for the National Hockey League and co-chair of the National Hockey League /National Hockey League Players' Association Concussion Subcommittee, Major League Soccer's Concussion Committee and the US Soccer Federation, provides testimony in matters related to mTBI and reports a grant from Boston Children's Hospital (sub-award from the National Football League) and travel support for the CIS conference and other professional conferences, an unpaid board member of CISG and leadership roles (unpaid) in professional organizations. GG Reports grant funding from CDC TEAM and OnTRACK grants, NIMH APNA grant, royalties from PAR, consulting fees from NFL Baltimore Ravens, Zogenix International, and Global Pharma Consultancy, and travel support for professional meetings. He is a member of USA Football Medical Advisory Panel. 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She holds leadership positions with several organizations American College of Sports Medicine, American Medical Society for Sports Medicine, Pediatric Research in Sports Medicine, Council on Sports Medicine and Fitness, American Academy of Pediatrics, Untold Foundation, Pink Concussions, Headway Foundation, and the editorial boards of Journal of Adolescent Health, Frontiers in Neuroergonomics, Exercise, Sport, and Movement. JP reports travel support for the CIS conference and other professional meetings, consulting fees and grant funding from World Rugby, and an unpaid board member of CISG and EyeGuide. He is a member of the BJSM editorial board. KJS has received grant funding from the Canadian Institutes of Health Research (CIHR), NFL Scientific Advisory Board, International Olympic Committee Medical and Scientific Research Fund, World Rugby, Mitacs Accelerate, University of Calgary, with funds paid to her institution and not to her personally. She is an Associate Editor of BJSM (unpaid), Independent consultant to World Rugby and has received travel and accommodation support for meetings where she has presented. She coordinated the writing of the systematic reviews that informed Amsterdam International Consensus on Concussion in Sport, for which she has received an educational grant to assist with the administrative costs associated with the writing of the reviews (with funds paid to her institution). She is a member of the AFL Concussion Scientific Committee (unpaid position), Brain Canada (unpaid positions) and Board member of the Concussion in Sport Group (CISG) (unpaid). She works as a physiotherapy consultant and treats athletes of all levels of sport from grass roots to professional. JVI reports CIHR Postdoctoral Fellowship Award, UOMBRI Grant, travel stipend from CTRC and Founder of R2P™ Concussion Management. JPar reports no disclosures. 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