

Introduction

This World Rugby Concussion Guidance document has been developed to provide guidance and information to persons involved in the Game of Rugby (including the general public) regarding concussion and suspected concussion.

Individual member Unions are strongly encouraged to develop their own guidelines and policies, and must use this Concussion Guidance as minimum standards.

These guidelines apply to all male and female Rugby players including adults (over 18 years), adolescents (18 and under) and children (12 and under). Unions can adjust these age levels upwards at their discretion.

CONCUSSION FACTS

- A concussion is a **brain injury**.
- All concussions are **serious**.
- Concussions can occur **without loss of consciousness**.
- All athletes with any symptoms following a head injury
 - must be removed from playing or training
 - must not return to playing or training until symptom free or until all concussion-related symptoms have cleared or have returned to pre-concussion level
 - must complete a Graduated Return To Play programme
 - should be assessed by a medical practitioner
- Specifically, return to play or training on the day of a **concussion or suspected concussion** is forbidden.
- **Recognise and Remove** to help prevent further injury or even death.
- **Concussion can be fatal - do not return to play if symptoms persist.**
- Most players with concussion recover with physical and mental rest.

World Rugby strongly recommends that all players seek the highest level of medical care available following concussion or suspected concussion (see definition of Advanced Care below).

Concussion information

What is concussion?

Concussion is a traumatic brain injury resulting in a disturbance of brain function. There are many symptoms of concussion, common ones being headache, dizziness, memory disturbance or balance problems.

Loss of consciousness, being knocked out, occurs in less than 10% of concussions. Loss of consciousness is not a requirement for diagnosing concussion but is a clear indication that a concussion has been sustained.

Typically standard brain scans are normal for someone with concussion and therefore a normal brain scan is not a reliable test of whether or not a player has concussion or suspected concussion.

What causes concussion?

Concussion can be caused by a direct blow to the head, but can also occur when blows to other parts of the body result in rapid movement of the head, e.g. whiplash type injuries.

Who is at risk?

Concussions can happen at any age. However, **children and adolescent athletes**:

- are more susceptible to concussion
- take longer to recover
- have more significant memory and mental processing issues
- are more susceptible to rare and dangerous neurological complications, including death caused by a single or second impact

Recurrent or multiple concussions

Players with a history of **two or more concussions** within the past year are at greater risk of further brain injury and slower recovery and should seek medical attention from practitioners experienced in concussion management before return to play.

In addition, a history of multiple concussions or players with unusual presentations or prolonged recovery should be assessed and managed by health care providers with experience in sports-related concussions.

Onset of symptoms

It should be noted that the symptoms of concussion can present at any time but typically become evident in the first 24-48 hours following a head injury.

How to recognise concussion or suspected concussion

Everyone involved in the game (including side-line medical staff, coaches, players, parents and guardians of children and adolescents) should be aware of the signs, symptoms and dangers of concussion. If any of the following signs or symptoms are present following an injury the player should at least be **suspected** of having concussion and be **immediately removed from play or training**.

Clear indicators of concussion / suspected concussion – what you see or hear immediately

Any one or more of the following clearly indicate a concussion:

- Seizure (fits)
- Loss of consciousness – confirmed or suspected
- Unsteady on feet or balance problems or falling over or poor coordination
- Confused
- Disorientated – not aware of where they are or who they are or the time of day
- Dazed, blank or vacant look
- Behavioural changes e.g. more emotional or more irritable

Other signs of concussion / suspected concussion – what you see

Any one or more of the following may suggest a concussion:

- Lying motionless on ground
- Slow to get up off the ground
- Grabbing or clutching of head
- Injury event that could possibly cause concussion

Symptoms of concussion / suspected concussion - what you are told

Presence of any one or more of the following signs and symptoms may suggest a concussion:

- Headache
- Dizziness
- Mental clouding, confusion, or feeling slowed down
- Visual problems
- Nausea or vomiting
- Fatigue
- Drowsiness/feeling like “in a fog”/difficulty concentrating
- “Pressure in head”
- Sensitivity to light or noise

What questions you ask adults and adolescents

*Failure to answer **any** of these questions correctly is a strong indication of concussion or at least suspected concussion.*

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

What questions you ask children (12 years and under)

*Failure to answer **any** of these questions correctly is a strong indication of concussion or at least suspected concussion.*

- “Where are we now?”
- “Is it before or after lunch?”
- “What was your last lesson / class?” or “Who scored last in this game?”
- “What is your teacher’s name?” or “What is your coach’s name?”

Recognise and remove and if in doubt, sit them out.

Managing concussion or suspected concussion

On field management of concussion or suspected concussion at training or during a match

Any player with concussion or suspected concussion should be **immediately and permanently removed from training or play**. Appropriate emergency management procedures must be followed especially if a neck injury is suspected. In this instance the player should only be removed by emergency healthcare professionals with appropriate spinal care training.

Once safely removed, the injured player must not return to any activity that day and **should be medically assessed**.

Side-line medical staff, coaches, players or parents and guardians who suspect that a player may have concussion **must** do their best to ensure that the player is removed from the field of play in a safe manner.

Immediate management of concussion or suspected concussion

If **any** of the following are reported or noticed then the player should be transported for urgent medical assessment at the nearest hospital:

- player complains of severe neck pain
- deteriorating consciousness (more drowsy)
- increasing confusion or irritability
- severe or increasing headache
- repeated vomiting
- unusual behaviour change
- seizure (fit)
- double vision
- weakness or tingling / burning in arms or legs

In all cases of concussion or suspected concussion it is strongly recommended that the player is referred to a medical or healthcare professional for diagnosis and guidance regarding management and return to play, even if the symptoms resolve. **It should only be in rare and exceptional circumstances that a player with concussion or suspected concussion is not medically assessed.**

Players with concussion or suspected concussion:

- **should not be left alone** in the first 24 hours
- **should not consume alcohol** in the first 24 hours and thereafter should avoid alcohol until provided with medical or healthcare professional clearance or if no medical or healthcare professional advice is available the injured player should avoid alcohol until symptom free
- **should not drive a motor vehicle** and should not return to driving until provided with medical or healthcare professional clearance or if no medical or healthcare professional advice is available should not drive until symptom free.

Rest the body, rest the brain

Rest is the cornerstone of concussion treatment. This involves resting the body, ‘physical rest’, and resting the brain, ‘cognitive rest’. This means avoidance of:

- physical activities such as running, cycling, swimming etc.
- cognitive activities, such as school work, homework, reading, television, video games, etc.

ADULTS

Physical rest shall be for a **minimum of one week** for any adult player with concussion or suspected concussion. This physical rest comprises 24 hours of complete physical and cognitive rest followed by relative rest (activity that does not induce or aggravate symptoms) for the rest of the week. Cautious reintroduction of cognitive (“thinking”) activities are allowed following an obligatory 24 hours of complete (physical and cognitive) rest as long as symptoms related to the concussion are not aggravated.

After the one week physical rest period the player:

- must be symptom free or if pre-injury symptoms existed, these must have returned to pre concussion level at rest;
- should be cleared by a medical practitioner or approved healthcare provider prior to starting a Graduated Return To Play programme; and
- must follow (and complete) this Graduated Return To Play (G RTP) programme which must be consistent with World Rugby’s G RTP Protocol set out later in this Guidance document.

The only exceptions to the requisite minimum 1 week rest period and the completion of a Graduated Return to Play Programme are set out at pages 8 and 11 below (advanced level of concussion care).

CHILDREN AND ADOLESCENTS

Physical rest shall be for a **minimum of two weeks** for any child or adolescent (18 years and under) with concussion or suspected concussion. This physical rest comprises a minimum of 24 hours of complete physical and cognitive rest followed by relative rest (activity that does not induce or aggravate symptoms) for the rest of the two weeks. Cautious reintroduction of cognitive (“thinking”) activities are allowed following an obligatory 24 hours of complete (physical and cognitive) rest as long as symptoms related to the concussion are not aggravated.

After the two week physical rest period the player:

- must be symptom free or if pre-injury symptoms existed, these must have returned to pre concussion level at rest;
- should be cleared by a medical practitioner or approved healthcare provider prior to starting a Graduated Return To Play programme;
- must, if a student, have returned to school or full studies;
- must follow (and complete) this Graduated Return To Play programme which must be consistent with World Rugby’s GRTP programme set out later in this Guidance document.

Children and adolescents must be managed more conservatively than adults. World Rugby requires any child or adolescent with concussion or suspected concussion to have physical rest for at least two weeks and if symptom free then complete a Graduated Return To Play programme following this minimum two week physical rest period.

Returning to play after concussion or suspected concussion

Any child, adolescent or adult player with a second concussion within 12 months, a history of multiple concussions, players with unusual presentations or prolonged recovery must be assessed and managed by health care professionals (multi-disciplinary) with experience in sports-related concussions and no further participation in Rugby must take place until the player is cleared by a medical practitioner with experience in concussion management. In rare and exceptional circumstances where there is no access to such health care professionals in the country where the player is playing rugby, they must contact their Union for further advice before returning to play.

ADULTS

- A player with concussion or suspected concussion should be assessed medically immediately after their injury and prior to returning to contact training and playing.
- **A minimum physical rest period of one week** (including an initial 24 hours of complete rest) is required for adults before commencing a Graduated Return To Play programme.
- A Graduated Return To Play programme must be completed by ALL players (once symptom free) who have been concussed or had suspected concussion.
- If any symptoms are present or reappear the Graduated Return To Play programme should not be started, or if started it should be stopped until symptoms resolve.
- A Graduated Return To Play programme should only be commenced after the completion of the one week physical rest period and only if the player is symptom free at rest and off medication that modifies or masks the symptoms of concussion.

Exceptions for adults:

- The one week rest period is obligatory regardless of whether the adult Player has become symptom free, unless the adult Player has successfully accessed an 'Advanced level of concussion care' (as defined below) and has received medical advice that the one week rest period is not required. (In any event, there is no exception to the initial 24 hour period of complete physical and cognitive rest);
- The completion of a GRTP programme is obligatory except in cases of suspected concussion where the adult Player has accessed an 'Advanced level of concussion care' (as defined at below) and has been medically cleared to return to training or to play on the grounds that the Player had not in fact been concussed.

CHILDREN AND ADOLESCENTS

- Children and adolescents with concussion or suspected concussion should be assessed medically immediately after their injury and prior to returning to contact training and playing
- A **minimum physical rest period of two weeks** (including an initial 24 hours of complete rest) is required for children and adolescents before commencing a Graduated Return To Play programme.
- A Graduated Return To Play programme must be completed by **all players** (once symptom free) who have been concussed or had suspected concussion.
- If any symptoms are present or reappear the Graduated Return To Play programme should not be started, or if started it should be stopped until symptoms resolve.
- A Graduated Return To Play programme should only be commenced after the completion of the two week physical rest period and only if the player is symptom free and off medication that modifies or masks the symptoms of concussion.

Graduated Return To Play (GRTP) programme

The Graduated Return To Play (GRTP) programme incorporates a progressive exercise programme that introduces a player back to sport in a step-wise fashion. This should only be started once the player has completed the requisite physical rest period and is symptom free and off treatments and/or medication that may modify or mask concussion symptoms, for example drugs for headaches or sleeping tablets.

If a player already had symptoms prior to the head injury incident which resulted in the player's concussion or suspected concussion, the player's symptoms must have returned to the pre-concussion level prior to commencing a GRTP. However, in these circumstances, extra caution must be exercised and it is recommended that a player specifically seeks medical advice in respect of those pre-existing symptoms.

As a minimum, a GRTP programme must be consistent with World Rugby's GRTP Protocol below. World Rugby's GRTP Protocol reflects the Zurich Concussion Consensus Statement GRTP protocol which contains six distinct stages.

- The first stage is the recommended rest period
- The next four stages are training based restricted activity
- Stage 6 is a return to play

World Rugby requires that each stage of the GRTP be a minimum of 24 hours. GRTP stage length may be increased by member Unions at their discretion.

It is critical that all concussion or suspected concussion symptoms have cleared prior to commencing a GRTP programme. The player must only start a GRTP programme or proceed to the next stage **if there are no symptoms of concussion** during rest and at the level of exercise achieved in the previous GRTP stage.

World Rugby strongly recommends that a medical practitioner or approved healthcare professional confirm that the player can take part in full contact training before entering Stage 5.

GRTP programme table

| Rehabilitation stage | Exercise allowed | Objective |
|--------------------------------|---|---|
| 1. Minimum rest period | Complete body and brain rest without symptoms | Recovery |
| 2. Light aerobic exercise | Light jogging for 10-15 minutes, swimming or stationary cycling at low to moderate intensity. No resistance training. Symptom free during full 24-hour period | Increase heart rate |
| 3. Sport-specific exercise | Running drills. No head impact activities | Add movement |
| 4. Non-contact training drills | Progression to more complex training drills, e.g. passing drills. May start progressive resistance training | Exercise, coordination, and cognitive load |
| 5. Full contact practice | Normal training activities | Restore confidence and assess functional skills by coaching staff |
| 6. Return to play | Player rehabilitated | Recover |

It is strongly recommended that, in all cases of concussion or suspected concussion, the player is referred to a medical professional for diagnosis and guidance as well as return to play decisions, even if the symptoms resolve.

Advanced level of concussion care

World Rugby strongly recommends that all players seek the highest level of medical care available following concussion or suspected concussion. This highest level of concussion care is supplied in an advanced care setting and shall include at least all of the following:

- medical doctors with training and experience in recognising and managing concussion and suspected concussion; and
- access to brain imaging facilities and neuroradiologists; and
- access to a multidisciplinary team of specialists including neurologists, neurosurgeons, neuropsychologists, neurocognitive testing, balance and vestibular rehabilitation therapists.

An adult player with concussion or suspected concussion must have the minimum required one week rest referred to above unless that player accesses an advanced level of concussion care as verified by their Union **and** has received medical advice that the one week rest period is not required.

Advanced care is generally available within professional Rugby teams and allows for a more individualised management of concussion.

Even if advanced care is available:

- an adult player who has been concussed must not return to play until they have been medically cleared to do so and has had a minimum 24 hour complete rest period and is symptom free;
- an adult player who has suspected concussion must not return to play until they have been medically cleared to do so.

There is currently no exception to the requisite minimum rest period which applies to a child or adolescent with concussion or suspected concussion.

NOTES

- 1 The minimum standards are set out in this Concussion Guidance. A Union has discretion to introduce more stringent criteria.
- 2 The definition of an adolescent for the purposes of this guidance is 18 years and under. The definition of a child for the purposes of this guidance is 12 years and under. Unions are at liberty to increase (but not decrease) this age threshold at their discretion.
- 3 If rest periods and GRTP stage lengths are more stringent within a member Union, the player must adhere to their respective Union's guidelines or policy.
- 4 World Rugby strongly recommends that players seek the highest level of medical care available especially when a player's condition deteriorates, concussions occur repeatedly or more easily in the same player, symptoms fail to resolve or the diagnosis is uncertain.
- 5 Only in World Rugby approved elite adult matches is temporary replacement for a head injury assessment (HIA) applicable. **The HIA and temporary replacement Law does NOT apply to community rugby at any level or age or to any matches or tournaments which have not been approved by World Rugby.**