
# CONCUSSION

## RECOGNISE & REMOVE

WRU

## Concussion Guidance

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## Concussion facts

- Concussion is a brain injury
- **All** concussions are serious
- Concussion can often occur **without** loss of consciousness
- Players with **any signs or symptoms** of concussion must be **immediately** removed from playing or training
- Players **must not** return to play on the same day of any suspected concussion
- All players with concussion should be referred to a medical practitioner
- Players **must not** return to full contact sport until cleared by a medical practitioner
- Most concussions will recover with physical and mental rest
- Children and adolescents may take longer to recover following concussion
- Concussion can occur without an obvious blow to the head

- **Recognise and Remove** players with concussion to prevent further injury or even fatality

## What is Concussion?

- Concussion is a traumatic brain injury resulting in a disturbance of the brain's function
- There are many symptoms of Concussion. Common ones include headache, dizziness, memory disturbance and balance problems
- Loss of consciousness or being knocked out occurs in less than 10% of concussions
- Loss of consciousness is **not** a requirement when diagnosing concussion
- A brain scan will usually be normal

## 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?

**Concussion can happen at any age and to anyone. However, child and adolescent players*:**

- 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, which in some circumstances could be fatal due to brain swelling (known as second impact syndrome)

* Child and adolescent players are defined as under the age of 19 years old as of the 1st of September.

## Recurrent concussion

All players who suffer two or more concussion within a year are at greater risk of further brain injury and slower recovery. These players should seek medical attention from practitioners specialising in concussion management (i.e. Neurologists or Neurosurgeons) before returning to play or undertaking contact practice.

## Onset of Signs and Symptoms

Signs and symptoms of concussion can appear at any time but typically become evident in the first 24–48 hours following a head injury.

## Recognise and Remove a concussed player

If **any** of the following signs or symptoms are present following an injury, the player should be suspected of having concussion and **Recognised and Removed** from play or training.

**Players must not return to play or training on the same day of a suspected concussion.**

## Signs of concussion – What you see

- Dazed, blank or vacant look
- Lying motionless on the ground / slow to get up
- Unsteady on feet / balance problems or falling over / loss of coordination
- Loss of consciousness or unresponsiveness
- Confused / not aware of plays or events
- Grabbing / clutching of head
- Seizure (fits)
- Nausea or vomiting
- More emotional / irritable than normal for that person

## Symptoms of concussion – What you are told

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

**The following memory questions are commonly used to assess whether a player may be concussed:**

## Memory questions to ask players

- "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?"

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

**Recognise and Remove** any player who shows any signs or symptoms of concussion immediately and do not allow him/her to return to the training or playing field until he/she has been assessed by a medical practitioner.

The Internationally recognised Pocket Recognition tool can also be utilised to aid you in **Recognising and Removing** a player with suspected concussion. This can be downloaded from the following sources:

**WRU** www.wru.co.uk/medical
**IRB** www.irbplayerwelfare.com/concussion

Hard copies have been distributed to rugby clubs around Wales, additional copies can be requested by contacting medical@wru.co.uk

## On field management of a suspected concussion

Any player with a suspected concussion should be **Recognised and Removed immediately from play or training**.

Once safely removed from play, players **must not** return to activity that day and, in all cases, should be assessed by a medical practitioner.

If a neck injury is suspected, the player should only be removed by emergency healthcare professionals with appropriate spinal care training.

Teammates, pitchside medical staff, coaches, match officials, team managers, administrators or parents who suspect 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.

## Sideline management of a suspected concussion

All players with a suspected concussion:

- Should be monitored by a responsible adult for the first 24 hours
- Should not drink alcohol until symptom free
- Should not drive until symptom free

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

- Severe neck pain
- Weakness or tingling/burning in arms or legs
- Deteriorating consciousness (more drowsy)
- Increasing confusion or irritability
- Severe or increasing headache
- Repeated vomiting
- Unusual behaviour change
- Seizure (fitting)
- Double vision

**In all cases of suspected concussion it is recommended that the player be referred to a medical practitioner for diagnosis and guidance, as well as return to play decisions, even if the symptoms resolve.**

# Managing a concussion or suspected concussion

## Rest The Body & Rest The Brain

The majority (80–90%) of concussions resolve in a short (7–10 day) period. This may be longer in children and adolescents and a more conservative approach should be taken with players of this age group.

Children and adolescents are defined as players under the age of 19 years old as of the 1st of September.

During the recovery time following a concussion, the brain is more vulnerable to further injury.

If a player returns too early before he/she has fully recovered, he/she may:

- Prolong the symptoms of concussion
- Experience possible long-term health consequences
- Expose themselves to further concussive events that in rare cases could be fatal, due to severe brain swelling (known as second impact syndrome)

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

- **Physical activities** e.g. running, cycling, swimming and lifting weights
- **Cognitive activities** e.g. driving, schoolwork, homework, reading, television, work at a computer, playing video games and social media

**Complete physical and cognitive rest** should be undertaken in the **first 24 hours** or until symptom free in all cases of concussion. In the case of children and adolescents, cognitive rest should be emphasised by parents / guardians.

**Students must have returned to school or full studies before re-commencing exercise.**

Before re-starting physical activity, the player must be symptom free at rest i.e. he/she doesn't show any of the "what you see" or "what you are told" signs and symptoms.

It is recommended that all players who have a confirmed concussion do not undertake strenuous exercise for a minimum of **two weeks** prior to undertaking a Graduated Return to Play (GRTP) programme. During this two weeks, players should undertake a period of **relative rest**, defined as a gradual return to normal activities of daily living.

After the minimum rest period and if symptom free, **medical practitioner** or **physiotherapist** approval is recommended prior to starting a Graduated Return to Play (GRTP) programme.*

*Medical practitioners and physiotherapists should only work within their scope of practice. If practitioners have reservations regarding their experience or ability to allow someone to commence a GRTP they should refer the player appropriately.

# Graduated Return to Play (GRTP) programme

Once the recommended two week relative rest period has been undertaken and the player is symptom free, the player should commence a GRTP programme. It is recommended that approval by a medical practitioner or physiotherapist experienced in managing concussion is obtained prior to commencing the GRTP programme.

If a player is still showing signs or symptoms of concussion he/she should **not** commence the GRTP programme and must return to his/her medical practitioner for further assessment.

A GRTP programme is a progressive exercise protocol that introduces a player back to sport in a step by step fashion.

The GRTP programme should be undertaken with the full co-operation of the player. In the case of children and adolescents, this should also include their parents/guardians.

## The GRTP programme involves six distinct stages*:

**Stage 1**

Recommended two week relative rest period

**Stage 2–4**

Introduce physical and mental activities with varying levels of restriction, gradually increasing from one stage to the next

**Stage 5**

Progressive return to contact training

**Stage 6**

Returning to play

Stages 2–5 should take a minimum of **24 hours** for adults and **48 hours** for children/adolescents.

### Children and adolescents should be managed more conservatively

It is recommended that children and adolescents (players under the age of 19 years old as of the 1st of September) should undertake a more prolonged GRTP programme. With this in mind, 24 hours rest should follow each stage of the GRTP programme (i.e. each stage will last **48 hours**).

* A more detailed description of each stage of the GRTP programme can be found on page 11.

During the GRTP programme, the player may only proceed to the next stage if there are no symptoms of concussion experienced during or after that level of exercise.

If any symptoms occur while undertaking the GRTP programme the player must return to the previous stage, undertake a minimum 24-hour period of rest without symptoms and attempt to progress again.

**If symptoms persist players should seek the advise of a medical practitioner before attempting further stages of the GRTP programme.**

Where possible a medical practitioner, physiotherapist, coach or PE teacher should supervise stages 2–4 (this may be conducted during training or PE sessions). Continual assessment of symptoms should be undertaken at each stage of the programme.

When this is not possible, players may do these in their own time. The GRTP programme should be undertaken on a case by case basis and with the full co-operation of the player and their parents / guardians.

On completing stage 4 it is recommended that players obtain clearance from a medical practitioner to progress to stage 5 (full contact practice).

Schools and clubs are advised to keep a record of the player's or parent's confirmation that clearance has been obtained, a doctor's letter is not necessarily required.

# Diagram of what players or parents should do to return to play following a concussion

**Suspected concussion**

**Referral to Medical Practitioner**

| **Adult** (19 and over*) | **Child or Adolescent** (Under 19*) |
|---|---|
| **Stage 1 GRTP**<br>2 week rest period<br>**MUST** be symptom free before progressing to stage 2 | **Stage 1 GRTP**<br>2 week rest period<br>**MUST** be symptom free before returning to academic studies and progressing to stage 2 |
| **Clearance by Medical Practitioner or Physiotherapist** | **Clearance by Medical Practitioner or Physiotherapist** |
| **Stage 2–4 GRTP**<br>24 hour per stage | **Stage 2–4 GRTP**<br>48 hour per stage |
| **Clearance by Medical Practitioner** | **Clearance by Medical Practitioner** |
| **Stage 5 GRTP**<br>24 hour per stage | **Stage 5 GRTP**<br>48 hour per stage |
| **Stage 6 GRTP**<br>Earliest Return to Play = **19 days** | **Stage 6 GRTP**<br>Earliest Return to Play = **23 days** |

* A player's age is deemed to be their age as of the 1st of September

**It must be emphasised that these are minimum return to play times. Players who do not recover fully within these time frames will need a longer recovery period.**

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# Specific stages of the GRTP Programme

| Recommended Physical activity | Recommended Cognitive activity | Objective | Clearance to proceed to next stage |
|---|---|---|---|
| **Stage 1** – Two week rest period | | | |
| Initial 24 hours of complete physical and mental rest. Once symptom free, 13 days of relative rest without symptoms. | Recommence studies and able to undertake computer based tasks after initial 24 hours complete rest | Recovery and introduction to cognitive tasks | Medical practitioner or physiotherapist<br>**If still showing signs or symptoms, return to medical practitioner** |
| **Stage 2** – Light aerobic exercise | | | |
| 15 minutes of light jogging, swimming or stationary cycling at low to moderate intensity. No weight training.<br>**Symptom free during full 24-hour period (48 hours for under 19s)** | Recommence studies and able to undertake computer based tasks | Increase heart rate and introduction to cognitive tasks | |
| **Stage 3** – Sport-specific exercise | | | |
| Moderate to maximum running drills. No head impact activities. No weight training.<br>**Symptom free during full 24-hour period (48 hours for under 19s)** | Able to undertake all mental tasks such as studying and computer based tasks | Add movement and cognitive load | |
| **Stage 4** – Non-contact training drills | | | |
| Progression to more complex training drills, e.g. passing, kicking and running drills. May start weight training.<br>**Symptom free during full 24-hour period (48 hours for under 19s)** | | Functional exercise and coordination | Medical practitioner |
| **Stage 5** – Full contact practice | | | |
| Normal training activities.<br>**Symptom free during full 24-hour period (48 hours for under 19s)** | | Restore confidence and assess functional skills by coaching staff | |
| **Stage 6** – Return to Play | | | |
| Player rehabilitated | | Play | |

If symptoms of concussion are experienced, go back to the previous stage, undertake a 24-hour rest period before recommencing this level of exercise. **If symptoms persist return to medical practitioner for assessment.**

**In all cases of suspected concussion it is recommended that the player be referred to a medical practitioner for diagnosis and guidance, as well as return to play decisions, even if the symptoms resolve.**

A comprehensive concussion evaluation by a medical practitioner may include:

- An analysis of symptoms
- A general and neurological examination
- Verbal cognitive (memory) tests
- A balance assessment
- Computerised brain function tests

Each of these is useful in contributing to a diagnosis and return to play (RTP) decisions but no single test stands alone in determining return to play.

# Return to play in the enhanced care setting

It is acknowledged that in some circumstances teams or organisations may be well supported with medical teams trained and experienced in the management of concussion or traumatic brain injury.

Such circumstances may include international, professional and semi-professional rugby teams, in addition to the armed forces and certain academic institutions.

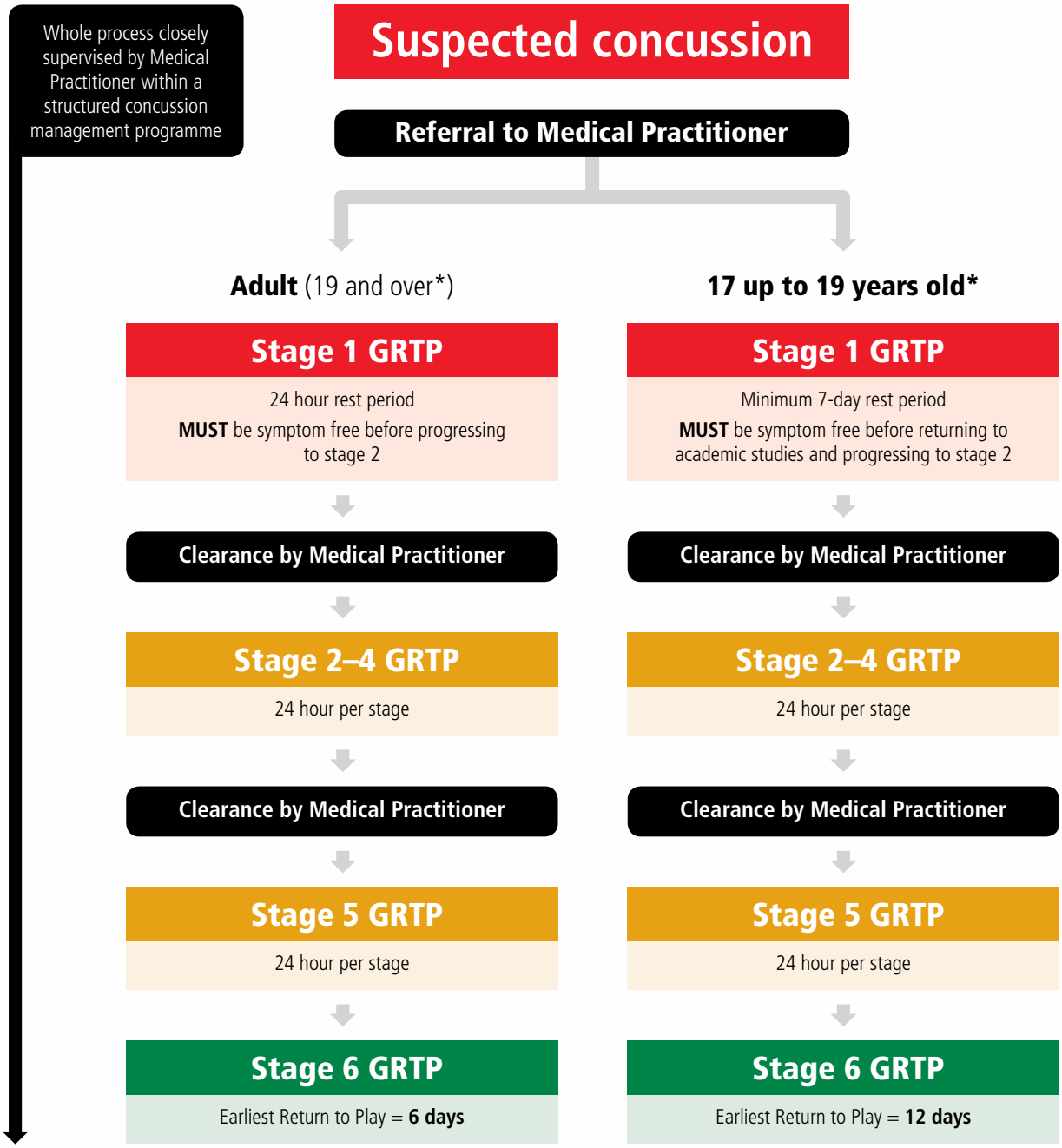
In these circumstances a shortened time frame for return to play is possible, but only under the **strict supervision** of appropriate medical experts.

**Please note this enhanced care return to play protocol only applies to players 17 years old and over. All players below this age must follow the standard return to play guidance.**

## Teams must be able to demonstrate the following when adopting this shortened return to play time frame:

- A doctor with appropriate training (e.g. WRU Immediate Care In Rugby course qualification) and experience in the management of concussion and traumatic brain injury, available to closely supervise the GRTP programme and clear the player prior to stage 5 of the GRTP programme
- Are able to demonstrate that there is a structured concussion management programme in place including:
  - Baseline SCAT 3 with additional computerised psychometric/cognitive testing of players (e.g. CogSport)
  - Clinical serial multimodal concussion assessment of players post head impact event
  - Formalised GRTP programme with regular SCAT 3 and computerised psychometric/cognitive assessments recorded in players' medical records
  - Access to neuropsychology/neurology/neurosurgery specialists if required
  - Formal concussion education programme for coaches and players

# Diagram of the enhanced care pathway for return to play following a concussion




* A player's age is deemed to be their age as of the 1st of September

**It must be emphasised that these are minimum return to play times. Players who do not recover fully within these time frames will need a longer recovery period.**

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## Additional resources

- **WRU** www.wru.co.uk/medical
- **IRB** www.irbplayerwelfare.com/concussion

This WRU Concussion resource has been developed utilising guidelines published in the 2012 Consensus Statement on Concussion in Sport, and adapted for rugby by the International Rugby Board. The information contained within this document is correct as of the published IRB regulations in April 2014.

The information contained in this resource is for information and educational purposes only and is not intended to be a substitute for appropriate medical advice or care and should not be used for the diagnosis or treatment of medical conditions. If you believe that you or someone under your care has sustained a concussion we strongly recommend that you immediately contact a qualified medical practitioner for appropriate diagnosis and treatment. Whilst reasonable care has been taken to include accurate information, the authors make no representation or warranty regarding its accuracy and specifically disclaim (to the fullest extent permitted by law) any and all liability in connection with the contents of this resource or as a result of its use by any person.

Welsh language versions of this guidance and other associated documents can be downloaded from www.wru.co.uk/medical. Hard copy Welsh language versions of all documents can be requested by contacting medical@wru.co.uk.