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When can a player safely 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
- Prolonged symptoms lasting weeks or months
- Greater risk of further concussions
- Interference with studies (school and university) and work
- Poor performance on the Rugby field
- Long-term, permanent brain effects including memory loss and emotional disturbances.

Mandatory rest periods

Unless advised by a medical doctor with expertise in concussion management, the following minimum rest periods are prescribed for players suspected of sustaining a concussion in Rugby:

Players 18 and younger – rest for a minimum of 2 weeks, followed by a 4-day minimum period of Graduated Return To Sport (**GRTS**, see protocol below)

Players 19 and older – rest for a minimum of 1 week followed by a 4-day minimum **GRTS**.

These minimum periods 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 Graduated Return To Sport (GRTS) Protocol

GRTS Protocol – each Stage progression AFTER the stand-down period is a minimum of 24 hours

Stage	Rehabilitation	Objective	Exercise Allowed
1	Minimum age-appropriate rest period.	Recovery	<ul style="list-style-type: none"> Complete body and brain rest for the first 24-48 hours Followed by rest and light exercise (walking, slow, stationary cycling) that does not worsen symptoms
2	Light aerobic exercise (20 min)	Increase heart rate	<ul style="list-style-type: none"> Light jogging, swimming or stationary cycling at low to moderate intensity. No resistance training. Symptom free during full 24-hour period.
3	Sport-specific exercise (25-30 minutes)	Add movement	<ul style="list-style-type: none"> Running drills. No head impact activities
4	Non-contact training drills	Exercise, coordination, and cognitive load	<ul style="list-style-type: none"> Progression to more complex training drills, e.g. passing drills. 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
5	Full Contact Practice	Restore confidence and assess functional skills by coaching staff	<ul style="list-style-type: none"> Normal rugby 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	<ul style="list-style-type: none"> Player rehabilitated and can be progressively re-introduced into full match play

Notes:

- ***a player may only start the GRTS process once cleared by a medical doctor and all symptoms have cleared***
- ***a player may only progress to the next stage if no symptoms occur during or after exercise in each stage***
- ***a player must again be cleared by medical doctor before starting full-contact training***

Summary of Graduated Return To Sport (GRTS) Criteria for Rugby

AGE GROUP	COMPULSORY REST PERIOD POST CONCUSSION		GRTS		NUMBER OF MISSED FULL WEEKS
<i>Players 18 and younger</i>	Minimum of 2 weeks off before starting the GRTS process, even longer if any signs or symptoms remain.	Caution! Return To Sport protocol should be started only if the player is symptom free and off medication that modifies symptoms of concussion	4 Stage GRTS with progression every 24 hours if no symptoms. Total GRTS days = a minimum of 4 days.	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 rest post injury + 4 days GRTS (Play - Day 19 post injury)
<i>Players 19 and older</i>	Minimum of 1 week off before starting the GRTS process, even longer if any signs or symptoms remain.				<u>Earliest Return To Sport</u> = 1 week rest post injury + 4 day GRTS (Play - Day 12 post injury)
 <p>Any player with a second concussion within 12 months, 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. It is recommended that if this expertise is unavailable then as a minimum the player should be managed using the protocol from the lower age group i.e. 1. 'Players 19 and older' uses the 'Players 18 and younger' protocol and 2. for 'Players 18 and younger' the minimum rest period should be <u>doubled</u>. However, the medical doctor clearance is non-negotiable and must always be provided before entering the GRTS and before starting full-contact training, regardless of who is available to manage or monitor the GRTS process.</p>					

NOTE: Exceptions to SA Rugby's and World Rugby's Concussion protocols are only allowed where a player has access to an Enhanced Care clinical setting.

Advanced care settings include:

- (1) Medical doctors with training and experience in recognising and managing concussion*
- (2) Access to brain imaging facilities and neuro-radiologists*
- (3) Access to a multidisciplinary team of specialists including neurologists, neurosurgeons, neuropsychologists, neurocognitive testing, balance and vestibular rehabilitation therapists.*

REFERENCES

1. Purcell L. What are the most appropriate return-to-play guidelines for concussed child athletes? *Br J Sports Med* 2009; 43 (Suppl 1): i51-i55
2. Schneider KJ et al. The effects of rest and treatment following a sports related concussion: a systematic review of the literature. *Br J Sports Med* 2013; 47: 304-307
3. McCrory P et al. Consensus Statement on Concussion in Sport 3rd International Conference on Concussion in Sport, Zurich. *Clinical J Sports Med* 2009; 19: 185-200
4. McCrory P et al. Consensus statement on concussion in sport—the 5th international conference on concussion in sport held in Berlin, October 2016. *Br J Sports Med* 2017;0:1–10. doi:10.1136/bjsports-2017-097699

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