

Concussion Protocol 2018/19

"Sport related concussion is a traumatic brain injury induced by mechanical forces"

Concussion in Sport Group (2017)

Introduction

Diagnosis of concussion appears to be steadily increasing across a range of sports. At SGS College the health and safety of our students is paramount and we hold their best interests at heart. Staff and coaches have a duty of care to not only minimise the risk of concussion but to recognise and manage those who have suffered a potential concussion appropriately. These points are detailed in the following document along with a clear return to play protocol for coaches, medical staff and parents to refer to should one of our athletes sustain a concussion. These guidelines are definitive and should not be tailored or manipulated to suit the athlete, sport or scenario.

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1. Prevention

In both contact and non-contact sports there is a risk of sustaining a concussion. Whilst we can never fully eliminate this risk it can be minimised through various measures to ensure that sport and our student's remains safe. At present there is an ongoing wealth of research into the prevention of concussion. The level of research for some of the following points is of varying quality but it is generally hypothesised that these measures will aid in the prevention of concussion.

- **Equipment** - Each individual sport requires an array of equipment designed to protect the athlete which is too broad to cover in this section. Prior to training/ games it should be ensured that the required equipment specified by the laws of the game is in place and in correct working order. Examples of this include post protectors in rugby, helmets in American football or even padded edges of the backboard in basketball.
- **Environment** - it is the duty of the referee and coaches to ensure that the environment and playing surface are safe. This includes ensuring there is a sufficient buffer around the edge of the court/pitch so that the athlete cannot come into contact with foreign objects such as barriers, boards and seating. The playing surface is also a consideration. For court based sports this means ensuring the surface is dry and smooth so that athletes don't slip or trip on raised edges. Whilst it is unlikely field based fixtures will be postponed due to a firm ground, in extreme circumstances it is a consideration to water the pitch in to allow for some impact absorption.

- Technique - the majority of concussions in rugby are sustained whilst making a tackle, which can be transferred to a variety of collision sports. Time should be dedicated, particularly in pre-season, to sessions specifically looking at correct techniques in contact situations such as tackling. Those struggling with techniques should be provided with additional assistance.
- Foul play - A surprisingly large percentage of concussions are sustained through acts of illegal play. This may be intentional, such as violence, or unintentional acts such as a flailing elbow. Coaches should promote sportsmanship and play within the rules. Foul play should be punished appropriately to act as a deterrent, whether this is through the referee in a match or the coach in a training environment.
- There is new evidence to suggest that players with greater muscular strength around the neck may be at a reduced risk compared to those weaker athletes. Consequently, athletes who play contact sports should work on neck strengthening as part of their S&C sessions.

2. Recognise

A) For Coaches

It is not always easy to assess whether someone has sustained a concussion and often symptoms will be masked for a few hours after the incident. It is important to remember "*if in doubt sit them out*". This is especially true for coaches or those with little or no medical expertise. It is not your duty to diagnose concussion. However you must be able to recognise those who **may** have sustained a concussion and manage them appropriately. This will always result in removal of the athlete from play. A good resource to have with you to reference to is the concussion recognition tool (Appendix 2).

As a coach there are a variety of signs, symptoms or changes in the athlete which you may notice. These are mentioned below (table 1) but are not exclusive. ***It should be noted that you do not have to lose consciousness to sustain a concussion.*** The athlete only has to have 1 of the points (not exhaustive) mentioned below to have a suspected concussion and as a result be removed from play immediately. You may even wish to remove someone from play who displays no symptoms but has a mechanism of trauma to the head which you suspect was sufficient enough that the athlete may go onto to develop a delayed concussion.

Symptoms	Headache, dizziness, "feeling in a fog"
Physical signs	Loss of consciousness, vacant expression, vomiting, inappropriate playing behaviour, unsteady on legs, slowed reactions
Behavioural changes	Inappropriate emotions, irritability, feeling nervous or anxious
Cognitive impairment	Slowed reaction times, confusion/disorientation, poor attention and concentration, loss of memory for events up to and/or after the concussion

TABLE 1. SIGNS, SYMPTOMS AND CHANGES INDICATIVE OF A CONCUSSED PATIENT

B) For Healthcare Professionals

You should follow the same guidance provided to the coaches as above but your pitch side assessment should be more thorough as per your training. If a player reports none of the points mentioned in table 1 you should go on to ask the patient the 5 Maddocks questions detailed in table 2. If the patient answers 1 or more of the questions incorrectly they are removed from play immediately.

These cognitive tests will also provide you with an opportunity to further assess physical or behavioural changes such as slurred speech or irritability. If the athlete answers all questions correctly

Modified Maddocks Questions

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

TABLE 2. MADDOCKS QUESTIONS

but you are still unsure whether the athlete **may** have sustained a concussion they should be removed from play. An assessment of the athletes Glasgow Coma Score (Appendix 3) should be made.

NOTE: The correct on-field assessment is detailed in the first section of the SCAT5.

3. Remove

A) For Coaches

If a member of the physiotherapy department is unavailable to assess a student with suspected concussion then they must be transferred to an emergency department for further assessment by a doctor. The student may have suffered from a more serious head injury (hemorrhaging or skull fracture) which may not be immediately evident. Arrangements for their transportation will be dependent on the situation and any further injuries which may be present (i.e. spinal injury). Please follow the hospitalization protocol.

B) For Healthcare Professionals

If a player is removed from play with a suspected concussion it needs to be determined whether they have sustained a potentially serious brain injury and require further medical assessment and/or imaging at a hospital. This is up to discretion of the treating therapist but **any** patient who matches **any** of the items listed in table 3 should be referred to an emergency department. If the patient shows little signs of concussion but have very mild symptoms then it may be appropriate that they are sent home under supervision and monitored there by an appropriate adult. They should be given the concussion advice card. However, it is better to be cautious and there would be nothing wrong with sending a patient with mild symptoms for further assessment at a hospital.

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|---|
| <ul style="list-style-type: none">• Glasgow coma scale less than 15 (Appendix 3)• Seizures or convulsions• Potential spinal injury – neck pain and/or radicular pain• Loss of consciousness• Severe or worsening headache• One or more episodes of vomiting• Penetrating head injury – including signs such as ‘panda eyes’ |
|---|

TABLE 3. PATIENTS REQUIRING URGENT REFERRAL TO EMERGENCY DEPT

If the athlete is sent to hospital then the hospitalisation protocol needs to be followed. Should the treating therapist be happy for them to return home, and not visit A&E, they should speak to the athletes’ responsible adult. They should be provided with the concussion advice card and explained the following...

- Signs or symptoms when the athlete should be taken to hospital
- They should not be left alone
- They should not drive
- They should not drink alcohol
- They should not take prescription or non-prescription drugs unless medically advised
- They should not train or play until medically cleared

4. Return

A) Graduated Return to Play (GRTP)

An athlete's return to play should be graduated by where the duration, intensity and specificity of exercise increases steadily through various sessions. Table 4 shows the recommended GRTP protocol developed by the Concussion in Sport Group (2017) and used by nearly all national governing bodies. How quickly an individual is able to progress through this protocol is specific to their sport as detailed below (Table 5), although the vast majority now use the same timeframes. An athlete must remain symptom free to progress from one stage to the next.

Stage	Rehabilitation Stage	Exercise Allowed	Objective
1	Rest	None – complete physical and cognitive rest	Recovery
2	Light aerobic exercise	Walking, swimming or stationary cycle keeping intensity <70% maximum heart rate. No resistance training	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, eg passing. 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	Safe return to play once fully recovered

TABLE 4. GRADUATED RETURN TO PLAY PROTOCOL

B) National Governing Body guidelines

Most governing bodies have now developed their own concussion protocols using the GRTP protocol (table 4), with separate protocols for adults and under-19 athletes. All protocols require a 2 week rest period from the date of injury. After these 2 weeks are completed, and the athlete is symptom free, they may start going through stages 2-6 with 48 rest between stages. They should be cleared by a doctor prior to returning to sport (stage 6).

A slight change to the protocols have been made for the 2017/18 season. An athlete has to be symptom free for 14 days prior to returning to play. If their symptoms resolve in days 1-7 they still have to wait until day 14 prior to starting the GRTP. If their symptoms resolve in days 8-12 they may start the GRTP but cannot do contact (stage 5) until 14 days after they last experienced symptoms. If their symptoms resolve in days 13+ they must wait 48 hours before commencing to stage 2, but again cannot do contact (stage 5) until 14 days after they last experienced symptoms.

If an athlete participates in more than 1 sport, possibly external to the college, then the more conservative protocol should supersede the other.

Please note: These are minimum timeframes and some individuals may require longer if they don't recover within these timeframes. All policies require the athlete to be cleared by a doctor of medicine before they are allowed to return to play.

Stage	All Team Sports	Box - ABAE
1	2 weeks	No guidelines given
2	48h	
3	48h	
4	48h	
CLEARANCE BY DOCTOR		
5	48h	30 days
6	Return to Play	-
Minimum Time	23 days	30 days

TABLE 5. NGB SPECIFIC MINIMUM RETURN TO PLAY TIMEFRAMES

C) For healthcare professionals

An athletes return to play should be managed and monitored appropriately by members of the physiotherapy department. The athletes coaches should be made aware of their current status so they can ensure that the athlete doesn't do more than they have been cleared to do. It is the responsibility of the coaching and medical staff to ensure that the athlete follows the protocol correctly and does not do more than they should.

When the athlete has been asymptomatic for the period set out in table 5 they may progress from stage 1 to stage 2. Immediately after the athlete has completed the exercise allowed they should fill out the symptom evaluation section of the SCAT5, ideally under supervision of a member of the physiotherapy department. Provided they remain symptom free this process should continue from one stage to another up until stage 6. If they show any symptoms they are required to rest for the duration required between stages before returning back to their current stage. When the therapist has taken the patient through the GRTP and happy they have recovered, they should be sent to their doctor to gain clearance ideally prior to contact (stage 5) but certainly prior to returning to play (stage 6). 48 hours is needed between all stages, including stage 5 and 6.

Note: Healthcare professionals do not have the authority to clear patients for return to play. This must be authorized and signed off by a doctor whose decision is final.

5. Summary

1. If any player is suspected of concussion he/she should be removed from play immediately.
2. If no member of the physiotherapy department is available for assessment then the patient should be sent to hospital for further assessment.
3. If a member of the physiotherapy department is available they will deem whether the patient requires referral to hospital
4. The player should not be left alone and monitored by someone first aid trained or if deemed appropriate a responsible adult
5. They should not be allowed to drive
6. The physiotherapy team will monitor the patient via the SCAT5 assessment form in the days following injury
7. When suitable the physiotherapy team will take the patient through the GRTP protocol
8. When the physiotherapy team have taken patient through the GRTP protocol they should be cleared by a doctor of medicine prior to returning to play

Disclaimer

The information contained in this resource is intended for educational purposes only and is not meant to be a substitute for appropriate medical advice or care. If you believe that you or someone under your care has sustained a concussion we strongly recommend that you contact a qualified health care professional for appropriate diagnosis and treatment. The author has made responsible efforts to include accurate and timely information. However they make no representations or warranties regarding the accuracy of the information contained and specifically disclaim any liability in connection with the content on this site.

6. Appendix

- **Appendix 1** - Sport Concussion Assessment Tool - SCAT5
Accessible at <http://bjism.bmj.com/content/bjsports/51/11/851.full.pdf>
- **Appendix 2** – Concussion Recognition Tool 5 (CRT5)
Accessible at <http://bjism.bmj.com/content/bjsports/51/11/872.full.pdf>

CONCUSSION RECOGNITION TOOL 5 ©
To help identify concussion in children, adolescents and adults

Supported by: IHF, FIFA, IOC, FEI

RECOGNISE & REMOVE
Head impacts can be associated with serious and potentially fatal brain injuries. The Concussion Recognition Tool 5 (CRT5) is to be used for the identification of suspected concussion. It is not designed to diagnose concussion.

STEP 1: RED FLAGS – CALL AN AMBULANCE
If there is concern after an injury including whether ANY of the following signs are observed or complaints are reported then the player should be safely and immediately removed from play/game/activity. If no licensed healthcare professional is available, call an ambulance for urgent medical assessment:

- Neck pain or tenderness
- Double vision
- Weakness or tingling/burning in arms or legs
- Severe or increasing headache
- Seizure or convulsion
- Loss of consciousness
- Deteriorating conscious state
- Vomiting
- Increasingly restless, agitated or combative

Remember:

- In all cases, the basic principles of first aid (danger, response, airway, breathing, circulation) should be followed.
- Assessment for a spinal cord injury is critical.
- Do not attempt to move the player (other than required for airway support) unless trained to do so.
- Do not remove a helmet or any other equipment unless trained to do so safely.

If there are no Red Flags, identification of possible concussion should proceed to the following steps:

STEP 2: OBSERVABLE SIGNS
Visual clues that suggest possible concussion include:

- Lying motionless on the playing surface
- Slow to get up after a direct or indirect hit to the head
- Disorientation or confusion, or an inability to respond appropriately to questions
- Blank or vacant look
- Balance, gait difficulties, motor incoordination, stumbling, slow laboured movements
- Facial injury after head trauma

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STEP 3: SYMPTOMS

- Headache
- "Pressure in head"
- Balance problems
- Nausea or vomiting
- Drowsiness
- Dizziness
- Blurred vision
- Sensitivity to light
- Sensitivity to noise
- Fatigue or low energy
- "Don't feel right"
- More emotional
- More irritable
- Sadness
- Nervous or anxious
- Neck Pain
- Difficulty concentrating
- Difficulty remembering
- Feeling slowed down
- Feeling like "in a fog"

STEP 4: MEMORY ASSESSMENT
(IN ATHLETES OLDER THAN 12 YEARS)

Failure to answer any of these questions (modified appropriately for each sport) correctly may suggest a 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?"

Athletes with suspected concussion should:

- Not be left alone initially (at least for the first 1-2 hours).
- Not drink alcohol.
- Not use recreational/ prescription drugs.
- Not be sent home by themselves. They need to be with a responsible adult.
- Not drive a motor vehicle until cleared to do so by a healthcare professional.

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ANY ATHLETE WITH A SUSPECTED CONCUSSION SHOULD BE IMMEDIATELY REMOVED FROM PRACTICE OR PLAY AND SHOULD NOT RETURN TO ACTIVITY UNTIL ASSESSED MEDICALLY, EVEN IF THE SYMPTOMS RESOLVE

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- **Appendix 3** - Glasgow Coma Scale (GCS)
The GCS should be used to give an objective marker on the patient state of being and constantly reassessed to monitor for any deterioration. The scale goes from 3 (deep coma or death) to 15 (fully alert). Anyone who scores less than 15 should be referred to the emergency department as mentioned above. A pain response may be achieved by squeezing the patients' nail bed or pushing on the indentation (supra-orbital foramen) at the junction of the medial and middle third of the eyebrow.

	1	2	3	4	5	6
EYES	Does not open eyes	Opens eyes in response to painful stimuli	Opens eyes in response to voice	Opens eyes spontaneously	N/A	N/A
VERBAL	Makes no sound	Incomprehensible sounds	Utters inappropriate words	Confused, disorientated	Orientated, converses normally	N/A
MOTOR	Makes no movement	Extension to painful stimuli	Abnormal flexion to painful stimuli	Flexion/ withdrawal to painful stimuli	Localizes painful stimuli	Obeys Command

APPENDIX 3. GLASGOW COMA SCALE ASSESING EYE, VERBAL AND MOTOR RESPONSES

