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# IF IN DOUBT, SIT THEM OUT.

## Scottish Sports Concussion Guidance: grassroots sport and general public

*2018 version. Adapted from the Berlin 5th International concussion consensus statement 2016.*

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# Introduction

The following guidance is intended to provide information on how to recognise sports concussion and on how this should be managed from the time of injury through to safe return to play.

This information is intended for the general public and for grassroots sport participants, where specialists in sport and exercise medicine are not available to manage concussed individuals.

**At all levels in all sports** if an athlete is suspected of having a concussion, they must be immediately removed from play. **If in doubt, sit them out. No-one should return to play on the same day with suspected concussion. No-one should drive, operate machinery or drink alcohol after a suspected concussion.**

**All head injuries should be assessed by a healthcare professional. Those who are suspected of being 'knocked out' or have persisting symptoms such as headache, vomiting or unusual behavior, need to be reviewed in an accident and emergency department (A&E).**

Any player with a second concussion within 12 months, a history of multiple concussions, players with unusual symptoms or prolonged recovery should be assessed and managed by health care providers with experience in sports-related concussions.

## CONCUSSION FACTS

*A concussion is a brain injury*

*All concussions are serious*

*Most concussions occur without loss of consciousness*

*Anyone with any symptoms following a head injury must be removed from playing or training and must not take part in any physical activity until all concussion symptoms have cleared*

*Specifically, there must be no return to play on the day of any suspected concussion*

*Return to education or work takes priority over return to play*

*If in doubt, sit them out to help prevent further injury or even death*

*Head injury can be fatal*

*Most concussions recover with time and a staged return to normal life and sport*

## 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 or concentration disturbance or balance problems. It can be very difficult to tell concussion apart from other more serious injuries, such as bleeding on the brain.

Loss of consciousness, being knocked out, occurs in less than 10% of concussions. Loss of consciousness is **not** required to diagnose concussion.

## What causes concussion?

Concussion can be caused by a direct blow to the head, but can also occur when knocks 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 adolescents (aged under 19)**:

- 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**

A history of previous concussion increases risk of further concussions, and other sports injuries which may take longer to recover.

## Onset of symptoms

The first symptoms of concussion can present at any time, but typically appear in the first 24-48 hours following a head injury.

## How to recognise a concussion

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

Spotting impacts capable of causing concussion can be difficult in a fast moving sport. It is the responsibility of everyone – supporters, officials, coaches and parents, to look out for athletes with suspected concussion and ensure they are safely removed from play.

**IF IN DOUBT, SIT THEM OUT.**

## Visible clues of concussion - what you see

*Any one or more of the following visual clues can indicate a concussion:*

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

## Symptoms of concussion - what you are told

Presence of any one or more of the following signs & 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
- Concerns expressed by parent, official, spectators about a player

## Questions to ask - and when to ask them

Any suspicion of concussion, as a result of symptoms or behaviour, should result in permanent removal from play with no further assessment. Occasionally concussion can be present when a player ceases activity due to a different, more obvious, injury e.g. a shoulder injury. The following questions may help you identify a possible concussion in this setting.

*These should be tailored to the particular activity and event, but failure to answer any of the questions correctly may suggest a concussion. Examples with alternatives include:*

**“What venue are we at today?”**

or “Where are we now?”

**“Which half is it now?”**

or “Approximately what time of day is it?”

**“Who scored last in this game?”**

or “How did you get to here today?”

**“What team did you play last game?”**

or “Where were you on this day last week?”

**“Did your team win the last game?”**

or “What were you doing this time last week?”

**These questions should not be used as a filter to keep someone on the pitch. Concussion can still be present despite correct answers.**

**IF IN DOUBT, SIT THEM OUT.**

## **Immediate management of a suspected concussion**

Anyone with a **suspected concussion** should be **IMMEDIATELY REMOVED FROM PLAY**.

Once safely removed from play they must not be returned to activity that day.

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

Team mates, coaches, match officials, team managers, administrators or parents who **suspect** someone may have concussion **MUST** do their best to ensure that they are removed from play in a safe manner.

## **Red flags in concussion - urgent hospital transfer**

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

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

In all cases of **suspected concussion** it is recommended that the player is referred to a medical or healthcare professional for diagnosis and advice, even if the symptoms resolve.

Anyone with a concussion or suspected concussion should not:

- **be left alone** in the first 24 hours
- **consume alcohol** in the first 24 hours, and thereafter should avoid alcohol until free of all concussion symptoms
- **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 free of all concussion symptoms

## **Ongoing management of a concussion or suspected concussion**

### **REHABILITATE THE PERSON, REHABILITATE THE BRAIN, RETURN TO NORMAL LIFE, RETURN TO SPORT**

A slow, stepwise return to normal life and then sport is the cornerstone of concussion treatment. After a short period of rest, a staged return to normal life at a level that does not produce symptoms of concussion is the main aim – then finally a staged return to sport.

## **Aim to return to normal life before sport when recovering from concussion**

Participants should be symptom free and have returned to normal school or work activities, as well as have evidence of completing a staged returning to learning and returning to sport protocol.

Those younger than 13 may need to take longer over their rehabilitation and return to sport, with medical guidance being sought. Return to competitive or uncontrolled sport should be longer than 23 days in those aged under 13.

Symptoms persisting for more than 14 days in adults and four weeks in children are abnormal and the athlete should be reviewed by a doctor.

**Recovery from a suspected concussion – Rehabilitate the person, Rehabilitate the brain.**

## Phase 1 - Relative rest period

Take it easy for a 24-48 hour period after a suspected concussion. Once your symptoms have settled, you can begin daily activities that don't bring on the symptoms of concussion. It is best to minimise your physical activity, screen time and reading to 10-15 minute slots.

If an activity doesn't feel right or is making you feel unwell, you should back off. Use this time to find the right balance. Early medical review should be sought if symptoms persist through or beyond the relative rest phase of 24-48 hours.

## Phase 2 - Return to normal life (RTNL)

After a couple of days you can begin to work towards doing a small amount of paperwork, school or study activities, aiming towards a full return. You should do this gradually, slowly building up the amount and type of activity you do. You can do more around the house, socialise more, involve more hobbies, do some work from home and gradually build to a full return to your work or school.

If you don't feel right at any stage, then back off a bit and make an appointment with your doctor. Don't try to return to sport or training just yet, limit it to very light physical activity that doesn't cause you any symptoms

Return to normal life should progress through four stages. There are no absolute time limits between progression of each stage, and this should be guided by symptoms. However, 24-48 hrs are recommended between each stage.

## Return to normal life pathway

### STAGE 1

**Aim: Focus on return to daily activities –**

Rehabilitate the brain through reading, television, games etc. Typically activities should begin with 5-15 minutes sessions at home and then gradually increase back to full participation.

### STAGE 2

**Aim: Focus on increasing tolerance –** Once daily activities are tolerated on an unlimited quantity then home based school or work related activity, such as homework, reading or paperwork can be commenced.

### STAGE 3

**Aim: Focus on return to study and work –** part time return to school or activity in the workplace, e.g. half days, avoiding hard physical work, avoiding complicated study.

### STAGE 4

**Aim: Focus on return to full academic or work related activity –** return to full activity and catch up on missing work.

## Special groups

Although this guideline is a framework for the majority of the public, some groups may require a much slower progression and careful planning to return to normal life and sport. People with recurrent, prolonged or frequent previous concussions will require a longer recovery period, in addition to those with medical problems, such as attention deficit hyperactivity disorder.

## Phase 3 - Return to sport

Once you are almost at full return to normal work or school, and providing you have no symptoms, you can begin a staged return to sport. See the guidance in the GRTS table on the next page about how much and of what type of activity you can do in each stage. You might need to work with your coach or teacher to find the right type of activity relevant to your sport. Once you have worked through the stages without symptoms and feel ready to return to competitive sport, you should seek a review by a healthcare professional experienced in concussion management or your doctor prior to playing. If you don't feel right at any point, drop back down a stage and wait a further 24\* hrs before trying to progress.

\*48 hours in those aged under 19



## GRTS - Graduated return to sport

A graduated return to sport (GRTS) protocol is a progressive exercise program that introduces an individual back to sport in a step wise fashion.

### GRADUATED RETURN TO SPORT PROTOCOL (48 HOURS BETWEEN STAGES IF AGED UNDER 19, 24 HOURS PROGRESSION IN ADULTS)

Stage	Rehabilitation Stage	Exercise Allowed	% Max Heart rate	Duration	Objective
1	Minimum rest period	Complete body and brain rest			Recovery
2	Light exercise	Walking, light jogging, swimming, stationary cycling or equivalent No resistance training, weight lifting, jumping or hard running	<70%	<15min	Increase heart rate
3	Sport-specific exercise	Simple movement activities e.g. running drills Limit body and head movement NO head impact activities	<80%	<45min	Add movement
4	Non-contact training	Progression to more complex training activities with increased intensity, coordination and attention e.g. passing May start resistance training NO head impact activities	<90%	<60min	Exercise, coordination and skills/tactics
5	Full Contact Practice	Normal training activities with risk of potential body contact			Restore confidence and assess functional skills by coaching staff
6	Return to Play	Normal uncontrolled matchplay			Return to play

*Adults should only progress between stages at 24 hour intervals*

*Those aged under 19 should only progress at 48 hour intervals*

*Those aged under 13 might take even longer under the guidance of a doctor*

## IF IN DOUBT, SIT THEM OUT.

### GRTS should only be started when the player is:



- Symptom free at rest,
- Has returned to normal education or work, where appropriate,
- Free from treatments that may mask concussion symptoms, e.g. drugs for headaches or sleeping tablets.


It is recommended that a medical practitioner or approved healthcare professional confirms that an individual can take part in full contact training before entering stage 5 full contact practice.

Full return to sport should be guided more by symptoms and progression than absolute timescales, but all grassroots athletes in Scotland should take a **MIMIMUM** of 12 days in adults, and 23 days in those aged under 19 for full return to play. Those under 13 should take this more slowly and be guided by a doctor.

Some sports may not have a likelihood for bodily contact, but training intensity can still increase appropriately with the GRTS framework with creativity with coaches or teachers towards the training objective.

### MINIMUM RETURN TO PLAY INTERVALS WHEN FOLLOWING GRTS PROTOCOL

AGE GROUP	GRTS STAGE 1 MINIMUM REST PERIOD	 <b>CAUTION!</b>	GRTS STAGES 2 to 5	 <b>CAUTION!</b>	GRTS STAGE 6 MINIMUM RETURN TO PLAY INTERVAL
Children and Adolescents (aged under 19)	14 days	Return to play protocol should be started <u>only</u> if the player is symptom free and off medication that modifies symptoms of concussion	4 Stage GRTS Progression every <b>48-72 hours</b> , if symptom free	Contact sport should be authorised <u>only</u> if the player is symptom free and off medication <b>MEDICAL CLEARANCE RECOMMENDED</b>	14 day rest + 8 day GRTS = Day 23 post injury
Adults	7 days		4 Stage GRTS Progression every <b>24-48 hours</b> , if symptom free		7 day rest + 4 day GRTS = Day 12 post injury



**CAUTION!** 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 with experience in sports-related concussions.

## Frequently asked questions

### **I am a doctor with a patient who has persistent symptoms – how long is too long?**

The aim of the pathway is for people to be working at a level at which they have no symptoms of concussion at all times, but progressing through the stages. There are absolute minimum timescales for individuals in different age groups to complete the process and return to sport. These are minimums, not targets. They are 12 days for an adult and 23 days for those aged under 19. Those aged under 13 may need even longer.

Symptoms that persist beyond 14 days for adults and 4 weeks in those aged under 19 should be regarded as persistent symptoms and further medical review is required. The number of symptoms at the time of initial injury and past history of concussion may predict those in whom a longer, more conservative approach, may be needed.

### **How are recurrent or multiple concussions managed?**

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

Any athlete with a second concussion within 12 months, a history of multiple concussions, athletes with unusual symptoms or prolonged recovery should be assessed and managed by health care providers (multi-disciplinary) with experience in sports-related concussions.

### **Is concussion different in young children?**

Young children may be more susceptible to concussion and have prolonged duration of symptoms. They need to be managed more slowly and take longer before returning to sport.

### **Do headguards and mouthguards protect against concussion?**

Although protective equipment may help protect against scalp wounds and dental trauma, and are recommended for safety in sports such as cycling, shinty or winter sports, there is no evidence that headguards and mouthguards protect players against sport related concussion.

### **Should I see a doctor for my head injury?**

All cases of head injury should seek early medical review. All cases of concussion are advised to see a doctor or healthcare professional experienced in concussion management before returning to competitive sport. In adults, concussion symptoms would be expected to resolve in 10-14 days. In those aged under 19, the majority of symptoms should disappear by 4 weeks. Anything longer than this should seek a further review with a doctor, if they haven't already,

### **What has changed in the Scottish advice since 2015?**

The guidelines have been updated in line with updated international research and advice and informed by local expert experience. More priority is put on rehabilitating the brain injury and a return to normal life in a staged progressive fashion, rather than focussing on primarily returning to sport or absolute timescales. There was a large emphasis on absolute rest in the previous guidelines, but this time the advice is more about helping participants slowly progress through more complex stages of physical and mental activity that do not cause any symptoms. So more focus on rehabilitation through return to normal life rather than rest.

## Athlete checklist for concussion management

sportscotland concussion management checklist				
Name:		ADULT – MINIMUM – 12 DAYS	UNDER 19 – MINIMUM – 23 DAYS	
Age:				
Incident date:				
Incident description:				
				Date
Relative rest period	24-48 hrs with sub-threshold activity allowed			
Return to normal life	Stage 1. Focus – daily activities at home			
	Stage 2. Focus – limited study/work from home			
	Stage 3. Focus – part-time return to study /work			
	Stage 4. Focus - return to full study and work			
Return to sport	Stage 2. Light aerobic exercise (24-48* hrs)			
	Stage 3. Sport specific exercise (24-48* hrs)			
	Stage 4. Non-contact training (24-48* hrs)			
	Stage 5. Full contact practice (24-48* hrs)			
Medical review dates				
	Stage 6. Return to full contact competition.			

The aim of concussion management is to promptly remove all suspected cases of concussion from the sporting arena and minimise risk to the athletes during a safe recovery period to normal life and sport. Almost all will achieve this by following the protocol above.

A small number of cases may need further tests. Following this protocol and monitoring safe recovery via the checklist will best allow a safe return to sport and normal life.

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