IF IN DOUBT, SIT THEM OUT.

Scottish Sports Concussion Guidance: grassroots sport and general public

2024 VERSION

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Contents

Executive Summary

This is the 3rd version of the Scottish Sports Concussion Guidance that was first launched in 2015.

This latest document includes updated information following the publication of the 2023 UK Government Concussion guidelines and the 6th International Consensus Statement on Concussion in Sport.

The guidelines are for athletes, coaches, parents, and officials across all grassroots sport. They are designed to provide clear information on how to recognise sports concussion to ensure that anyone suffering from a suspected concussion is immediately removed from play.

Athletes supporting the publication of the second version of the Scottish Sports Concussion Guidance in 2018

There have been some key changes to the guidance since 2015 and these are highlighted here. However, rehabilitating the brain injury and a return to normal life in a staged progressive fashion remains the priority rather than focusing on returning to sports competition or absolute timescales.

The message remains, **"IF IN DOUBT, SIT THEM OUT"**.

- The previous graduated return to sport programme differentiated between adults and children/adolescents. The Guidance is now the same for all ages, although children/adolescents may take longer to progress through the programme.
- Participating in light physical activity is beneficial and has been shown to have a positive effect on recovery after the initial 24-48 hr period of relative rest.
- All concussions should be managed individually, but there should be no return to competition before 21 days from injury.
- Anyone with symptoms after 28 days should seek medical advice from their GP (which may in turn require specialist referral and review).

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 individuals participating in all grassroots sports – primary school age and upwards – where healthcare professionals are typically not available onsite to manage athletes with concussion.

This document contains general medical information relating to a suspected concussion in sport, but it is not a substitute for advice from a qualified medical practitioner or healthcare provider. You should never delay seeking medical advice, disregard medical advice, or discontinue medical treatment because of the information contained in this guidance.

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 competition, training or Physical Education (PE) within 24 hours of a suspected concussion.

No one should drive, ride a bicycle, operate machinery or drink alcohol within 24 hours of a suspected concussion or whilst symptomatic. Commercial drivers (HGV etc.) should seek review by an appropriate healthcare professional before driving.

All those suspected of sustaining a concussion should be assessed by an appropriate onsite healthcare professional or by accessing NHS24 (dial 111) within 24 hours of the injury.

Those who are suspected of having 'red flags' should receive urgent medical assessment onsite or in a hospital Accident and Emergency (A&E) Department using ambulance transfer by calling 999 if necessary.

CONCUSSION FACTS

Most people with concussion recover fully with time.

A concussion is a brain injury.

All concussions are serious.

A head injury can be fatal.

Most concussions occur without loss of consciousness (being knocked out).

All those suspected of sustaining a concussion should be assessed by an appropriate onsite healthcare professional or by accessing NHS24 (dial 111) within 24 hours of the injury.

Return to education/work takes priority over return to sport.

Individuals with concussion should only return to competition having followed a graduated return to activity (education/work) and sport (GRAS) programme.

All concussions should be managed individually, but there should be no return to competition before 21 days from injury.

Anyone with symptoms persisting more than 28 days should seek support from a healthcare professional (e.g. their General Practitioner (GP)) as they may benefit from a being referred to a specialist.

What is concussion?

Concussion is a traumatic brain injury resulting in a disturbance of brain function. It affects the way a person thinks, feels and remembers things.

Loss of consciousness, being knocked out, occurs in less than 10% of concussions.

Loss of consciousness is not required to diagnose a 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.

How does concussion affect people?

Concussion can affect people in 4 main areas:

Physical: for example, headaches, dizziness, changes in vision

Mental processing: for example, not thinking clearly, feeling slowed down

Mood: for example, being short tempered, sad or emotional

Sleep: for example, not being able to sleep or sleeping too much

There may be times when the person may have no visible signs such as looking blank and being off balance. It can be very difficult to differentiate concussion from other more serious injuries, such as bleeding in the brain. Other significant injuries such as injuries to the neck or face can also occur along with concussion.

Continuing to play with concussion can prolong recovery and return to activity and sport. It also increases the risk of sustaining other injuries (e.g. musculoskeletal injuries) and, if another head injury occurs, result in more severe injury and in rare cases, death.

Additional Considerations?

Concussions can happen to anyone at any age. All concussions are different and return to activity (education/work) and sport should be individualised for each person.

However, there are some groups who require special consideration:

- Children and adolescents (aged under 19) may be more susceptible to concussion and take longer to recover. Returning to education and sport too quickly may exacerbate symptoms and prolong recovery. Children and adolescents are also more susceptible to rare and dangerous neurological complications including death caused by a single or second impact before recovering from a previous concussion
- Some studies have shown female athletes may be more susceptible to concussion and may take longer to recover from concussion
- Those with a history of previous concussion are at increased risk of subsequent concussion
- Those with a history of mental health problems may take longer to recover from concussion
- Those with a disability may take longer to recover from concussion

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

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.

Visible clues of concussion - what you see

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

- Loss of consciousness or responsiveness
- Lying motionless on ground/slow to get up
- Unsteady on feet/balance problems or falling over/incoordination
- Dazed, blank or vacant look
- Slow to respond to questions
- Confused/not aware of plays or events
- Grabbing/clutching of head
- An impact seizure/convulsion
- Tonic posturing-lying rigid/motionless due to muscle spasm (may appear to be unconscious)
- Change in mood (more emotional/irritable than normal for that person)
- Vomiting

Symptoms of concussion - what you are told

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

- Disorientated (not aware of surroundings (for example opponent, score)
- Headache
- Dizziness/feeling off balance
- Mental clouding, confusion, or feeling slowed down
- Visual problems
- Nausea
- Fatigue
- Drowsiness/feeling like “in a fog“/difficulty concentrating
- “Pressure in head”
- Sensitivity to light or noise
- More emotional
- Don’t feel right
- Concerns expressed by parent, official, spectators about a player

Immediate management of a suspected concussion

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

Teammates, 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.

Once safely removed from play they must not be returned to activity that day and until an appropriate healthcare professional has excluded concussion or the player has completed a graduated return to activity (education/work) and sport (GRAS) programme.

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

Red flags in concussion - urgent hospital transfer

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

- Any loss of or deteriorating consciousness (more drowsy)
- Amnesia (no memory) of events before or after the injury
- Increasing confusion or irritability
- Unusual behaviour change
- Any new neurological deficit for example difficulties with understanding or speaking, decreased sensation, loss of balance, weakness, double vision
- Seizure/convulsion or limb twitching OR lying rigid/motionless due to muscle spasm
- Severe or increasing headache
- Repeated vomiting
- Severe neck pain
- Any suspicion of a skull fracture such as a cut, bruise, swelling or severe pain at injury site
- Previous history of brain surgery or a bleeding disorder
- Taking medication to thin the blood
- Current drug or alcohol intoxication

All those suspected of sustaining a concussion should be assessed by an appropriate onsite healthcare professional or by accessing NHS24 (dial 111) within 24 hours of the injury.

If there are concerns about other significant injury or the presence of 'red flags' then the player should receive urgent medical assessment onsite or in a hospital Accident and Emergency (A&E) Department using ambulance transfer by calling 999 if necessary.

Anyone with a suspected concussion **should**:

- Be removed from play immediately
- Get assessed by an appropriate healthcare professional onsite or access NHS24 (dial 111) within 24 hours of the incident
- Rest & sleep as needed for the first 24-48 hours – this is good for recovery. Easy activities of daily living and walking are also acceptable
- Minimise smartphone, screen and computer use for at least the first 48 hours. Limiting screentime has been shown to improve recovery

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 or bicycle within the first 24 hours. Commercial drivers (HGV etc.) should seek review by an appropriate healthcare professional before driving

Following a suspected concussion, what is your role?

Coaches/teachers/volunteers

- Safely remove the individual from the field of play and ensure that they do not return to play in that game even if they say they have no symptoms or symptoms have resolved
- Observe the player or assign a responsible adult to monitor the individual once the player is removed
- If the player is under the age of 18 years old, contact their parent or guardian to inform them of the possible concussion
- Arrange for the player to get home safely
- Arrange a responsible adult to supervise the player over the next 24-48 hours
- Ensure any relevant injury report form is completed and stored by the club, school/ organisation
- Follow a graduated return to activity (education/ work) and sport (GRAS) programme with an emphasis on initial relative rest and returning to education/work before returning to training for sport

Parents/Carers

- Obtain full details about the incident
- Do not leave your child alone for the first 24 hours
- Contact NHS24 (dial 111) for appropriate assessment
- Monitor your child for worsening signs and symptoms of concussion for at least 24-48 hours
- Encourage initial rest/sleep as needed and limit smartphone/computer and screen use for the first 24-48 hours
- Inform school/work/other sports clubs of the suspected concussion
- Support your child to follow the graduated return to activity (education/work) and sport (GRAS) programme

Players/athletes

- Stop playing/training **immediately** if you experience any symptoms of concussion
- Be honest with how you feel and report any symptoms immediately to your coach, medic and/or parent
- Delays in reporting and under-reporting symptoms have been associated with a longer recovery and delayed return to activity and could risk incomplete recovery of the brain
- If you have continuing symptoms, do not return to training or sport activities until evaluated by an appropriate healthcare professional or by contacting NHS24 (dial 111)
- Inform your school/work and sports clubs
- Follow the graduated return to activity (education/work) and sport programme (GRAS)
- During training and matches, always watch out for teammates and encourage them to be honest and report any concussion symptoms
- If you question whether another player may have symptoms of concussion, report this to the coach, match official or appropriate healthcare professional

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 activity (education/work) and then sport is the corner-stone of concussion rehabilitation.

After a 24-48 hour period of relative rest, a staged return to activity (education/work) and sport at a rate that does not exacerbate existing symptoms, more than mildly, or produce new symptoms is the main aim. This is before return to sport is contemplated.

Aim to return to activity (education/work) before sport when recovering from concussion

It is acceptable to allow students to return to school or work activities, and subsequently school or work part-time (e.g. half-days or with scheduled breaks), even if symptoms are still present, provided that symptoms are not severe or significantly worsened.

The final stage of return to school or work activity is when the individual is back to full pre-injury mental activity, and this should occur before return to unrestricted sport is contemplated.

Similar to the return to education/work progression, the return to sport progression can occur at a rate that does not, more than mildly, exacerbate existing symptoms or produce new symptoms. It is acceptable to begin light aerobic activity (e.g. walking, light jogging, riding a stationary bike etc.), even if symptoms are still present, provided they are stable and are not getting worse and the activity is stopped for more than mild symptom exacerbation.

Symptom exacerbations are typically brief (several minutes to a few hours) and the activity can be resumed once the symptom exacerbation has subsided.

Symptoms persisting for more than 28 days are abnormal and the athlete should be reviewed by a doctor.

Rehabilitate the person, give the brain time to recover.

Concussion recovery time varies

Most symptoms of a concussion resolve by two to four weeks, but some can take longer.

Everyone is unique in their recovery duration which is why completion of a graduated return to activity (education/work) and sport (GRAS) programme is important to reduce the risks of a prolonged recovery, further brain injury, and longer-term problems.

Children and adolescents may take longer to recover than adults. Female athletes may take longer to recover than their male counterparts.

If symptoms persist for more than 28 days, individuals need to be assessed by an appropriate healthcare professional – typically their GP. Please note that headaches can persist for several months or more, well after the acute injury from the concussion has resolved.

They may resemble migraine and may be associated with nausea and sensitivity to light and/or sound. Sometimes they are from a neck injury. Persisting symptoms are not usually due to a more severe brain injury and, if the headache is not increased by mental or physical activity and the frequency and intensity is managed adequately, it should not preclude an individual from returning to school, work and physical activity.

Generally, a short period of relative rest (first 24-48 hours) followed by a gradual stepwise return to normal life (education, work, low level exercise), then subsequently to sport is safe and effective.

- Progression through the stages below is dependent upon the activity not more than mildly exacerbating symptoms. Medical advice from the NHS24 (dial 111) should be sought if symptoms deteriorate or do not improve by 14 days after the injury. Those with symptoms after 28 days should seek medical advice via their GP
- Participating in light physical activity is beneficial and has been shown to have a positive effect on recovery after the initial period of relative rest. The focus should be on returning to normal daily activities of education and work in advance of unrestricted sporting activities

Graduated return to education/work & sport summary

(See full table on next page for more detail)

STAGE 1
Relative rest for 24-48 hours

- Minimise screen time
- Gentle exercise*

STAGE 2
Gradually introduce daily activities

- Activities away from school/work (introduce TV, increase reading, games etc)*
- Exercise – light physical activity (e.g. short walks)*

STAGE 3
Increase tolerance for mental and exercise activities

- Increase study/work-related activities with rest periods*
- Increase intensity of exercise*

STAGE 4
Return to study/work and sport training

- Part-time return to education/work*
- Start training activities without risk of head impact*

STAGE 5
Return to normal work/education and full training

- Full work/education
- If symptom-free at rest for 14 days consider full training

STAGE 6
Return to sports competition

(NOT before day 21) as long as symptom-free at rest for 14 days and during the pre-competition training of Stage 5

*rest until the following day if this activity more than mildly increases symptoms.

Graduated return to activity (education/work) and sport programme

	Focus	Description of activity	Comments
Stage 1	**Relative rest for 24–48 hours**	Take it easy for the first 24-48 hours after a suspected concussion. It is best to minimise any activity to 10 to 15-minute slots. You may walk, read and do some easy daily activities provided that your concussion symptoms are no more than mildly increased. Phone or computer screen time should be kept to the absolute minimum to help recovery.	
Stage 2	**Return to normal daily activities outside of school or work**	• Increase mental activities through easy reading, limited television, games, and limited phone and computer use • Gradually introduce school and work activities at home • Advancing the volume of mental activities can occur as long as they do not increase symptoms more than mildly	There may be some mild symptoms with activity, which is OK. If they become more than mildly exacerbated by the mental or physical activity in Stage 2, rest briefly until they subside.
	Physical Activity (e.g. week 1)	• After the initial 24–48 hours of relative rest, gradually increase light physical activity • Increase daily activities like moving around the house, simple chores and short walks. Briefly rest if these activities more than mildly increase symptoms	
Stage 3	**Increase tolerance for thinking activities**	• Once normal level of daily activities can be tolerated then explore adding in some home-based school or work-related activity, such as homework, longer periods of reading or paperwork in 20 to 30 minute blocks with a brief rest after each block. • Discuss with school or employer about returning part-time, time for rest or breaks, or doing limited hours each week from home	Progressing too quickly through stages 3 - 5 whilst symptoms are significantly worsened by exercise may slow recovery. Although headaches are the most common symptom following concussion and may persist for several months, exercise should be limited to that which does not more than mildly exacerbate them. Symptom exacerbation with physical activity and exercise is generally safe, brief and is self-limiting typically lasting from several minutes to a few hours.
	Light aerobic exercise (e.g. weeks 1 or 2)	• Walking or stationary cycling for 10–15 minutes. Start at an intensity where able to easily speak in short sentences. The duration and the intensity of the exercise can gradually be increased according to tolerance • If symptoms more than mildly increase, or new symptoms appear, stop and briefly rest. Resume at a reduced level of exercise intensity until able to tolerate it without more than mild symptom exacerbation • Brisk walks and low intensity, body weight resistance training are fine but no high intensity exercise or added weight resistance training	

Graduated return to activity (education/work) and sport programme

	Focus	Description of activity	Comments
Stage 4	Return to study and work	May need to consider a part-time return to school or reduced activities in the workplace (e.g. half-days, breaks, avoiding hard physical work, avoiding complicated study).	Progressing too quickly through stages 3 - 5 whilst symptoms are significantly worsened by exercise may slow recovery. Although headaches are the most common symptom following concussion and may persist for several months, exercise should be limited to that which does not more than mildly exacerbate them. Symptom exacerbation with physical activity and exercise is generally safe, brief and is self-limiting typically lasting from several minutes to a few hours.
	Non-contact training (e.g. during week 2)	Start training activities in chosen sport once not experiencing symptoms at rest from the recent concussion. It is important to avoid any training activities involving head impacts or where there may be a risk of head injury. Now increase the intensity of exercise and resistance training.	
Stage 5	Return to full academic or work-related activity	Return to full activity and catch up on any missed work.	Individuals should only return to training activities involving head impacts or where there may be a risk of head injury when they have not experienced symptoms at rest from their recent concussion for 14 days. Recurrence of concussion symptoms following head impact in training should trigger removal of the player from the activity.
	Unrestricted training activities (not before week 3)	When free of symptoms at rest from the recent concussion for 14 days can consider commencing training activities involving head impacts or where there may be a risk of head injury.	
Stage 6	Return to competition	This stage should not be reached before day 21* (at the earliest) and only if no symptoms at rest have been experienced from the recent concussion in the preceding 14 days and now symptom free during pre-competition training. *The day of the concussion is Day 0 (see example on following page).	Resolution of symptoms is only one factor influencing the time before a safe return to competition with a predictable risk of head injury. Approximately two-thirds of individuals will be able to return to full sport by 28 days but children, adolescents and young adults may take longer. Disabled people will need specific tailored advice which is outside the remit of this guidance.

Examples

Example 1

- Concussion occurs on Saturday 3rd June (Day 0)
- No concussion symptoms the following day (Day 1)
- A minimum of 14 days is then needed before the individual can return to sport-specific training. In this case, this would be Day 15 (Sunday 18th June).
- Returning to competition should not be reached before Day 21

Example 2

- Concussion on Saturday 3rd June (Day 0). Player reports a headache and nausea (concussion symptoms) until Day 4
- Player has no concussion symptoms at rest by Thursday 8th June (Day 5)
- A minimum of 14 days is then needed before the individual can return to sport-specific training. In this case, this would be Day 19 (Thursday 22nd June)
- Returning to competition should not be reached before Day 21, and only if the individual has had no symptoms at rest for 14 days before this and is symptom free during sport-specific training. In this scenario, the individual was symptom free since Day 5 and remained symptom free at rest and during exercise. The earliest this individual should return to competition is Day 21 (Saturday 24th June)

Example 3

- A concussion was sustained on Tuesday 4th April (Day 0)
- The individual had a relative rest period of 24-28 hours and then began to engage in light physical activity (e.g. short walks, household chores; Stage 2), but their symptoms began to worsen considerably with introduction of more physical activity. By Day 14 (Tuesday 18th April) this has not subsided. They feel stuck in the same place
- This individual is not yet ready to progress and should be advised to seek medical guidance
- This player CANNOT return within 21 days

Frequently asked questions

Is concussion different in children and adolescents compared to adults?

Children and adolescents may be more susceptible to concussion and have prolonged duration of symptoms. They may take longer to work through the return to education and sport (GRAS) programme.

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 insufficient evidence that headguards and mouthguards protect players against sport-related concussion.

Does concussion management differ for athletes with disabilities?

As with anyone who suffers a concussion, athletes with disabilities who have a suspected concussion must be removed from practice or play.
The principles of "If In Doubt Sit Them Out" apply.

There may be individualised adaptations required for supporting a person with disabilities, such as facilitating transfers for wheelchair athletes to help promote rest in the initial phases or using a hand cycle instead of stationary cycling in the later stages of returning to sport.

Athletes with disabilities may require a longer initial period of relative physical and cognitive rest prior to starting the return to activity and sport process, over and above the current guidance given to athletes without disability.

This is especially relevant for athletes with conditions such as cerebral palsy, stroke, or previous moderate/severe traumatic brain injury, where they may already exhibit some degree of neurological impairment. During the GRAS process, it must be established whether symptoms brought on during the GRAS process represent part of the athlete's normal functioning, rather than related to their concussion.

Does concussion management differ for females?

Studies comparing data on concussion risk and recovery in male and female athletes are evolving but suggest female athletes may be at higher risk and may take longer to recover than male athletes. More research is needed to explore these findings.

Meanwhile, managing all concussions individually remains the rule and it is suggested that equivalent concussion management resources be made available to both female and male athletes, where at all practical.

What is the difference between the GRAS and the previous GRTP (Graduated Return to Play)?

This pathway no longer requires an initial 14-day complete rest period. After a first week of light exercise/symptom-limited activity, if symptom-free at rest, you will be able to start more demanding physical activities in the second week, provided there is no predictable risk of head contact. Resistance training activities can also be started in this week. Training activities with a predictable risk of head contact can be introduced in week three (but only if symptom-free for 14 days).

Do we need to leave 48 hours between stages of the GRAS?

The GRAS is not based around the same strict minimum timing per stage as the previous GRTP. However, at least 24 hours must be left between stages 1, 2 and 3. Stage 4 can start at the earliest on day 8 and you must be symptom-free at rest. Stages 5 and 6 involve return to unrestricted training and match play, where there may be a predictable risk of head contact. Therefore, you must have been completely symptom free at rest for at least 14 days before this. Stage 5 therefore cannot start until Day 15 at the earliest. Throughout, the focus should be on returning to normal daily activities of education and work in advance of unrestricted sporting activities.

Is there a requirement for review by a doctor or a healthcare professional when moving through the GRAS programme and before to returning to competition?

There is no longer any expectation for review by a doctor or healthcare professional when progressing through recovery, including moving to contact training or to be cleared for return to competition. However, the advice is that the individual should be reviewed by an on-site medical professional or call NHS 111 within 24 hours of injury. The guidelines also state that medical advice should be sought from the NHS by calling 111 if symptoms deteriorate or do not improve by 14 days after the injury. Those with symptoms after 28 days should seek further medical advice via their GP.

At elite level, you may hear of athletes having reviews by their team doctors or being cleared earlier for return to competition. This is considered standard practice in the elite setting as part of their individualised care pathway.

How do we know when it is appropriate to move between stages 1, 2 and 3 of the GRAS?

There is increasing evidence that low level exercise early after a concussion is helpful in improving brain recovery.

Reflecting this, progressive low-level exercise is encouraged, even if you have mild symptoms. You may, therefore, still progress through stages 1, 2 and 3 even if symptoms are present, providing the activity does not more than mildly exacerbate these symptoms.

Any mild worsening of symptoms is acceptable if they are brief, ideally less than one hour but this can be up to a few hours, and the activity can be resumed once the symptom exacerbation has subsided.

How do we know when it is appropriate to move to stages 4, 5 and 6?

You can move into stage 4 when you are symptom-free at rest and have completed stages 1, 2 and 3.

You can move into stage 5 at the earliest on day 15 and must have been symptom-free at rest for a minimum of 14 days and have completed stages 1, 2, 3 and 4.

You can return to play (stage 6) at the earliest on day 21 and must have completed stage 5.

What can I do between stage 4 and stage 5 (i.e. do I just follow a 'normal' training schedule within the limitations of the stage I am at)?

This is set out in more detail in the GRAS guidance.

Progression should be gradual across all stages of the GRAS and guided by the clinical picture. During the non-contact and contact training phases, there should be a gradual increase in exposure with the aim of being back into the normal training schedule by the end of the week.

How are recurrent or multiple concussions managed?

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

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