WE ARE ENGLAND CRICKET

Professional and Elite Academy **Concussion Guidelines**

SOME OF THE KEY DEVELOPMENTS SINCE THE 2018 ECB CONCUSSION GUIDELINES

1. **ICC (International Cricket Council) Concussion Guidelines, including the introduction of Concussion replacements (updated 2023/4).**
2. **The 6th International Conference on Concussion in Sport – Amsterdam, October 2022.**
3. **UK (United Kingdom) Concussion Guidelines for Non-Elite (Grassroots) Sport 2023.**

KEY CHANGE IN THE ECB CONCUSSION GUIDELINES

Three new Graduated Return to Play (GRTP) Protocols have been produced

Age and wider risk factors determine which GRTP Protocol to use

APPLICATION OF THE GUIDELINES

These guidelines are intended to give guidance to health care professionals managing concussion in professional and elite academy cricketers. Specifically, it applies to:

1. **England Men's, Women's and Disability Senior Teams.**
2. **England Men's and Women's Pathway Teams and Squads.**
3. **Men's First Class Counties and Women's Professional Regional Teams and their corresponding academies. The Hundred Men's and Women's Teams.**

Critically, a Healthcare Practitioner, e.g. a physiotherapist, and a medically qualified doctor must be able to perform concussion assessments and supervise the concussion protocols for them to apply.

Healthcare Practitioners should use the guidelines in conjunction with required standards of advanced life support and emergency care.

These are guidelines only and all players, where injury is ongoing or uncertain and / or significant concern is raised, should at once be referred to specialist care.

The guidelines are not intended to replace or supersede evaluation by a doctor or suitably trained health care professional and are not for use outside of the elite performance environment.

THIS DOCUMENT **DOES NOT APPLY TO:**

Players who do not have ongoing access to a club doctor and physio.

These players should follow the **recreational concussion guidelines found here.**

CLICK A SECTION
FOR MORE INFO

The ECB (England and Wales Cricket Board) guidelines are a revision and update of the 2018 ECB Concussion Guidelines.

They draw upon the Amsterdam Concussion Consensus, the UK Concussion Guidelines for Non-Elite (Grassroots) Sport, feedback from Concussion Implementation Consensus panels, the ongoing Drake Concussion symposiums, the 2022 International Olympic Committee (IOC) Injury Prevention Conference and data from ECB's own concussion screening and research programs.

Furthermore, shared international cricket experience with other International Governing Bodies has helped form these guidelines.

This document is intended for educational purposes and to help support the assessment and management of concussion in elite cricket.

The ECB have made responsible efforts to include correct and prompt information.

Updates of this document will occur as research and consensus evolves.

CONCUSSION IS A SERIOUS AND COMPLEX CONDITION
THAT REQUIRES RESPECT

A concussion can be one of the most complex and challenging injuries to diagnose and manage.

It is now considered more than a simple self-limiting functional brain disturbance, and the immediate recognition and care appears increasingly important considering concerns regarding developing awareness of the relationship between concussive episodes and long-term brain health.

Concussion cannot be diagnosed through any one question, sign, symptom or test. It requires multiple modes of assessment that may well need repeating. Management involves a careful graduated reintroduction to training and play.

Because of this challenging and complex process, concussion can be easily missed and under-diagnosed, but also could result in inappropriately early return to play.

The risk of concussion in cricket appears relatively low compared to some sports but carries significant risk through the speed of delivery and properties of a cricket ball.

In addition, the cricket ball can be projected at a high velocity directly at someone's head within the laws of the game. Head injuries are most common while batting but can occur when in the field, especially in close fielding positions, falling backwards or if collisions occur in the act of fielding.

Protective headgear is mandated in the professional game and in age group cricket for batting, keeping and close fielding in the riskiest situations, but is predominantly intended to reduce the risk of skull and face fracture, rather than concussion. Whilst there is no current evidence that helmets remove the risk of concussion in cricket, it would seem likely that the risks of concussions being more frequent and more severe are higher without their use. Research around this is being undertaken including development of standards that may test the property of a helmets capacity to reduce a concussion.

CONSEQUENCES
OF A CONCUSSION

Short Term

Short term consequences can include physical, physiological and psychological issues. Patients with a concussion can have headaches, poor cognition, poor coordination, reduced physical and sporting performance and alteration of mood.

People who have had a concussion in other sports are eight-times as likely to suffer a significant musculoskeletal injury within that game if they continue to play, and over the next six months have a 40% increased risk of musculoskeletal injury compared to a non-concussed cohort.

Long Term

There is no direct evidence of long-term problems following exposure to concussion in cricket. However, there is continuing interest into understanding the long-term consequence of Traumatic Brain Injury (TBI).

Some findings have suggested that profound neurodegenerative changes may be a consequence of repeated TBI such as those seen in boxing and traumatic contact sports including American Football and Rugby. This can be referred to as Chronic Traumatic Encephalopathy.

KEY **POINTS**

The welfare of cricketers is paramount, and all involved in cricket have their role to play.

Although concussion is relatively uncommon in cricket, it is now recognised that an appropriately managed recovery is an important part of protecting long term brain health.

An e-learning module reviews concussion further and compliments this guideline
concussionlearning.ecb.co.uk

"If in doubt, sit them out."

DEFINITION OF A **SPORT RELATED CONCUSSION (SRC)**

Sport-related concussion (SRC) is a traumatic brain injury caused by a direct blow to the head, neck or body resulting in an impulsive force being transmitted to the brain that occurs in sports and exercise-related activities.

This initiates a neurotransmitter and metabolic cascade, with possible axonal injury, blood flow change and inflammation affecting the brain.

Symptoms and signs may present immediately or evolve over minutes or hours. Symptoms commonly resolve within days but may be prolonged.

Sport-related concussion results in a range of clinical symptoms and signs that may or may not involve loss of consciousness.

The clinical symptoms and signs of concussion cannot be explained solely by (but may occur concomitantly with) drug, alcohol, or medication use, other injuries (such as cervical injuries, peripheral vestibular dysfunction) or other comorbidities (such as psychological factors or coexisting medical conditions e.g. migraine).

No abnormality is seen on standard structural neuroimaging studies (computed tomography or magnetic resonance imaging), but in the research setting, abnormalities may be present on functional, blood flow or metabolic imaging studies.

THE MANAGEMENT, AND IMPORTANT CONSIDERATIONS OF THE CONCUSSION ARE SUMMARISED AS '12 RS' (AMSTERDAM 2022)

REMEMBER:

1. **Recognise**
2. **Reduce** Prevention
3. **Remove**
4. **Re-evaluate**
5. **Rest** and Exercise
6. **Refer**
7. **Rehabilitation**
8. **Recovery**
9. **Return to sport** Return to Learn
10. **Reconsider**
11. **Retire**
12. **Refine**

Some of the '12 Rs' will be reviewed in this document. A full discussion can be found in the Amsterdam Concussion Consensus:

https://bjsm.bmj.com/content/57/11/695#F3

DIAGNOSIS

The recognition of concussion is vital. Where a concussion is suspected, the player should be removed from the field of play, at least until evaluation from a suitably qualified and experienced healthcare professional has been undertaken.

The management in cricket is no different to any other sport and should still follow the basic principles laid out in the Amsterdam Consensus 2022.

INITIAL ON-FIELD ASSESSMENT

A player should be reviewed on the field in the instance of any helmet strike (batter or fielder) by the most appropriate Healthcare Practitioner available.

In the event of any head or potential neck injury, e.g., fielder, the most appropriate Healthcare practitioner should attend to the potentially injured player.

In domestic cricket this is most likely to be initially a physiotherapist. In International cricket this is most likely to initially be a doctor.

In all circumstances, we would encourage a multidisciplinary assessment where possible. Acute management can be supported by paramedics if present and clinically indicated.

When out in the middle, the healthcare professional will need to undertake an on-field assessment. They should use the Concussion Recognition Tool 6, CRT6 (Concussion Recognition Tool 6) (Appendix 1) using the modified Maddock's test questions for cricket as listed below.

RED FLAGS
ACUTE MANAGEMENT AND IMMEDIATE HOSPITAL TRANSFER

If ANY of the following Red Flag signs are observed or complaints are reported after an impact to the head or body the athlete should be immediately removed from play and transported for urgent medical care by a healthcare professional (HCP).

A structural brain or spinal injury may have occurred, which requires acute medical care in hospital. An ambulance should be called, if not already present, and acute pitch-side trauma emergency care carried out by appropriately trained Healthcare practitioners.

Neck Pain or Central Bony Tenderness

Seizure, 'Fits', or Convulsion

Loss of Vision or Double Vision

Loss of Consciousness

Increased Confusion or Deteriorating Conscious State (Becoming Less Responsive, Drowsy)

Weakness or Numbness/Tingling in More Than One Arm or Leg

Repeated Vomiting

Severe or Increasing Headache

Increasingly Restless, Agitated or Combative

Visible Deformity of the Skull

Any Other Focal **Neurological Deficit**

Once the player is considered stable acutely and if a concussion diagnosis is not clear, a reassessment of potential signs and symptoms of concussion listed below (Table 1) here should occur using the CRT6 tool for assistance.

Even in the absence of any of the listed signs or symptoms, a concussion may be suspected if there is:

- Concern about the severity of the helmet strike (See 'Video review' – Appendix 7)
- Visible facial or head injury
- Urgency and concern from other players or the umpires

EMOTIONAL	COGNTIVE	PHYSICAL
Nervous or Anxious	**Confused/ Daze,** Blank or Vacant Look	**Loss of Consciousness**
Irritable	**Difficulty Concentrating**	**Headache**
Sad	**Confusion**	**Lying Motionless on the Ground/** Slow to Get Up
More Emotional	**Feeling Slowed Down**	**Seizure** or Convulsion/ Dizziness
	Difficulty Remembering	**Balance/** Co-ordination Problems
	Fatigue or Low Energy/ Feeling like "In a Fog"	**Nausea** or Vomiting
	Loss of Memory	**Drowsiness/** "Pressure in Head"
	"Don't Feel Right"	**Blurred Vision**
	Sensitive to Noise or Light	**Sensitive to Light**
		Neck Pain
		Grabbing/ Clutching Head

TABLE 1

If the player has any features listed in Table 1, they must be removed from the field for further assessment and/or resuscitated and stabilised as appropriate.

If in the professional game and using the CSX app to aid the CRT6 assessment, this is referred to as a PSA (Pitch-Side Assessment).

If in the professional game and using the Smartabase Electronic Patient Record to aid the CRT6 assessment, this is referred to as 'Head Strike Assessment'.

MODIFIED **MADDOCKS**

If the player does not have any signs or symptoms of concussion, an assessment of awareness can be made with amended 'cricket specific' Maddock questions.

Failure to answer any of these questions correctly may suggest a concussion, and the player should be removed from play. However, answering these questions correctly does not rule out a concussion.

"What venue are we at today?"

"Which innings of the game are we in?"

"Who was the last person out / dismissed?"

"What team did you play last week / match?"

"Who won the last match?"

REMEMBER

If any of the following signs or symptoms are present, or later develop, the player should be acutely managed and transported for immediate medical assessment at the nearest hospital emergency department:

Neck Pain or Central Bony Tenderness

Seizure, 'Fits', or Convulsion

Loss of Vision or Double Vision

Loss of Consciousness

Increased Confusion or Deteriorating Conscious State (Becoming Less Responsive, Drowsy)

Weakness or Numbness/Tingling in More Than One Arm or Leg

Repeated Vomiting

Severe or Increasing Headache

Increasingly Restless, Agitated or Combative

Visible Deformity of the Skull

Any Other Focal Neurological Deficit

The umpire / coach is not expected to diagnose or manage a concussion episode. However, they must call onto the field medical personnel for any helmet strikes or concerns around a player's welfare.

If no medical personnel are available at the game and a concussion is suspected, the player should be removed from the field of play and not be allowed to return to play until medical assessment has been sought and has occurred.

If no medical attention is available, the UK Concussion Guidelines for Non-Elite (Grassroots) Sport should be followed (Appendix 6).

Education modules have been developed by the ECB, and simple literature / guidance is available at:

https://www.ecb.co.uk/about/policies/concussion/coaches

Further evaluation is critical in deciding further care decisions for the player. The side-line evaluation is based upon recognition of injury, assessment of symptoms, cognitive and cranial nerve function, and balance.

Serial assessments are often necessary. As concussion is often an evolving injury, and signs and symptoms may be delayed, erring on the side of caution (i.e., keeping a player out of participation when there is any suspicion of injury) is important.

As well as monitoring for the signs and symptoms outlined in Table 1, any sleep/wake disturbance (e.g., somnolence, drowsiness) may also be considered as a symptom of concussion.

ACTIONS

ASSESSMENT ON FIELD OF PLAY
No Suspected Concussion
If the testing on field is normal and there are no concerns then the player can stay on the field, and upon leaving the field can be monitored with repeated observations. CRT6 can aid this.

PLAYER REMOVED FROM FIELD OF PLAY
No Suspected Concussion
If a player is removed from play but after 15 minutes' assessment no concussion is diagnosed, the player can return but continue to be observed. An additional SCAT6 (Sport Concussion Assessment Tool 6) should occur at end of the day's play or sooner if symptoms evolve. SCAT6 may be used as an assessment and compared to baseline as recorded in CSx or Smartabase (Athlete Medical Database).

PLAYER REMOVED FROM FIELD OF PLAY
Concussion Suspected/Diagnosed
If after removal a concussion is confirmed and the concussion replacement is activated, a player is permanently removed from the game. Cricket allows for a player to be substituted whilst fielding, or to retire hurt when batting. If the subsequent assessment using SCAT6 determines no actual concussion the batter can return to the field at the next opportunity. A fielder can return at a suitable moment in play. ECB Concussion Substitute Forms and completion of medical records electronically, including completing electronically or uploading all SCAT6 forms, must be undertaken.

FOLLOW UP
ASSESSMENTS

Any player removed from the field of play following a head strike requires ongoing head injury review. This should occur at the end of the day's play with a minimum of at least an hour after the first SCAT6, and the following morning before the start of play. These repeat assessments may help in identifying a delayed concussion.

All players who have needed a SCAT6 assessment should be provided with Head injury advice (See Head Injury Advice in Appendix 8).

REMEMBER
Anyone with a suspected or confirmed concussion should NOT:

- Be left alone in the first 24 hours
- Consume alcohol in the first 24 hours and/or if symptoms persist
- Drive a motor vehicle within the first 24 hours

Cricket somewhat uniquely has formats that may continue to play for many days and thus the morning after the original injury allows a final SCAT6 to be undertaken to help exclude a delayed diagnosis of concussion.

This can include other subtle signs such as sleep disturbance, feeling “in a fog,” emotional changes and memory function. If at this stage the repeat SCAT6 is indicative of a concussion, then the management must be as per a confirmed concussion.

A concussion substitute can be used in a multi-day match in this scenario.

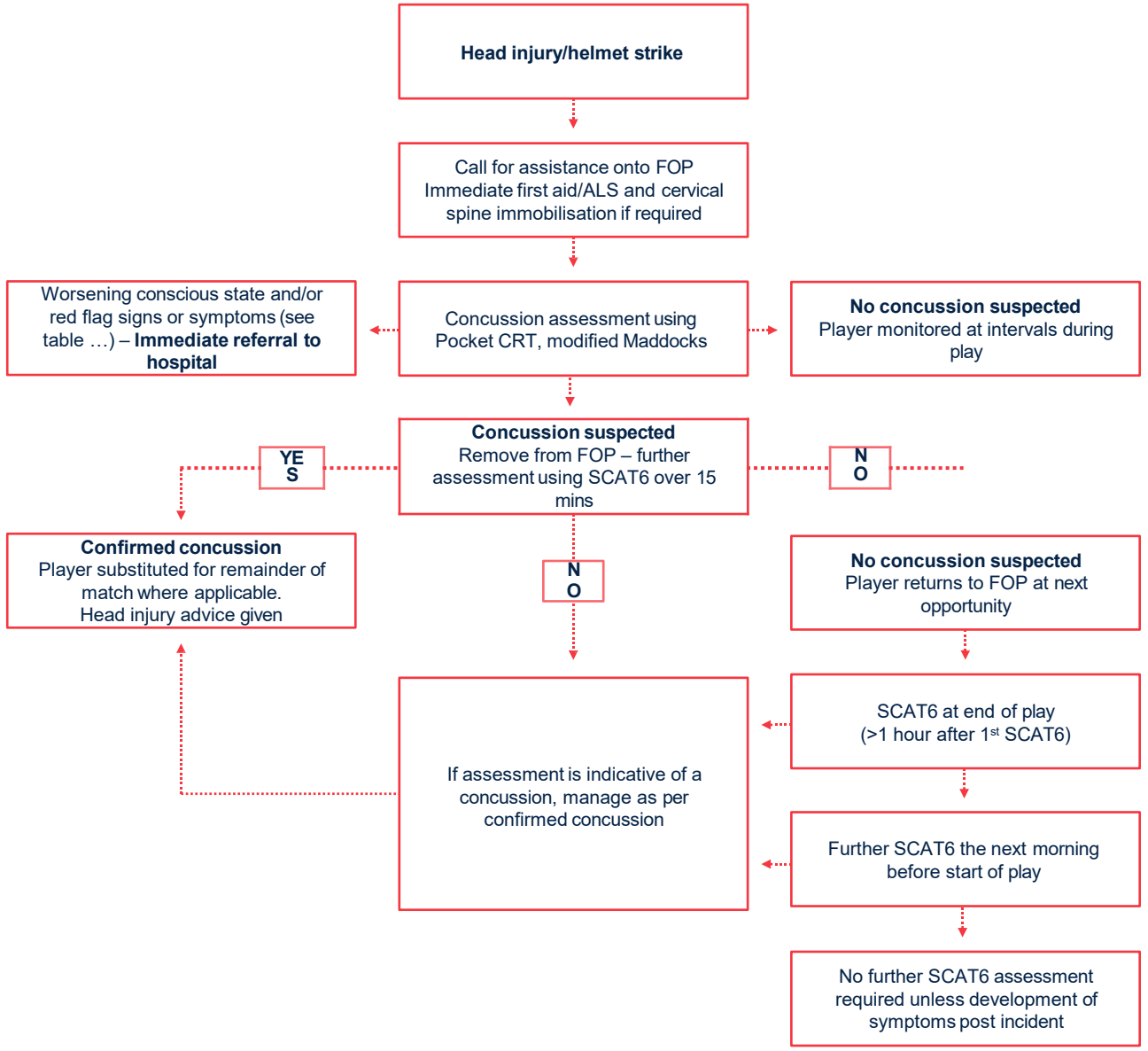
The ECB has introduced Concussion Replacement Regulations across the Professional Game, which will allow for a player with a suspected concussion to be replaced according to the ECB regulations
(see ‘References and Resources’).

This will require the appropriate Healthcare Professionals at the match to notify the Match Referee (MR), or designated authority, that a player has sustained a concussion and that they wish to activate the concussion replacement.

The Concussion Replacement form must be completed along with the opening of an Injury medical record on the Electronic Patient Record System, Smartabase, including completion of the CRT and SCAT 6 electronic forms, as well as video review where available.

Full documentation is needed following the ECB Concussion Replacement Regulations and ICC Concussion Replacements in International Cricket.

Basic first aid principles apply with immediate assessment of level of consciousness AVPU and subsequent ABCDE, e.g., airways, cervical management, breathing, circulation, cervical spine management and call for help.



REMEMBER
The management of a concussion requires well established and practised emergency care plans, equipment, staffing and training following ECB guidelines.

1

Recognise

Both the immediate and delayed presentation of concussion can be complex and thus a high index of suspicion must be maintained. Symptoms and signs must be used as well as tools such as the CRT (Appendix 1). If in doubt the player should be removed from the field of play for further assessment. Video evidence and severity of event may demand further assessment off field. As well as a suspected concussion, all trauma and suspected injuries should be managed as per Advanced Life Support included in ECB Cricket Trauma Management training.

2

Remove

Any suspected or confirmed concussion demands removal from the field of play.

3

Re-evaluate

Once the player has been removed from the field of play, this allows for a formal assessment using SCAT6 (Appendix 2) and medical evaluation. If the situation appears unclear or worsening, immediate referral to specialist care including hospital emergency departments is necessary. A medical doctor trained in the management of head injuries may make an assessment at the ground.

4

Head injury advice

Any player where a suspicion of a head injury/concussion has been raised must be monitored both on and off the field and should not leave the ground without head injury advice. See Appendix 8.

The nature of any concussion should be taken on a case-by-case basis. We will describe some general principles and then review the rest and rehabilitation of three pathways.

1. An Adult Professional Cricketer, Aged 19 years and over (Lower risk presentation)
2. A Professional or Elite Cricketer, Aged 17 – 18 years old / Higher risk Adult Aged 19 years and over*
3. A Young Elite Cricketer, Aged 16 or younger

A Healthcare Professional trained in concussion (e.g., Up to date Pitch side Trauma Management Qualification) and Club Chief Medical Officer must take an active role in the RTP process)

GENERAL **PRINCIPLES**

The understanding of the initial recovery after concussion is evolving, but it is certain that neurophysiology suggests the brain does not begin to recover for some days after the initial insult.

Following injury, a period of relative rest from cognitive and physical activity is recommended for the first 48 hours. Light activities of daily living, such as reading, and short walks for short periods of time (up to 15 minutes) may be suitable if this does not significantly worsen symptoms. It is recommended to avoid screentime as far as possible during this window and to get good sleep.

There is now consensus that complete physical rest may be detrimental to recovery and that light physical activity can have a positive effect on recovery after the first 48-hour relative rest period. Following this period, a graduated return to activities of daily living, including mental activity (school/work) may begin as symptoms allow.

KEY POINTS OF THE INITIAL REST AND **REHABILITATION PERIOD**

In first 24 hours post-concussion diagnosis, the person with concussion should not:

1. Be Left Alone
2. Consume Alcohol (thereafter should avoid alcohol until free of all concussion symptoms)
3. Drive a Motor Vehicle

In first 24-48 hours post-concussion diagnosis, the person with concussion should:

1. Engage in Activities of Daily Living, Including Walking
2. Reduce Screen Time
3. Avoid Heavy Physical Activity Like Running
4. Avoid 'Thinking' Tasks Like Smartphone Use, School or University Work

KEY GENERAL PRINCIPALS OF GRADUATED RETURN TO PLAY (GRTP)

All cases must fully complete the six stage GRTP described in Table 2.

The player must be evaluated (Face to face or remotely if considered appropriate) by a doctor prior to starting Stage 2 as well as before returning to Stage 5 'Full Unrestricted training'.

The player should only move to the next stage if symptoms are not more than mildly and briefly worsened with prescribed activity. Specifically, this should not be an increase of more than 2 points on a 0–10-point scale for less than an hour when compared with the baseline value.

The player must return to the earlier GRTP stage if symptoms are worsened significantly and try to progress again after a minimum 24-hour period.

The presence of any of the 'Additional risk modifiers' warrants consideration for a more conservative return to play.

A player should not progress to the next GRTP stage if there is any doubt over suitability.

STAGES OF **'GRADUATED RETURN TO PLAY (GRTP)'**

Stage 1 Relative Rest	**Stage 2** Light Exercise
Stage 3 Cricket Specific Exercise	**Stage 4** Non-contact Training
Stage 5 Full Unrestricted Training	**Stage 6** Return To Play (RTP)

TABLE 2

ADDITIONAL CONSIDERATIONS

Child & adolescent cricketers

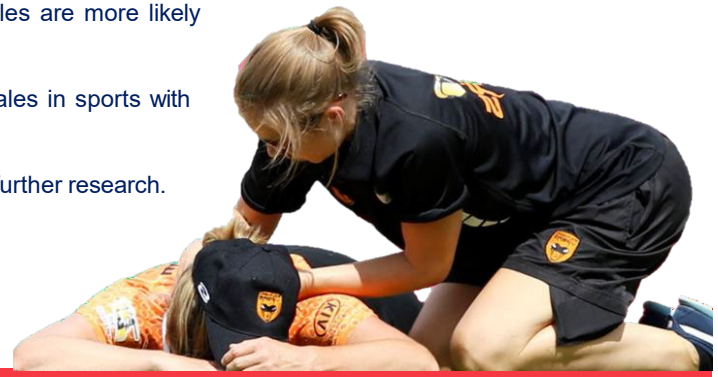
- Players should follow either Pathway 2 (17-18 yrs) or Pathway 3 (16 and under).
- Players in formal education should complete a Return to Learn (RTL) process before returning to competitive sporting activity.
- A longer assessment, management and return to sport is recommended due to the potential differences in physical and cognitive development of child/adolescent players
- The Child SCAT6 and Child SCOAT6 should be used in players aged 8-12 years.

Disability cricketers

- Baseline pre-participation screening is useful in providing a point of reference for comparison after any head injury in players with disabilities
- Disability cricketers may have impairments in sight, hearing, reading, and cognition as well as physical disability
- Altered dexterity, balance, specific dysfunction such as cervical spine movement, may provide challenges in the assessment for suspected SRC
- There are not specific SCAT6, SCOAT6 and CRT6 tools for the disabled players limiting their application in this population.
- A good knowledge of the athlete and their baseline level of function is essential.
- Longer initial period of relative physical and cognitive rest prior to starting the return to sport process should be considered over and above the current guidance.

Female cricketers

- There is no clear evidence for different recovery and return to play time between male and female cricketers although females are more likely to report SRC symptoms.
- The incidence of SRC appears to be higher in females in sports with equal participation of males and females.
- Links between the menstrual cycle and SRC require further research.



ADDITIONAL RISK MODIFIERS

Factors that may change concussion progression or return to play:

DURATION OF SYMPTOMS
Greater number > 10 days

SEVERITY

SIGNS
Prolonged loss of consciousness (LOC) >1 min

LOSS OF MEMORY

POST CONCUSSION
New onset convulsion

TIMING
Injuries close together in time

"RECENCY"
Recent concussion or traumatic brain injury (TBI)

THRESHOLD
Repeated concussions occurring with progressively less impact force or slower recovery after each successive concussion

TEMPORAL FREQUENCY
Repeated concussions over time

AGE
Child and adolescent (<19 years old)

CO-MORBIDITIES
Migraine, depression or other mental health, attention deficit hyperactivity disorders (ADHD), learning disabilities (LD) and sleep disorders

MANAGEMENT OF PERSISTING SYMPTOMS AND ASSOCIATED PATHOLOGY

Persisting symptoms may pre-exist the SRC or exist alongside.

Several different clinical symptoms may overlap.

A comprehensive multi-modal assessment such as SCOAT6 can be used in understanding persisting clinical profiles such as:

- Autonomic / Orthostatic vital signs
- Anxiety, depression and sleep disorders
- Vestibular / Oculomotor
- Cervical Spine
- Headache
- Cognitive

In these instances, consider more comprehensive neurological, cervical spine and balance assessments as outlined on the next page.

Athletes with persisting symptoms should be considered for early referral for Specialist it / multidisciplinary assessment.

COGNITIVE

Persisting cognitive symptoms indicate problems in other clinical domains (e.g. headache, mood disorder and VOMS dysfunction.

Ongoing impairments of cognitive function warrant referral to a multidisciplinary SRC service / neuropsychologist

CERVICAL DYSFUNCTION

Cervicogenic symptoms are present in a significant proportion of concussions and are strongly linked to persisting post-concussion symptoms.

- Multiple structures/pathologies within the cervical spine should be considered and assessed.
- Like vestibular dysfunction, cervical dysfunction can also be a cause of dizziness and proprioception deficits.

HEADACHE AFTER SRC

Headache is the most common symptom after concussion.

Awareness of head injury red flags and indications for imaging is essential.

Majority of symptoms are migraine / tension-related headache and should be treated as per standard practice.

Consider differential diagnoses associated with persistent headache and difficulties in the assessment and management of SRC

MENTAL HEALTH

Underlying mental health symptoms can be triggered by SRC

Mental health symptoms such as anxiety, depression, sleep disorder may contribute to a slower recovery.

Pre-existing mental health concerns increase likelihood of prolonged recovery

SCOAT6 and Sport Mental Health Tool 1 (SMHAT-1) can be used as part of mental health screening / monitoring

RETURN TO MENU

MANAGEMENT OF PROLONGED RECOVERY

Recovery from SRC can be complicated by the persisting symptoms described in page 17 which may be pre-existing.

For a more complicated clinical picture with persisting symptoms, consider the use of comprehensive neurological, cervical spine and balance assessments.

A SCOAT6 or clinical assessment can be used on an individualised basis with appropriate components used as indicated by symptoms. Additional components that can be used include:

1. Graded exercise testing such as Buffalo can be useful to guide exercise prescription
2. Vestibular / Oculomotor Screening which may require referral to a specialist physiotherapist or neurologist.

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Athletes with persisting symptoms should be considered for early referral for Specialist it / multidisciplinary assessment.

SCOAT6™
Sport Concussion Office Assessment Tool
For Adults & Adolescents (13 years +)

BUFFALO CONCUSSION TREADMILL TEST (BCTT)

Can be used to assess the degree of exercise tolerance in individuals undergoing return to play post-concussion and identify the heart rate at which concussion-specific symptom exacerbation occurs.

The BCTT can also be used as part of the rehabilitation process.

The BCTT protocol can be accessed here

VESTIBULAR/OCCULOMOTOR SCREENING (VOMS)

Vestibular impairments are common post-concussion and can delay an athlete's recovery from concussion. This can result in dizziness and balance issues which are commonly reported during the recovery period post-concussion.

VOMS provides a tool to assess the causes of dizziness as well as guiding rehabilitation. Further referral is often recommended.

PATHWAY 1
AN ADULT PROFESSIONAL CRICKETER, AGED 19 YEARS AND OVER

1. To achieve a full return to match play, the player needs at least a 24-hour period for each level after 48 hours of relative rest. Therefore, this means there will be a MINIMUM of SEVEN days prior to a return to match play outlined in Table 3.
2. Only a low-risk concussion in an adult over 19 that meet the * criteria listed below the table should follow this pathway.
3. The return to play after a MININUM of SEVEN days must be 'signed off' by the Club Chief Medical Officer, or a Specialist in Sport and Exercise Medicine or Sports Concussion Neurologist / Neurosurgeon.
4. All others should follow 'Table 4 – A Professional or Elite Cricketer, Aged 17 – 18 years old / Higher risk Adult Aged 19 years and over'.

HEALTHCARE PROFESSIONAL ASSESSMENT IN PATHWAY 1
AN ADULT PROFESSIONAL CRICKETER, AGED 19 YEARS AND OVER

SCAT6 can be used throughout if a player with concussion qualifies for this GRTP Pathway 1 and has an uneventful GRTP.

A SCOAT6 maybe used instead of SCAT6 at the medical assessment prior to Full Unrestricted Training if the supervising medical team wish to use a wider multi-modal assessment tool.

A SCOAT6 should be considered for use if a player still is symptomatic / has an abnormal SCAT6 after 72 hours.

An ImPACT computerised assessment is recommended at the medical assessment prior to Full Unrestricted Training.

GRADED RETURN TO PLAY (GRTP) FOR AN ADULT
PROFESSIONAL CRICKETER, AGED 19 YEARS AND OVER

STAGE OF GRTP	EXERCISE AT EACH STAGE OF GRTP	MINIMUM TIME IN EACH STAGE
Stage 1 Relative Rest	**Easy activities** of daily living **Short walks** (up to 15mins) **Avoid Screentime** as Far as is Possible **Get Good Sleep**	**48** Hours
	Doctor Review – SCAT6	
Stage 2 Light Exercise	**Mild to Moderate Aerobic Exercise** (<70% maximum permitted heart rate) **Duration should not exceed** 20-30 min **Avoid Resistance** Exercises	**24** Hours
Stage 3 Cricket-Specific Exercise	**Simple Fielding** (Catching/ Throwing) **Controlled, Familiar and Predictable** Batting Drills **Bowlers Bowl** to Empty Net at Around 50% **Body-Weight Exercises** and Moderate Aerobic Exercise	**24** Hours
Stage 4 Non-Contact Training	**Increased Intensity Exercise Progressing** Towards Short-Lived Maximal Exercise **Progression to More Complex Training Drills,** e.g., Moderately Challenging Fielding Drills **Batting Against Throws/Machine (Predictable)** **Bowling to Empty Net 75%-100%** May Start Progressive Resistance Training **Maximum Cardiovascular Stress**	**24** Hours
	Doctor Review – SCAT6	
Stage 5 Full Unrestricted Training	**Full Batting, Bowling and Fielding**	**24** Hours
Stage 6 Return to Play	**Normal Match Play**	Earliest **7 Days**

TABLE 3

*THE FOLLOWING MUST BE PRESENT TO **QUALIFY FOR THIS PATHWAY**

19 years old or older.

Return to baseline SCAT6 recorded at 36-48 hours post-injury.

No prior concussion in the previous twelve months.

No prior history of three or more career concussions.

No prior history of any previous concussion complicated by psychological symptoms.

No previous concussion with prolonged recovery (>21 days).

No evidence of loss of consciousness, ataxia, tonic posturing, confusion, or other red flags, as described in this document, on field of play at the time of injury.

Ongoing review of symptoms and progressions guided by a healthcare professional.

'Sign off' by the Club Chief Medical Officer, or a Specialist in Sport and Exercise Medicine or Sports Concussion Neurologist / Neurosurgeon.

PATHWAY 2
A PROFESSIONAL OR ELITE CRICKETER, AGED 17 – 18 YEARS OLD / HIGHER RISK ADULT AGED 19 YEARS AND OVER

1. To achieve a full return to match play, the player needs at least a 48-hour period for each level to Stage 4 Non-Contact Training, then 72 hours of Stage 5 Full Unrestricted training prior to Return to Play.

2. Therefore, this means there will be a MINIMUM of TWELVE days prior to a return to match play outlined in Table 4.

HEALTHCARE PROFESSIONAL ASSESSMENT IN PATHWAY 2 (A Professional or Elite Cricketer, Aged 17 – 18 years old / Higher risk Adult Aged 19 years and over)

A SCOAT6 should be considered for use if a player still is symptomatic / has an abnormal SCAT6 after 72 hours.

A SCOAT6 should be used at the medical assessment prior to Full Unrestricted Training.

An ImPACT computerised assessment is recommended at the medical assessment prior to Full Unrestricted Training, if a baseline test has been performed.

GRADED RETURN TO PLAY (GRTP) FOR A PROFESSIONAL OR ELITE CRICKETER, AGED 17 – 18 YEARS OLD / HIGHER RISK ADULT AGED 19 YEARS AND OVER

STAGE OF GRTP	EXERCISE AT EACH STAGE OF GRTP	MINIMUM TIME IN EACH STAGE
Stage 1 Relative Rest	**Easy activities** of daily living **Short walks** (up to 15mins) **Avoid Screentime** as Far as is Possible **Get Good Sleep**	**48** Hours
	Doctor Review – SCAT6	
Stage 2 Light Exercise	**Mild to Moderate Aerobic Exercise** (<70% maximum permitted heart rate) **Duration should not exceed** 20-30 min **Avoid Resistance** Exercises	**48** Hours
Stage 3 Cricket-Specific Exercise	**Simple Fielding** (Catching/ Throwing) **Controlled, Familiar and Predictable** Batting Drills **Bowlers Bowl** to Empty Net at Around 50% **Body-Weight Exercises** and Moderate Aerobic Exercise	**48** Hours
Stage 4 Non-Contact Training	**Progression to More Complex Training Drills,** e.g., Moderately Challenging Fielding Drills **Batting Against Throws/Machine (Predictable)** **Bowling to Empty Net 75%-100%** May Start Progressive Resistance Training **Maximum Cardiovascular Stress**	**48** Hours
	Doctor Review – SCAT6	
Stage 5 Full Unrestricted Training	**Full Batting, Bowling and Fielding**	**72** Hours
Stage 6 Return to Play	**Normal Match Play**	Earliest **12 Days**

TABLE 4

*THE FOLLOWING **SHOULD USE THIS PATHWAY**

17- and 18-year-old Professional / Elite Cricketers (who are contracted to a club or academy and are cared for by club doctors and/or physios).

19 years old or older who do not qualify for Pathway 1 by NOT having the following:

Return to baseline SCAT6 recorded at 36-48 hours post-injury.

No prior concussion in the previous twelve months.

No prior history of three or more career concussions.

No prior history of any previous concussion complicated by psychological symptoms.

No previous concussion with prolonged recovery (>21 days).

No evidence of loss of consciousness, ataxia, tonic posturing, confusion or other red flags, as described in this document, on field of play at the time of injury.

PATHWAY 3
A YOUNG ELITE CRICKETER, AGED 12 - 16

1. To achieve a full return to match play, the player needs a MINIMUM of TWENTY-ONE days prior to a return to match play. Stage 1 is still 2 days (48 hours) of relative rest consistent with other pathways.
2. Stages 1 to 4 must take a minimum of 14 days with a minimum of 24 hours prior to moving to the next stage. Stage 5 Full Unrestricted training must occur after a MINIMUM of 14 days without symptoms.
3. A Return to Learning should be prioritised over a Return to Play in this age group. Return to Learn details can be found within the Amsterdam Consensus Statement: (http://dx.doi.org/10.1136/bjsports-2023-106898)
4. An example of an estimated return to play for a young elite cricketer is shown in Table 5.

*THE FOLLOWING
SHOULD USE THIS PATHWAY

16-year-old Professional / Elite Cricketers with Healthcare Professionals / a Club Doctor supervising the pathway.

Note
If an HCP / doctor is not available to support this pathway, the player must follow The UK Concussion Guidelines for Non-Elite (Grassroots) Sport.

http://sramedia.s3.amazonaws.com/media/documents/9ced1e1a-5d3b-4871-9209-bff4b2575b46.pdf

A YOUNG ELITE CRICKETER
AGED 16 OR YOUNGER

STAGE OF GRTP	EXERCISE AT EACH STAGE OF GRTP	MINIMUM TIME IN EACH STAGE
Stage 1 Relative Rest	**Easy activities** of daily living **Short walks** (up to 15mins) **Avoid Screentime** as Far as is Possible **Get Good Sleep**	**2** Days (Mandatory)
	Healthcare Practitioner Review – SCAT6	
Stage 2 Light Exercise	**Mild to Moderate Aerobic Exercise** (<70% maximum permitted heart rate) **Duration should not exceed** 20-30 min **Avoid Resistance** Exercises	**4** Days
Stage 3 Cricket-Specific Exercise	**Simple Fielding** (Catching/ Throwing) **Controlled, Familiar and Predictable** Batting Drills **Bowlers Bowl** to Empty Net at Around 50% **Body-Weight Exercises** and Moderate Aerobic Exercise	**4** Days
Stage 4 Non-Contact Training	**Progression to More Complex Training Drills,** e.g., Moderately Challenging Fielding Drills **Batting Against Throws/Machine (Predictable)** **Bowling to Empty Net 75%-100%** May Start Progressive Resistance Training **Maximum Cardiovascular Stress**	**4** Days
	Doctor Review – SCAT6	
Stage 5 Full Unrestricted Training	**Full Batting, Bowling and Fielding**	**7** Days
Stage 6 Return to Play	**Normal Match Play**	Earliest **21 Days**

TABLE 5

HEALTHCARE PROFESSIONAL ASSESSMENT IN PATHWAY 3
A YOUNG ELITE CRICKETER, AGED 16 OR YOUNGER

A SCOAT6 should be considered for use if a player still is symptomatic / has an abnormal SCAT6 after 72 hours.

A SCOAT6 should be used at the medical assessment prior to Full Unrestricted training.

All children under the age of 12 should be assessed using the Child SCAT6 and Child SCOAT6.

An ImPACT computerised assessment is recommended at the medical assessment prior to Full Unrestricted Training, if a baseline test has been performed.

A Healthcare Professional, like a suitably qualified physiotherapist, can lead the medical assessment prior to entry to Stage 2, but must involve and discuss findings with the Club doctor. The Club doctor may choose to assess the player either Face to face or remotely e.g., via video

Note
This document is aimed at the professional / elite game and therefore children under the age of 12 are not under the provision of these guidelines and must follow The UK Concussion Guidelines for Non-Elite (Grassroots) Sport:

http://sramedia.s3.amazonaws.com/media/documents/9ced1e1a-5d3b-4871-9209-bff4b2575b46.pdf

SUMMARY OF GRTP
PATHWAY TIMES

PATHWAY 1

An Adult Professional Cricketer

Aged 19 years and over

MININUM of 7 days GRTP*

Otherwise 12 days

PATHWAY 2

A Professional or Elite Cricketer

Aged 17 – 18 years old

Higher risk Adult Aged 19 over years

MINIMUM of 12 days GRTP

PATHWAY 3

A Young Elite Cricketer

Aged 12-16

MINIMUM of 21 days GRTP

***REMEMBER:**

The following must be present to qualify for pathway 1:

19 years old or older

Return to baseline SCAT6 recorded at 36-48 hours post-injury.

No prior concussion in the previous twelve months

No prior history of three or more career concussions

No prior history of any previous concussion complicated by psychological symptoms

No previous concussion with prolonged recovery (>21 days)

No evidence of loss of consciousness, ataxia, tonic posturing, confusion or other red flags, as described in this document, on field of play at the time of injury

Ongoing review of symptoms and progressions guided by a healthcare professional

'Sign off' by the Club Chief Medical Officer, or a Specialist in Sport and Exercise Medicine or Sports Concussion Neurologist / Neurosurgeon

REFER

FAILED RETURN TO PLAY
RECURRENT CONCUSSIONS

Any delay or concerns relating to a failure to progress in a return to play program or deterioration of symptoms demands urgent review with a doctor (and multi-disciplinary team) with an expertise and experience in managing concussion injuries before continuing or progressing.

Similarly, any individual that has been exposed to recurrent concussions over the course of their career or a repeat concussion (within a single year) demands a prolonged recovery period (e.g., minimum of 21 days) and/or onward referral.

REDUCE

ECB CONCUSSION
PREVENTION PROGRAMME

For the true incidence, prevalence, pattern and nature of concussion to be best understood, all head injuries, concussions and 'near misses' must be recorded using Smartabase, the ECB's Electronic Patient Record that supports Injury Surveillance analysis. Head injuries, concussions and 'near misses' can also be reported using the **injurysurveillance@ecb.co.uk** email address, which allows for rapid escalation and review by the ECB's medical panel chaired by the ECB's Chief Medical Officer as part of the ECB's Science and Medicine Team.

All CRT, SCAT6 or SCOAT6 (Sport Concussion Office Assessment Tool 6) forms should be uploaded completed on the ECB's Smartabase system. Head Injuries and concussions will be included in season or competition specific injury surveillance reports and inform future concussion policies and head injury reduction strategies.

BASELINE
TESTING

The ECB mandates all players undertake baseline testing, including an annual SCAT6 and at least a 2-yearly Computerised Neurocognitive 'ImPACT' assessment* for over 19s and annual SCAT6 and Computerised Neurocognitive 'ImPACT' assessment in under 19s. This will form part of the off-season player profiling screening. This can then be compared to post-injury scores in both the diagnosis of a concussion and the graded Return-to-Play (RTP) evaluation.

ImPACT baseline testing must be undertaken every 2 years or repeated annually in players who have had a helmet strike that season.

PROTECTIVE EQUIPMENT HELMETS, GRILLS, NECK-GUARDS

The testing of helmets has been undertaken for some time with regards to the helmet's ability to attenuate head impacts and appear effective. There is overwhelming evidence from injury surveillance that wearing a suitable head protector can significantly reduce the risk of severe injury to cricketers when batting or close fielding.

The wearing of head protectors is mandated in the professional game and in age group cricket for batting, keeping and close fielding in the riskiest situations. The design and manufacture of cricket head protectors is now governed by British Standard BS7928:2013, which has been adopted by the ICC as the international standard.

RESEARCH

The ECB is dedicated to ensuring the game is safe for participants and support staff and the understanding of the injury of a concussion and relationship with the sport is clear. The ECB is therefore continuing to audit and engage with the research community, supported by relationships with the Repetitive Concussion in Sport research groups and Universities.

If you wish to contact this group, please contact Prof Nick Peirce, ECB Chief Medical Officer **(nick.peirce@ecb.co.uk).**

Whilst these guidelines are for use by appropriately trained healthcare professionals, other guidelines for use across the recreational game and educational sector are available on the **ECB website.**

CONTACTS:

Prof Nick Peirce
ECB Chief Medical Officer

nick.peirce@ecb.co.uk

+ 44 (0) 7917 529431

Dr Gurjit Bhogal
England Women's Team Physician

gurjit.bhogal@ecb.co.uk

+44 (0) 7920 269246

LINKS:

ECB Concussion website
https://www.ecb.co.uk/about/policies/concussion

ECB 2023 Concussion Replacement Regulations (due to be updated in March 2024)
https://resources.ecb.co.uk/ecb/document/2023/04/03/a3c2a2cc-800e-4e9a-8064-dfebc5acb4da/Concussion-Replacement-Regulations-2023-1-.pdf

Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport–Amsterdam, October 2022
http://dx.doi.org/10.1136/bjsports-2023-106898

ECB Policy for PPE in Training Environments
https://resources.ecb.co.uk/ecb/document/2023/05/03/b8037b84-0604-4d14-808e-450fe565a99c/ECB-Policy-for-Personal-Protective-Equipment-in-Training-Environments.pdf

ECB 2023 Head Protector Regulations (due to be updated in March 2024)
https://resources.ecb.co.uk/ecb/document/2023/04/01/1cdd010f-2927-440e-9cd5-12243fed2d66/10-Head-Protector-Regulations-2023-vF.pdf

ICC Concussion Management Guidelines 2021
https://resources.pulse.icc-cricket.com/ICC/document/2021/01/21/28d8425f-cbc6-4101-b336-e567fdabc737/ICC-Concussion-Management-Guidelines-Dec-2020.pdf

1. **Concussion Recognition Tool 6**
   http://dx.doi.org/10.1136/bjsports-2023-107021
2. **SCAT6**
   http://dx.doi.org/10.1136/bjsports-2023-107036
3. **Child SCAT6**
   http://dx.doi.org/10.1136/bjsports-2023-106982
4. **SCOAT6**
   http://dx.doi.org/10.1136/bjsports-2023-106859
5. **Child SCOAT6**
   http://dx.doi.org/10.1136/bjsports-2023-106984
6. **The UK Concussion Guidelines for Non-Elite (Grassroots) Sport**
   http://sramedia.s3.amazonaws.com/media/documents/9ced1e1a-5d3b-4871-9209-bff4b2575b46.pdf

The use of videos in sport has now become increasingly widespread with both immediate and subsequent analysis helping both in recognising concussive episodes and understanding the signs of injury and the events that can lead to them.

All healthcare professionals should look to review available videos of an injurious episode even if they have seen the event themselves.

In cricket, it may be difficult to see the players reaction when helmeted, and indeed with the prolonged periods of play, medical personnel will often not see the initial injury mechanism. In the professional game, the fixed camera video analysis coded by performance analysts, or the television coverage should be made available to the medical team as soon as practical.

KEY POINTS

- Video footage should be reviewed to assess the nature of the impact and supports, but must not replace, an initial on field assessment using CRT6.
- Any ball strike that does not amount to a glancing blow should be assessed on the field.
- Any severe blow with worrying video features should be at once removed from the field with an off-field assessment

Worrying Video features that demand immediate removal from play

- Motor incoordination / ataxia*
- Unprotected fall
- Evidence of seizure / convulsion
- Tonic Posturing
- Lying motionless

**Motor incoordination / ataxia most likely observable video feature in cricket*

VIDEO IMPACT SIGNS
DEMANDING REVIEW AND POTENTIAL REMOVAL FROM PLAY

ADDITIONAL VIDEO POST
IMPACT SIGNS DEMANDING REVIEW AND POTENTIAL REMOVAL FROM PLAY:

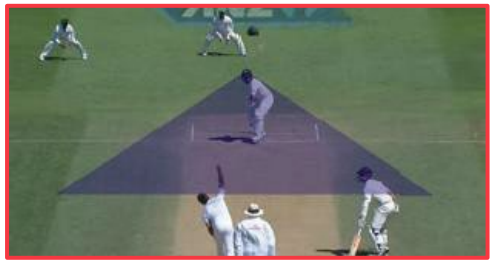
Longer pause prior to the batter trying to resume play

Level of concern shown by other players

1

Severe Helmet Strike
(direction of ball travel is back down the wicket or stops dead showing significant transfer of energy).

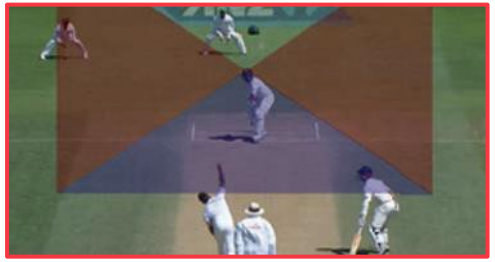
Frontal/back down the wicket



2

Moderate Helmet Strikes with Accompanying Worrying Signs
(direction of ball travel is approx. 90 degrees).

90 degrees rebound



This patient has received an injury to the head and no sign of any serious complications has been found.

If you notice any change in behaviour, vomiting, dizziness, worsening headache, double vision or excessive drowsiness, please contact your medical team or the nearest hospital emergency department immediately.

IMPORTANT POINTS

Rest (physically and mentally), including training or playing sports, until symptoms resolve, and you are medically cleared

No alcohol

No prescription or non-prescription drugs without medical supervision

Do not leave anyone with suspected concussion alone for the first 24 hours

IF YOU ARE CONCERNED

Contact your GP/NHS 111, attend A&E or call an ambulance 999/112 .

GENERAL ADVICE
To recover more quickly, it is important to:

- Rest from stressful situations, including school, college or work until you feel recovered.
- Undertake a Graded Return to activities including use of computers at work and at school, video games and more vigorous physical activity.
- Avoid contact sports until you have completed the required return to sport program.

SPECIFICALLY

- It may be normal to experience mild headache, nausea, or difficulties concentrating or tiredness for a short period.
- No sleeping tablets.
- Do not use aspirin, anti- inflammatory medication or sedating painkillers.
- Do not drive until medically cleared.
- Do not train or play sport until medically cleared.

MEDICAL HELP

If symptoms do not disappear after 10 days or you become concerned about worsening signs, please see your GP (General Practitioners).