

4.4 CONCUSSION GUIDELINES FOR VOLLEYBALL ENGLAND

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Appendix	
Scope	All individuals in the employment of this establishment (<i>'employ' means any person who is employed, self-employed, volunteers, working under practising privileges or contract of service with this establishment</i>)

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1. POLICY AND CONSENSUS STATEMENT

In all levels of Volleyball, if a player is suspected of having a concussion, they must be promptly taken off the court, regardless of whether it is during training or a match.

“IF IN DOUBT, SIT THEM OUT”

The Concussion in Sport Consensus Meeting periodically publishes a position paper called the Consensus Statement, which presents a synopsis of the most recent evidence-based discoveries on concussions. This document is the outcome of dialogue among leading worldwide experts in concussion. The latest iteration of the Consensus Statement was released in Amsterdam in 2022 and covers the currently accepted protocols for managing concussions.

We have implemented concussion protocols that adhere to the current Consensus Statement. These protocols specify the required standard of care within Volleyball England and will be assessed on a yearly basis or whenever substantial advancements in knowledge arise. The protocols recognise that the scientific comprehension of concussions is constantly evolving, and decisions regarding management and return to sports will be determined based on the individual clinician's discretion.

The Consensus Statement suggests that it is advisable for children and adolescents to avoid engaging in sports or any form of physical activity until they have completely recuperated from their symptoms and resumed attending school without exhibiting any indications of illness.

2. WHAT IS CONCUSSION?

Concussion is a serious condition that can cause the brain to temporarily function less effectively, impacting cognitive processes, emotions, and memory. A variety of symptoms can be observed, such as headaches, dizziness, difficulties with recalling information, and problems maintaining balance.

What causes a concussion?

A concussion is a kind of brain injury that happens when there is a hit to the head, neck, or body, or if there is force or trauma to another part of the body that causes the head to suddenly move, like a whiplash injury.

Recognising that there may be other injuries along with a concussion is extremely important. These injuries could include cuts, scrapes, or fractures on the scalp or face. It is crucial to treat all head injuries as possible neck injuries until proven otherwise.

Onset of symptoms

The symptoms of a concussion can develop right away or over time, in as little as a few minutes to a few hours. While these symptoms typically go away within a few days, there are cases where they last for a longer period of time.

Concussion can occur even if the person does not lose consciousness. Loss of consciousness occurs in less than 10% of concussions.

Which individuals are at the highest risk of experiencing a concussion?

Concussions in children and adolescents (Under 18)

Children and adolescents, who are 18 years or younger, are at a higher risk for sustaining concussions.

- Their time for recuperation is usually longer.
- They suffer notable impacts on their memory and cognitive abilities.
- They are more susceptible to rare and dangerous neurological complications, like second impact syndrome, which in some instances can be life-threatening due to brain swelling.

Prior to resuming volleyball training, it is crucial for children and adolescents to completely resume their education.

Concussions in women

Women, especially children and adolescent women, are also recognised as having a high vulnerability to concussions.

Recurrent concussions

People who have had a concussion in the past have a higher likelihood of getting more concussions in the future. Furthermore, having recently experienced a concussion could also heighten the chance of sustaining other sport-related injuries, such as musculoskeletal injuries.

3. RECOGNISING A CONCUSSION

If any of the signs or symptoms listed below are observed after an injury, it is necessary to suspect that the player has a concussion, and they should be promptly taken out of play or training. They should not participate in any further activities on that day.

The concussion recognition tool (CRT6) can be utilised as a helpful guide for identifying concussions on the court (see useful links section).

The most reliable way to diagnose a concussion is through a clinical evaluation conducted by a medical professional. This evaluation is supported by:

- A thorough examination of symptoms

- The use of established checklists such as SCAT6 or Child SCAT6
- Cognitive assessments to assess memory functions
- Additional tests may also be used to enhance the accuracy of the diagnosis.

We support and promote: ***“If in doubt, sit them out”***

Visible Signs and Symptoms of Concussion

Visible signs and symptoms of a concussion may manifest at any time following the injury, although they typically become evident within the initial 24-48 hours.

It is crucial for the individual to not be left alone, undergo regular check-ups, and be provided with a copy of the list of potential signs and symptoms during this timeframe. The individual responsible for the player with a suspected or diagnosed concussion, such as a parent or guardian, should also have a copy of this checklist, as well as guidance on how to proceed if symptoms deteriorate.

It is advisable for individuals diagnosed or with a suspected concussion to abstain from driving or consuming alcohol until they are entirely symptom-free.

The visible signs and reported symptoms of concussion include but are not limited to any one or more of the following:

VISIBLE SIGNS OF CONCUSSION	SYMPTOMS OF CONCUSSION
Loss of consciousness or responsiveness Falling unprotected on the playing surface Lying motionless Disorientation or confusion, staring or limited responses, inability to respond to appropriate questions. Dazed, blank or vacant. Seizure, fits or convulsions. Facial Injury Unsteady on feet or balance problems Slow to get up	Headache “Pressure in head” Balance problems Nausea and vomiting Drowsiness Dizziness Blurred vision More sensitive to light More sensitive to noise Fatigue/Low energy “Don’t feel right” Neck Pain More emotional More irrational

	<p>Sadness</p> <p>Nervous or anxious</p> <p>Difficulty concentrating</p> <p>Difficulty remembering</p> <p>Feeling slowed down</p> <p>Feeling “in a fog”</p>
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Questions to ask a player with a suspected concussion:

Giving a wrong response to these questions may indicate a concussion, although correct answers do not mean a player does not have a concussion.

“What venue are we at today?” or “Can you tell me where we are?”

“Who won the last set?” or “How did you get here today?”

“Which team did you play against last?” or “Where were you this time last week?”

“Did your team win their last set?” or “What time of day is it approximately?”

“Which set are we in now?” or “What were you doing this time last week?”

CONCUSSION ASSESSMENT TOOLS

SCAT6 & SCOAT6

The SCAT6, which is the Sports Concussion Assessment tool, is an effective instrument for identifying and diagnosing concussions. It is a standardised method for assessing injured athletes and can be applied to athletes who are 13 years old and above.

Please be aware that there is a separate document named the Child SCAT6 which is designed for children between the ages of 8 and 12.

Performing a baseline SCAT6 test on all players is of utmost importance immediately after they are selected to participate. It is recommended to repeat these baseline tests annually, adhering to the current guidelines.

After a potential head injury, athletes will undergo the SCAT6 test to evaluate their condition, and the outcomes will be compared with their initial baseline test. It is recommended to administer the SCAT6 test multiple times after the player is taken out of the game, for example, between sets, at the end of the match, and 24-48 hours after the injury. Any change observed in any aspect of the test, such as symptoms, cognitive assessment, and balance evaluation, strongly indicates a concussion.

Before being allowed to participate again, the player must achieve the same or better results as their initial baseline test. The SCOAT6 (Sport Concussion Office Assessment

Tool) is used to assess concussive symptoms during the subacute period (72 hours to several weeks after the injury). Its purpose is to monitor the progress of recovery and determine if specialist referral is necessary.

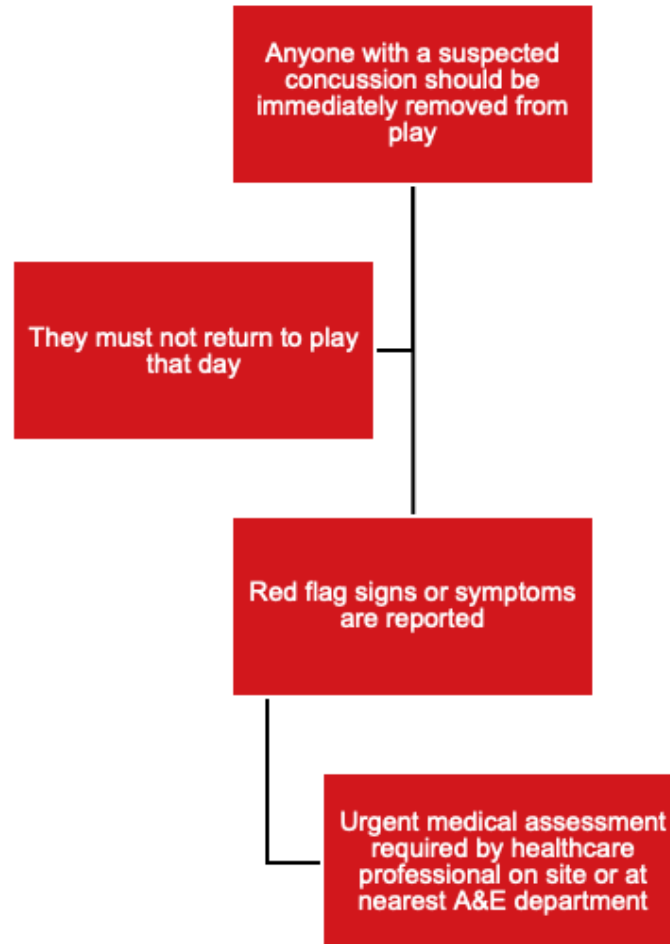
If, for some reason, a player does not have baseline data, the following indicators should be given strong consideration as they potentially indicate a diagnosis of concussion:

- One or more new symptoms from the symptom list that are not typically encountered by the player after a game or practice session.
- Assessment of balance: performing the tandem stance with 3 or more mistakes or single leg stance test with 4 or more mistakes.
- If the findings of the SCAT6 reveal the following, a concussion is suspected:
 - Overall standardised evaluation of concussion (SAC) score of 24 or lower.
 - Concentration score (digits backward) of 2 or lower.
 - Recall of 3 or fewer words after a delay.

Neuropsychological testing (ImPACT or Cognigram)

The gold standard neuropsychological online testing tools for managing concussions are 'ImPACT' and 'Cognigram.' The Senior Men's and Women's indoor and beach volleyball will complete this type of testing annually as a baseline.

After experiencing a concussion, a post-concussion test can be taken, and the results can be compared. These tests can be used alongside symptom checklists, memory and balance evaluations to help clinicians make decisions, but they should not be the only factor considered when determining when a player can return to play.



4. IMMEDIATE MANAGEMENT OF SUSPECTED CONCUSSION

What are the red flag signs and symptoms for immediate removal?

- ▶ Neck pain or tenderness
- ▶ Tonic posturing
- ▶ Balance disturbances / ataxia
- ▶ Repeated vomiting

- ▶ Double vision / Loss of vision
- ▶ Seizures, fits or convulsions
- ▶ Severe or increasing headaches
- ▶ Weakness or tingling/burning in more than one leg
- ▶ Increasing confusion
- ▶ Confirmed, suspected loss or deteriorating consciousness
- ▶ Visible deformity of the skull
- ▶ Increasing irritability, restlessness or combative

What to do courtside?

There might be times when a doctor or healthcare professional is not around when an injury happens. Clubs and organisations are strongly advised to teach their staff and volunteers, including coaches, about the signs and symptoms of concussions. This way, they can take the necessary steps and seek medical help right away.

If a doctor or healthcare professional is available, they should; remove the player from the court; wait for 5 minutes before evaluating the player with a suspected concussion. This allows the athlete to rest and recover from tiredness caused by the game, and prevents any false positive results caused by this tiredness.

During these 5 minutes, it is suggested that they watch any available video footage to better understand how the injury occurred and how severe it might be.

1. Remove from play.
2. Wait 5 minutes.
3. Start assessment.

During a match

Everyone has a duty of care to recognise the symptoms of concussion.

Should any of the bench personnel notice signs of concussion and a health care professional is present, they should follow the recognise and remove approach.

Referees and match officials should be aware of the sign and symptoms of concussion. They can request the match is stopped and the player assessed if a health care professional is available.

Recognition of concussion is everyone's responsibility.

When a health care professional is not available, Volleyball England will follow the recognition and remove protocols, this cannot be overruled.

5. ONGOING MANAGEMENT OF SUSPECTED CONCUSSION

Managing a concussion requires a brief period of **relative rest** followed by a gradual resumption of normal activities based on the individual's symptoms. **Relative rest** entails giving both the body and the brain a break. This rest period can aid in symptom recovery and, in non-professional environments, allow individuals to return to work or school before engaging in training and playing again.

The recovery process after a concussion should be evaluated on a case-by-case basis. While most concussion injuries heal within a span of 7 to 10 days, it may take longer for children and teenagers (under 18) to fully recover. According to the latest guidelines for resuming sports activities, athletes should not be allowed to return to play earlier than 21 days, unless they fulfil the specific criteria outlined in the enhanced care pathway.

In the **first 24 hours** following a suspected or confirmed concussion, players should **NOT**:

- ✗ **Drive a vehicle**
- ✗ **Drink alcohol**
- ✗ **Be left alone**

The **initial 48 hours** of relative rest involves:

- ✓ **Engaging in daily activities that do not worsen symptoms**
- ✓ **Reducing screen time**
- ✗ **Avoiding physical activity including running, swimming, cycling etc.**
- ✗ **Avoiding school work or homework**

The importance of honesty

It is important that players are encouraged to be honest with themselves and their support team (coaches, team manager and health professionals) when it comes to their symptoms and recovery. There are several risks associated with returning to play early before being ready, including:

- A higher chance of experiencing a second concussion leading to an increased risk of second impact syndrome.
- Poor decision-making or decreased reaction time associated with a concussion can lead to a higher risk of other injuries.
- Performance may be weakened or affected.
- If a structural brain injury goes unrecognised, it can result in severe injury or even death.
- A possibility of an elevated risk in developing long-term neurological decline.

Return-to-sport (RTS)

Once the first 48-hour period of relative rest has passed, individuals can gradually resume their daily activities, including education/work and volleyball training. This should be done following a standard return to sport protocol, ensuring that symptoms do not worsen or produce new symptoms.

Standard return to sport protocol (minimum 21 days)

Stage 1	48 hours relative rest, engaging in daily activities that do not worsen symptoms.	Stages 1 - 4 must take a minimum of 14 days.
Stage 2a	Light aerobic activity (HR under 55%)	
Stage 2b	Light aerobic activity (HR under 70%)	
<i>Medical clearance from a HCP is recommended to progress to stage 3.</i>		
Stage 3	Individual volleyball specific exercises in a controlled manner. Only exercises where there is a very low risk of balls to the face. No partner, teamwork or diving.	
<i>Athletes may only progress to stages 4-6 once they are symptom free and show no cognitive changes to baseline testing, including after physical activity. This must be confirmed with a HCP.</i>		
Stage 4	Non-contact training. Increasing complexity of drills including, Ball-handling with a partner, serving with a jump, hitting with no block, change direction: agility, plyometrics (Avoid drills involving diving, and risk of ball to face/head) GB Replace with below...	
<i>Review by doctor / HCP</i>		
Stage 5	Full unrestricted training. No competitive matches or friendlies.	
Stage 6	Return to sport	<i>The earliest that stage 6 can commence is 21 days post injury.</i>

The player can progress to the next stage of the RTS after spending at least 24 hours at each stage, and if they experience no change in concussion symptoms (as listed in SCAT6) or only a short-lived and mild worsening of symptoms. Mild worsening of symptoms is defined as no more than a 2-point increase on a scale of 0-10, lasting for less than an hour, compared to their initial score. These timelines are minimum timelines, all concussion cases should be managed on an individual basis. A more detailed breakdown can be found within the 'Return to Sport Table' below.

If any symptoms arise or worsen during stages 1-3 of the RTS protocol, the player should stop exercising for a day before attempting it again the following day. Athletes who experience worsening symptoms during stages 4-6 should revert back to stage 3 until their symptoms have reduced.

Managing the standard return to sport protocol:

- A medical practitioner or approved healthcare practitioner should be in charge of managing the RTS.
- In cases where this is not feasible, it is important that someone familiar with the player takes on the responsibility of observing and managing the RTS. This person should be able to identify any unusual signs or behaviours exhibited by the player.
- It is the duty of clubs, officials, staff, players, and parents to thoroughly read and familiarise themselves with this policy and related materials. This will help raise awareness about concussion and enable them to recognise the signs and symptoms and take appropriate action.
- It is **always necessary** to obtain **clearance from a medical practitioner** before participating in **competitive play**.

Enhanced Care Settings

In specific and exceptional situations, this protocol can be enhanced to enable a faster return to competition within Volleyball. This is typically more prevalent among professional or international athletes who have access to a superior standard of medical treatment.

There are certain specific prerequisites that need to be fulfilled for this to occur. While this enhanced care approach is not commonly used in Volleyball England, the protocol is established for situations where it is necessary and feasible.

Enhanced Care Pathway (minimum 12 days)

Prerequisites:

- The player **MUST** be over the age of 16.

- It is necessary to have a doctor who is registered with the GMC Specialist register and has expertise in treating concussions. This doctor should have a specific interest, as well as training and experience in concussion. This role is commonly fulfilled by a Consultant in Sport and Exercise Medicine or a Consultant neurologist.
- The doctor will closely oversee the return-to-sport (RTS) process and personally assess the player in person on a daily basis.
- The player must have completed a pre-injury SCAT6 baseline and undergone neurocognitive baseline computer testing (using either ImPACT or Cognigram).
- Regular assessments need to be conducted, including tests for cognitive and neurological abilities, to monitor symptoms and keep track of the player's progress during their return to sport protocol. These evaluations should be well-documented in the player's medical records.
- The player needs to have access to a diverse team of experts who have experience in handling concussions in sports. This team should include neurologists and neurosurgeons who can monitor and provide additional interventions if necessary.
- A specific formal protocol for RTS (return to sport) that includes regularly completing and recording SCAT6/SCOAT6 or similar assessments in the players' medical records.
- The team is able to show how they provide an education program about concussions to everyone, including staff and players.

If any prerequisite is missing from the list above, the player MUST follow the standard return to sport protocol.

Early Return to Play within the Enhanced Care Pathway (minimum 7 days)

In specific situations, an adult player may qualify for a quicker return to play within the enhanced care pathway.

The prerequisites for this are:

- The player must be over the age of 18
- They should have no history of complex or recurrent concussions, including:
 - No concussions within the last year
 - No more than 5 concussions within their sporting career
 - No previous concussions with complicated psychological symptoms
 - No previous concussions that took longer than 3 weeks to recover
- There must be no evidence of any red flag symptoms during or following the injury
- A normal SCAT6 must be recorded within 36-48 hours post injury
- A HCP must be available daily in person to review and symptoms with the player

- The player must be signed off by a doctor who is registered with the GMC and specialises in neurology, neurosurgery, sports and exercise medicine, or a related field. This doctor should also have experience in treating concussions in athletes.

Return to Sport Table

RETURN TO SPORT (RTS)				Standard RTS	Enhanced Pathway RTS	Early RTS - Enhanced Pathway	
		Exercises Allowed	% max HR	Objective	Duration*	Duration*	Duration*
Stage 1	Relative Rest	Mental tasks like reading, along with regular daily activities, that do not exacerbate symptoms. However, it is advised to limit walking sessions to a maximum of 15 minutes at a time.	N/A	Recovery	Minimum 48 hours	Minimum 48 hours	Minimum 48 hours
Stage 2a	Light Aerobic Activity	Stationary cycling or walking at a slow-medium pace. Light resistance training.	<55%	Increase heart rate	Minimum 24 hours	Day 3 & 4	Minimum 24 hours
Stage 2b	Light Aerobic Activity	Stationary cycling or walking at a slow-medium pace. Light resistance training.	<70%	Increase heart rate			
Stage 3	Volleyball Specific Exercise	Simple movements / ball work. Individual volleyball specific exercises in a controlled manner. Only exercises where there is a very low risk of balls to the face. Limit body movements and any head contact. - Serving (no jump) - Individual ball-handling (against wall or from a toss)	<90%	Add movement	Minimum 24 hours	Day 5 & 6	Minimum 24 hours

		No partner work, team work or diving.					
Stage 4	Non Contact Training	Increasing complexity of drills including - Ball-handling with a partner - Serving with a jump - Hitting with no block - Change direction: agility, plyometrics - No reception or defending - No close proximity to other players	No limit	Exercise, coordination and sport specific skills	Minimum 24 hours Stages 1 - 4 must take a minimum of 14 days.	Day 7 & 8	Minimum 24 hours
RECOMMENDED REVIEW BY DOCTOR / HEALTHCARE PROFESSIONAL							
Stage 5	Contact Training	Normal training activities up to and including full-speed gameplay. But no competitive matches or friendlies.	No limit	Restore confidence and assess functional skills	Minimum 24 hours	Day 9, 10 & 11	Minimum 24 hours
Stage 6	Return to Sport	Competitive games, no limitations	No limit	Return to sport	Earliest RTS at day 21	Earliest RTS at day 12	Earliest RTS at day 7

**The durations listed are minimum time frames. If players have not fully recovered within these time frames, their return to sport protocol will need to be extended.*

6. WHEN TO SEEK SPECIALIST HELP?

Players who have any of the following conditions should be evaluated and cared for by healthcare professionals who have experience in the field of sports-related concussions (a consultant doctor in neurology, neurosurgery or sport and exercise medicine):

- Experiencing a second concussion within 12 months.
- Having a past of multiple concussions.
- Showing symptoms in a different or uncommon way.
- Taking a long time to recover and having symptoms that continue (symptoms lasting more than 4 weeks).
- Concern that the threshold for experiencing a concussion is decreasing.

A specialist is a doctor with specific knowledge, training, and experience in dealing with concussions.

If a player experiences dizziness, neck pain, or headaches for more than 10 days, it is recommended to undergo cervico-vestibular rehabilitation. You should talk to your sports club's healthcare professionals or a doctor who specialises in this area for more advice.

Useful Information and forms

SCAT6 (ages 13+)

SCOAT 6

Children's SCAT6 (ages 8-12)

Concussion Pocket Recognition Tool 6

[Amsterdam 2022 Concussion Group Consensus Statement](#)

References

1. Patricios JS, Schneider KJ, Dvorak J, et al Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport–Amsterdam, October 2022 British Journal of Sports Medicine 2023; 57:695-711.
2. Putukian M, Raftery M, Guskiewicz K, et al. On field assessment of concussion in the adult athlete. Br J Sports Med 2013; 47:285–288.
3. Sport and Recreational Alliance Concussion Guidelines for [grassroots sport](#).