Australian Sailing Concussion Management Guidelines

Australian Sailing is the national sporting organisation for the sport of sailing. The Australian Sailing Team (AST) is its performance program in partnership with Sport Australia. The Australian Sailing Squad (ASS) is the development program of the Australian Sailing Team and provides the pathway for elite youth.

These guidelines apply to all AST and ASS athletes, coaches and support staff, providing standardised procedures which can be followed by Australian Sailing medical, physiotherapy and coaching staff at any training or regatta location.


The goal of these guidelines is to achieve a safe and successful return to sailing, allowing full recovery and readiness for training and competition, in the shortest timeframe possible. Minimisation of short-term risk and consideration for long-term health consequences are of utmost importance.

An athlete or coach who has been suspected of a concussion needs to be thoroughly assessed and managed by an appropriate health professional who is familiar with these guidelines. The athlete or coach must gain medical clearance prior to returning on water. The process is explained in more detail below.

PREPARATION

Baseline testing
All AST and ASS athletes and coaches should have baseline testing completed every 12 months, at the start of the season including:

- Cogstate
- SCAT5
- Modified BESS balance

Protective gear - helmets
Currently, Nacra 17 is the only class for which World Sailing mandates helmet use.

- According to the World Sailing Class Rules for International Nacra 17 Class, Rule C 3.1 (c) is as follows: “Each crew member shall wear a helmet that shall be to the minimum standard EN1385 or EN1077 or equivalent with at least 300 square centimetres of the exterior surface in a high visibility colour. When Flag T is flown by the Race Committee Rule C 3.1 (c) is suspended.”
- There is no gold standard for helmet choice.
- Helmets are more effective at reducing the risk of skull fractures, lacerations, and severe traumatic brain injury
- To reduce the severity of a concussion, we encourage correctly fitting helmets.
  - An athlete is at an increased risk of concussion severity and duration if a helmet fits improperly.
  - Adding layers into the helmet for warmth or additional protection (such as Unequal inserts) will affect the fit and should be considered when fitting a helmet.

It is mandatory for an athlete to replace their helmet if they have sustained a concussive episode or if there is visible damage to their helmet. It is recommended that athletes carry a second helmet for such scenarios as damage through travel, normal use or concussion.
DIAGNOSIS
The most important step for coaches and athletes is RECOGNITION. Recognising concussion can be difficult. It may be subtle or obvious. Apply first aid principles if the athlete or coach is unconscious (DRSABC). Protect the cervical spine, manage traumatic injuries and be aware for any red flags.

RECOGNISE the concussion to ensure appropriate management

- use the Concussion Recognition Tool 5 (CRT5) to help recognise concussion signs and symptoms (Appendix 1)

Coaches and support staff can also access the “Headcheck” concussion check - a free app from the Murdoch Institute on their phone or tablet. It is a simple concussion identification check for non-medical persons to assist in recognising concussion.

- Keep monitoring as symptoms may take 24-48 hours to appear
If the athlete or coach has any symptoms, REMOVE them from training and do not allow them to return same day

- Follow the flow chart diagrams 3-5 (Appendix 2) per Concussion in Sport Australia Position Statement document
- If there are any red flags indicating more serious injury, take the athlete or coach to an emergency department

Perform a SCAT5 assessment (within 15mins if possible) – carry a paper copy of the SCAT5 (Appendix 3). Note: If <18 use the Child-SCAT5 (Appendix 4).

- The SCAT5 is considered to be positive if any one of these three items varies from baseline:
  o Symptoms
  o SAC score
  o Modified BESS balance
- If no baseline is available, the SCAT5 is positive (per SCAT3-based IRB concussion guidelines, 2014) if:
  o there are one or more symptoms that are not usual for the athlete
  o Modified BESS: Tandem 3 or more errors or Single Leg stance 4 or more errors
  o SAC: Total score 24/30 or less, concentration score (digits backward) 2 or less, delayed recall 3 or less words

NB: If no Australian Sailing medical or physio staff are present, coaches/other staff/athletes have a duty of care to ensure the athlete or coach is assessed by a medical practitioner ASAP.

Notify the Sailing Medical Officer, Dr Kathy Yu, and National Lead Physiotherapist, Ashley Merkur, as soon as practical after a concussion. If medical assessment has been performed, please also send any reports.

**MONITORING**
Ensure that the athlete or coach goes home with a responsible person, who will be able to stay with, and monitor, them.

- If the resources are not available to do this, have the athlete or coach monitored in a medical facility

Serial monitoring is required over the next 4-6 hours.
- Repeat the SCAT5 Symptom Evaluation every 2-3 hours

Provide the athlete or coach with concussion education and the Australian Sailing Graded Return To Sport protocol (Appendix 5). Suspected concussion can only be ruled out if all findings are negative at the 3 time points:

- Immediately post-injury
- 4-6 hours post-injury
- 36-48 hours post-injury

**RECOVERY: The days following a head injury**
Gradual progressive increase in physical and cognitive activity below symptom thresholds is encouraged after 24-48 hours rest

- “Symptom-limited physical and cognitive rest” is recommended
- This may mean limited screen time or reading and minimal exercise (eg. walking)
- The rest period is usually only 24-48 hours, even if acute symptoms have not resolved
- Low-level exercise may benefit athletes/coaches whose symptoms are slow to resolve
- Exercise that doesn’t worsen existing symptoms is encouraged
- Athletes/Coaches don’t have to be symptom-free to do light exercise
The athlete or coach should continue to be monitored via SCAT5 symptoms and BESS daily until the symptoms are consistently reported at zero and balance has returned to baseline

- SCAT5 symptoms can be completed directly by the athlete or coach into AMS
- BESS can be observed by the physio or other staff present and be recorded on a phone and sent to the Medical Officer and Lead Physiotherapist
- If there is persistence or deterioration of symptoms, refer the athlete to a doctor experienced in concussion management for assessment – a Sports Doctor, Sports Physician, or GP with additional training in managing head injuries

Paracetamol is okay post-concussion, but stronger pain relief and non-steroidal anti-inflammatory medications (NSAIDs) should be avoided post-concussion.

Hydration, sleep and nutrition are important to aid recovery post-concussion.

**REHABILITATION: Graded return to sport (GRTS)**

Once asymptomatic (or returned to baseline) on the SCAT5 symptoms and BESS balance scores, the athlete or coach can proceed to perform a post-injury Cogstate test.

- If they pass Cogstate, medical clearance from the Sailing Medical Officer, Dr Kathy Yu, must be obtained prior to commencing the graded return to sport program.
- If the athlete or coach fails, they must wait another 24 hours before repeating the Cogstate test.

There are 6 GRTS stages:

- The athlete/coach can only move to next stage if there are no new or recurrent symptoms
- The athlete/coach should complete the SCAT5 Concussion Symptom Evaluation 15mins following the completion of each new stage until they reach full training
- Only one new stage can be completed per 24 hour period
- Remember that concussion symptoms can recur and vary from day to day
- In the event of persisting or recurrent symptoms, athletes/coaches should be referred for further medical review with a Sports Doctor, Sports Physician, or GP with additional training in managing head injuries

The athlete/coach needs to pass through this graded return to sport program in all cases of concussion, whether in training or competition period. Please see detail of the Sailing GRTS program in Appendix 5.

NB. Athletes under 18 will need to progress more slowly, with a minimum of 14 days return. They should successfully complete a return to school progression prior to their return to sport.

**RECORDING**

Please ensure that all concussion injury records and progress through the GRTS are clearly documented in AMS. Procedure for accessing SCAT5 online is listed in Appendix 6.
Appendix 1: Concussion Recognition Tool 5 (CRT5)

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

RECOGNISE & REMOVE

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

STEP 1: RED FLAGS — CALL AN AMBULANCE

If there is concern after an injury including whether ANY of the following signs are observed or complaints are reported then the player should be safely and immediately removed from play/matching. If a licensed healthcare professional is available, call an ambulance for urgent medical assessment:

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

In all cases, the basic principles of first aid (dangers, response, airway, breathing, circulation) should be followed:

- Assessment for a spinal cord injury is critical.
- Do not attempt to move the player (other than required for airway support) unless trained to do so.
- Do not remove a helmet or any other equipment unless trained to do so safely.

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

STEP 2: OBSERVABLE SIGNS

Visual clues that suggest possible concussion include:

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

STEP 3: SYMPTOMS

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

STEP 4: MEMORY ASSESSMENT

(in athletes older than 13 years)

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

- "What venue were we at today?"
- "Which half is it now?"
- "Who scored last in this game?"
- "What team did you play last week/game?"
- "Did your team win the last game?"

Athletes with suspected concussion should:

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

The CRT5 may be freely copied in its current form for distribution to individuals, teams, groups and organisations. Any revision and any reproduction in a digital form requires approval by the Concussion in Sport Group. It should not be altered in any way, rebranded or sold for commercial gain.

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

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Diagram 3: Concussion management flow chart – on field
(for parents, coaches, teachers, team-mates, support staff)

Athlete with suspected concussion

On-field signs of concussion:
- Loss of consciousness
- Lying motionless, slow to get up
- Seizure
- Confusion, disorientation
- Memory impairment
- Balance disturbance/motor incoordination
- Nausea or vomiting
- Headache or ‘pressure in the head’
- Visual or hearing disturbance
- Dazed, blank/vacant stare
- Behaviour or emotional changes, not themselves

Immediate and permanent removal from sport
Take normal first aid precautions including neck protection

RED FLAGS
- Neck pain
- Increasing confusion, agitation or irritability
- Repeated vomiting
- Seizure or convulsion
- Weakness or tingling/burning in the arms or legs
- Deteriorating conscious state
- Severe or increasing headache
- Unusual behavioural change
- Visual or hearing disturbance

Refer to medical practitioner as soon as practical
Immediate referral to emergency department
Diagram 4: Concussion management flow chart – off field
(for parents, coaches, teachers, team-mates, support staff)

Athlete with suspected concussion

Subtle signs of concussion:
- Pale
- Difficulty concentrating
- Fatigue
- Sensitivity to light/noise
- Confusion, disorientation
- Memory impairment

NO

Rest, observation, return to sport protocol under medical advice

YES

Immediate referral to emergency department

Review by medical practitioner

THINGs to look out for at home or at school following a possible concussion

Subtle signs of concussion:
- Nausea
- Headache or ‘pressure in the head’
- Feeling slowed or ‘not right’
- Dazed, blank/vacant stare
- Behaviour or emotional changes, not themselves

RED FLAGS

- Neck pain
- Increasing confusion, agitation or irritability
- Repeated vomiting
- Seizure or convulsion
- Weakness or tingling/burning in the arms or legs
- Deteriorating conscious state
- Severe or increasing headache
- Unusual behavioural change
- Visual or hearing disturbance

"if in doubt, sit them out"
Diagram 5: Concussion management flow chart – on field
(for medical practitioners)

Athlete with suspected concussion

Signs of concussion:
- Loss of consciousness
- Seizure or tonic posturing
- Confusion, disorientation
- Memory impairment
- Balance disturbance/motor incoordination
- Dazed, blank/vacant stare
- Behaviour change, not themselves

NO

Athlete concussed
Immediate and permanent removal from sport

Evidence of structural intracranial pathology or spinal injury

YES

NO

SCAT 5
Neurological examination
Use of video assessment if available (professional sport)

Evidence of concussion
Permanent removal from sport

Monitor and reassess as appropriate

Signs of neurological deterioration:
- Worsening headache
- Emotionally labile
- Altered level of consciousness
- Vomiting
- Focal neurological signs

Immediate referral to emergency department

SCAT 5
Neurological examination

Implantation of a helmet is not a sufficient substitute for adequate medical follow-up or addressing the cognitive, emotional and psychological sequelae of head injury.
Appendix 3: SCAT5

SCAT5®
SPORT CONCUSSION ASSESSMENT TOOL – 5TH EDITION
DEVELOPED BY THE CONCUSSION IN SPORT GROUP
FOR USE BY MEDICAL PROFESSIONALS ONLY

Patient details
Name: ____________________________________________
DOB: ____________________________________________
Address: __________________________________________
ID number: _______________________________________
Examiner: _________________________________________
Date of Injury: ________________________________ Time: __________________

WHAT IS THE SCAT5?
The SCAT5 is a standardized tool for evaluating concussions designed for use by physicians and licensed healthcare professionals. The SCAT5 cannot be performed correctly in less than 10 minutes.

If you are not a physician or licensed healthcare professional, please use the Concussion Recognition Tool 5 (CRT5). The SCAT5 is to be used for evaluating athletes aged 13 years and older. For children aged 12 years or younger, please use the Child SCAT5.

Preseason SCAT5 baseline testing can be useful for interpreting post-injury test scores, but is not required for that purpose. Detailed instructions for use of the SCAT5 are provided on page 7. Please read through these instructions carefully before testing the athlete. Brief verbal instructions for each test are given in italics. The only equipment required for the tester is a watch or timer.

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Recognise and Remove
A head impact by either a direct blow or indirect transmission of force can be associated with a serious and potentially fatal brain injury. If there are significant concerns, including any of the red flags listed in Box 1, then activation of emergency procedures and urgent transport to the nearest hospital should be arranged.

Key points
• Any athlete with suspected concussion should be REMOVED FROM PLAY, medically assessed and monitored for deterioration. No athlete diagnosed with concussion should be returned to play on the day of injury.
• If an athlete is suspected of having a concussion and medical personnel are not immediately available, the athlete should be referred to a medical facility for urgent assessment.
• Athletes with suspected concussion should not drink alcohol, use recreational drugs and should not drive a motor vehicle until cleared to do so by a medical professional.
• Concussion signs and symptoms evolve over time and it is important to consider repeat evaluation in the assessment of concussion.
• The diagnosis of a concussion is a clinical judgment made by a medical professional. The SCAT5 should NOT be used by itself to make, or exclude, the diagnosis of concussion. An athlete may have a concussion even if their SCAT5 is “normal”.

Remember:
• The basic principles of first aid (danger, response, airway, breathing, circulation) should be followed.
• Do not attempt to move the athlete (other than that required for airway management) unless trained to do so.
• Assessment for a spinal cord injury is a critical part of the initial on-field assessment.
• Do not remove a helmet or any other equipment unless trained to do so safely.

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IMMEDIATE OR ON-FIELD ASSESSMENT

The following elements should be assessed for all athletes who are suspected of having a concussion prior to proceeding to the neurocognitive assessment and ideally should be done on-field after the first first aid / emergency care priorities are completed.

If any of the “Red Flags” or observable signs are noted after a direct or indirect blow to the head, the athlete should be immediately and safely removed from participation and evaluated by a physician or licensed healthcare professional.

Consideration of transportation to a medical facility should be at the discretion of the physician or licensed healthcare professional.

The GCS is important as a standard measure for all patients and can be done serially in the event of deterioration in conscious state. The Maddocks questions and cervical spine exam are critical steps of the immediate assessment; however, these do not need to be done serially.

STEP 1: RED FLAGS

RED FLAGS:

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

STEP 2: OBSERVABLE SIGNS

Witnessed □ Observed on Video □

- Lying motionless on the playing surface
- Balance / gait difficulties / motor incoordination: stumbling, slow / labored movements
- Disorientation or confusion, or an inability to respond appropriately to questions
- Blank or vacant look
- Facial injury after head trauma

STEP 3: MEMORY ASSESSMENT

MADDOCKS QUESTIONS

“Am going to ask you a few questions, please listen carefully and give your best efforts. First, tell me what happened.”

Mark Y for correct answer / N for incorrect

What time are we at today?
What has fix it now?
Who scored last in the match?
What team did you play last week / game?
Did your team win the last game?

Note: Appropriate sport-specific questions may be substituted.

STEP 4: EXAMINATION

GLASGOW COMA SCALE (GCS)³

Time of assessment Date of assessment

Best eye response (E) No eye opening 1 1 1
Eye opening to pain 2 2 2
Eye opening to speech 3 3 3
Eye opening spontaneously 4 4 4

Best verbal response (V) No verbal response 1 1 1
Incomprehensible sounds 2 2 2
Inappropriate words 3 3 3
Confused 4 4 4
On test 5 5 5

Best motor response (M) No motor response 1 1 1
Extension to pain 2 2 2
Abnormal flexion to pain 3 3 3
Extension Withdrawal to pain 4 4 4
Localized to pain 5 5 5

Glasgow Coma score (E+V+M)

CERVICAL SPINE ASSESSMENT

Does the athlete report that their neck is pain free at rest? Y N

If there is NO neck pain at rest, does the athlete have a full range of AC/VE pain free movement? Y N

Is the limb strength and sensation normal? Y N

In a patient who is not lucid or fully conscious, a cervical spine injury should be assumed until proven otherwise.
OFFICE OR OFF-FIELD ASSESSMENT

Please note that the neuropsychological assessment should be done in a
distraction-free environment with the athlete in a resting state.

STEP 1: ATHLETE BACKGROUND

Sport/team/school: ____________________________
Date/time of injury: ___________________________
Years of education completed: __________________
Age: ____________________________
Gender: M / F / Other
Dominant hand: left / neither / right
How many diagnosed concussions has the
athlete had in the past? __________________
When was the most recent concussion? ________________
How long was the recovery (time to being cleared to play)
from the most recent concussion? __________________ (days)

Has the athlete ever been:

Hospitalized for a head injury? Yes No
Diagnosed/treated for headache disorder or migraines? Yes No
Diagnosed with a learning disability/dyslexia? Yes No
Diagnosed with ADD/ADHD? Yes No
Diagnosed with depression, anxiety or other psychiatric disorder? Yes No

Current medications? If yes, please list:

________________________________________
________________________________________
________________________________________
________________________________________

STEP 2: SYMPTOM EVALUATION

The athlete should be given the symptom form and asked to read this instruction
paragraph out loud then complete the symptom scale. For the baseline assessment,
the athlete should be in the gym setting and on how he/she typically feels and for
the post injury assessment the athlete should be to the symptom setting at time.

Please check: □ Baseline □ Post-Injury

Please hand form to the athlete

<table>
<thead>
<tr>
<th>Symptom</th>
<th>none</th>
<th>mild</th>
<th>moderate</th>
<th>severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>&quot;Press ur in head&quot;</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Neck Pain</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Nausea or vomiting</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Dizziness</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Blurred vision</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Balance problems</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Sensitivity to light</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Sensitivity to noise</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Feeling slowed down</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Feeling like in a fog</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>&quot;Don't feel right&quot;</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Difficulty concentrating</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Difficulty remembering</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Fatigued or low energy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Confusion</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Drowsiness</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>More emotional</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Instability</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Sadness</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Nervous or Anxious</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Trouble falling asleep (if applicable)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Total number of symptoms: 22
Symptom severity score: 132
Do your symptoms get worse with physical activity? Y N
Do your symptoms get worse with mental activity? Y N
If 100% is feeling perfectly normal, what percent of normal do you feel?
If not 100%, why?

Please hand form back to examiner

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**STEP 3: COGNITIVE SCREENING**

**Standardised Assessment of Concussion (SAC)**

**ORIENTATION**

<table>
<thead>
<tr>
<th>Question</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>What month is it?</td>
<td>0</td>
</tr>
<tr>
<td>What is the date today?</td>
<td>0</td>
</tr>
<tr>
<td>What is the day of the week?</td>
<td>0</td>
</tr>
<tr>
<td>What year is it?</td>
<td>0</td>
</tr>
<tr>
<td>What time is it right now (within 1 hour)</td>
<td>0</td>
</tr>
</tbody>
</table>

Orientation score: __________ out of 5

**IMMEDIATE MEMORY**

The Immediate Memory component can be completed using the traditional 5-word per trial list or optionally using 10-words per trial to minimise any ceiling effect. All 3 trials must be administered irrespective of the number correct on the first trial. Administer at the rate of one word per second.

Please choose EITHER the 5 or 10 word list groups and circle the specific word list chosen for this test.

I am going to test your memory. I will read you a list of words and when I am done, repeat back as many words as you can remember, in any order. For Trials 2&3 I am going to test the same list again. Repeat back as many words as you can remember in any order, even if you skip the word list.

**List** | **Alternate 5 Word Lists** | **Score (of 5)** | **Trial 1** | **Trial 2** | **Trial 3**
--- | --- | --- | --- | --- |
A Finger | Penny | Blanket | Lemon | Insect | 1
B Candle | Paper | Sugar | Sandbox | Wagon | 1
C Baby | Monkey | Perfume | Sunset | Iron | 1
D Elbow | Apple | Carpet | Saddle | Bubble | 1
E Jacket | Arrow | Pepper | Cotton | More | 1
F Dollar | Honey | Mirror | Saddle | Anchor | 1

Time that last trial was completed: __________

**List** | **Alternate 10 Word Lists** | **Score (of 10)** | **Trial 1** | **Trial 2** | **Trial 3**
--- | --- | --- | --- | --- |
G Finger | Penny | Blanket | Lemon | Insect | 1
H Candle | Paper | Sugar | Sandbox | Wagon | 1
I Baby | Monkey | Perfume | Sunset | Iron | 1
J Elbow | Apple | Carpet | Saddle | Bubble | 1
K Jacket | Arrow | Pepper | Cotton | More | 1
L Dollar | Honey | Mirror | Saddle | Anchor | 1

Time that last trial was completed: __________

**CONCENTRATION**

**DIGITS BACKWARDS**

Please circle the Digit list chosen (A, B, C, D, E, F). Administer at the rate of one digit per second reading DOWN the selected column.

I am going to read a string of numbers and when I am done, you must repeat them back to me in reverse order of how I read them to you. For example, if I say 5-1-9, you would say 9-1-5.

**List** | **List A** | **List B** | **List C** | **List D** | **List E** | **List F**
--- | --- | --- | --- | --- | --- | ---
4-9-3 | 5-2-6 | 1-4-2 | Y | N | 0 | 1
6-2-9 | 4-1-5 | 6-5-8 | Y | N | 0 | 1
3-6-1-4 | 1-7-9-5 | 6-9-1-3 | Y | N | 0 | 1
3-3-7-9 | 4-9-6-8 | 3-6-9-1 | Y | N | 0 | 1
6-2-9-1 | 4-8-5-2-7 | 4-9-1-5-3 | Y | N | 0 | 1
1-5-2-8-6 | 6-1-8-4-3 | 6-9-2-5-1 | Y | N | 0 | 1
7-1-8-4-6-2 | 8-3-1-9-6-4 | 3-7-5-6-9 | Y | N | 0 | 1
5-9-1-4-6 | 7-2-4-8-5-6 | 9-2-6-5-1-4 | Y | N | 0 | 1

| **List** | **List A** | **List B** | **List C** | **List D** | **List E** | **List F**
--- | --- | --- | --- | --- | --- | ---
7-9-2 | 3-8-2 | 2-2-1 | Y | N | 0 | 1
9-2-6 | 5-1-7 | 4-2-9 | Y | N | 0 | 1
4-1-9-3 | 2-7-9-3 | 1-6-9-3 | Y | N | 0 | 1
9-7-2-3 | 2-1-6-9 | 3-9-2-4 | Y | N | 0 | 1
1-7-9-2-6 | 4-1-8-6-9 | 2-6-3-5-8 | Y | N | 0 | 1
4-7-7-5-2 | 9-4-7-7-5 | 8-3-9-6-4 | Y | N | 0 | 1
2-6-4-6-7-7 | 6-9-7-3-8-2 | 5-8-6-2-4-9 | Y | N | 0 | 1
8-4-1-9-3-5 | 4-2-7-9-3-8 | 3-1-9-8-2-6 | Y | N | 0 | 1

Digits Score: __________ out of 4

**MONTHS IN REVERSE ORDER**

How to time the months of the year in reverse order. Start with the last month and go backwards. So you say December, November, ... .

<table>
<thead>
<tr>
<th><strong>Month</strong></th>
<th><strong>Score</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec-Nov-Oct-Sep-Aug-Jul-Jun-May-Apr-Mar-Feb-Jan</td>
<td>0 1</td>
</tr>
</tbody>
</table>

**Total Score: ** __________ out of 5

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**STEP 4: NEUROLOGICAL SCREEN**

See the instruction sheet (page 7) for details of test administration and scoring of the tests.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double leg stance</td>
<td>of 10</td>
</tr>
<tr>
<td>Single leg stance (non-dominant foot)</td>
<td>of 10</td>
</tr>
<tr>
<td>Tandem stance (non-dominant foot at the back)</td>
<td>of 10</td>
</tr>
<tr>
<td>Total Errors</td>
<td>of 30</td>
</tr>
</tbody>
</table>

**BALANCE EXAMINATION**

Modified Balance Error Scoring System (mBESS) Testing

- Which foot was tested (i.e., which is the non-dominant foot)?
  - Left
  - Right

Testing surface (hard floor, field, etc.)

Footwear (shoes, barefoot, braces, tape, etc.)

**STEP 5: DELAYED RECALL:**

The delayed recall should be performed after 5 minutes have elapsed since the end of the Immediate Recall section. Score 1 pt. for each correct response.

Do you remember that list of words I read a few times earlier? Time as many words from the list as you can remember in any order.

**Time Started**

Please record each word correctly recalled. Total score equals number of words recalled.

**STEP 6: DECISION**

Date and time of injury:

If the athlete is known to you prior to the injury, are they different from their usual self?

- Yes
- No
- Unsure
- Not applicable

If different, describe why in the clinical notes section:

Concussion diagnosis?

- Yes
- No
- Unsure
- Not applicable

If testing, has the athlete improved?

- Yes
- No
- Unsure
- Not applicable

I am a physician or licensed health care professional and have personally administered or supervised the administration of this SCAT5.

Signature: ________________________________

Name: ________________________________

Title: ________________________________

Registration number (if applicable): ________________________________

Date: ________________________________

**SCORING ON THE SCAT5 SHOULD NOT BE USED AS A STAND-ALONE METHOD TO DIAGNOSE CONCUSSION, MEASURE RECOVERY OR MAKE DECISIONS ABOUT AN ATHLETE’S READINESS TO RETURN TO COMPETITION AFTER CONCUSSION.**

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CLINICAL NOTES:

Name: ____________________________
DOB: ____________________________
Address: ____________________________
ID number: ____________________________
Examiner: ____________________________
Date: ____________________________

CONCUSSION INJURY ADVICE
(To be given to the person monitoring the concussed athlete)

This patient has received an injury to the head. A careful medical examination has been carried out and no sign of any serious complications has been found. Recovery time is variable across individuals and the patient will need monitoring for a further period by a responsible adult. Your treating physician will provide guidance as to this timeframe.

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

Other important points:
Initial rest: Limit physical activity to routine daily activities (avoid exercise, training, sports) and limit activities such as school, work, and screen time to a level that does not worsen symptoms.

1) Avoid alcohol
2) Avoid prescription or non-prescription drugs without medical supervision. Specifically:
   a) Avoid sleeping tablets
   b) Do not use aspirin, anti-inflammatory medication or stronger pain medications such as narcotics
3) Do not drive until cleared by a healthcare professional.
4) Return to play/sport requires clearance by a healthcare professional.

Clinic phone number: ____________________________
Patient’s name: ____________________________
Date / time of injury: ____________________________
Date / time of medical review: ____________________________
Healthcare Provider: ____________________________

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Contact details or stamp
INSTRUCTIONS
Words in Italics throughout the SCAT5 are the instructions given to the athlete by the clinician

Symptom Scale
The time frame for symptoms should be based on the type of test being administered. At baseline it is advantageous to assess how an athlete ‘typically’ feels whereas during the acute post-acute stage it is best to ask how the athlete feels at the time of testing.

The symptom scale should be completed by the athlete, not by the examiner. In situations where the symptom scale is being completed after exercise, it should be done in a resting state, generally by approximating his/her resting heart rate.

For total number of symptoms, maximum possible is 22 except immediately post injury, if sleep is omitted, which then creates a maximum of 21.

For Symptom severity score, add all scores in table, maximum possible is 22 x 6 = 132, except immediately post injury if sleep is omitted, which then creates a maximum of 21x6=126.

Immediate Memory
The Immediate Memory component can be completed using the traditional 5-word per trial list or, optionally, using 10-words per trial. The literature suggests that the Immediate Memory has a notable ceiling effect when a 5-word list is used in settings where this ceiling is prominent, the examiner may wish to make the task more difficult by incorporating two 5-word groups for a total of 10 words per trial. In this case, the maximum score per trial is 10 with a total trial maximum of 30.

Choose one of the word lists (either 5 or 10). Then perform 3 trials of Immediate memory using this list.

Complete all 3 trials regardless of score on previous trials.

“I am going to test your memory. I will read you a list of words, and when I am done, note at back as many words as you can remember, in any order.” The word list must be read at a rate of one word per second.

Trials 2 & 3 MUST be completed regardless of score on trial 1 & 2.

Trials 2 & 3
“I am going to repeat the same list again. Repeat back as many words as you can remember in any order, even if you said the word before.”

Score 1 pt. for each correct response. Total score equals sum across all 3 trials.

Do NOT inform the athlete that delayed recall will be tested.

Concentration
Digits backward
Choose a column of digits from lists A, B, C, D, E or F and administer those digits as follows:

Say: “I am going to read a string of numbers and when I am done, repeat them back to me in reverse order of how I read them to you. For example, if I say 7-1-9, you would say 9-1-7.”

Begin with first 3 digit string.

If correct, circle “Y” for correct and go to next string length. If incorrect, circle “N” for the first string length and read trial 2 in the same string length. One point possible for each string length. Stop after incorrect on both trials (2 Ns) in a string length.

The digits should be read at the rate of one per second.

Months in reverse order
“Now tell me the months of the year in reverse order. Start with the last month and go backwards. So you’ll say December, November… Go ahead.”

1 pt. for entire sequence correct.

Delayed Recall
The delayed recall should be performed after 5 minutes have elapsed since the end of the Immediate Recall section.

“Do you remember that list of words I read a few times earlier? Tell me as many words from the list as you can remember in any order.”

Score 1 pt. for each correct response

Modified Balance Error Scoring System (mBESS)® testing
This balance testing is based on a modified version of the Balance Error Scoring System (BESS®). A timing device is required for this testing.

Each of 20-second trial/stance is scored by counting the number of errors. The examiner will begin counting errors only after the athlete has assumed the proper start position. The modified BESS is calculated by adding one error point for each error during the three 20-second tests. The maximum number of errors for any single condition is 10. If the athlete commits multiple errors simultaneously, only one error is recorded but the athlete should quickly return to the testing position, and counting should resume once the athlete is set. Athletes that are unable to maintain the testing procedure for a minimum of five seconds at the start are assigned the highest possible score, 10, for that testing condition.

OPTION: For further assessment, the same 3 stances can be performed on a surface of medium density foam (e.g., approximately 50cm x 40cm x 6cm).

Balance testing = types of errors
1. Hands lifted off iliac crest
2. Opening eyes
3. Step, stumble, or fall
4. Moving hip > 30 degrees abduction
5. Lifting forehead or heel
6. Remaining out of test position > 5 sec

“I am now going to test your balance. Please take your shoes off (if applicable), roll up your pant legs above ankle (if applicable), and remove any ankle taping (if applicable). This test will consist of the two eye conditions with different stances.”

(a) Double leg stance.

“The first stance is standing with your feet together with your hands on your hips and with your eyes closed. Your hands should maintain a stable position for 20 seconds. I will be counting the number of times you move out of this position. I will call you out of position, open your eyes and return to the start position and continue balancing, I will start timing when you are set and have closed your eyes.”

(b) Single leg stance.

“If you were to kick a ball, which foot would you use? [This will be the dominant foot]. Now stand on your non-dominant foot. The dominant leg should be held in approximately 30 degrees of hip flexion and 45 degrees of knee flexion. Again, you should try to maintain stability for 20 seconds with your hands on your hips and your eyes closed. I will be counting the number of times you move out of this position. If you stumble out of this position, open your eyes and return to the start position and continue balancing, I will start timing when you are set and have closed your eyes.”

(c) Tandem stance.

“Now stand heel-to-toe with your non-dominant foot in back. Your weight should be evenly distributed across both feet. Again, you should try to maintain stability for 20 seconds with your hands on your hips and your eyes closed. I will be counting the number of times you move out of this position. If you stumble out of this position, open your eyes and return to the start position and continue balancing, I will start timing when you are set and have closed your eyes.”

Tandem Gait
Participants are instructed to stand with their feet together behind a starting line (the test is best done with footwear removed). Then they walk in a forward direction as quickly and as accurately as possible along a 3.8m wide (sports tape), 3 metre line with an alternate foot heel-to-toe gait ensuring that they approximate their heel and toe on each step. Once they cross the line, they turn 180 degrees and return to the starting point using the same gait. As athletes fall the test if they step off the line, have a separation between their heel and toe, or if they touch or grab the examiner or an object.

Finger to Nose
“I am going to test your coordination now. Please sit comfortably on the chair with your eyes open and your arm (either right or left) outstretched (shoulder flexed to 90 degrees and elbow and fingers extended), pointing in front of you. When I give a start signal, I would like you to perform five successive finger to nose repetitions using your index finger to touch the tip of the nose, and then return to the starting position as quickly and as accurately as possible.”

References

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CONCUSSION INFORMATION

Any athlete suspected of having a concussion should be removed from play and seek medical evaluation.

Signs to watch for
Problems could arise over the first 24-48 hours. The athlete should not be left alone and must go to a hospital at once if they experience:

- Worsening headache
- Drowsiness or inability to be awakened
- Inability to recognize people or places
- Repeated vomiting
- Unusual behavior or confusion or irritable
- Seizures (arms and legs jerk uncontrollably)
- Weakness or numbness in arms or legs
- Unsteadiness on their feet
- Slurred speech

Consult your physician or licensed healthcare professional after a suspected concussion. Remember, it is better to be safe.

Rest & Rehabilitation
After a concussion, the athlete should have physical rest and relative cognitive rest for a few days to allow their symptoms to improve. In most cases, after no more than a few days of rest, the athlete should gradually increase their daily activity level as long as their symptoms do not worsen. Once the athlete is able to complete their usual daily activities without concussion-related symptoms, the second step of the return to play/sport progression can be started. The athlete should not return to play/sport until their concussion-related symptoms have resolved and the athlete has successfully returned to full school/learning activities.

When returning to play/sport, the athlete should follow a stepwise, medically managed exercise progression, with increasing amounts of exercise. For example:

Graduated Return to Sport Strategy

<table>
<thead>
<tr>
<th>Exercise step</th>
<th>Functional exercise at each step</th>
<th>Goal of each step</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Symptom-limited activity</td>
<td>daily activities that do not provoke any symptoms.</td>
<td>Gradual reintroduction of work/school activities.</td>
</tr>
<tr>
<td>2. Light aerobic exercise</td>
<td>Walking or stationary cycling at slow to medium pace. No resistance training.</td>
<td>Increase heart rate.</td>
</tr>
<tr>
<td>4. Non-contact training drills</td>
<td>Harder training drills, e.g., passing drills. May start progressive resistance training.</td>
<td>Exercise, coordination, and increased heart rate.</td>
</tr>
<tr>
<td>5. Full contact practice</td>
<td>Following medical clearance, participate in normal training activities.</td>
<td>Restore confidence and reassess functional skills by coaching staff.</td>
</tr>
<tr>
<td>6. Return to play/sport</td>
<td>Normal gameplay.</td>
<td></td>
</tr>
</tbody>
</table>

Graduated Return to School Strategy
Concussion may affect the ability to learn at school. The athlete may need to miss a few days of school after a concussion. When going back to school, some athletes may need to go back gradually and may need to have some changes made to their schedule so that concussion symptoms do not get worse. If a particular activity makes symptoms worse, then the athlete should stop that activity and rest until symptoms get better. To make sure that the athlete can get back to school without problems, it is important that the healthcare provider, parents, caregivers and teachers talk to each other so that everyone knows what the plan is for the athlete to go back to school.

Note: If mental activity does not cause any symptoms, the athlete may be able to skip step 2 and return to school part-time before doing school activities at home first.

<table>
<thead>
<tr>
<th>Mental Activity</th>
<th>Activity at each step</th>
<th>Goal of each step</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Daily activities that do not give the athlete symptoms</td>
<td>Typical activities that the athlete does during the day. As long as they do not increase symptoms (e.g., reading, texting, screen time). Start with 6-15 minutes at a time and gradually build up.</td>
<td>Gradual return to typical activities.</td>
</tr>
<tr>
<td>2. School activities</td>
<td>Homework, reading or other cognitive activities outside of the classroom.</td>
<td>Increase tolerance of cognitive work.</td>
</tr>
<tr>
<td>3. Return to school part-time</td>
<td>Gradual introduction of schoolwork. May need to start with a partial school day or with increased breaks during the day.</td>
<td>Increase academic activities.</td>
</tr>
<tr>
<td>4. Return to school full-time</td>
<td>Gradually progress school activities until a full day can be tolerated.</td>
<td>Return to full academic activities and catch up on missed work.</td>
</tr>
</tbody>
</table>

If the athlete continues to have symptoms with mental activity, some other accommodations that can help with return to school may include:

- Starting school later, only going for half days, or only on certain classes
- More time to finish assignments/tests
- Quiet room to finish assignments/tests
- Not going to noisy areas like the cafeteria, assembly halls, sporting events, music class, shop class, etc.
- Taking lots of breaks during class, homework, tests
- No more than one exam/day
- Shorter assignments
- Repetition/memory cues
- Use of a student helper/tutor
- Reassurance from teachers that the child will be supported while getting better

The athlete should not go back to sports until they are back to school/learning, without symptoms getting significantly worse and no longer needing any changes to their schedule.

Written clearance should be provided by a healthcare professional before return to play/sport as directed by local laws and regulations.

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Appendix 4: Child-SCAT5

Child SCAT5®
SPORT CONCUSSION ASSESSMENT TOOL
FOR CHILDREN AGES 5 TO 12 YEARS
FOR USE BY MEDICAL PROFESSIONALS ONLY

supported by

Patient details
Name: ____________________________
DOB: ____________________________
Address: ____________________________
ID number: ____________________________
Examiner: ____________________________
Date of Injury: ____________________________ Time: ____________________________

WHAT IS THE CHILD SCAT5?

The Child SCAT5 is a standardized tool for evaluating concussions designed for use by physicians and licensed healthcare professionals.

If you are not a physician or licensed healthcare professional, please use the Concussion Recognition Tool 5 (CRT5). The Child SCAT5 is to be used for evaluating Children aged 5 to 12 years. For athletes aged 13 years and older, please use the SCAT5.

Preseason Child SCAT5 baseline testing can be useful for interpreting post-injury test scores, but not required for that purpose. Detailed instructions for use of the Child SCAT5 are provided on page 7. Please read through these instructions carefully before testing the athlete. Brief verbal instructions for each test are given in italics. The only equipment required for the tester is a watch or timer.

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Recognise and Remove

A head impact by either a direct blow or indirect transmission of force can be associated with a serious and potentially fatal brain injury. If there are significant concerns, including any of the red flags listed in Box 1, then activation of emergency procedures and urgent transport to the nearest hospital should be arranged.

Key points
• Any athlete with suspected concussion should be REMOVED FROM PLAY, medically assessed and monitored for deterioration. No athlete diagnosed with concussion should be returned to play on the day of injury.
• If the child is suspected of having a concussion and medical personnel are not immediately available, the child should be referred to a medical facility for urgent assessment.
• Concussion signs and symptoms evolve over time and it is important to consider repeat evaluation in the assessment of concussion.
• The diagnosis of a concussion is a clinical judgment, made by a medical professional. The Child SCAT5 should NOT be used by itself to make, or exclude, the diagnosis of concussion. An athlete may have a concussion even if their Child SCAT5 is “normal”.

Remember:
• The basic principles of first aid (danger, response, airway, breathing, circulation) should be followed.
• Do not attempt to move the athlete (other than that required for airway management) unless trained to do so.
• Assessment for a spinal cord injury is a critical part of the initial on-field assessment.
• Do not remove a helmet or any other equipment unless trained to do so safely.

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**IMMEDIATE OR ON-FIELD ASSESSMENT**

The following elements should be assessed for all athletes who are suspected of having a concussion prior to proceeding to the neurocognitive assessment and ideally should be done on-field after the first first aid / emergency care priorities are completed.

If any of the “Red Flags” or observable signs are noted after a direct or indirect blow to the head, the athlete should be immediately and safely removed from participation and evaluated by a physician or licensed healthcare professional.

Consideration of transportation to a medical facility should be at the discretion of the physician or licensed healthcare professional.

The GCS is an important as a standard measure for all patients and can be done serially if necessary in the event of deterioration in conscious state. The cervical spine exam is a critical step of the immediate assessment, however, it does not need to be done serially.

**STEP 1: RED FLAGS**

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

**STEP 2: OBSERVABLE SIGNS**

<table>
<thead>
<tr>
<th>Observational Sign</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of consciousness while on field</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance / gait difficulties / motor incoordination</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orientation / confusion / inability to respond</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black / vacant look</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facial injury after head trauma</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**STEP 3: EXAMINATION**

**GLASGOW COMA SCALE (GCS)**

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best eye response (E)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No eye opening</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Eye opening to pain</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Eye opening to speech</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Eyes opening spontaneously</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Best verbal response (V)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal response</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incomprehensible sounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inappropriate words</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confused</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Oriented</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

**CERVICAL SPINE ASSESSMENT**

Does the athlete report that their neck is pain free at rest? Y N

If there is NO neck pain at rest, does the athlete have a full range of AC/TE/PA movement? Y N

Is their strength and sensation normal? Y N

**OFFICE OR OFF-FIELD ASSESSMENT**

**STEP 1: ATHLETE BACKGROUND**

Please note that the neurocognitive assessment should be done in a distraction-free environment with the athlete in a resting state.

Sport / team / school: ___________________________

Date / time of injury: ___________________________

Years of education completed: ___________________

Age: __________________

Gender: M / F / Other

Dominant hand: left / neither / right

How many concussions has the athlete had in the past? ___________________________

When was the most recent concussion? ___________________________

How long was the recovery (time to being cleared to play)? __________________________

If the athlete ever been: Y N

- Had a fall for a head injury?
- Diagnosed / treated for headache disorder or migraines?
- Diagnosed with a learning disability / dyslexia?
- Diagnosed with ADD / ADHD?
- Diagnosed with depression, anxiety or other psychiatric disorder?

Current medications? Y N, please list: __________________________

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STEP 2: SYMPTOM EVALUATION

The athlete should be given the symptom form and asked to rate his or her symptoms based on how he/she normally feels and how he/she feels after a head impact or traumatic brain injury. The athlete should rate his or her symptoms at that point in time.

To be done in a resting state

Please Check: □ Baseline □ Post-Injury

### Child Report

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Not at all/ Never</th>
<th>A little/ Flurry</th>
<th>Somewhat/ Sometimes</th>
<th>A lot/ Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have headaches</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I feel dizzy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I feel like the room is spinning</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I feel like I’m going to faint</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Things are blurry when I look at them</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I see double</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>My neck hurts</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I get tired of it</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I get tired easily</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I have trouble paying attention on</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I get distracted easily</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I have a hard time concentrating</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I have problems remembering what people tell me</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I have problems following directions</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I daydream too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I get confused</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I forget things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I have problems finishing things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I have trouble figuring things out</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>It’s hard for me to learn new things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total number of symptoms:</strong></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Symptom severity score:</strong></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

**Overall rating for child to answer:**

- Very bad
- Very good

0 as normal, how do you feel now?

If not 10, in what way do you feel different?

### Parent Report

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Not at all/ Never</th>
<th>A little/ Flurry</th>
<th>Somewhat/ Sometimes</th>
<th>A lot/ Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have headaches</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I feel dizzy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I feel like the room is spinning</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I feel like I’m going to faint</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Things are blurry when I look at them</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I see double</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>My neck hurts</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I get tired of it</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I get tired easily</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I have trouble paying attention on</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I get distracted easily</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I have a hard time concentrating</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I have problems remembering what people tell me</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I have problems following directions</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I daydream too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I get confused</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I forget things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I have problems finishing things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I have trouble figuring things out</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>It’s hard for me to learn new things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total number of symptoms:</strong></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Symptom severity score:</strong></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

**Overall rating for child to answer:**

- Very bad
- Very good

0 as normal, how do you feel now?

If not 10, in what way do you feel different?

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**STEP 3: COGNITIVE SCREENING**

**Immediate Memory**

The Immediate Memory component can be completed using the traditional 5-word per trial list or optionally using 10-words per trial to minimise any ceiling effect. All 3 trials must be administered irrespective of the number correct on the first trial. Administer at the rate of one word per second.

Please choose EITHER the 5 or 10 word list groups and circle the specific word list chosen for this test.

I am going to test your memory. I will read you a list of words and when I am done, repeat back as many words as you can remember, in any order. For Trials 2 & 3 I am going to repeat the same list again. Repeat back as many words as you can remember in any order, even if you said the word before.

<table>
<thead>
<tr>
<th>List</th>
<th>Alternate 5 word lists</th>
<th>Score (of 6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Finger, Penny, Blanket, Lemon, Insect</td>
<td>Trial 1 Trial 2 Trial 3</td>
</tr>
<tr>
<td>B</td>
<td>Candle, Paper, Sugar, Sandwich, Wagon</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Baby, Monkey, Perfume, Sunset, Iron</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Elbow, Apple, Carpet, Saddle, Bubble</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Jacket, Arrow, Pepper, Cotton, Movie</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Dollar, Honey, Mirror, Saddle, Anular</td>
<td></td>
</tr>
</tbody>
</table>

Immediate Memory Score of 15

Time that last trial was completed

<table>
<thead>
<tr>
<th>List</th>
<th>Alternate 10 word lists</th>
<th>Score (of 10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>Finger, Penny, Blanket, Lemon, Insect, Candle, Paper, Sugar, Sandwich, Wagon, Elbow, Apple</td>
<td>Trial 1 Trial 2 Trial 3</td>
</tr>
<tr>
<td>H</td>
<td>Baby, Monkey, Perfume, Sunset, Iron, Elbow, Apple, Carpet, Saddle, Bubble</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>Jacket, Arrow, Pepper, Cotton, Movie, Dollar, Honey, Mirror, Saddle, Anular</td>
<td></td>
</tr>
</tbody>
</table>

Immediate Memory Score of 30

Time that last trial was completed

**Concentration**

**Digits Backwards**

Please circle the Digit list chosen (A, B, C, D, E, F). Administer at the rate of one digit per second reading DOWN the selected column.

I am going to read a string of numbers and when I am done, repeat them back to me in reverse order of how I read them to you. For example, 1, 2, 3 I say 3, 2, 1, you would say 1, 2, 3.

<table>
<thead>
<tr>
<th>Concentration Number Lists (circle one)</th>
<th>List A</th>
<th>List B</th>
<th>List C</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-2</td>
<td>4-1</td>
<td>4-9</td>
<td>Y N 0</td>
</tr>
<tr>
<td>4-1</td>
<td>9-4</td>
<td>6-2</td>
<td>Y N 1</td>
</tr>
<tr>
<td>4-9-3</td>
<td>5-2-6</td>
<td>1-4-2</td>
<td>Y N 0</td>
</tr>
<tr>
<td>6-2-9</td>
<td>4-5-6</td>
<td>6-5-8</td>
<td>Y N 1</td>
</tr>
<tr>
<td>3-8-1-4</td>
<td>1-7-9-5</td>
<td>6-9-3-1</td>
<td>Y N 0</td>
</tr>
<tr>
<td>3-3-7-9</td>
<td>4-9-6-8</td>
<td>3-6-9-1</td>
<td>Y N 1</td>
</tr>
<tr>
<td>6-2-9-7-1</td>
<td>4-8-5-2-7</td>
<td>4-9-1-5-3</td>
<td>Y N 0</td>
</tr>
<tr>
<td>1-5-2-8-6</td>
<td>6-1-8-0-3</td>
<td>6-8-2-5-1</td>
<td>Y N 1</td>
</tr>
<tr>
<td>7-1-0-8-6-2</td>
<td>8-3-1-9-6-4</td>
<td>3-7-6-5-9</td>
<td>Y N 0</td>
</tr>
<tr>
<td>5-9-9-1-4-8</td>
<td>7-2-4-8-5-6</td>
<td>9-2-6-9-1-4</td>
<td>Y N 1</td>
</tr>
</tbody>
</table>

**Days in Reverse Order**

Now fill in the days of the week in reverse order. Start with the last day and go backward. So you say Sunday, Saturday, Friday.

<table>
<thead>
<tr>
<th>Days Score</th>
<th>0 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days Score of 1</td>
<td></td>
</tr>
</tbody>
</table>

**Concussion in Sport Group 2017**
STEP 4: NEUROLOGICAL SCREEN

See the instruction sheet (page 7) for details of test administration and scoring of the test.

Can the patient read aloud (e.g. sentence) and follow instructions without difficulty?

<table>
<thead>
<tr>
<th></th>
<th>Y</th>
<th>N</th>
</tr>
</thead>
</table>

Does the patient have a full range of pain-free passive cervical spine movement?

<table>
<thead>
<tr>
<th></th>
<th>Y</th>
<th>N</th>
</tr>
</thead>
</table>

Without moving their head or neck, can the patient look side-to-side and up-and-down without double vision?

<table>
<thead>
<tr>
<th></th>
<th>Y</th>
<th>N</th>
</tr>
</thead>
</table>

Can the patient perform the finger nose coordination test normally?

<table>
<thead>
<tr>
<th></th>
<th>Y</th>
<th>N</th>
</tr>
</thead>
</table>

Can the patient perform tandem gait normally?

<table>
<thead>
<tr>
<th></th>
<th>Y</th>
<th>N</th>
</tr>
</thead>
</table>

BALANCE EXAMINATION

Modified Balance Error Scoring System (BESS) testing

<table>
<thead>
<tr>
<th>Condition</th>
<th>Right leg stance</th>
<th>Left leg stance (non-dominant foot)</th>
<th>Tandem stance (non-dominant foot at back)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Errors</td>
<td>of 10</td>
<td>of 10</td>
<td>of 10</td>
</tr>
</tbody>
</table>

Total Errors

<table>
<thead>
<tr>
<th></th>
<th>0-4 yrs</th>
<th>5-9 yrs</th>
<th>10-12 yrs</th>
<th>13 yrs</th>
</tr>
</thead>
</table>

STEP 5: DELAYED RECALL:

The delayed recall should be performed after 5 minutes have elapsed since the end of the Immediate Recall section. Score 1 pt. for each correct response.

Do you remember that list of words I read a few times earlier? Time as many words from the list as you can remember in any order.

**Time Started**

Please record each word correctly recalled. Total score equals number of words recalled.

**Total number of words recalled accurately:**

<table>
<thead>
<tr>
<th></th>
<th>of 5</th>
<th>of 10</th>
</tr>
</thead>
</table>

STEP 6: DECISION

Date and time of injury: __________________________

If the athlete is known to you prior to the injury, are they different from their usual self?

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Unsure</th>
<th>Not Applicable</th>
</tr>
</thead>
</table>

If different, describe why in the clinical notes section.

Concussion diagnoses?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Unsure</th>
<th>Not Applicable</th>
</tr>
</thead>
</table>

If there has been an athlete's injury, has the athlete improved?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Unsure</th>
<th>Not Applicable</th>
</tr>
</thead>
</table>

I am a physician or licensed healthcare professional and I have personally administered or supervised the administration of this Child SCAT5:

Signature: __________________________

Name: __________________________

Title: __________________________

Registration number (if applicable): __________________________

Date: __________________________

SCORING ON THE CHILD SCAT5 SHOULD NOT BE USED AS A STAND-ALONE METHOD TO DIAGNOSE CONCUSSION, MEASURE RECOVERY OR MAKE DECISIONS ABOUT AN ATHLETE’S READINESS TO RETURN TO COMPETITION AFTER CONCUSSION.
For the Neurological Screen (page 5), if the child cannot read, ask him/her to describe what they see in this picture.

CLINICAL NOTES:


Concussion injury advice for the child and parents/caregivers

(To be given to the person monitoring the concussed child)

This child has had an injury to the head and needs to be carefully watched for the next 24 hours by a responsible adult.

If you notice any change in behavior, vomiting, dizziness, worsening headache, double vision or excessive drowsiness, please call an ambulance to take the child to hospital immediately.

Other important points:

Following concussion, the child should rest for at least 24 hours.

- The child should not use a computer, internet or play video games if these activities make symptoms worse.
- The child should not be given any medications, including pain killers, unless prescribed by a medical doctor.
- The child should not go back to school until symptoms are improving.
- The child should not go back to sport or play until a doctor gives permission.

Clinic phone number: __________________________

Patient’s name: __________________________

Date / time of injury: __________________________

Date / time of medical review: __________________________

Healthcare Provider: __________________________

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Contact details or stamp
INSTRUCTIONS

Words in italics throughout the Child SCAT5 are the instructions given to the athlete by the clinician.

Symptom Scale

In situations where the symptom scale is being completed after exercise, it should still be done in a resting state, at least 10 minutes post exercise.

At Baseline
- The child is to complete the Child Report, according to how they feel today.
- The parent/carer is to complete the Parent Report according to how the child has been over the previous week.
- The child is to complete the Child Report, according to how the child feels today.
- The child has a history of a long-standing condition and the clinician decides whether to complete the report.
- The child is to complete the Child Report, according to how the child feels today and according to how the clinician decides.

For Total number of symptoms, maximum possible is 21.

For Symptom severity score, add all scores in table, maximum possible is 21 x 3 = 63.

Standardized Assessment of Concussion Child Version (SAC-C)

Immediate Memory

Choose one of the 5-word lists. Then perform 3 trials of immediate memory using this list. Complete all 3 trials of immediate memory on previous trials.

"I am going to test your memory, I will read you a list of words and then I will ask you to repeat back to me any words you can remember in any order."

The words must be read at a rate of one word per second.

OPTION: The literature suggests that immediate memory has a notable ceiling effect when 5-word lists are used. If younger children use the 5-word list, in situations where the ceiling is prominent the examiner may wish to make the task more difficult by incorporating two 5-word groups for a total of 10 words per trial. Choose one of the 5-word lists and complete all 3 trials of immediate memory. The maximum total number of errors for any single condition is 10. If the child commits multiple errors simultaneously, only one error is recorded but the child should quickly return to the testing position, and continue with the rest of the test. Children who are unable to maintain the testing procedure for a minimum of five seconds at the start are assigned the highest possible score, ten, for that testing condition.

Concentration

Digits backward

Choose a column only, for List A, B, C, D, E or F, and administer the task as follows.

"I am going to read you some numbers and when I am done, you say them back to me backward, in reverse order of how I read them to you, for example, if I say 7-1, you would say 1-7.

If correct, circle “Y” for correct and go to next string length. If incorrect, circle “N” for the first string length and read trial 2 in the same string length. One point possible for each string length. Stop after incorrect on both trials (2 N’s) in a string length. The digits should be read at the rate of one per second.

Days of the week in reverse order

"Now tell me the days of the week in reverse order, Start with Sunday and go backword. So you’ll say Sunday, Saturday, ... Go ahead"

1 pt. for entire sequence correct.

Delayed Recall

The delayed recall should be performed after at least 5 minutes have elapsed since the end of the form A or Recall section.

"Do you remember all of the words I read a few times earlier? Tell me as many words from the list as you can remember in any order."

Circle each word correctly recalled, Total score equals number of words recalled.

Neurological Screen

Reading

The child is asked to read a paragraph of text from the instructions in the Child SCAT5. For children who cannot read, they are asked to describe what they see in a photograph or picture, such as the picture on page 6 of the Child SCAT5.

Modified Balance Error Scoring System (mBEss)

These instructions are to be read by the person administering the ChildSCAT and each balance task should be demonstrated to the child. The child should then be asked to copy what the examiner demonstrated.

Each of 20-second trial/stance is scored by counting the number of errors. This balance testing is based on a modified version of the Balance Error Scoring System (BEss).

A stopwatch or watch with a second hand is required for this testing.

"I am now going to test your balance. Please take your shoes off, roll up your pants above your ankle (if applicable), and remove any ankle taping (if applicable). This test will consist of two different parts."

(a) Double leg stance:

The first stance is standing with the feet together with hands on hips and with eyes closed. The child should try to maintain stability in that position for 20 seconds. You should inform the child/difficult to see in the moment of time the child moves out of this position. You should start timing when the child is set and the eyes are closed.

(b) Tandem stance:

Instruct or show the child how to stand heel-to-toe with the non-dominant foot in the back. Weight should be evenly distributed across both feet. Again, the child should try to maintain stability for 20 seconds with hands on hips and eyes closed. You should inform the child that you will be counting the number of times the child moves out of this position. If the child moves out of this position, you should bring the child to the start position and continue balancing. You should start timing when the child is set and the eyes are closed.

(c) Single leg stance (10-12 year olds only):

If you were to kick a ball, which foot would you use? This will be the dominant foot.

Now stand on your other foot, You should stand your other leg and hold it up (show the child). Again, try to stand in that position for 20 seconds with your hands on your hips and your eyes closed. I will be counting the number of times you move out of this position. If you move out of this position, open your eyes and return to the start position and keep balancing. I will start timing when you are set and have closed your eyes."

Balance testing — types of errors

1. Hand lifted off
2. Stab, stumble, or fall
3. Moving hips into >30 degrees abduction
4. Moving hips into >30 degrees adduction
5. Lifting for foot or head
6. Remaining out of test position >5 sec

Each of the 20-second trials is scored by counting the errors, or deviations from the proper stance, accumulated by the child. The examiner will begin counting errors only after the child has assumed the proper start position. The modified BEss is calculated by adding one error point for each error during the testing period. The total maximum number of errors for any single condition is 10. If the child commits multiple errors simultaneously, only one error is recorded but the child should quickly return to the testing position, and continue with the rest of the test. Children who are unable to maintain the testing procedure for a minimum of five seconds at the start are assigned the highest possible score, ten, for that testing condition.

Tandem Gait

Instruction for the examiner - Demonstrate the following to the child:

"The child is instructed to stand with their feet together behind a starting line (the line is best done with footwear removed). Then they walk in a forward direction as quickly and accurately as possible along a 38 mm wide (20 mm tape) 3 metre line with an alternate foot heel-to-toe gait ensuring that they approximate their heel and toe on each step. Once they reach the end of the 3m line, they return to the starting point using the same gait. Children fail the test if they step off the line, have a separation between their heel and toe, or if they touch or grab the examiner as an object."

Finger to Nose

The tester should demonstrate it to the child,

"I am going to test your coordination now, Please sit comfortably on the chair with your eyes open and your arm (either right or left) outstretched (shoulder flexed to 90 degrees and elbow and fingers extended). When I give a start signal, I would like you to perform five successive finger to nose repetitions using your index finger to touch the tip of the nose as quickly and as accurately as possible."

Scoring: 5 correct repetitions in <4 seconds = 1

Note for testers: Children fail the test if they do not touch their nose, do not fully extend their elbow or do not perform five repetitions.

References


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CONCUSSION INFORMATION

If you think you or a teammate has a concussion, tell your coach/trainer/parent right away so that you can be taken out of the game. You or your teammate should be seen by a doctor as soon as possible. YOU OR YOUR TEAMMATE SHOULD NOT GO BACK TO PLAY/SPORT THAT DAY.

Signs to watch for

Problems can happen over the first 24-48 hours. You or your teammate should not believe alone and must go to a hospital right away if any of the following happens:

- New headache, or headache gets worse
- Neck pain that gets worse
- Becomes sleepy, drowsy, or can't be woken up
- Cannot recognize people or places
- Feels sick to your stomach or vomiting
- Feeling weak or tired
- Has weakness, numbness or tingling (arms, legs or face)
- Has any seizures (arms and/or leg jerk uncontrollably)
- Is unsteady walking or standing
- Talking is slurred
- Cannot understand what someone is saying or directions

Consult your physician or licensed healthcare professional after a suspected concussion. Remember, it is better to be safe.

Graduated Return to Sport Strategy

After a concussion, the child should rest physically and mentally for a few days to allow symptoms to get better in most cases, after a few days of rest, they can gradually increase their daily activity level as long as symptoms don't get worse. Once they are able to do their usual daily activities without symptoms, the child should gradually increase exercise in steps, guided by the healthcare professional (see below).

The athlete should not return to play/sport the day of injury.

NOTE: An initial period of a few days of both cognitive ("thinking") and physical rest is recommended before beginning the Return to Sport progression.

Graduated Return to School Strategy

Concussion may affect the ability to learn at school. The child may need to miss a few days of school after a concussion, but the child's doctor should help them get back to school after a few days. When going back to school, some children may need to go back gradually and may need to have some changes made to their schedule so that concussion symptoms don't get a lot worse. If a particular activity makes symptoms a lot worse, then the child should stop that activity and rest until symptoms get better.

To make sure that the child can get back to school without problems, it is important that the health care provider, parents/caregivers and teachers talk to each other so that everyone knows what the plan is for the child to go back to school.

Note: If mental activity does not cause any symptoms, the child may be able to return to school part-time without doing school activities at home first.

<table>
<thead>
<tr>
<th>Mental Activity</th>
<th>Activity at each step</th>
<th>Goal of each step</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Daily activities that do not give the child symptoms</td>
<td>Typical activities that the child does during the day as long as they do not increase symptoms (e.g. reading, testing, screen time). Start with 5-15 minutes at a time and gradually build up.</td>
<td>Gradual return to typical activities.</td>
</tr>
<tr>
<td>2. School activities</td>
<td>Homework, reading or other cognitive activities outside of the classroom.</td>
<td>Increase tolerance to cognitive work.</td>
</tr>
<tr>
<td>3. Return to school part-time</td>
<td>Gradual introduction of school work. May need to start with a partial school day or with increased breaks during the day.</td>
<td>Increase academic activities.</td>
</tr>
<tr>
<td>4. Return to school full-time</td>
<td>Gradually progress school activities until a full day can be tolerated.</td>
<td>Return to full academic activities and catch up on missed work.</td>
</tr>
</tbody>
</table>

If the child continues to have symptoms with mental activity, some other things that can be done to help with return to school may include:

- Starting school later, only going for half days, or only to certain classes
- Taking lots of breaks during class, homework, tests
- More time to finish assignments/tests
- No more than one exam/day
- Shorter assignments
- Quiet room to finish assignments/tests
- Repetition/memory cues
- Use of a student helper/tutor
- Reassurance from teachers that the child will be supported while getting better

The child should not go back to sports until they are back to school/learning, without symptoms getting significantly worse and no longer needing any changes to their schedule.

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There should be at least 24 hours (or longer) for each step of the progression. If any symptoms worsen while exercising, the athlete should go back to the previous step. Resistance training should be added only in the later stages (Stage 3 or 4 at the earliest). The athlete should not return to sport until if the concussion symptoms have gone, they have successfully returned to full school/learning activities, and the healthcare professional has given the child written permission to return to sport.

If the child has symptoms for more than a month, they should ask to be referred to a healthcare professional who is an expert in the management of concussion.
**Appendix 5: Australian Sailing Graded Return To Sport (GRTS) Program**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Aims</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1</td>
<td>Light aerobic activity</td>
<td>15 mins of steady heart rate physical activity, at 60-70% of maximum predicted heart rate</td>
</tr>
</tbody>
</table>
| Stage 2 | Cardio activities  
Aim to increase heart rate and blood pressure | 30 mins steady heart rate activity  
- first 15 minutes at 60-70% of max predicted HR  
- next 15 minutes at 70-85% of max predicted HR  
Note: hot environments are an additional stressor, physiologically and cognitively. Outdoor activity can be incorporated here |
| Stage 3 | Sport Specific Drills which are non-contact  
May add resistance training | Dryland functional tests for example:  
- Stepping lightly as though moving across the boat  
- Ducking under a hurdle as though ducking under a boom  
- Duck Walk in different directions  
- Landings  
- Rolls  
- Hiking practice  
Weights session |
| Stage 4 | Return to boat if cleared medically | Straight lines
Avoid skills session
Avoid rapid tacks and gybes
Limit time and intensity as discussed with medical/physio |
| Stage 5 | Increase tactical manoeuvres | Gybes and tacks |
| Stage 6 | Full training - Increased speed and difficulty of tasks | Unrestricted Training
Capsizes
Challenging situations
Racing |
Appendix 6: Accessing the SCAT5 Concussion Symptom Evaluation on AMS

Athletes and coaches can see the SCAT5 symptom list only when they log in to AMS.

The full SCAT5 form is available to health providers under Screening > SCAT5 Full Evaluation.

Select add a New SCAT5 evaluation. This will take you through to the form with full step-by-step instructions on how to run the SCAT5.

If you are seeing the athlete acutely, or for the first time after the concussion, please enter all requested data.

If you are just repeating the SCAT5 Concussion Symptom Evaluation, you can select the “Athlete” role at the top of the form to display this section only. Make sure to select Save & Close before leaving the page.
Step 2: Symptom Evaluation

The athlete should be given the symptom form and asked to read this instruction paragraph out loud then complete the symptom scale. For the baseline assessment, the athlete should rate his/her symptoms based on how he/she typically feels and for the post injury assessment the athlete should rate their symptoms at this point in time.

Scoring:
0 = None
1-2 = Mild
3-4 = Moderate
5-6 = Severe

Please hand the form to the athlete.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure in Head</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neck Pain</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Nausea or Vomiting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dizziness</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>