



What is the SCAT3?

The SCAT 3 is a standardised tool for evaluation injured athletes for concussion and can be used in athletes aged from 13 years and older. It supersedes the original SCAT and the SCAT2 published in 2005 and 2009, respectively.

NOTE: The diagnosis of a concussion is a clinical judgment, ideally made by a medical professional. The SCAT3 should not be used solely to make, or exclude, the diagnosis of concussion in the absence of clinical judgment. An athlete may have a concussion even if their SCAT3 is "normal". If you are not qualified, please use the Complete Concussion Test Tool.

A concussion is a disturbance in brain function caused by a direct or indirect force to the head. It results in a variety of non-specific signs and/or symptoms (some examples listed below) and most often does not involve loss of consciousness. Concussion should be suspected in the presence of **any one or more** of the following:

- a) Symptoms: somatic (e.g. headache), or
- b) Physical signs (e.g. unsteadiness), or
- c) Impaired brain function (e.g. confusion) or
- d) Abnormal behaviour (e.g., change in personality).

SIDELINE ASSESSMENT

Indication for Emergency Management

NOTE: A hit to the head can sometimes be associated with a more serious brain injury. Any of the following warrants consideration to activating emergency procedures and urgent transportation to the nearest hospital:

- Glasgow Coma score less than 15
- Deteriorating mental status
- Potential spinal injury
- Progressive, worsening symptoms or new neurologic signs.

Potential signs of concussion?

If any of the following signs are observed after a direct or indirect blow to the head, the rider should stop participation, be evaluated by a medical professional and **should not be permitted to return to sport the same day** if a concussion is suspected.

Any loss of consciousness? Y N
 "If so, how long?"

 Balance or motor coordination Y N
 (Stumbles, slow, laboured movements etc.?)

 Disorientation or confusion Y N
 (Inability to respond appropriately to questions?)

 Loss of Memory Y N
 "If so, how long?"
 "Before or after the injury?"

 Blank or vacant look Y N
 Visible facial injury in combination with any of the above Y N

1 Glasgow Coma Scale (GCS)	
Best Eye Response (E)	
No eye opening	1
Eye opening in response to pain	2
Eye opening to speech	3
Eyes opening spontaneously	4
Best Verbal Response (V)	
No verbal response	1
Incomprehensible sounds	2
Inappropriate words	3
Confused	4
Oriented	5
Best Motor Response (M)	
No motor response	1
Extension to pain	2
Abnormal flexion to pain	3
Flexion/Withdrawal to pain	4
Localizes to pain	5
Obeys commands	6
Glasgow Coma Score (E+V+M)	of 15
GCS should be recorded for all athletes in case of subsequent deterioration.	

2 Maddocks Score		
"I am going to ask you a few questions, please listen carefully and give your best effort." (1 point for each correct answer)		
What venue are we at today?	0	1
Which half is it now?	0	1
Who scored last in this match?	0	1
What team did you play last week / game?	0	1
Did your team win the last game?	0	1
Maddocks Score	of 5	

Notes: Mechanism of Injury ("tell me what happened?"):

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Any player with a suspected concussion should be REMOVED FROM PLAY, medically assessed, monitored for deterioration (i.e. should not be left alone) and should not drive a motor vehicle until cleared to do so by a medical professional. No player diagnosed with concussion should be returned to sports participation on the day of injury.

BACKGROUND

Name: Date:

Examiner:

Sport/Team/School: Date/time of injury:

Age: Gender: Male Female

Years of education completed:

Dominant hand: Right Left Neither

How many concussions do you think you have had in the past?

When was the most recent concussion?

How long was your recovery from the most recent concussion?

Have you ever been hospitalized or had medical imaging done for a head injury? Yes No

Have you ever been diagnosed with headaches or migraines? Yes No

Do you have a learning disability, dyslexia, ADD/ADHD? Yes No

Have you ever been diagnosed with depression, anxiety or other psychiatric disorder? Yes No

Has anyone in your family ever been diagnosed with any of these problems? Yes No

Are you on medications? If yes, please list: Yes No

SCAT3 to be done in resting state.

Best done 10 or more minutes post exercise.

SYMPTOM EVALUATION

3 How do you feel?

"You should score yourself on the following symptoms, based on how you feel now".

	None	Mild		Moderate		Severe	
Headache	0	1	2	3	4	5	6
"Pressure in head"	0	1	2	3	4	5	6
Neck Pain	0	1	2	3	4	5	6
Nausea or vomiting	0	1	2	3	4	5	6
Dizziness	0	1	2	3	4	5	6
Blurred vision	0	1	2	3	4	5	6
Balance problems	0	1	2	3	4	5	6
Sensitivity to light	0	1	2	3	4	5	6
Sensitivity to noise	0	1	2	3	4	5	6
Feeling slowed down	0	1	2	3	4	5	6
Feeling like "in a fog"	0	1	2	3	4	5	6
"Don't feel right"	0	1	2	3	4	5	6
Difficulty concentrating	0	1	2	3	4	5	6
Difficulty remembering	0	1	2	3	4	5	6
Fatigue or low energy	0	1	2	3	4	5	6
Confusion	0	1	2	3	4	5	6
Drowsiness	0	1	2	3	4	5	6
Trouble falling asleep	0	1	2	3	4	5	6
More emotional	0	1	2	3	4	5	6
Irritability	0	1	2	3	4	5	6
Sadness	0	1	2	3	4	5	6
Nervous or Anxious	0	1	2	3	4	5	6

Total number of symptoms (Maximum possible 22)

Symptom severity score (Maximum possible 132)

Do the symptoms get worse with physical activity? Yes No

Do the symptoms get worse with mental activity? Yes No

Self rated Self rated and clinician monitored

Clinician interview Self rated with parent input

Overall rating: If you know the athlete well prior to the injury, how different is the athlete acting compared to his/her usual self.

Please circle one response:

No different	Very different	Unsure	N/A
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4 Cognitive Assessment

Standardized Assessment of Concussion (SAC)

Orientation (1 point for each correct answer)

What month is it?	0	1
What is the date today?	0	1
What is the day of the week?	0	1
What year is it?	0	1
What time is it right now? (within 1 hour)	0	1

Orientation Score

of 5

Immediate Memory

"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."

List	Trial 1		Trial 2		Trial 3		Alternative word list		
elbow	0	1	0	1	0	1	candle	baby	finger
apple	0	1	0	1	0	1	paper	monkey	penny
carpet	0	1	0	1	0	1	sugar	perfume	blanket
saddle	0	1	0	1	0	1	sandwich	sunset	lemon
bubble	0	1	0	1	0	1	wagon	iron	insect

Immediate Memory Score

of 15

Concentration

Digits Backwards:

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

If correct, go to next string length. If correct, read trial 2. One point possible for each string length. Stop after incorrect on both trials. The digits should be read at the rate of one per second.

4-9-3	0	1	6-2-9	5-2-6	4-1-5
3-8-1-4	0	1	3-2-7-9	1-7-9-5	4-9-6-8
6-2-9-7-1	0	1	1-5-2-8-6	3-8-5-2-7	6-1-8-4-3
7-1-8-4-6-2	0	1	5-3-9-1-4-8	8-3-1-9-6-4	7-2-4-8-5-6

Total

of 4

Months in Reverse Order

"Now tell me the months of the year in reverse order. Start with the last month and go backward. So you'll say December, November...Go ahead."

1 pt. for entire sequence correct.

Dec-Nov-Oct-Sep-Aug-Jul-Jun-May-Apr-Mar-Feb-Jan	0	1
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Concentration Score

of 5

5 Neck Examination

- Range of motion
- Tenderness
- Upper and lower limb sensation & strength

Findings:

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6 Balance Examination

Do one or both of the following tests.

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

Modified Balance Error Scoring System (BESS) testing

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.

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

Testing Surface

"I am now going to test your balance. Please take your shoes off, roll up your pant legs above ankle (if applicable), and remove any ankle taping (if applicable). This test will consist of three twenty second tests 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. You should try to maintain stability in that position for 20 seconds. I will be counting the number of times you move out of this position. 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."

And / or Tandem Gate

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 38mm wide (sports tape), 3 meter line with an alternate foot heel-to-toe gait ensuring that they approximate their heel and toe on each step. Once they cross the end of the 3m line, they turn 180 degrees and return to the starting point using the same gait. A total of 4 trials are done and the best time is retained. Athletes should complete the test in 14 seconds. Athletes 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 or an object. In this case, the time is not recorded and the trial repeated, if appropriate.

Balance Testing - types of errors

- Hands lifted off iliac crest
- Opening eyes
- Step, stumble or fall
- Moving hip into > 30 degrees abduction
- Lifting forefoot or heel
- 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 athlete. The examiner will begin counting errors only after the individual 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 total number of errors for any single condition is 10. If a rider commits multiple errors simultaneously, only one error is recorded but the athlete should quickly return to the testing position, and counting should resume once subject is set. Subjects that 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.

Condition	Total Errors
Double Leg Stance (feet together)	of 10
Single Leg Stance (non-dominant foot)	of 10
Tandem Stance (non-dominant foot at back)	of 10
Balance Examination score (30 minus total errors)	of 30

And/or

Tandem gait

Participants etc.

Time (best of 4 trials) _____ seconds

7 Coordination Examination

Finger-to-nose (FTN) task:

"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."

Which arm was tested:

Left Right

Scoring: 5 correct repetitions in < 4 seconds = 1

Note for testers: Athletes fail the test if they do not touch their nose, do not fully extend their elbow or do not perform five repetitions. Failure should be scored as 0.

Coordination score:

of 1

8 SAC Delayed Recall

Standardized Assessment of Concussion (SAC)

Delayed Recall (1 point for each correct answer)

"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."

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

List	Alternative word list		
elbow	candle	baby	finger
apple	paper	monkey	penny
carpet	sugar	perfume	blanket
saddle	sandwich	sunset	lemon
bubble	wagon	iron	insect

Delayed recall score

of 5

Scoring Summary

Test Domain	Score		
	Date:	Date:	Date:
Number of symptoms of 22			
Symptom Severity Score of 132			
Orientation of 5			
Immediate Memory of 15			
Concentration of 5			
Delayed Recall of 5			
SAC Total			
BESS (total errors)			
Tandem Gait (seconds)			
Coordination of 1			

Scoring on the SCAT3 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 play after concussion. Since signs and symptoms may evolve over time, it is important to consider repeat evaluation in the acute assessment of concussion

Clinical Examination

B.P.:

Pulse:

Associated Injuries (especially facial):
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.....
.....
.....

Visual Fields: L:

R:

Pupils:

Neurological Examination

	Normal	Details
Level of consciousness	<input type="checkbox"/> Y <input type="checkbox"/> N
Cranial Nerves	<input type="checkbox"/> Y <input type="checkbox"/> N
Motor	<input type="checkbox"/> Y <input type="checkbox"/> N
Sensory	<input type="checkbox"/> Y <input type="checkbox"/> N

Red Flags for acute emergency management and referral, if any of the following are present

Headache that worsens	<input type="checkbox"/>	Seizures	<input type="checkbox"/>	Repeated vomiting	<input type="checkbox"/>
Can't recognize people or places	<input type="checkbox"/>	Weakness/numbness in limbs	<input type="checkbox"/>	Slurred speech	<input type="checkbox"/>
Deteriorating consciousness	<input type="checkbox"/>	Looks very drowsy	<input type="checkbox"/>	Focal neurological signs	<input type="checkbox"/>
Increasing confusion or irritability	<input type="checkbox"/>	Severe neck pain	<input type="checkbox"/>	Unusual behavior change	<input type="checkbox"/>

Diagnosis

Concussion Y N

Follow Up

Referral to hospital	<input type="checkbox"/> Y <input type="checkbox"/> N	(Name of hospital)
Discharge to care of responsible adult	<input type="checkbox"/> Y <input type="checkbox"/> N	
Given concussion injury advice	<input type="checkbox"/> Y <input type="checkbox"/> N	
Concussion injury advice sheet given to person monitoring the concussed athlete	<input type="checkbox"/> Y <input type="checkbox"/> N	
No follow-up required	<input type="checkbox"/> Y <input type="checkbox"/> N	

Signed:

Contact No.:

