

CONCUSSION in SPORT

Education Package



KING-DEVICK GUIDE

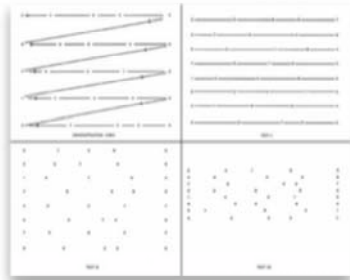


King Devick Test

Neurology® Clinical Practice

Vision testing is additive to the sideline assessment of sports-related concussion

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**KING-
DEVICK
TEST**®

In association with
Mayo Clinic

The King–Devick Test was developed in 1976 by Alan King and Steve Devick, as an indicator of saccadic performance as it relates to reading ability. For more than 30 years, the King–Devick Test has been a proven indicator of oculomotor inefficiencies regarding eye movements during reading.

King Devick Test

FOR IMMEDIATE RELEASE

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Mayo Clinic researchers validate rapid sideline concussion test for youth athletes

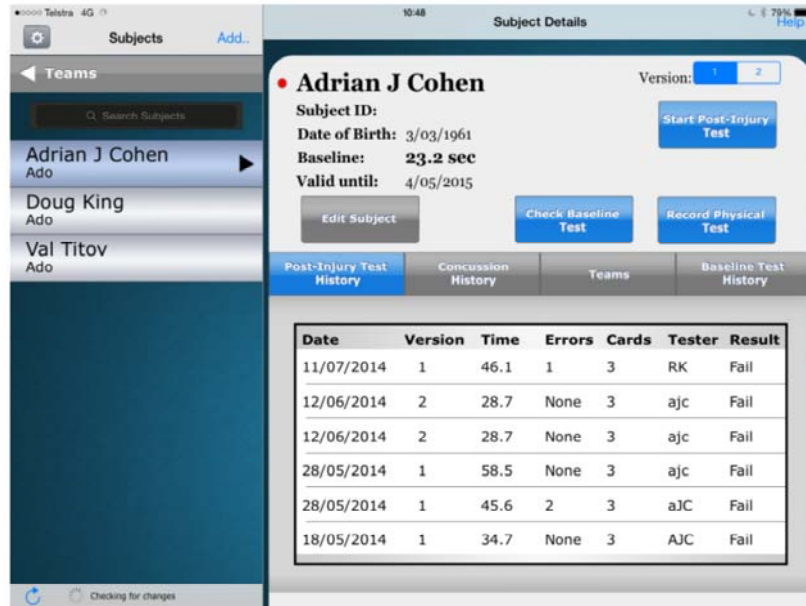
Eye movement test detects concussions and possible 'silent' concussions

PHOENIX - A rapid, easy-to-administer eye movement test is showing great promise as a sideline concussion test for youth sports, a Mayo Clinic study finds.

In the study, Mayo Clinic researchers assessed high school hockey players using the King-Devick test. The test requires an athlete to read single-digit numbers displayed on cards. After suspected head trauma, the athlete is given the test, which takes about two minutes, and the results are compared to a baseline test administered previously. If the time needed to complete the test takes longer than the baseline test time, the athlete should be removed from play until evaluated by a medical professional.

The test is an accurate and reliable method for identifying players with head trauma and can help to objectively determine whether players should be removed from games and when they have returned to their pre-injury test status they can be deemed safe to return to sport or practice (provided they have no symptoms and are not taking medication). The K-D Test has been extensively validated for use as a concussion screening tool and is deployed in association with the Mayo Clinic

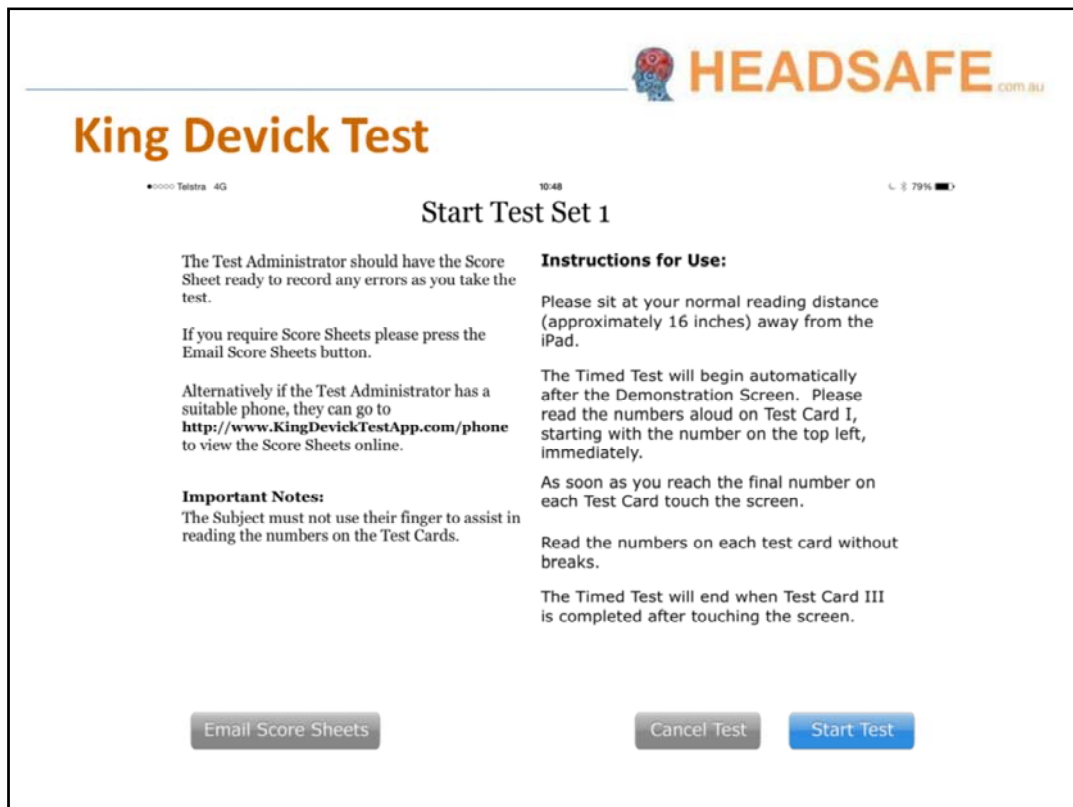
King Devick Test



The screenshot displays the iPad app interface for the King Devick Test. On the left, a sidebar menu shows a list of subjects: Adrian J Cohen, Doug King, and Val Titov. The main screen shows the 'Subject Details' for Adrian J Cohen, including his Subject ID, Date of Birth (3/03/1961), Baseline (23.2 sec), and Valid until date (4/05/2015). Below this, there are buttons for 'Edit Subject', 'Check Baseline Test', and 'Record Physical Test'. A 'Start Post-Injury Test' button is also visible. At the bottom, a tabbed interface shows 'Post-Injury Test History' selected, displaying a table of test results.

Date	Version	Time	Errors	Cards	Tester	Result
11/07/2014	1	46.1	1	3	RK	Fail
12/06/2014	2	28.7	None	3	ajc	Fail
12/06/2014	2	28.7	None	3	ajc	Fail
28/05/2014	1	58.5	None	3	ajc	Fail
28/05/2014	1	45.6	2	3	aJC	Fail
18/05/2014	1	34.7	None	3	AJC	Fail

The King Devick iPad version allows a history of the subject's tests to be seen, together with recommendations on whether they should be further examined by a doctor



It should be emphasized by the tester to the subject that he/she should read the numbers as fast as he/she can without making any errors.

The tester should tell the subject:

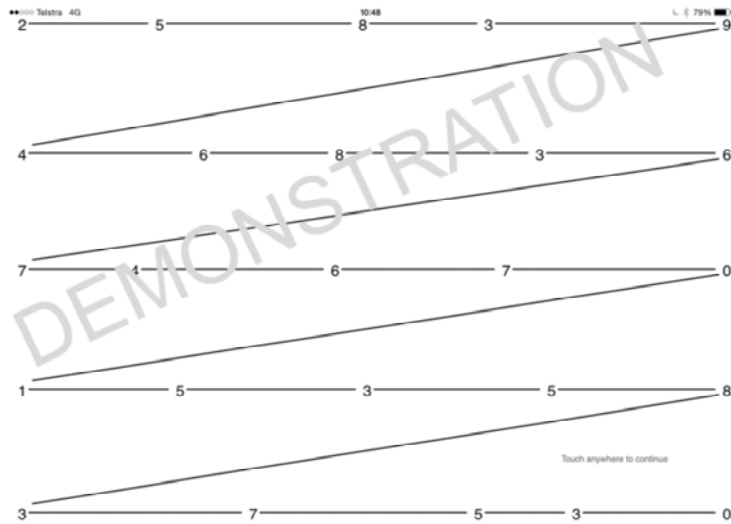
- not to use his/her hands or fingers on the iPad to help him/her follow the number pattern

- that they can rest and breathe during the TEST CARD COMPLETED screen

- tap the screen when all the numbers have been read and to go onto next screen

The subject should be told that the test will be administered at least twice and that his/her baseline score will be recorded as his/her fastest time without errors.


King Devick Test



When the tester is ready, hand the iPad over and tell the subject to begin reading the numbers.

As the subject reads the second page (after the DEMONSTRATION CARD SCREEN), timing begins.

King Devick Test

*** Telstra 4G 10:48 L 87% 

2 ————— 5 ————— 8 ————— 0 ————— 7

3 ————— 7 ————— 9 ————— 4 ————— 6

5 ————— 3 ————— 1 ————— 6 ————— 4

7 ————— 9 ————— 7 ————— 3 ————— 5

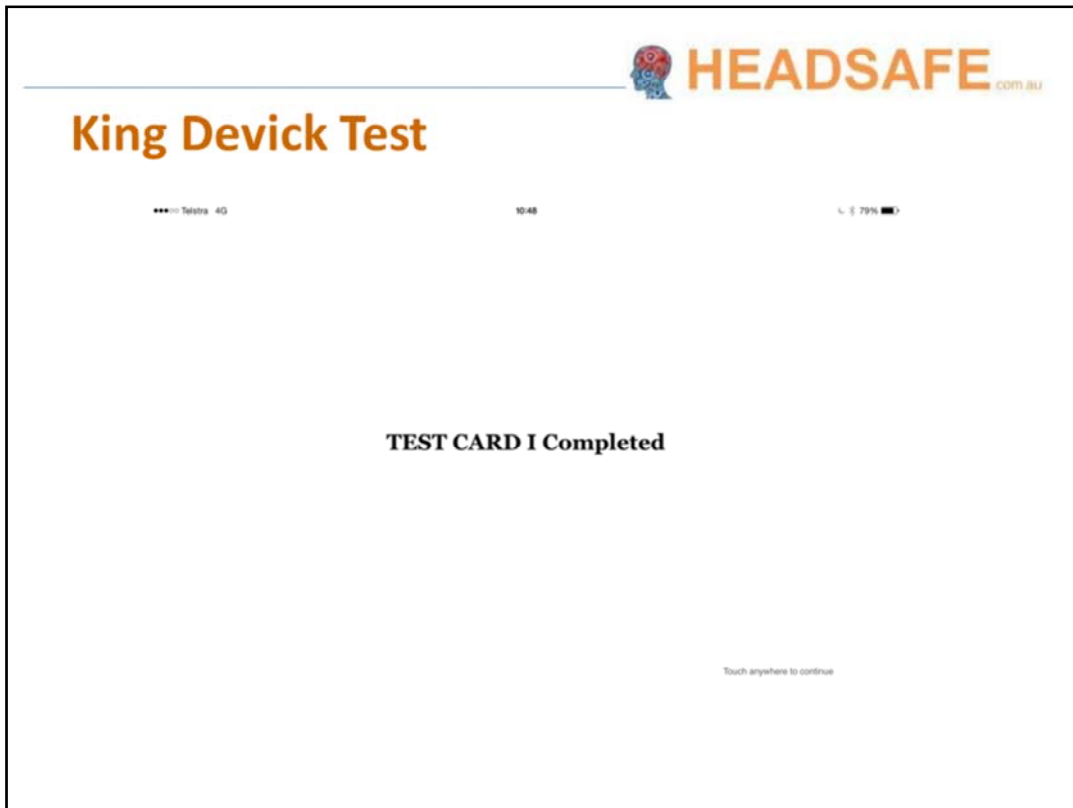
1 ————— 5 ————— 4 ————— 9 ————— 2

6 ————— 5 ————— 5 ————— 7 ————— 3

3 ————— 1 ————— 8 ————— 6 ————— 4

5 ————— 3 ————— 7 ————— 5 ————— 2

The subject reads the numbers out loud whilst the tester watches for errors



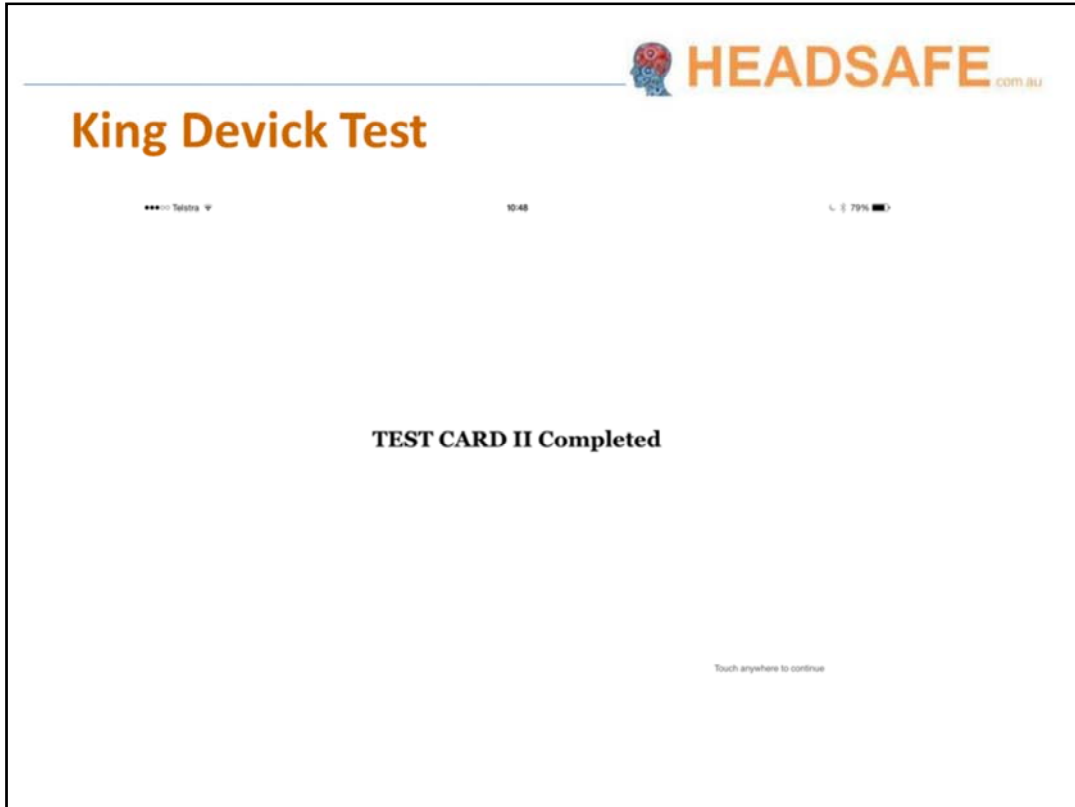
Timing stops at the TEST CARD COMPLETED screen and the subject can take a deep breath

King Devick Test

*** Telstra 4G 10:48 75%

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

The subject reads the second card numbers out loud whilst the tester watches for errors



Timing stops at the TEST CARD COMPLETED screen and the subject can take a deep breath

King Devick Test

**** Telstra

10:48

79%

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

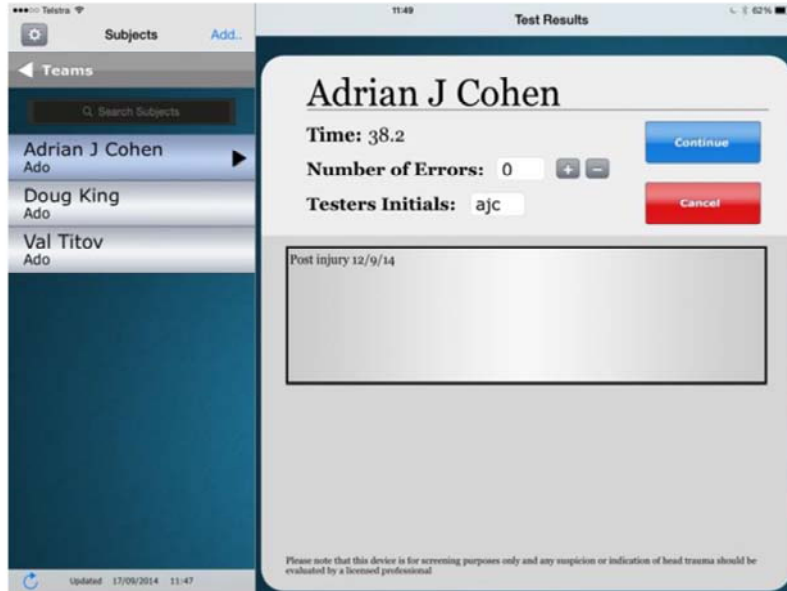
The subject reads the tcard numbers out loud whilst the tester watches for errors

King Devick Test



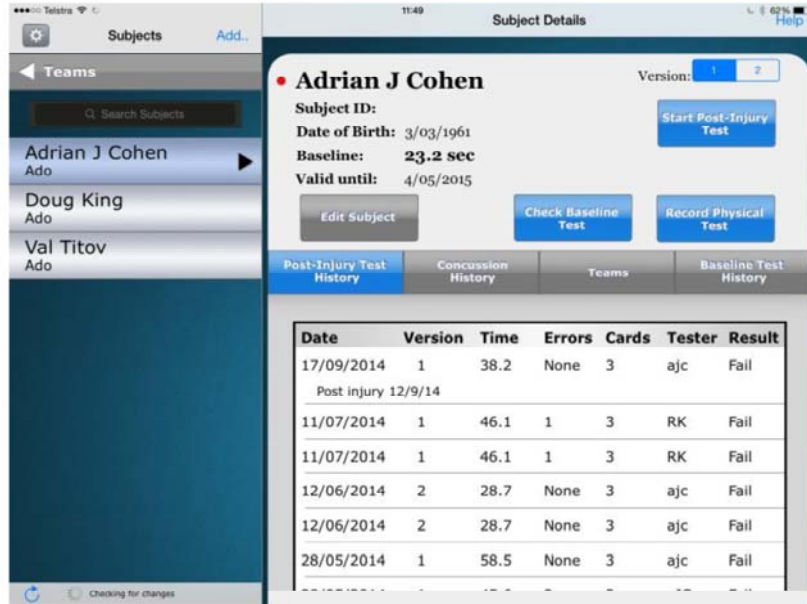
If the test is completed too rapidly, an INVALID test message is received

King Devick Test



Session agenda

King Devick Test



Adrian J Cohen Version: 1 2

Subject ID: **Start Post-Injury Test**

Date of Birth: 3/03/1961

Baseline: **23.2 sec** **Check Baseline Test**

Valid until: 4/05/2015 **Record Physical Test**

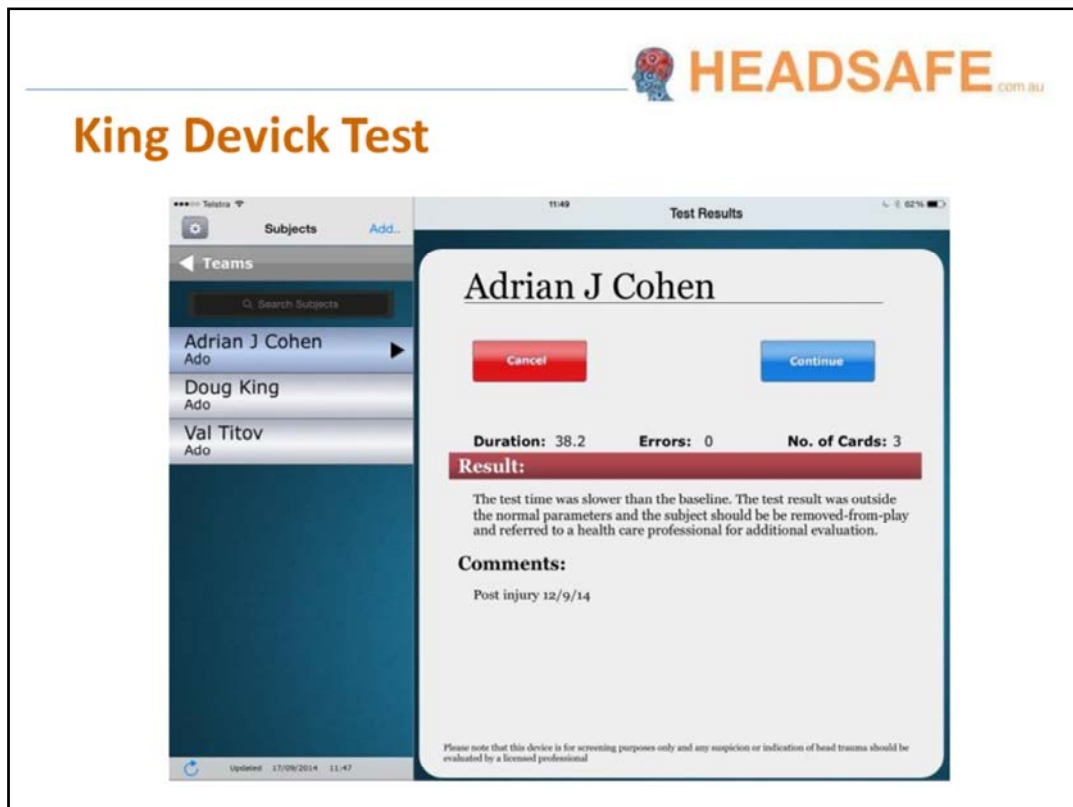
Edit Subject

Post-Injury Test History Concussion History Teams Baseline Test History

Date	Version	Time	Errors	Cards	Tester	Result
17/09/2014	1	38.2	None	3	ajc	Fail
Post injury 12/9/14						
11/07/2014	1	46.1	1	3	RK	Fail
11/07/2014	1	46.1	1	3	RK	Fail
12/06/2014	2	28.7	None	3	ajc	Fail
12/06/2014	2	28.7	None	3	ajc	Fail
28/05/2014	1	58.5	None	3	ajc	Fail

The tester should monitor and record any errors when the iPad test is completed, and add their initials and any comments.

A subject's baseline is the fastest time for which the subject has completed the test without errors.



When the subject is retested post suspected head trauma, the test should be administered once in the manner described above.

That score should be recorded with both time and any errors noted.

For post-injury or post high impact score testing, note the g force and rads2 recorded on impact testing and also whether the subject is Asymptomatic or what symptoms they report.

If the subject has a time which is any slower than his/her best baseline score or has increased errors, he/she should be removed from play and referred to a health care professional for additional evaluation.

For training purposes, the subject should commence the 6 step Return to Play process with 24 hours rest then light aerobic exercise

Ideally they should be retested prior to recommencing contact or game play (provided they are symptom-free) and have a time no slower than their current baseline with no errors

Questions?



Assessment



Session agenda