



# “BRAIN CAMP”

## MOBILE EVALUATION of CONCUSSION in SPORT

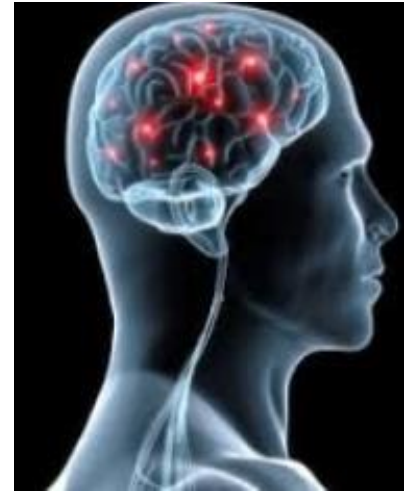




# Concussion is a problem

Concussion in sport is:

- a subset of mild traumatic brain injuries (mTBI)
- subjectively diagnosed on the field (signs and symptoms indistinct)
- not identifiable on CT or MRI scans
- different in each player
- variable in its clinical course
- linked to short and long-term cognitive (thinking) disorders
- linked to Chronic Traumatic Encephalopathy (CTE)



## TESTS FOR CONCUSSION

- Sideline/Dressing-room assessment (Maddocks, SCAT3, PSCA, CRT, KD)
- Comparisons to baseline cognitive tests (King Devick, Axon Cogstate, SCAT3 etc)
- Return to Play (RTP) testing and progression

# Measuring Concussion is a problem



- How do we measure?
- What tests are used (and useful)?
- When to do Baseline?
- How to do Baseline?
- When to do post-injury testing?
- Where is information stored?

# Brain CAMP

**C** ONCUSSION

**A** SSESSMENT

**M** ANAGEMENT

**P** ROGRAMME





# Brain CAMP Services

## COGNITIVE TESTS (baseline and comparative)

- Axon Cogstate
- SCAT3
- King Devick (KD)



## BALANCE TESTING

## CONCUSSION MANAGEMENT PROGRAMMES

- Policies, Procedures and Records
- Education for medical staff, trainers, parents, teachers, players

## RTP and RTS DECISION SUPPORT

- Return to Play and/or Return to School decision support
- Based on objective criteria

# The Brain Van

- is a portable concussion testing environment for players
- can measure a number of players in one session
- provides pre-season baselines for later comparison
- can attend post-injury or post-season
- has complete testing equipment (cognitive, TMS, paper-based and online)
- provides evidence, not “guesstimates”



# Cognitive Baseline Studies

Studies include:

Axon Cogstate



King Devick



SCAT3



**SCAT3** Sport Concussion Assessment Tool - 3rd Edition

**What is the SCAT3?**

**What is a concussion?**

**SIDELINE ASSESSMENT**

**Postural signs of concussion?**

**How to use the SCAT3?**

**King Devick D-2**

**3. Glasgow Coma Scale (GCS)**

**4. Modified Balance Scale**

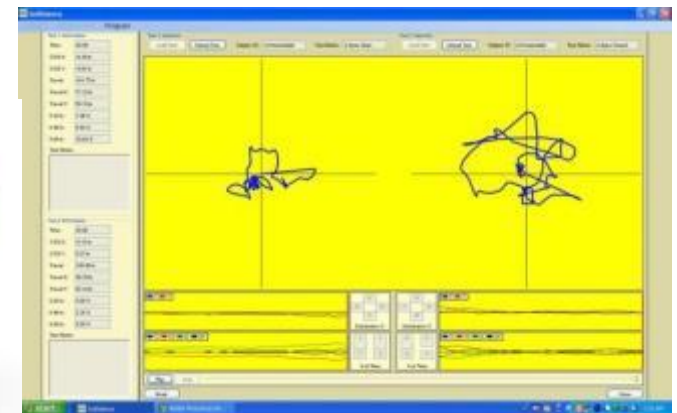
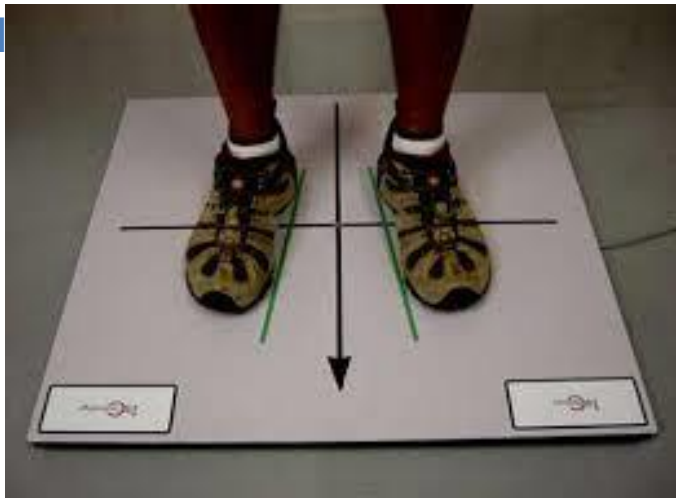
**5. Modified Balance Scale**

# Balance Baseline Studies

Comparison studies showed significant correlation between the BESS and force plate measures of postural control.

More recently however, the reliability of the BESS test has been questioned.

BESS remains *subjective* to a degree

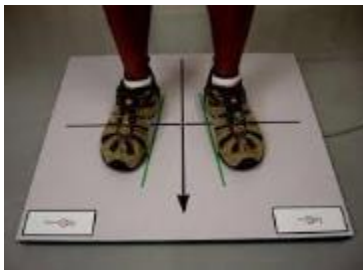
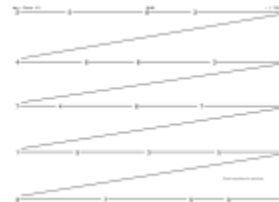




# Return to Play decisions

- Cognition & Balance can be monitored during graduated Return to Play (RTP)
- Once studies are the same as baseline, player has returned to normal
- Objective evidence to add to other medical examinations

= SAFE RTP DECISION



# Brain CAMP Services

**COGNITIVE + PHYSICAL TESTS**

**=**

**CONCUSSION PASSPORT**

