Sports Concussion
Recognition and Management
Rider Medical Cards
Results of Discussions

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Chair, Medical Committee, FEI
Dr Peter Whitehead MSc MFSEM(uk) MBBS DA

FEI Medical Committee Chair 2012

British Equestrian Federation CMO from 2002

British Eventing CMO from 1998

CMO at many international competitions

Sports physician and General Medical Practitioner
4th International Consensus Conference on Concussion in Sport

1 – 2 November 2012
hosted by FIFA at the Home of FIFA in Zurich

DAY 1: SESSION 1: OPENING SESSION (CHAIR: JIRI DVORAK)
“Concussion is defined as a complex pathophysiological process affecting the brain, induced by traumatic biomechanical forces. Several common features that incorporate clinical, pathologic and biomechanical injury constructs that may be utilized in defining the nature of a concussive head injury include...”
Concussion

1. Concussion may be caused by a direct blow ... or ...an ‘impulsive’ force ...
2. Concussion ...rapid onset of short-lived impairment of neurologic function ...
3. ...the acute clinical symptoms largely reflect a functional disturbance ...
4. ...graded set of clinical symptoms
5. No abnormality on standard structural neuroimaging.
Symptoms and Signs

Pocket SCAT2

Concussion should be suspected in the presence of any one or more of the following: symptoms (such as headache), or physical signs (such as unsteadiness), or impaired brain function (e.g. confusion) or abnormal behaviour.

1. Symptoms
Presence of any of the following signs & symptoms may suggest a concussion:

- Loss of consciousness
- Seizure or convulsion
- Amnesia
- Headache
- "Pressure in head"
- Neck Pain
- Nausea or vomiting
- Dizziness
- Blurred vision
- Balance problems
- Sensitivity to light
- Sensitivity to noise
- Feeling slowed down
- Feeling like "in a fog"
- "Don't feel right"
- Difficulty concentrating
- Difficulty remembering
- Fatigue or low energy
- Confusion
- Drowsiness
- More emotional
- Irritability
- Sadness
- Nervous or anxious

2. Memory function
Failure to answer all questions correctly may suggest a concussion.

"At what venue are 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?"

3. Balance testing
Instructions for tandem stance
"Now stand heel-to-toe with your non-dominant foot in back. Your weight should be evenly distributed across both feet. 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."

Observe the athlete for 20 seconds. If they make more than 5 errors (such as lift their hands off their hips, open their eyes; lift their forefoot or heel; slip, stumble, or fall; or remain out of the start position for more than 5 seconds) then this may suggest a concussion.

Any athlete with a suspected concussion should be IMMEDIATELY REMOVED FROM PLAY, urgently assessed medically, should not be left alone and should not drive a motor vehicle.
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Delayed Concussion
Concussion is the Most Common Type of Mild Traumatic Brain Injury (mTBI)

Concussion is a better term than mTBI because:

1. Concussion is now widely recognized by the public
2. The consequences of concussions are often not mild
3. The definition of concussion is simpler
4. It is helpful if we all use the same language
5. mTBI is an oxymoron

- in mTBI, GCS=13-15

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<td>Confused speech / Disorientated</td>
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<td>Localizes to pain</td>
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<td>Flexion / withdrawal</td>
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<tr>
<td>Abnormal flexion</td>
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Sports concussion

Glasgow Coma Scale

“Minimal”

Mild

Mod

Severe

Sports concussion

Severe  GCS < 8
Moderate GCS 9 - 12
Why is Concussion important?

- Common

- USA; 1.6 – 3.8 million sports concussions reported to team doctors annually. **Estimated unreported + 6-10 X higher**

- Australia – horse racing 40 concussions/1000 riding hours. NB long careers, increased chronic problems
1. High Incidence of Acute Concussion

- In Canada, there are 33 million people and about 100,000 concussions annually.
- Let’s always stress that concussions also occur in motor vehicle crashes, falls at home among seniors, and at work. Also-abuse, epilepsy, etc.
- Sports concussions occur in younger people and cause repetitive concussions more often than the other causes, and the young brain is more vulnerable to concussion, and therefore sports concussions are important.
Chronic symptoms

- Dysarthria, Parkinson’s Disease, Dementia, Alcohol sensitivity, emotional lability

- > 3 concussions results in
  - 5x risk of Mild Cognitive Impairment
  - 3x risk of memory problems
  - 3x risk of depression
AFL data
Survival analysis
N=1015 players
What can sports do?
Australian Rules Football

STRATEGIES TO REDUCE CONCUSSION

ENGAGEMENT

- Players
- Administrators
- Medical

RULE CHANGE

- Make the play more continuous
- Reduce impact speeds

CULTURE OF SAFETY

- Avoid head impact
- Education
- Management guidelines
Guidelines

2011 AFL GUIDELINES
- Comprehensive policy
- Detailed literature review
- All levels of performance

STRATEGY
- No RTP on day of injury
- SCAT2 for sideline assessment
- Computerized cognitive assessment
- Education
Sideline Assessment

- Standardised Assessment Tool 2013

Medical staff

Coaches

Parents

Riders
Assessment Tools

Pocket SCAT2

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Cogsport testing

- Limited use – teams
  need for baseline
  computer testing

When utilised – valuable adjunct
Education

CDC

- All CDC materials available at No Cost
- Co-branding opportunities
- Bulk orders may be placed by contacting: 1-800-CDC-INFO or CDC-INFO@cdc.gov
Assessing the Prevalence

- Sport-specific prospective analytical studies
  - Cluster RCT, Prospective Cohort
- Validated system of injury surveillance
- Sufficient sample size / power
- Strict operational definition of concussion
- Qualified personnel assessing and reporting injury
- Direct measurement of equipment exposure and individual athlete-participation
- Assess products with efficacious laboratory results
- Multivariate analyses controlling for previous concussion hx, age, experience, position, and clustering effects by team
Rider Medical Cards

Rider medical armband introduced >15 years ago

Identification and medical summary

Medical suspensions
Do we still need a medical card?

- Unanimous decision - Yes
- Study of existing cards – need to change
- What contents do we need/what can be removed
Current problems

Illegibility – several at every competition
Inaccuracy – how can we assess?
Different formats ( + poor uptake of FEI armband)
CMO – logistical difficulties at many competitions
Photocopying
Solutions

Discussions centered around:

Content of card – medical and personal details

Electronic data storage and armband generation (possible ultimate goal)

Ease of use for rider and sports officials.
Content of card

Competitor Name, FEI number, date of birth

Rider cellphone, Cellphone number of accompanying groom/family. NOK contact

Current medications, Allergies, current medical conditions, significant past medical history (illnesses and/or surgery)

Signature of rider declaring contents are accurate
A Method of Use

- Approved rider card on FEI website
- Download to home computer
- Complete all permanent fields and save
- Print two copies for competition, completing contacts for the competition day. One to be inserted in armband, one to be given to organiser on arrival
- Organiser copy to be given to CMO who can check, call rider if necessary, hold for competition then destroy
Future?

- Use of electronic database for armband production
  
  Benefits:
  
  Accurate injury surveillance
  
  Control of medical suspension especially concussion