CONCUSSION: WHAT IS IT?

Financial Disclosure

Dr. John Seals has no relevant financial relationships with commercial interests to disclose.
CONCUSSION

The Zurich Consensus
Consensus Statement on Concussion in Sport
3rd International Conference on Concussion in Sport
Held in Zurich, November, 2008

Definition

"A complex pathophysiological process affecting the brain, induced by traumatic biomechanical forces."  

("bell rung", “dinged”, etc.—these are no longer considered appropriate terminology to describe the concussive event)

40th Annual Symposium on Sports Medicine Symposium
UT Health Science Center San Antonio School of Medicine
January 17-19, 2012

CONCUSSION

- The sequence of events initiated by the physical forces to or transmitted to the head produce functional, physiologic and (potentially) structural alterations of brain tissue.
- These alterations occur over widely differing time scales and structural scales.

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### EXTENDED AREAS OF CONCERN

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<th>The &quot;EVENT&quot; and its Consequences</th>
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### THE CONCUSSION CASCADE

![Concussion Cascade Diagram]

- Scenario 1: Name
  - Time Periods: 2 sec, ~15 sec, ~60 sec, ~60 min
  - Events:
    - 2 sec: No further progression of tissue changes
    - ~15 sec: Initial recovery of symptoms
    - ~60 sec: Functional recovery
    - ~60 min: Continued tissue recovery over ?? Time Period

- Scenario 2: Beyond Concussion
  - Time Periods: 2 sec, ~15 sec, ~60 sec, ~60 min
  - Events:
    - 2 sec: Arterial for removal
    - ~15 sec: Progressive bleeding
    - ~60 sec: Secondary tissue injury
    - ~60 min: Permanent brain injury

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Just because something can happen does not mean that it will happen....

**Probably interplay of numerous contributing factors including genetics**

THANK YOU

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BRAIN ANATOMY