How is the Incidence and Recovery from Concussion Affected by Age, Gender, Sport, and Prior Concussion?

Sven Oman
Lehigh Valley Health Network

Published In/Presented At

Oman, S. (2015, March). *How is the Incidence and Recovery from Concussion Affected by Age, Gender, Sport, and Prior Concussion?* Poster presented at: The SELECT Capstone Project in the Kasych Conference Room, Lehigh Valley Health Network, Allentown, PA.

How is Athletic Concussion Recovery Affected by Young Age?

Sven P. Oman and Daniele Shollenberger

Lehigh Valley Health Network, Allentown, PA

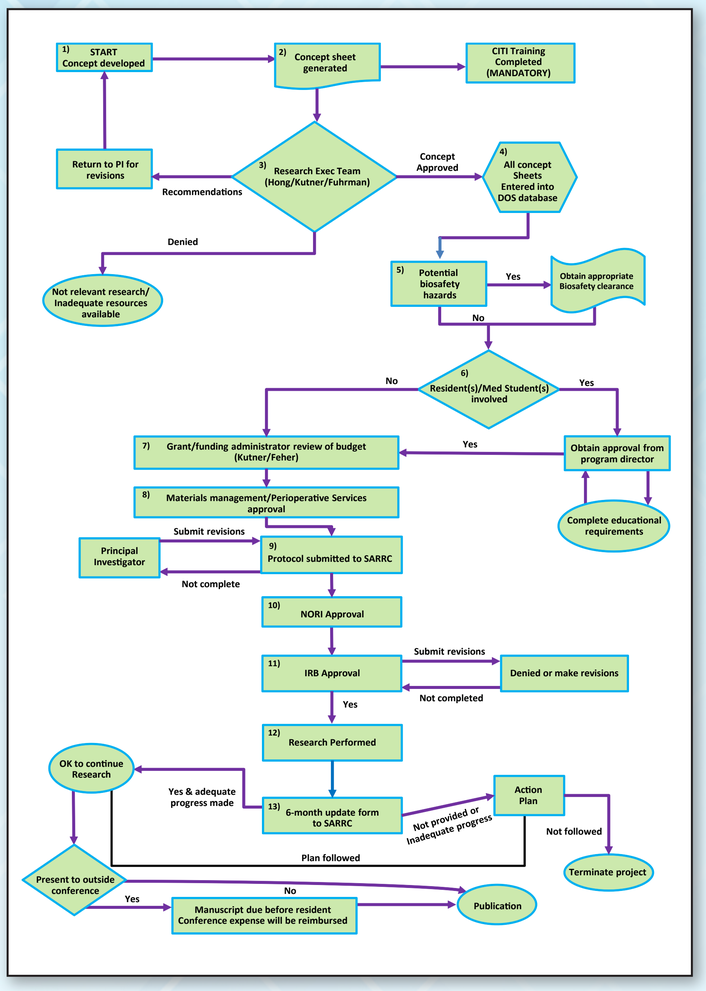
Background

- Pre-adolescents (6-11 years) sustain mild concussions more often than any other age group
- However, there are no evidence-based guidelines, no physician consensus, and only one symptom scale that has been developed to diagnose concussion and guide management in this age group
- Adolescents also take longer to recover from concussion
- There are no return to play (RTP) guidelines specific to young athletes

Methods

- Retrospective medical record review
- Athletes complete symptom inventory questionnaire
- Diagnosis of concussion made by a certified nurse practitioner
- Age:
  - Concussion suffered from sport participation
  - Primary dependent variable: days until symptoms return to baseline
  - 8-12 versus 14-18 year olds
  - Mann-Whitney U-test, set at an alpha of 0.05 to determine if recovery time (days) is significantly different between age groups
  - T-test to determine if difference in number of follow-up appointments and return to play time (days) between age groups

Results



- Four-part study approval process initiated:
  - Concept: Research Executive Committee
    - Summary sheet of proposed research
  - Surgery and Anesthesia Research Review Committee (SARRC)
    - Committee member presents study to board for suggestions and recommendations
  - NORI Review
    - Reviews related research. Focuses on finance, funding, expected outcomes, and measuring outcomes
  - IRB Review
    - Approves 12-month research license
- The Concept Review stage is complete
- Proposal submitted to SARRC
- NORI review process started
- IRB review process started
- Feedback from all four stages incorporated into proposal
- Next steps:
  - NORI meeting: statistical analysis plan, study design, complete Protocol Format document
  - SARRC review of Protocol Format
  - NORI Feasibility of proposal
  - Enter proposal into online eIRB

Conclusions

- Pre-adolescent athletes suffer more concussions and have prolonged recovery compared to older athletes
- There is a need for validated symptom scales and RTP guidelines for this age group
- Research would inform concussion education, legislation, and rule changes

REFERENCES

1. Halstead, M., Walter, K., & The Council on Sports Medicine and Fitness. (2010). Sports-Related Concussion in Children and Adolescents. *Pediatrics, 126*(3), 597-615.
2. Makdissi, M., Davis, G., Jordan, B., Patricios, J., Purcell, L., & Putukian, M. (2013). Revisiting the modifiers: How should the evaluation and management of acute concussions differ in specific groups? *British Journal of Sports Medicine, 47,* 314-320.
3. McCrory, P., Meeuwisse, W., Aubry, M., Cantu, B., Dvorak, J., & Echemendia, R... Turner, M. (2013). Consensus statement on concussion in sport: The 4th International Conference on Concussion in Sport held in Zurich, November 2012. *Br J Sports Med, 47,* 250-258.

SELECT Scholarly Excellence. Leadership Experiences. Collaborative Training.
Experiences for a lifetime. A network for life.™

USF HEALTH MORSANI COLLEGE OF MEDICINE UNIVERSITY OF SOUTH FLORIDA

Lehigh Valley Health Network