

Challenges in Project Development for Adolescent Sports-Related Concussion Baseline Testing

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Background and Literature Review

- Numerous assessments available for evaluating sport-related concussions
- Cost effective assessment battery needed for clinicians for sideline and in-clinic use^{1, 2, 3, 4}
- Search engines: Medline and CINAHL
 - Key search terms: concussion, neurocognitive, diagnosis, sports, athletes
- Immediate Post-Concussion Assessment and Cognitive Test (ImPACT™) is gold standard assessment, but costly per athlete⁶
- Evidence-based tests selected for youth athletes. Need to evaluate reliability & validity.

Project Timeline & Activities

- **Timeline**
 - Literature review completed - Spring 2022
 - Protocol development - Summer 2022
 - Initial IRB submission - Summer 2022
 - Initial youth hockey screening - Fall 2022
 - Initial female football screening - Winter 2022
 - Second IRB submission - Summer 2023
 - Second youth hockey screening - Fall 2023
 - 3rd & 4th IRB submissions - October 2023
- **Total Hours**
 - Includes research student and clinician time
 - Project development hours ~ 60 hours
 - Hockey screening hours ~ 230 hours
 - Football screening hours ~ 80 hours

Project Purpose

- To determine a battery of baseline assessments for athletes which clinicians may use to evaluate for concussion on the sidelines or in the clinic.

Project Challenges

- **Project logistics**
 - Appropriate stakeholders' involvement:
 - Youth athletes and Parents
 - Coaching/team staff
 - PT/ATC Facility staff
 - Research team (students/faculty mentors)
 - Scheduling education & testing around team training days/times prior to competitive season.
- **Complexities of IRB**
 - Required assent and consent forms for youth athletes and parents respectively⁵
 - Required project clarification of informed consent sequence for athlete contact
 - Timeframes of full-committee IRB meetings pushed beyond initial screening timeframes
- **Shift to Retrospective Project**
 - Photo/video permission and global research statement on participant consent forms for adult athletes (Spring 2023).
 - Required parental consent for both items
 - Prepared educational video for testing with youth athletes for Fall 2023.



Fig 1: SCAT5 testing balance activity



Fig 2: Drop Stick testing set up



Fig 3: Force plate used for modified COBALT testing



Fig 4: Youth athlete performing BlazePod™ cognitive testing



Fig 5: BlazePod™ testing on mirror in DMU Clinic at Rec Plex

What's Next?

- IRB approval for retrospective data extraction and analysis - November 2023
- Athletic trainer (research team member) to review athlete records for permission to utilize data
- Adult and youth athlete record extraction & de-identification
- Adult and youth athlete statistical analysis
- Professional presentation of results

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