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Submitter Details:

Affiliation: ACADEMIA
Status: Non-US (Government and Civilian)
Name: Dr. Karen McCulloch
Primary Email: kmac@med.unc.edu
Secondary Email:
Phone: 9194756448
Organization: University of North Carolina at Chapel Hill
Chapel Hill, NC 27599-7135
United States

Presenter Details:

Affiliation: ACADEMIA
Status: Civilian, Other (Non-Government)
Name: Mr. Michael Kress
Primary Email: michael_kress@med.unc.edu
Secondary Email: kmac@med.unc.edu
Phone: 9198438783
Organization: University of North Carolina, Chapel Hill
Chapel Hill, NC 27599-7135
United States

Co-Authors Detail:

Michael Kress, SPT[1], Courtney Harrison, MS[1], Amy Cecchini, PT, DPT[2], Karen L. McCulloch, PT, PhD, FAPTA[1]

[1] Division of Physical Therapy and Curriculum in Human Movement Science, Department of Allied Health Sciences, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA

[2] Geneva Foundation, Tacoma, WA, USA

Abstract Details:

Breakout Session: Novel Clinical Assessments and Interventions for mild Traumatic Brain Injury

Submission Category: Poster Only

Title: The Complex Assessment of Military Performance for mTBI Assessment: Dual-task Agility Test-Retest Reliability

Abstract:

Introduction: The Complex Assessment of Military Performance (CAMP) is a 3-item performance-based test battery that challenges known physical vulnerabilities post-mTBI. It is designed as a clinical test for therapists who work with active-duty service members (ADSM) who wish to return to active duty. The 2nd test in the CAMP battery is a dual-task agility skill that targets possible deficits in balance, agility and memory that can impede successful return to duty. Many measures used post-mTBI test functional domains in isolation (e.g. balance, memory, or vision). Military service members need to perform complex/complicated tasks under stressful conditions, therefore tasks that require dual or multi-task challenges approximate

demands of duty to a greater degree. Assessments that combine motor and cognitive tasks and require exertion while carrying a fighting load may be useful in clinical practice.

Objectives: To determine the test-retest reliability and possible practice effects of the dual-task agility component of CAMP with healthy controls participants.

Methods: The Agility Dual-Task (ADT) component of CAMP provides a physical and cognitive challenge in typical clinical space. This includes a single task working memory task (remembering an 8 item grid coordinate) and a motor task that is a combination of a standard shuttle run and the Illinois Agility Task requiring standing from a kneeling position, running, bending to touch targets, and rapid turns. After single task testing, the tasks are combined in a dual-task condition. Additional single-task motor and dual-task trials are completed while wearing a weighted vest (30% of body weight) to simulate a fighting load. All motor trials are hand timed and recorded to the nearest hundredth second. All cognitive trials are recorded as number of characters recalled in correct order. Healthy control participants completed initial testing and returned for a second test a minimum of 4 weeks later.

Subjects: Six male Active-Duty Service Members (ADSM) with an average age of 30.67 years from Fort Bragg and Joint Base Lewis McChord are included. Most subjects were white and reported their education level as "Some College". Participants had served in the Army 10.2 years on average, and 100% reported physical readiness for deployment in 72 hours. Self- reported scores on the PCL-5 (post-traumatic stress) were mean 14.8, NSI (mTBI symptoms) mean 12, and DVPRS (pain rating) 3/10. (Note: We anticipate a sample of at least 20 ADSM prior to presentation of this data in August.

Results: Initial testing resulted in mean scores of ST-Cog (6.33), ST-Motor (9.43s), DT-Cog (7.67), and DT-Motor (9.28s) without the weighted vest and ST-Motor (9.54s), DT-Cog (7.17), and DT-Motor (9.96s) with the weighted vest. Final testing resulted in mean scores of ST-Cog (7.17), ST-Motor (9.18s), DT-Cog (7.33), and DT-Motor (9.13s) without the weighted vest and ST-Motor (9.39s), DT-Cog (7.67), and DT-Motor (9.77s) with the weighted vest.

Conclusion: With this limited sample size, ICC computation is not appropriate, but will be completed prior to presentation. There may be a learning effect with the cognitive task and some task differences associated with adjustment to the weighted vest that will be examined with the larger sample (at least 20 participants) in order to inform test interpretation.

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Learning Objectives

1. Describe the dual-task agility test that is part of the CAMP test battery.
2. Describe differences seen from initial dual-task agility testing and final testing in healthy control ADSM.
3. Identify components of the dual-task agility test that appear stable and those that may demonstrate practice effects in order to aid in re-test interpretation.

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