

Comparisons were made for those below age 75 and those aged 75 and older, with 51.6% being under 75. Four ethnicity categories were also used: African American (8.1%), Asian (2.4%), Hispanic (14.5%), and non-Hispanic white (75%). All participants scored above 4 on the STEADI scale indicating fall risk. 42 scored positive for fear of falling on the FES-I scale and of that 42, 35.7% had a history of one or more falls in the last year ($p < .01$). 46.8% of the participants screened positive for depression and 100% of participants were positive for anxiety. Using one-way ANOVA analysis, we found significant relationships between (1) depression ($p < .01$); (2) STEADI ($p < .01$) and FES-I.

FEASIBILITY OF COMBINING NONINVASIVE BRAIN STIMULATION AND PERSONALIZED COUNSELING TO INCREASE PHYSICAL ACTIVITY

On-Yee (Amy) Lo,¹ Connor Mulvey,² Christine Lee,²

Margaret Gagnon,² Lewis Lipsitz,² and Brad Manor,³

1. *Hebrew SeniorLife/Harvard Medical School, Boston, Massachusetts, United States*, 2. *Hebrew SeniorLife, Boston, Massachusetts, United States*, 3. *Hinda and Arthur Marcus Institute for Aging Research, Harvard Medical School, Boston, Massachusetts, United States*

Few older adults meet recommended physical activity guidelines. Behavioral interventions may be more effective when combined with other modalities to promote activity. Transcranial direct current stimulation (tDCS) designed to increase the excitability of the left dorsolateral prefrontal cortex (dlPFC) — a brain region subserving motivation and executive function — has the potential to augment behavioral interventions. We designed a randomized, double-blinded trial to examine the feasibility of combining personalized behavioral counseling and tDCS targeting the left dlPFC to improve physical activity and related outcomes in sedentary older adults living within the supportive housing. Participants wore a Fit-Bit throughout the study period. Baseline step counts were determined for two weeks, then participants completed four bi-weekly personalized counseling sessions over eight weeks. They were also randomized to receive 10 sessions of tDCS or sham stimulation over the two weeks after the baseline. Physical, cognitive, and patient-reported outcomes were assessed at baseline, after ten brain stimulation sessions, and after four behavioral sessions. 33 individuals were screened and 16 enrolled (age=80±7, 13 females). 13 participants completed the study, including 100% of study assessments, 99±5% of brain stimulation sessions, and 98±7% of behavioral sessions. Fit-Bit adherence rate was 93±13%. Daily step counts were 3197±1480 at baseline and 4722±2553 over the last two weeks of the intervention. While the study is ongoing and blinded, these preliminary results indicate that it is feasible to conduct a controlled study of tDCS combined with personalized behavioral counseling to increase physical activity in sedentary older adults living within supportive housing.

FEASIBILITY OF USING A COMMERCIAL BOARD GAME TO ASSESS UPPER EXTREMITY FUNCTION IN OLDER ADULTS

Allison Niemic,¹ Yareli Lopez Hernandez,²

Ejlal Bin Mulayh,² Rachel Logue,¹ and Susan Brown,¹

1. *University of Michigan, Ann Arbor, Michigan, United*

States, 2. *University of Michigan, University of Michigan, Michigan, United States*

Upper extremity function, particularly the hand, declines with aging and is predictive of executive ability and independence. Standard assessments typically focus on strength partly due to a lack of easily administered functional tasks requiring multi-joint coordination and precision grasp. This study aimed to determine the feasibility of using an inexpensive board game to assess upper extremity function in older adults. Six healthy older adults (77 +/- 5.1 years) completed reaching tasks using the Connect4® game that requires grasping and placing small discs into a vertical board. Tasks included different hand configurations (unilateral, bilateral), and two dual-task conditions (serial subtraction by 7s and placing colored discs to match specific color patterns). The time to complete each task was recorded. For comparison purposes, participants completed a standardized pegboard test (Purdue Pegboard) using one or both hands. Connect4 results were similar to age-normative findings reported for the Purdue Pegboard. Dominant versus non-dominant hand performance did not differ while bilateral coordination tasks were slower than unilateral tasks for both the Purdue Pegboard ($p < 0.05$) and Connect4 ($p < 0.01$). Pegboard and Connect4 times were moderately to strongly correlated for all hand configurations. Dual-task conditions using Connect4 led to longer completion times ($p < 0.05$). Preliminary results support the use of Connect4 as a functional upper extremity assessment tool for older adults. It is inexpensive, engaging, easy to use, and allows for cognitive-motor assessment using dual-task protocols, a critical factor in maintaining functional independence in older individuals. Further research will include a formal validation study across a wider age range.

FOOT MECHANICS DEFINE DIRECTIONAL CHANGES IN CURVED-PATH WALKING: NEW METHODS TO ASSESS THE MOTOR SKILL OF WALKING

Haley Hicks,¹ Anthony McBroom,² Patrick Roscher,³

Jessie VanSwearingen,⁴ and Kristin Lowry,⁵

1. *Broadlawn Medical Center, Des Moines, Iowa, United States*, 2. *Des Moines University, Des Moines, Iowa, United States*, 3. *Protokinetics, Inc, Havortown, Pennsylvania, United States*, 4. *School of Health and Rehabilitation Sciences, Pittsburgh, Pennsylvania, United States*, 5. *University of Pittsburgh, University of Pittsburgh, Pennsylvania, United States*

Although it is essential to navigating the world, curved path walking is a challenge to mediolateral balance control. The focus of previous curved-path walking research was in spatiotemporal characteristics. We quantified the foot-ground interaction, center of pressure (COP) characteristics during non-linear (eg curved-path) walking important to understand the functional mechanics of directional changes for curved paths. We hypothesized the foot mechanics differ between older adults with better versus poorer curved-path walking (Figure of 8 Walk Test, F8W). Twenty-five older adults (mean age 71.8 ± 8.9 years) completed the F8W on an instrumented walkway (Protokinetics, LLC.) The derived metrics of the foot mechanics included medial/lateral movement of the COP for inside and outside steps, maximum medial and lateral COP excursions, and total medial/lateral COP range. Pearson correlations were used to examine