to 0.32 for Hb) irrespective of the methods used. In addition, intraclass correlations suggested excellent reliability across methods and task conditions (HbO2 range=0.982 to 0.996; Hb range=0.883 to 0.984). These findings support fNIRS as a robust approach for measuring prefrontal activity in older adults during walking and emphasize the importance for establishing explicit guidelines/principles for fNIRS processing.

PATTERNS OF PREFRONTAL ACTIVATION AND PERFORMANCE DURING WALKING TASKS AMONG OLDER ADULTS

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Differences in prefrontal cortex (PFC) control of walking in older age likely arise from changes in neural capacity and compensation. PFC activation by changes in oxygenated hemoglobin from functional near infra-red spectroscopy was examined in 29 older adults (mean age=76). Tasks included standing with cognitive challenge and walking with and without cognitive challenge on even and uneven surfaces. Three PFC activation-performance patterns were identified using K-means clustering: 1) low activation during walking tasks and high activation during standing cognitive task, with the best performance in terms of walking speed and cognitive performance (n=10); 2) low activation on all tasks, with the lowest performance (n=15); 3) high activation during walking and low activation during cognitive, with intermediate performance (n=5). Associations of patterns with cognitive function and structural neuroimaging were explored, with results informing interpretation of functional changes of PFC during aging process, including compensatory mechanisms for primary network impairment.

USING FNIRS TO CAPTURE CEREBRAL OXYGENATION IN OLDER ADULTS NAVIGATING STAIRS

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Navigating stairs is a complex motor activity and while it provides health benefits it can also increase the risk of falls in older adults (OA). The prefrontal cortex (PFC) contribution to stairclimbing (with or without a cognitive task) remain unknown. Using functional near infra-red spectroscopy (fNIRS) and wireless insoles, this study evaluated cerebral oxygenation changes (ΔHbO2) in the PFC, gait parameters (speed) and cognitive performance (reaction time (RT)/accuracy) during stair ascent and descent in single (SMup/ SMdown) and dual task (DTup/DTdown) conditions. OAs navigated stairs with or without a simple reaction time task. Participants had longer RTs in DTup (p < .001) and DTdown (p < .001) in comparison to standing, with no significant differences in accuracy or walk speed. ΔHbO2 was significantly different (p = .003) between SMdown and DTdown. Findings suggest that despite the simplicity of the cognitive task, dual-tasking on stairs resulted in increased cerebral oxygenation and slowed cognitive responses.

OVERLAP, COMMONALITY, DISPARITY, AND VARIABILITY OF FRONTAL LOBE ACTIVATION IN AGING AND NEURODEGENERATION

Inbal Maidan,1 Hagar Bernad-Elazar,2 Roni Hacham,2 Jeffrey Hausdorff,2 and Anat Mirelman,1 1. Tel Aviv Sourasky Medical Center, Tel Aviv, Israel, 2. Tel Aviv Sourasky Medical Center, Tel Aviv, Tel Aviv, Israel

Recent work suggests that the prefrontal cortex is recruited during complex walking as a form of cognitive compensation to maintain performance in aging and neurodegenerative diseases. Evidence from fNIRS studies is accumulating on different patient groups demonstrating the utility of this method and its sensitivity to neural dysfunction. However a direct comparison that explores the specificity of prefrontal activation patterns has not been conducted. This process is essential towards implementing the use of fNIRS at the individual level. Data collected from four different cohorts; young adults, older adults, PD patients at different stages of the disease, and patients with Multiple-Sclerosis during challenging tasks will be presented. Overlap, commonality, disparity and variability between groups and conditions will be presented and modifiers and moderators that can affect individual performance will be discussed. Understanding individual differences in fNIRS response will enhance data interpretation and promote translation of this technology to clinical care applications.

FNIRS OUTCOMES FOR A PILOT CLINICAL TRIAL COMBINING FRONTAL tDCS WITH WALKING REHABILITATION IN OLDER ADULTS

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This pilot study assessed a novel intervention to enhance both walking and executive function in older adults. The primary hypothesis was that eighteen sessions of frontal lobe tDCS combined with walking rehabilitation would be feasible, safe, and show preliminary efficacy. Eighteen participants were randomized to one of three intervention groups: active tDCS and rehabilitation with complex walking tasks (Active/Complex); sham tDCS and rehabilitation with complex walking tasks (Sham/Complex); or sham tDCS and rehabilitation with typical walking (Sham/Typical). Outcome measures included multiple tests of walking function, executive function, and prefrontal activity during walking as measured by functional near infrared spectroscopy (fNIRS).
Of the three groups, the Active/Complex group demonstrated the broadest improvements across outcome measures including for prefrontal activity. The functional range of prefrontal activity in this group was increased considerably, as conceptualized by the Compensation Related Utilization of Neural Circuits Hypothesis. Frontal tDCS is a promising adjuvant to walking rehabilitation.

SESSION 7205 (SYMPOSIUM)

PREVENTING AND MANAGING CHRONIC CONDITIONS IN OLDER ADULTS: LESSONS LEARNED FROM THE NHATS AND NSOC 2017
Chair: Rose Ann DiMaria-Ghalili
Discussant: Cheryl Monturo

According to the Centers for Disease Control, 85% of older adults have at least one chronic health condition, and 60% percent have at least two chronic conditions. This symposium explores strategies to prevent and manage chronic conditions (nutritional status, medication management, wound care, and physical function) using data from the 2017 National Health and Aging Trends Study (NHATS) and corresponding National Study on Caregiving (NSOC). The datasets include a nationally representative sample of US older adults (NHATS) and their caregivers (NSOC). In addition to survey questions, the 2017 NHATS cohort submitted dried blood samples which include inflammatory biomarkers (hs-C reactive protein [hsCRP] and interleukin-6 [IL-6]). All individual presentations report on weighted data from the analysis to more accurately reflect the US population. In the first paper, DiMaria-Ghalili explores the prevalence of and factors related to malnutrition in community-dwelling and residential living older adults. In the second paper Coates examines the extent to which source of purchased medications impacts the occurrence of self-reported medication mistakes and hospitalizations in community-dwelling participants who managed medications independently. In the third paper, Hathaway compares the socio-demographic, nutrition, and inflammatory profile of older adults with and without wounds. In the fourth paper, Sefcik examines the relationship between the frequency of community-dwelling older adults going outside and physical function. Collectively, findings provide insight into the experiences of vulnerable older adults with chronic conditions informed from the NHATS and NSOC datasets. The symposium will conclude with a discussion by Monturo on implications for research, policy and practice.

PREVALENCE OF MALNUTRITION IN A NATIONAL SAMPLE OF OLDER ADULTS RESIDING IN COMMUNITY OR RESIDENTIAL CARE: NHATS 2017
Rose Ann DiMaria-Ghalili, Janeway Granche, Martha Coates, Zachary Hathaway, and Justine Sefcik, *Drexel University, Philadelphia, Pennsylvania, United States*

The national prevalence of malnutrition in older adults living in the community and residential care (non-nursing home) is not known. We determined the prevalence of malnutrition (Mini-Nutritional Assessment) in a representative sample (N=4472) living in the community (95%) or residential care (5%), and examined known nutrition risk factors (inflammation [hsCRP, IL-6], socio-demographic variables). The majority (68%) were nourished, 26% were at risk, and 6% were malnourished. Those living in residential care vs community were more likely to be malnourished (12% vs 5%, respectively p<.01). Compared to nourished group, those with malnutrition were more likely to have hsCRP greater than median (1.36) (OR = 1.45 [95% CI 1.01-1.92]) and those at nutritional risk were more likely to have IL-6 greater than median (4.22) (OR=1.34 [95% CI 1.09-1.63]). Malnourished older adults were more likely to be older, female, live alone, report worse self-reported health, and use Meals on Wheels (p <.05).

SOURCE OF PURCHASED MEDICATIONS AND ITS IMPACT ON MEDICATION MISTAKES AND HOSPITALIZATIONS: THE NHATS 2017
Martha Coates, Janeway Granche, and Rose Ann DiMaria-Ghalili, *Drexel University, Philadelphia, Pennsylvania, United States*

Older adults self-administer prescribed medication regimens to treat chronic diseases which can lead to mismanagement, medication related harm and hospitalizations. We examined the extent to which source of purchased medications influenced the occurrence of self-reported medication mistakes and hospitalizations in community-dwelling participants who managed medications independently (N=3899). The majority (65%) picked-up medications, 18% had medications delivered, and 17% used both (picked-up and delivery). Compared to those picking up their medications, those using delivery only were less likely to have a hospital stay (OR=0.691 [95% CI 0.507-0.943]) and no difference in odds of medication mistakes (OR=1.051 [95% CI 0.764-1.445]), while those using both methods were more likely to report hospital stays (OR=1.429 [95% CI 1.106-1.846]) and medication mistakes (OR = 1.576[95% CI 1.078-2.304]). Older adults who picked-up medications from a local pharmacy and had medications delivered were more likely to report medication mistakes and hospitalizations.

ASSESSING OLDER ADULTS’ FREQUENCY OF GOING OUTSIDE AND PHYSICAL PERFORMANCE: NHATS 2017
Justine Sefcik, Janeway Granche, Martha Coates, Zachary Hathaway, and Rose Ann DiMaria-Ghalili, *Drexel University, Philadelphia, Pennsylvania, United States*

Little is known about community-dwelling older adults’ outdoor activity and the relationship between physical function and frequency of going outside. Using the 2017 NHATS (N = 4,465), we looked at self-reported outdoor frequency (Likert scale: every day to once a week or less) and the Short Physical Performance Battery (SPPB; participants completed five different physical activities to...