

The need for improved communication in these spheres extended to all stages of hospitalization. Based on these needs, we developed a questionnaire to evaluate the quality of EOLC. Reliability was measured in a different sample, and ranged from Cronbach alpha of .916 (41 items; 41 FCs) to .937 (41 items with discrimination index greater than .3; 78 FCs). Factor analysis yielded factors similar to the themes that emerged from the qualitative analysis. The findings highlight aspects of EOLC between FCs and HPs which should be addressed and improved. Thus, this study is a crucial first step toward improving the quality of care at the end-of-life.

SESSION 715 (PAPER)

DIET, EXERCISE, AND WELL-BEING

AEROBIC TRAINING, THE DEFAULT MODE NETWORK, AND COGNITION IN OLDER ADULTS WITH MILD VASCULAR COGNITIVE IMPAIRMENT

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Aerobic training has been shown to be effective at improving cognitive and brain outcomes in older adults with mild subcortical ischemic vascular cognitive impairment (SIVCI). However, uncertainty remains regarding the underlying neurobiological mechanisms by which exercise elicits these improvements in cognition. Increased aberrant functional connectivity of the default mode network has been highlighted as a factor contributing to cognitive decline in older adults with cognitive impairment. Greater connectivity of the DMN at rest is associated with poorer performance on attention-demanding tasks, indicative of a lack of ability to deactivate the network on task. Our previous work on a randomized controlled trial of participants with mild SIVCI, demonstrated that 6-months of thrice weekly aerobic training led to improved global cognitive function, as measured by Alzheimer's disease Assessment Scale-Cognitive subscale (ADAS-Cog), compared with a health education program. Thus, we conducted secondary analyses to investigate whether these changes in global cognitive function were associated with changes in resting state DMN connectivity. A subsample of 21 participants underwent a resting state functional magnetic resonance imaging (fMRI) scan before and after trial completion. Change in resting state DMN connectivity was found to significantly predict change in ADAS-Cog score ($\beta = -.442, p=.038$) after controlling for age, intervention group, and baseline functional capacity ($R^2=.467, F(4,16)= 3.507, p=.031$). These findings suggest that functional connectivity of the DMN may underlie changes in global cognitive function. Furthermore, aerobic exercise is a promising intervention by which to elicit these changes in older adults with mild SIVCI.

COMPONENTS OF A HEALTHFUL DIET ARE ASSOCIATED WITH WAIST CIRCUMFERENCE AMONG PRE- AND POSTMENOPAUSAL WOMEN

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After menopause, women are at increased risk of diabetes and cardiovascular disease. A contributing factor to increased risk may be weight gain, especially visceral adiposity. Diet plays a role in maintaining weight at all ages but less is known about the specific contributions of a healthful dietary pattern after menopause. Therefore, we evaluated associations between diet and WC as a measure of visceral adiposity. We compared 869 pre- (aged 35-45 years) and 353 post-menopausal (aged 40-65 years) women from NHANES III (1988-94). Women were pre-menopausal if they self-reported menses in the past 2 months and postmenopausal if they reported no menses in past 12 months and were aged > 40 years. Compared to premenopausal women, postmenopausal women consumed fewer Calories (-200 kcal/d) and had a higher mean waist circumference (+4.43 cm, $p=0.007$), after adjusting for age, race-ethnicity, height, physical activity, and smoking. Higher intakes of dark green vegetables ($p=0.03$) and lower intakes of potatoes ($p=0.03$), refined grains ($p=0.001$), and meats ($p=0.04$) were associated with lower WC for all women. Higher intakes of nuts and seeds and fish high in Omega-3 fatty acids were associated with smaller WC while higher intakes of poultry and dairy products were associated with higher WC in post- but not pre-menopausal women. Our findings generally support a diet high in nuts and seeds, dark green vegetables, and fish, and low in potatoes, refined grains, and meats. After menopause it may be important to incorporate fatty fish, nuts and seeds into the diet for lower visceral adiposity.

COMPUTERIZED COGNITIVE TRAINING, WITH OR WITHOUT EXERCISE, TO PROMOTE COGNITIVE FUNCTION: A RANDOMIZED TRIAL

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Given the world's aging population, it is important to identify strategies that promote healthy cognitive aging. Computerized cognitive training (CCT) may be a promising method to combat cognitive decline in older adults. Moreover, physical exercise immediately prior to CCT might provide additional cognitive benefits. We conducted a randomized controlled trial to examine the effect of a CCT intervention, alone or preceded by physical exercise, on memory and executive functions in older adults. 124 community-dwelling older adults aged 65-85 years were randomly assigned to either 8-weeks of: 1) 3x/week group-based CCT plus 3x/week CCT sessions at home; 2) 3x/week group-based CCT combined with a 15-minute brisk walk (Ex-CCT) plus 3x/week Ex-CCT sessions at home; or 3) 3x/week group-based sham exercise and education sessions (CON). At baseline and 8-weeks standard neuropsychological tests of verbal memory and learning and executive functions were administered, including the Rey Auditory Verbal Learning Test (RAVLT), Stroop test, Flanker test, Trail Making Tests (TMT B-A), and Dimensional Change Card Sort (DCCS) Test. At trial completion, there were no differences in RAVLT performance. Compared with CON, FBT and Ex-FBT participants significantly improved performance on the Stroop test

($p = .001$ and $p = .023$, respectively). Additionally, those randomized to Ex-CCT improved performance on the Flanker test ($p = .002$), TMT B-A ($p = .047$), and the DCCS Test ($p = .023$) compared with BAT. These findings suggest that an 8-week CCT program could benefit executive functions, and that implementing exercise immediately prior to CCT could provide broader benefits.

NOVEL METABOLOMICS MARKERS PREDICT 18-MONTH DECLINE IN HAND GRIP STRENGTH IN COMMUNITY-DWELLING OLDER ADULTS

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Sarcopenia that accompanies aging necessitates early detection tools, ideally before the presentation of clinically evident symptoms. The acylcarnitines (ACs) are a class of metabolites generated by cellular fuel metabolism and their predictive utility in declining muscle strength in community-dwelling older adults is unknown. We aim to examine whether baseline acylcarnitines levels can predict changes in hand grip strength over 18 months in 121 community-dwelling older adults. We measured ACs by targeted plasma metabolomics profiling. We then performed a biologically-relevant classification of these markers. Hand grip strength was measured using a Smedley spring-type dynamometer. Multivariate linear regressions were performed to examine if: 1) there was an association between ACs and hand grip strength at baseline and 2) baseline ACs could significantly predict changes in hand grip strength over an 18-month period. At baseline, AC levels were not significantly associated with hand grip strength. We found an inverse association between baseline short-chain carboxyl and dihydroxyl acylcarnitines (AC-DC/-OH) levels and 18-month changes in hand grip strength ($p=0.047$, $\beta=-0.548$, 95% CI=-1.088 to -0.008). Notably, a specific AC-DC/-OH species, C4-DC/C6-OH, accounts for the majority of the variance. The mean difference between Malay and Chinese ethnicity is 2.28kg ($p=0.042$, $\beta=2.275$, 95% CI=0.084 to 4.466). These findings suggest an association between metabolic markers and deterioration in hand grip strength. These results suggest that perturbations in fuel metabolism are detectable way before the emergence of clinically evident sarcopenia and frailty. The use of AC-DC/-OH panel as antecedent biomarkers may enable clinicians to risk stratify patients in the future.

VITAMIN K ANTAGONISM AND CHONDROCALCINOSIS IN THE OSTEOARTHRITIS INITIATIVE

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Calcification of articular cartilage, known as chondrocalcinosis, becomes more prevalent with age. Although chondrocalcinosis can be characteristic of osteoarthritis, it has been associated with more joint pain and disability independent of osteoarthritis severity. Identifying novel modifiable risk factors for chondrocalcinosis may help reduce joint pain and disability. One potential risk factor involves vitamin K because vitamin K-dependent proteins that inhibit calcification are present in articular cartilage. To test the hypothesis that vitamin K antagonism is associated with more chondrocalcinosis, we evaluated the cross-sectional association between warfarin use and chondrocalcinosis prevalence in the Osteoarthritis Initiative (n=1472, 60% female, mean age 64 years). Warfarin is a vitamin K antagonist that interferes with vitamin K-dependent protein function. In a secondary analysis we evaluated whether the prevalence of chondrocalcinosis differed according to dietary vitamin K intake. Chondrocalcinosis of the knee, evaluated using plain x-rays, was detected in 8% of participants. It was three times more prevalent in warfarin users (n=20) compared to non-users [prevalence ratio (95% confidence interval) (PR(95%CI)): 3.02(1.42-6.46); $p=0.004$, adjusted for age, sex, race, BMI]. Chondrocalcinosis prevalence did not differ according to vitamin K intake [PR(95%CI), compared to tertile 3 (≥ 189 mcg/d): tertile 1 (< 96 mcg/d) =1.30(0.82-2.07), tertile 2 (96-189 mcg/d) =1.17(0.76-1.81), p -trend=0.623, adjusted for age, sex, race, BMI, energy intake]. That chondrocalcinosis prevalence differed according to warfarin use, but not vitamin K intake, suggests vitamin K-dependent protein function may be involved in chondrocalcinosis development. Since warfarin was not commonly used in this cohort, additional studies are needed to substantiate our findings.

SESSION 720 (SYMPOSIUM)

EARLY-LIFE INFLUENCES ON LATER-LIFE HEALTH

Chair: Sara M. Moorman, Boston College, Chestnut Hill, Massachusetts, United States

Discussant: Jacqui Smith, University of Michigan, Ann Arbor, Michigan, United States

This symposium identifies risk and protective factors in childhood and adolescence that continue to influence the physical and cognitive health of older adults. Dimensions of early life inequality include geographic location, educational opportunities, and total amount of adversity faced. Papers in the symposium use data from three major U.S. longitudinal studies: the Health and Retirement Study (HRS), the MacArthur Study of Midlife in the U.S. (MIDUS), and the Wisconsin Longitudinal Study (WLS). Each paper focuses on the mechanisms (i.e., mediators and moderators) linking well-being in childhood and adolescence to health in older adulthood. Greenfield, Akincigil, and Moorman find that net of IQ, college education boosts later life cognition, especially for men who had a low probability of college attendance. Kemp and Montez further find that state economic policy and adult health behavior explain later life disparities in health by educational attainment. Herd, Sicinski, and Asthana continue the theme of geographic place, finding that rural