effect to facilitate interpreting that link is lacking. Clouston et al. (2021) emphasized the value of the Flynn effect in investigating links between childhood cognitive functioning and later adult Alzheimer’s disease and related dementia (ADRD) risks. We linked our family level results to middle-age maternal health outcomes (factors that are related to ADRD risks). Canonical correlation analyses showed that mothers (at ages 40+ and 50+) from families with higher score levels and slopes tended to have better mental and physical health. Our results, showing a Flynn effect in child and adolescence scores, at the family level, with links to adult health, persisted after controlling for a known selection bias.

**PHYSIOLOGICAL DYSREGULATION AS A PREDICTOR OF COGNITIVE DECLINE**

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Preclinical indicators of disease such as inflammation, cortisol and glucose dysregulation, and multisystem dysregulation (allostatic load) are related to individual differences in the level of cognitive functioning across adulthood. This study examined whether individual biological systems and allostatic load are related to differential patterns of change in cognitive functioning over 9 years. Data are from the Midlife in the United States (MIDUS) study second (biomarker and cognitive) and third waves (cognitive). The sample includes 863 men and women who ranged in age from 35 to 85 when the data were first collected. MIDUS biomarkers include a comprehensive range of biological and anthropometric measurements reflecting cardiovascular functioning, glucose metabolism, lipid metabolism, inflammation, HPA axis function, as well as sympathetic and parasympathetic nervous system function. Summary indices of dysregulation in each of these major systems as well as an overall index of multi-system dysregulation, or allostatic load were examined in relation to 9-year changes in episodic memory and executive functioning from the Brief Test of Adult Cognition by Telephone. Regression analyses, controlling for preexisting diseases and medications, showed that higher allostatic load was associated with decreased executive functioning over time for those who started out with higher cognitive performance at baseline, after adjusting for age, gender, race, English language, education, neurological conditions, medication use and smoking. Identifying biomarkers as antecedents of cognitive changes in midlife and old age, can potentially aid in the early detection of cognitive impairments and increase the possibilities for preventive interventions.

**SESSION 6450 (POSTER)**

**COGNITIVE FUNCTION (HEALTH SCIENCES POSTERS)**

**USEFULNESS OF REVISED SIMPLIFIED SHORT-TERM COGNITIVE SCREENING TEST (STMT-R) IN ACUTELY ILL GERIATRIC PATIENTS**

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Background: Dementia can be a major cause of mortality and morbidity in geriatric patients. So, it would be essential to assess their mental state. Aims: We aim to appraise the impact of cognitive dysfunction on the long-term prognosis on STMT-R as a quicker and sensitive cognitive identification in acutely ill geriatric patients.

Methods: The inclusion criteria were to measure geriatric patients by STMT-R at admission, age≧50yo and being non-critical ill. Between October 2014 and September 2015, 836 were enrolled (52.4% female, mean age: 78.9 years). STMT-R≧4 was considered as cognitive dysfunction. Following the collection of clinical data, survival was subsequently measured for 7-8 years until January 2022. Cox’s proportional hazards regression models were used to evaluate the hazard of death according to the dementia severity, with adjustment for potential covariates. Survival was estimated using Kaplan-Meier method.

Results: Among enrolled subjects, 144 were unable to complete the test due to severe dementia (ITG). 433 had cognitive dysfunction (STMT-R≧4; CDG) and 259 didn’t have cognitive dysfunction (STMT-R<4; NCDG). The survival curves for death among three groups were significantly decreased in the CDG and ITG compared with the NCDG. The risks for mortality in the ITG and CDG are 3.92 (hazard ratio; 95% confidence interval:2.74-5.61, p< 0.001) and 1.82(1.33-2.51, p< 0.001) compared with the NCDG as reference.

Conclusion: 1) It was suggested that severity of cognitive dysfunction at admission has independently an impact on survival rate in acutely ill geriatric patients.2) STMT-R may also be useful for the future bedside or remote cognitive assessment.

**ASSOCIATION BETWEEN SUBJECTIVE COGNITIVE DECLINE AND STRENGTH TRAINING IN US ADULTS AGED 45+ YEARS**

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Subjective cognitive decline (SCD) can be an early marker for Alzheimer’s disease and related dementias. Data supports physical activity to delay cognitive impairment and to improve cognitive functioning. We examined strength training engagement by middle-aged and older US adults with and without SCD. We used data from 121, 059 participants aged 45 years or older from the 2019 Behavioral Risk Factor Surveillance System (BRFSS) from 31 states and Washington, D.C. SCD was assessed by asking participants if they had experienced confusion or memory loss during the past 12 months (yes/no). Participants reported how often they engaged in strength training (e.g., using weight machine, free weights) in the past month. We dichotomized strength training engagement as meeting physical activity recommendations (2+ times weekly) or not (< 2 times weekly). An adjusted logistic regression model, controlling for confounding variables, estimated the likelihood of strength training in relation to SCD. Analyses were weighted; results
are nationally representative. SCD was reported by 11.0% (SE: 0.2%) of middle-aged and older US adults. Three in 10 (29.1%; SE: 0.7%) of US middle-aged and older adults who reported SCD engaged in strength training 2+ times a week compared to 34.0% (SE: 0.3%) of US adults without SCD (aOR, 0.9; 95% CI: 0.9-1.0). While middle-aged and older US adults with SCD were less likely to strength train than those without SCD, only a third engaged in recommended strength training regardless of SCD status. Primary care providers should encourage strength training among middle-aged and older adults regardless of cognitive status.

HIGHER PHYSICAL FITNESS CLUSTERS SHOWED GREATER GLOBAL COGNITIVE OUTCOMES IN MIDDLE-TO OLDER-AGED ADULTS

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Approximately, 6 million individuals in the United States are living with Alzheimer’s disease. A new diagnosis occurs every 67 seconds, which will triple the rates by 2050. Recently, physical dysfunction has been associated with cognitive decline; however, usually, this is examined in one dimension of physical fitness (PF). A more robust way including multiple domains of PF would be beneficial in examining the relationship between PF and cognition. Therefore, the purpose of this investigation was to examine cognition in clustered PF variables among middle to older-aged adults. Participants (n=216;73% female) enrolled and completed a DXA scan, RBANS, handgrip, sit-to-stand power with TENDO, dual-task (4-meter and 10-meter), and 6-minute walk distance test. A hierarchical cluster analysis was utilized to identify PF cluster for participants, a one-way ANOVA was used to assess differences in cognition between clusters. Cluster 1 (C1;n=29) was characterized with the highest physical fitness values, cluster 2 (C2;n=74) was in-between C1 and C3, cluster 3 (C3;n=113) had the lowest values among PF variables. C1 had significantly higher global cognitive and visuospatial scores compared to C3 (p<0.05). C1 and C2 had significantly higher values on line orientation and figure recall than C3 (p<0.05). Data showed high PF clusters had higher global cognitive values when compared to lower PF clusters. Moreover, higher PF showed greater visuospatial and delayed memory values compared to lower PF. Clustering PF tasks served as a practical tool evaluating cognition—this may be useful for future interpretation of cognitive decline where higher PF represents higher overall cognition.

THE RELATIONSHIP BETWEEN SKIPPING BREAKFAST AND DEMENTIA: A RETROSPECTIVE COHORT STUDY IN OSAKA

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In Japan, annual medical checkups are carried out to prevent lifestyle diseases. Studies have found that skipping breakfast is a risk factor for diabetes, and potentially also dementia. This retrospective cohort study aimed to evaluate the relationship between skipping breakfast and dementia in people with diabetes. The eligible cohort was anyone on the National Health Insurance Database of Osaka who had a checkup in FY 2013 and had diabetes (N = 283,410). The cohort was divided into two groups, those who skipped breakfast more than three times a week (7.38%) and those who did not. The database does not allow individuals to be identified. People with diabetes were defined as those prescribed diabetes drugs in the year before the checkup or with HbA1c of 6.5% or higher at the checkup. People with dementia were defined as those prescribed anti-dementia drugs between April 2014 and December 2017. Data also included body mass index (BMI), smoking, sex, age, and prescription of hypolipidemic or blood pressure drugs. Logistic regression analysis was used, with odds ratio (OR) and 95% confidence interval. Being male, younger, smoking, having lower BMI or HbA1c levels, and drug prescriptions were associated with skipping breakfast. Skipping breakfast was associated with dementia (OR 1.26, 1.14–1.41), as was lower BMI and being older. For people with diabetes, skipping breakfast is a risk factor for obesity and dyslipidemia, which are associated with dementia. This study therefore provides evidence for a health behavior approach to eating breakfast in people with diabetes.

ASSOCIATION OF SUBJECTIVE AND OBJECTIVE COGNITION WITH DISEASE AWARENESS: EVIDENCE FROM BLOOD BIOMarkers DATA

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Impaired cognitive ability and its misperception contribute to poor decision-making of older adults; yet their impact on health-related decisions is less known. We examined how self-perceived and actual cognition were associated with chronic disease awareness using a nationally representative sample of Chinese older adults. Blood biomarkers data were collected in 2015 to identify participants’ dyslipidemia and diabetes status. Among participants with identified dyslipidemia or diabetes, disease awareness was defined as self-reported diagnosis of the conditions as of 2018. Objective and subjective cognition were respectively assessed using the Mini-Mental State Examination and self-rated memory. The associations of subjective and objective cognition with chronic disease awareness were determined by weighted logistic regressions. Among 4,578 adults aged 60 and older with complete measurements, 1,442 and 759 individuals were identified having dyslipidemia and diabetes, with proportions of disease awareness being 38.0% and 58.1%, respectively. Individuals with mild (Odds Ratio [OR]=0.63; 95%CI: 0.45-0.89) or severe cognitive impairment (OR=0.46; 95%CI: 0.29-0.72) had lower odds of dyslipidemia awareness; and those with severe cognitive impairment had lower odds of diabetes awareness (OR=0.43; 95%CI: 0.23-0.79) than cognitively intact counterparts. However, adjusting for objective cognition,