late life cognitive function. However, it is unclear whether non-traditional physical activities provide additional benefits for cognitive function above and beyond traditional leisure physical activities. This study examines the associations between movement therapy and cognitive function in the US population. We used data from the waves 1, 2 and 3 (1995-2014) of the Midlife in the United States (MIDUS) study. MIDUS included a national probability sample of community-living adults aged 25-75 years old in 1995 (wave 1) and added the wave 2 cognitive functioning tests of executive function and episodic memory. We applied multivariate linear regression models to estimate the effect of movement therapy (wave 2) on the cognitive episodic memory and executive function (wave 3) while controlling the covariates (wave 2 sociodemographic factors, health, and cognitive function). A total of 2097 individuals aged 42-92 years (mean 64.4, sd 10.9, 55.6% women) were included in the analysis. Movement therapy was independently associated with better episodic memory ($\beta=0.117, p=0.02$), but not with executive function ($\beta=0.039, p=0.14$), after including control variables. The results suggest that movement therapy may be an effective non-pharmacological intervention to attenuate age-related cognitive decline in middle-aged and older adults. Future research should test whether these findings can be replicated in similar populations and if confirmed, interventions should incorporate a wider range of physical activities in community-living older adults with the goal of maintaining and improving physical and cognitive health.

NEURAL INHIBITION TASK ELICITS AGE-ASSOCIATED CHANGES IN PREFRONTAL CEREBRAL OXYGENATION

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Certain cognitive tasks, such as those involving inhibition, can influence an older adult’s dual-tasking ability more than others. This study aimed to manipulate cognitive task difficulty to evaluate age-associated differences in brain activity and behaviour during walking. Nineteen younger (M=21.3, SD=3.9) and 20 older (M=71.8, SD=6.4) adults completed four cognitive-auditory tasks: simple reaction time (SRT; processing speed), Go-no-Go (GN; neural inhibition), N-back (NBK; working memory) and Double number sequence (DNS; working memory) with or without self-paced walking. Trials took place under single cognitive (SC), single motor (SM) and dual-task (walking with a cognitive task; DT) conditions. Throughout each condition, cerebral oxygenation changes ($\Delta$HbO2) in the prefrontal cortex were acquired using functional near-infrared spectroscopy (fNIRS). Behavioural measures including response time (ms), accuracy (%) and gait speed (m/s) were also calculated. Repeated measures ANOVAs revealed that OAs exhibited greater $\Delta$HbO2 than YAs in the left hemisphere during the GNG inhibition task ($p = 0.04$). Activation in the right hemisphere also increased compared to the left during DNS DT ($p = 0.05$). Response times increased with increasing task difficulty and YAs were faster than OAs during NBK SC ($p = 0.09$). Neural findings revealed age-associated changes in prefrontal activation at the GNG inhibition difficulty level. Behavioural results indicated poorer performance with increasing task difficulty including slower response times in OAs. Moreover, gait speed and accuracy only decreased within task and difficulty. Therefore, understanding the neural and behavioural changes across task difficulty may help monitor cognitive decline and distinguish normal aging from disease states.

NOW YOU SEE THEM, NOW YOU DON’T: AGE DIFFERENCES IN RISK AVERSION

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Older age has often, but not always, been associated with greater risk aversion. Some have suggested that age differences in risk may reflect age-related declines in cognitive abilities. This study investigated the robustness of age differences in risk aversion across three different risk-taking measures, after controlling for cognitive abilities. Community-dwelling younger (n = 75; 25-36 years, M age = 29.01) and older (n = 74; 60-90 years, M age = 69.11) adults completed self-report and behavioral measures of risk aversion and several measures of cognitive abilities. Results showed that older adults reported significantly greater risk aversion than young adults on the behavioral measure of risk (Balloon Analogue Risk Task, BART), but not on the self-report measures (Framing Task and Choice Dilemmas Questionnaire). Greater risk aversion on BART was significantly associated with lower analytic thinking, slower processing speed, and worse shifting of attention. Therefore, we tested the relation between age and risk aversion on the BART while controlling for these three cognitive abilities. Age differences in risk aversion remained significant even after accounting for cognitive abilities. Our results suggest that the lack of consistent age differences in risk aversion in the literature may at least partly be due to measurement differences, which raises concerns about the construct validity of these measures of risk aversion. Moreover, cognitive decline may not explain age differences in risk. Further research is needed to understand factors that dampen and heighten risk aversion in people of diverse ages.

PREDICTING AGE FROM LARGE-SCALE BRAIN NETWORKS: EVIDENCE FROM THE CAM-CAN DATASET ACROSS THE LIFESPAN

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Changes in cognition observed in aging (e.g. a shift from prioritization of fluid cognition in young adulthood toward an emphasis on crystallized knowledge and semantic cognition in older adulthood) are believed to reflect alterations in neural connectivity in aging. Recent work specifically highlights how increased connectivity between executive control (EC) regions and default mode network (DMN) may underlie characteristic shifts in cognitive abilities between younger and older adults. However, the contribution of the salience network, which plays a crucial role in
mediating the dynamic interplay between EC and DMN, is relatively overlooked. To extend previous work, we used a large cohort (N = 547) of participants from the Cam-CAN database (18-88 years old) to examine whether resting-state functional connectivity between EC and DMN can reliably predict participant age. We further examined how addition of the salience network impacts the hypothesized increased connectivity between EC and DMN as a result of aging. A series of multiple regression analyses using functional connectivity and age as variables revealed that connectivity between EC and DMN regions (specifically between dorsolateral and ventromedial prefrontal cortex and parietal regions, including the precuneus) accounted for a significant portion of age variability and that the inclusion of the salience network improved the models' explanatory power. Follow-up analyses by age cohort further highlighted that these relationships dynamically change across the lifespan. We will discuss these findings in the context of default-executive coupling hypothesis for aging and propose avenues for future research in refinement of this model.

SPOUSAL LOSS AND COGNITIVE FUNCTIONING: DO PRE-LOSS MARITAL QUALITY AND GENDER MATTER?

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Prior research has found that the risk of cognitive decline increases after the death of a spouse. In general, the impact of life transitions is contingent on contextual factors such as socio-demographic characteristics or relationship quality. However, there is limited research on how marital quality before spousal loss and gender influence the association between spousal loss and cognitive change. The current study examines the effects of spousal loss on change in cognitive functioning as well as the moderating effects of pre-loss marital quality and gender. Data from two waves of the Midlife in the United States (MIDUS) study were analyzed (MIDUS2: 2004-05, MIDUS3: 2013-14). The analytic sample consists of two groups: (1) 179 bereaved adults who were age 54 or older at MIDUS2 (M = 65.2, SD = 9.5) and whose spouses died between MIDUS2 and MIDUS3, and (2) 179 non-bereaved adults, matched with the bereaved group on age and gender, who did not experience spousal loss between the two waves. Cognitive function was assessed via BTACT (Brief Telephone Adult Cognition Test) at both waves. Regression results show that both pre-loss marital quality and gender significantly moderate the association between spousal loss and change in cognitive functioning. Specifically, relative to their counterparts, men and those who reported better marital relationships prior to spousal death had a greater risk of cognitive decline after a spouse’s death. The findings suggest the significance of pre-loss marital quality and gender for cognitive changes in widowhood and have implications for the development of efficient interventions.

TAKE ACTION OR WORRY: OLDER ADULTS’ ANTICIPATED RESPONSES TO CONCERNING COGNITIVE ASSESSMENT RESULTS

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Under a third of older adults (28%) report having ever received an assessment for cognitive problems in US primary care settings. Patient resistance is cited as a major reason cognitive assessments are not performed. Theoretical models emphasize the role of anticipated benefits and harms in shaping health behaviors. Accordingly, here we investigated older adults’ anticipated actions and worries regarding their cognitive assessment results. A total of 393 community-dwelling respondents between ages 50 and 91, 65% female, 89% college/university-educated, with no diagnosed cognitive disorder, completed Attitudes Around Cognitive Testing (AAC T) at primary care sites (n=98) and through an online platform (www.mturk.com) (n=298). AACT examines older adults’ preferences and concerns about cognitive assessment. It includes questions about actions participants would take and worries they would have if assessment results indicated cognitive problems. Willingness to take part in testing (yes or unsure/no) was also assessed. We found that seeking a formal diagnosis (84%), talking to family about healthcare (77%), and planning one’s own future (70%) were highly endorsed actions, and becoming depressed (48%), becoming anxious (47%), and losing driving privileges (41%) highly endorsed worries. Logistic regression showed that total worries and worry-action difference scores predicted reduced willingness (OR=0.84, CI=0.75-0.93 and OR=0.82, CI=0.74-0.82, respectively), whereas total actions did not. Our results suggest that older adults view concerning cognitive assessment outcomes as an opportunity for taking action as well as a reason for worrying. Both worries and actions appear to play a role in deciding whether to take part in a cognitive assessment.

THE ASSOCIATION BETWEEN COGNITIVE FUNCTION AND PREVENTIVE CARE SERVICE UTILIZATION AMONG U.S. CHINESE OLDER ADULTS

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Preventive healthcare utilization is an important aspect of medical practice that facilitates the identification of chronic diseases at an early stage and increases options for treatment. Cognitive function plays an important role in individuals’ utilization of preventive care services. However, our understanding of the relationship between cognitive function and preventive care utilization is limited, particularly in older minority aging populations. The study aims to assess the association between cognitive function and preventive healthcare utilization among U.S. Chinese older adults. Data were obtained from the Population Study of Chinese Elderly in Chicago (PINE). Five instruments were used to measure global cognition, including the Mini-Mental State Examination, East Boston Memory Test Immediate Recall and Delayed Recall, Digit Span Backwards,