participants who were aged 60-97 (56.7% women) who completed at least one post-baseline neuropsychological evaluation, had medication data, and both T1 and FLAIR neuroimaging scans. Cognitive composites (Memory, Attention, Executive Function, Language) were derived factor analytically using harmonized data. Baseline WMH volumes were quantified using UBO Detector. Baseline health screening and medication data was used to determine overall CVD burden and total medication. Longitudinal latent growth curve models were estimated adjusting for demographics.
Results: More CVD medication was associated with greater CVD burden; however, no direct effects of medication were found on any of the cognitive composites or WMH volume. While no direct effects of CVD burden on cognition (overall or rate of decline) were observed, instead we found that greater CVD burden had small, but significant, negative indirect effects on Memory, Attention, Executive Functioning and Language (all p's < .01) after controlling for CVD medication use. Whole brain WMH volume served as the mediator of this relationship, as it did for an indirect effect of baseline CVD on 6-year rate of decline in Memory and Executive function.
Conclusions: Findings from this study were generally consistent with previous literature and extend extant knowledge regarding the direct and indirect associations between CVD burden, pharmacological treatment, and neuropathology of presumed vascular origin on cognitive decline trajectories in an older adult sample. Results reveal the subtle importance of CVD risk factors on late life cognition even after accounting for treatment and WHM volume and highlight the need for additional research to determine sensitive windows of opportunity for intervention.

Categories: Aging
Keyword 1: vascular cognitive impairment
Keyword 2: aging (normal)
Keyword 3: neuroimaging: structural
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41 The Role of Physical Activity, Social Support and Genetic Risk in Age-Related Cognitive Decline Over Time: A UK Biobank Study

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Objective: This study aimed to determine how modifiable risk factors, such as physical exercise and social support, and non-modifiable risk factors, such as genetic risk may affect cognitive function over time in older adults. As well, the study explored how changes in modifiable risk factors (i.e., increase in exercise) may affect cognitive function over time. This research question was shaped with the help of a patient partner team.
Participants and Methods: The study used UK Biobank data, and patient partners were involved in shaping research questions/goals. The UK Biobank study had participants complete comprehensive baseline assessments (2006-2010), with subgroups also completing repeat assessments (2012-2013), imaging assessments (2014-ongoing) and/or repeat imaging assessments (2019-ongoing; i.e., 2-4 data points per participant). Age, sex, education, ethnicity, and apolipoprotein E (APOE) e4 status (at least one e4 allele present) data were collected at baseline. Employment, physical activity, social support, and recent depressive symptom data were collected across timepoints. A Fluid intelligence score was obtained at each timepoint via a series of thirteen 1-pt. reasoning tasks (range: 0-13). Participants who did not complete cognitive testing at baseline and at least one other time point, and those with neurological conditions or events (e.g., stroke, epilepsy, dementia) were excluded (final N=17,409).
Multi-Level Modeling (with Maximum Likelihood) was utilized, with fluid intelligence as the primary outcome measure. We ran Model 1: fully unconditioned, Model 2: with time predictor in years (baseline= 0), and Model 3: with baseline physical activity, social support and APOE e-4 predictors and covariates (mean-centered as appropriate), time-varying physical activity and social support predictors, and interaction terms. Nonsignificant interaction terms were trimmed from Model 3 to facilitate interpretation.
Results: Model 1 was significant (p<.001) with an intraclass correlation (ICC) of 0.64,

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suggesting that 64% of the total variance in fluid intelligence in this sample is due to interindividual differences. Model 2 revealed that the average fluid intelligence score at baseline mean age (55.85) was 6.79 and significantly decreased with each year increase since baseline. Results from Model 3 (trimmed) revealed that being male, white, and having at least a university degree were associated with higher score at baseline, while being older and having more recent depressive symptoms were associated with lower scores. Higher social support quality was associated with higher scores while higher social support quantity was associated with lower scores at baseline; however, higher social support quantity at baseline was associated with less decline in scores over time. Surprisingly, having at least one e4 allele was associated with higher scores. Engaging in more moderate physical activity was associated with lower scores at baseline, however, individuals who increased the length of their moderate physical activity sessions over time showed higher timepoint-specific fluid intelligence scores. Additional significant interactions will be elaborated.
Conclusions: Results suggest that increases in the length of moderate physical activity exercise sessions were associated with better cognitive function over time. Having better social support quality was also associated with better cognitive function, while higher social support quantity was associated with less cognitive decline over time. These findings suggest that positive lifestyle changes in older adulthood may slow cognitive decline.

Categories: Aging
Keyword 1: aging (normal)
Keyword 2: cognitive functioning
Keyword 3: mild cognitive impairment
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42 Age-Related Alterations in Representational Forms of Imagination: A Novel Scoring Protocol Applied to Autobiographical Memory

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Objective: Human imagination is a complex system that allows us to form images or concepts in the mind that are not present to the senses. Research on imagination has been heavily influenced by the idea that humans store two distinct types of long-term memory: episodic and semantic memory. This theoretical distinction is particularly important in the context of aging, where older adults show reduced episodic memory compared to semantic memory (Levine et al., 2002). However, recent work has shown that these two memories are not as distinct as once thought (Renoult et al., 2019; Irish & Vatansever, 2020), suggesting a need to either refine the relationship between these concepts, or the concepts themselves.
Here, we apply a broader framework for imagination to the autobiographical memories of older adults. Introduced by Andrews-Hanna & Grilli (2021), memory and future thoughts can be understood as the outcome of the collaboration between two representational forms of imagination: the mind's mind and the mind's eye. The mind's mind is described as a high-level, abstract form of imagination accompanied by a verbal representational form, and the mind's eye is described as a contextually-specific, image-based form of imagination. In the present study, we examine whether this broader framework for understanding imaginative thought can a) explain some of the established age-related changes in episodic and semantic memory, and b) extend beyond existing research to offer new ways to conceptualize autobiographical memory in aging.
Participants and Methods: In this study, we introduce a novel scoring protocol distinguishing mind's eye from mind's mind forms of imagination and apply this protocol to the autobiographical memories of eighty-two cognitively normal older adults. Participants were instructed to retrieve unique autobiographical events, and to focus on describing event-specific details. All data were scored both with our new scoring protocol as well as the Autobiographical Interview scoring protocol from Levine et al. (2002).
Results: Our novel scoring protocol demonstrated high inter-rater reliability across two raters for both mind's mind (0.95) and mind's eye (0.96) details. First, we show that the proportion of mind's mind and mind's eye details on average are significantly different, with an increased proportion of mind's eye details. Second, we find that both mind's eye detail production and mind's mind detail production is

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