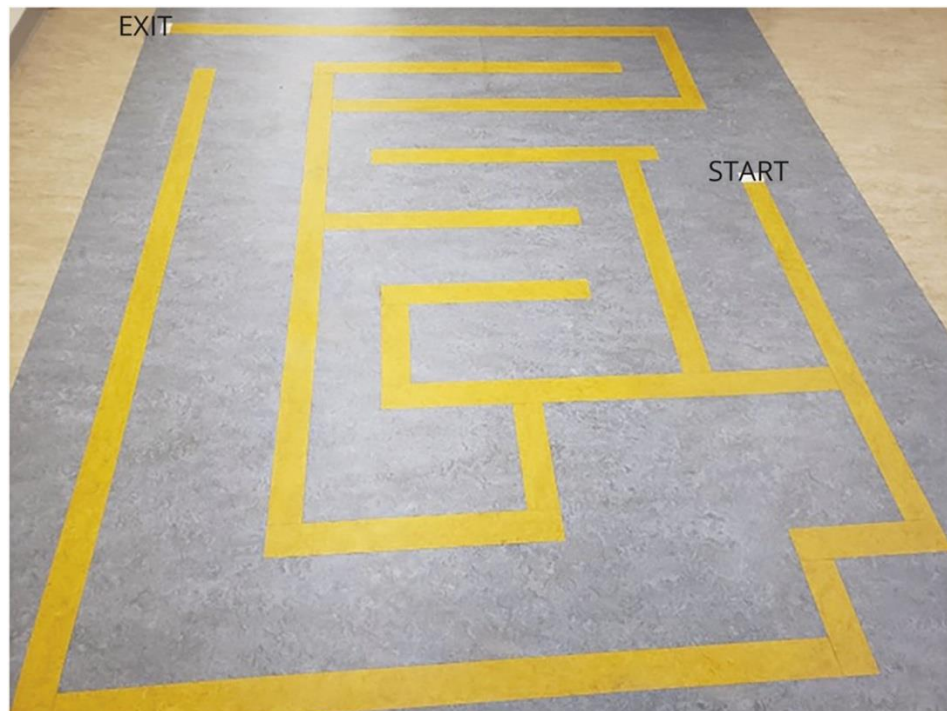
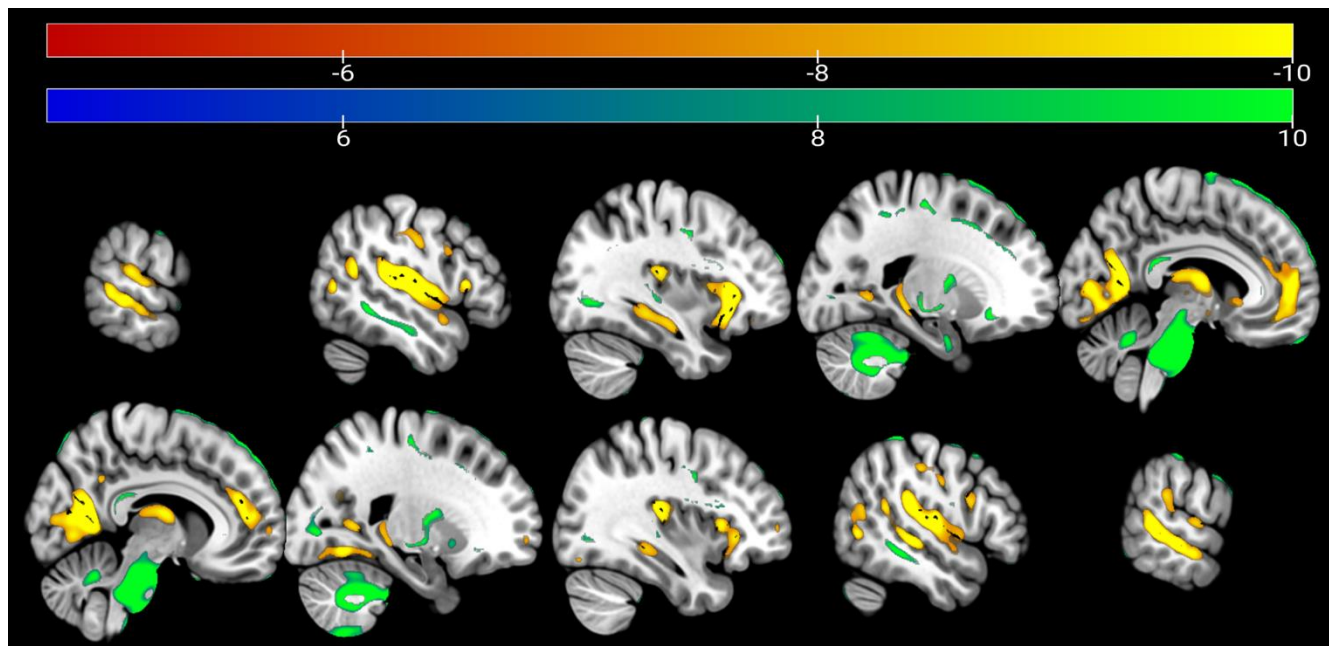
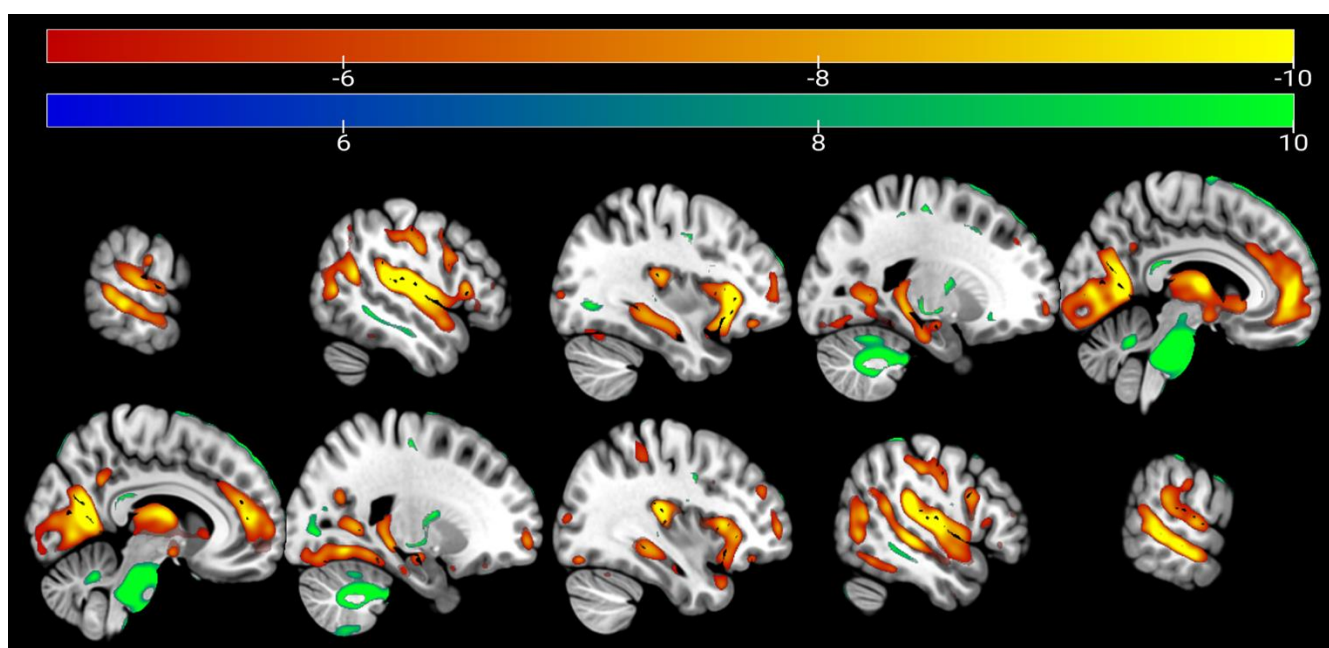


Gray Matter Networks Associated with Floor Maze Test Performance in Older Adults

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INTRODUCTION	METHODS	RESULTS	FIGURES	CONCLUSIONS
- Impairments in spatial navigation are common in aging and neurodegenerative disorders, including Alzheimer's disease (AD) and Parkinson's disease (PD)¹. - The underlying brain structures of spatial navigation in aging, and the neurodegenerative processes that contribute to spatial impairments in AD and PD – are not well-understood. Current Research Question: What structural brain networks are associated with spatial navigation in older adults without dementia?	- Sample: 102 older adults without dementia, from the Central Control of Mobility in Aging Study². - Design: Cross-sectional MRI and spatial navigation data. - Outcomes: Immediate (IMT) and delayed (DMT) Floor Maze Test times (FMT)³. - Covariates: Age, gender, education and total intracranial volume. - Multivariate Covariance-Based analyses were applied after voxel-based morphometry to derive gray matter volume covariance patterns/networks associated with IMT and DMT.	1. Distributed and largely overlapping gray matter networks were associated with IMT and DMT. 2. Networks were composed of prefrontal (medial), insular, temporal (including hippocampus), occipital, thalamic, motor, and supplementary motor regions. 3. The network associated with DMT was more widespread than the network associated with IMT. 	 Figure 1. Gray Matter Covariance Patterns Associated with Immediate Maze Time. Negatively weighted regions displayed in red-to-yellow had increased volume with a faster (better) immediate maze time. Positively weighted regions displayed in blue-to-green had reduced volume with a faster immediate maze time.  Figure 2. Gray Matter Covariance Patterns Associated with Delayed Maze Time. Negatively weighted regions displayed in red-to-yellow had increased volume with a faster (better) delayed maze time. Positively weighted regions displayed in blue-to-green had reduced volume with a faster delayed maze time.	Gray matter volume covariance networks associated with FMT performance include regions: a. Previously linked to spatial navigation (e.g., hippocampus). b. Important for episodic memory, executive function, visual processing, sensory integration, motor planning, and motor execution. c. Affected by normal aging (e.g., prefrontal), early Alzheimer's disease (e.g., hippocampus) and Parkinson's disease (e.g., thalamus). <i>FMT performance may reflect different neurodegenerative processes – yet additional and longitudinal brain data are needed to confirm this proposition.</i> REFERENCES 