

noncarriers. Furthermore, global neurocognitive performance was comparable across FHD/APOE-e4 groups. Differences between the FHD-/APOE-e4+ and FHD+/APOE-e4- groups in motor skills were likely driven by FHD status, considering there were no independent effects of APOE-e4 status. This suggests that FHD may be a predispositional risk factor for poor neurocognitive performance among PWH. Considering FHD is easily captured through self-report, compared to blood based APOE-e4 status, PWH with FHD should be more closely monitored. Future research is warranted to address the potential additive effect of FHD and APOE-e4 on rates of global and domain-specific neurocognitive decline and impairment over time among in an older cohort of PWH, where APOE-e4 status may have stronger effects.

Categories: Dementia (Alzheimer's Disease)

Keyword 1: HIV/AIDS

Keyword 2: neurocognition

Keyword 3: dementia - Alzheimer's disease

Correspondence: Maulika Kohli, SDSU/UC San Diego Joint Doctoral Program in Clinical Psychology, mkohli@health.ucsd.edu

42 Cognitive and Neuroanatomic Correlates of Olfactory Function in Cognitively Unimpaired and Impaired Older Adults

Michael DiCalogero¹, Vidyulata Kamath², David Wolk¹, Sandhitsu Das¹, Long Xie³, Jacqueline Lane¹, Kimberly Halberstadter¹, [Dawn Mechanic-Hamilton¹](#)

¹University of Pennsylvania, Perelman School of Medicine, Department of Neurology, Philadelphia, Pennsylvania, USA. ²Johns Hopkins University School of Medicine, Department of Psychiatry and Behavioral Sciences, Baltimore, Maryland, USA. ³University of Pennsylvania, Perelman School of Medicine, Department of Radiology, Philadelphia, Pennsylvania, USA

Objective: Olfactory function declines during normal aging; however, accelerated olfactory decline is observed in neurodegenerative diseases, such as Alzheimer's disease (AD). Moreover, olfactory deficits in pre-clinical AD are associated with future cognitive decline. Odor

identification and memory deficits have been consistently reported in early stage AD indicating its potential sensitivity to AD pathophysiology in olfactory and limbic structures, yet few studies of olfaction have incorporated structural measures in a well-characterized cohort of older adults. In the current study we examined the association between odor identification impairment, cognition, and medial temporal lobe (MTL) sub-regions in cognitively unimpaired and impaired older adults.

Participants and Methods: We enrolled 140 participants (age=72.25±6.54, 56% female, years of education=16.30±2.63, 82% Caucasian, 15% Black/AA, 3% Multiracial) from the Penn Alzheimer's Disease Research Center Clinical Cohort. Participants completed the Sniffin' Sticks Odor Identification Test (SS-OIT), cognitive testing (NACC UDS2 or UDS3 and additional cognitive tests), and MRI scans (3T Siemens MAGNETOM Prisma MRI scanner). For the SS-OIT, participants were presented with 16 odorants using felt-tipped pen dispensers and asked to identify each odor from four multiple-choice options. Scores range from 0 to 16. Additionally, cognitive domains were created by averaging z-scores from tests within each domain: attention, memory, language, executive function, and visuospatial. This cohort was divided into participants with unimpaired cognition (n=96) and impaired cognition (MCI, dementia; n=44) using established normative data and consensus diagnosis. Linear regressions were performed to examine the association between SS-OIT score, each cognitive domain, and MTL measurements for unimpaired and impaired groups. For all analyses, we controlled for age, race, sex, education, smoking status, and hypertension and additionally for MOCA score and intracranial volume with MTL measurements.

Results: In the unimpaired group, SS-OIT significantly associated with language (p<.05). In the impaired group, SS-OIT significantly associated with language and memory (p<.05). In the unimpaired group, SS-OIT significantly associated with right anterior hippocampal volume (p<.05). In the impaired group, significant associations were found between SS-OIT and right anterior hippocampal volume (p<.05) and left hippocampal mean thickness (p<.05). Additionally, SS-OIT significantly associated with left and right entorhinal cortex volume (p<.05) and mean thickness (p<.05).

Conclusions: This study reveals that lower odor identification performance is related to lower performance on measures of cognition and atrophy in MTL sub-regions in unimpaired and impaired older adults. Our findings support prior results demonstrating relationships between olfactory function, cognition, and MTL sub-regions. Specifically, olfactory function and episodic memory have been shown to follow similar patterns of decline in the course of AD, potentially reflecting AD pathology in shared regions of the MTL subserving episodic memory and olfactory function. Our findings demonstrate that reductions in both cortical thickness and grey matter volume of MTL regions are linked to olfactory deficits in individuals at risk for Alzheimer's dementia. Future steps will include the analysis of longitudinal cognitive and imaging indices and the incorporation of fluid biomarker data.

Categories: Dementia (Alzheimer's Disease)

Keyword 1: olfaction

Keyword 2: neuroimaging: structural

Correspondence: Michael DiCalogero
University of Pennsylvania, Perelman School of
Medicine, Department of Neurology
Michael.Dicalogero@pennmedicine.upenn.edu

43 Evaluating the Relationship Between Social Support, Executive Function, and Communicative Effectiveness

Molly Split¹, Jessica L Saurman², Amy Rodriguez², Felicia C Goldstein², Kayci L Vickers²

¹Drexel University, Philadelphia, PA, USA.

²Emory University, Atlanta, GA, USA

Objective: Research suggests greater perceived social support is associated with better general cognitive function in community-dwelling older adults. While these findings expand our understanding of the role of social support in healthy aging, further work is needed to investigate the role of social support in mild cognitive impairment (MCI). Of particular interest is the relationship between executive function (EF), communicative effectiveness, and social support, as these are common areas of decline and are likely to impact one's ability to meaningfully interact with others. The present study aimed to evaluate the association between

perceived social support, EF, and communicative effectiveness. We hypothesize better EF performance and communicative effectiveness would be associated with higher levels of perceived social support in older adults with MCI.

Participants and Methods: One hundred and twenty-one older adults with MCI were included in the current study. All participants were enrolled in Charles and Harriett Schaffer Cognitive Empowerment Program (CEP) at Emory University, a comprehensive lifestyle program for individuals diagnosed with MCI and their care partners. Upon CEP enrollment, participants completed self-report questionnaires, including the Multidimensional Scale of Perceived Social Support (MSPSS), the Communicative Effectiveness Index (CETI), and EF assessments including Letter Fluency (phonemic fluency), Digit Span Backward (working memory), and the Test of Practical Judgment (decision making). Additionally, a subset of participants completed the written Trail Making Test – Part B (set-shifting; n = 63). Pearson bivariate correlations were utilized to explore the relationship between MSPSS, CETI, and EF performance.

Results: Higher levels of perceived social support were significantly associated with communicative effectiveness ($r = .210$, $p = .021$), such that participants who endorsed having more social support also reported greater confidence in their communicative effectiveness. Perceived social support was associated with better working memory performance ($r = .342$, $p < .001$), phonemic fluency output ($r = .261$, $p = .041$), and shorter time to complete TMT-B ($r = -.244$, $p = .052$), indicating individuals with higher perceived social support demonstrated better EF abilities. Finally, greater confidence in communicative effectiveness was associated with better performances in working memory ($r = .274$; $p = .008$), phonemic fluency output ($r = .213$; $p = .020$) and decision making ($r = .192$; $p = .044$), suggesting stronger working memory, phonemic fluency, and practical decision-making abilities support better communicative effectiveness. There was no association between social support and practical decision-making abilities ($r = .146$, $p = .129$).

Conclusions: The current findings demonstrate a link between higher levels of social support, communicative effectiveness, and EF abilities, particularly in the subdomains of working memory, phonemic fluency, and set-shifting. This link suggests individuals with stronger EF