

TNET and neuropsychological measures, including episodic and semantic memory tests. **Results:** NCI adults demonstrated better memory than CI participants for TNET items. The NCI and CI groups did not differ regarding memory for remote items; however, CI participants had worse memory for recent items. There was a significant association between TNET performance and capacity for episodic and semantic memory in people with CI. In the NCI group, the TNET was associated only with episodic memory.

Conclusions: Findings support the use of news events to assess remote memories in older adults. Novel remote memory measures broaden the scope of memory assessment far beyond what is feasible within traditional neuropsychological assessment and provide insight into the onset of memory changes. Results enhance understanding of memory decline in older adults with cognitive impairment.

Categories: Memory Functions/Amnesia

Keyword 1: amnesia

3 Towards Detecting a Pre-clinical Signature of Dementia: Accelerated Forgetting in Healthy Older Samples - Implications for Methodology, Future Ageing Studies and Early Identification of Dementia

Ashok Jansari

University of London, London, United Kingdom

Objective: Accelerated long-term forgetting (ALF) has been reported in healthy older individuals, and is a possible early marker for risk of developing Alzheimer's disease (AD). The Verbal Associative Learning & Memory Test (VALMT; McGibbon & Jansari, 2013) addresses methodological weaknesses in existing clinical tests and has detected ALF in epilepsy within an hour. We used VALMT to investigate learning and forgetting in healthy older participants.

Participants and Methods: Older (60-69yrs) and Younger (19-31yrs) participants were compared. Using VALMT, unrelated word-pairs were learned to criterion, then cued-recall was tested at delays of 5, 30 and 55 minutes. Unique pairs were tested at each delay. Subjective memory complaints data were gathered, and the Wechsler Memory Scale Logical Memory test

(WMS-LM; a standard clinical measure) was administered.

Results: VALMT identified a significant difference in delayed recall between Younger and Older groups by 55 minutes ($d = 1.32$). While 'fast-learning' Older participants scored similarly to Younger participants, 'slow-learning' Older participants were impaired at all delays. Forgetting rates suggested degradation of memory starts during early synaptic consolidation rather than later system-level consolidation. Increased subjective memory complaints were associated with reduced VALMT scores. By contrast, WMS-LM failed to identify significant differences between any groups, and did not correlate with memory complaints.

Conclusions: We conclude VALMT may be better able than WMS-LM to identify subtle impairments in healthy older adults within a single clinical visit, and VALMT results better reflect subjective experience. Older slow-learners forget faster and report more subjective memory complaints, which may indicate a group at risk of developing AD.

Categories: Memory Functions/Amnesia

Keyword 1: amnesia

4 Accelerated Long-Term Forgetting in Patients with Cerebrovascular Disease

Roy PC Kessels

Radboud University, Nijmegen, Netherlands

Objective: Long-term forgetting rates may be more sensitive for detecting memory decrements compared to short-delay memory assessments (e.g., after 20-30 minutes). To date, much research has been performed on accelerated long-term forgetting (ALF) in epilepsy patients, but research in other patient groups is lacking. ALF may be promising in the field of cerebrovascular disease, as many of these patients experience cognitive complaints, yet do not show impaired performances on neuropsychological assessments.

Participants and Methods: Here, I will present empirical findings on ALF in individuals after a TIA/minor stroke ($n=30$) and after stroke ($n=91$) using short- (20-30 min) and long-delay (1-week) memory testing.

Results: After TIA/minor stroke, short-delay (20-30 min) memory testing was unimpaired, but 1-week delayed testing showed an impaired performance compared to stroke-free controls. In the stroke group, ALF was present in 17% of the patients, compared to stroke-free controls, but more prevalent than rapid forgetting after short-delay memory testing.

Conclusions: ALF is present in patients with cerebrovascular disease, despite normal acquisition rates. The relation with neuroimaging findings and the clinical relevance of these results will be discussed.

Categories: Memory Functions/Amnesia

Keyword 1: amnesia

Symposium 13: Addressing Challenges in the Digital Assessment of Cognition: The Mobile Toolbox for Monitoring Cognitive Change

9:00 - 10:30am
Saturday, 4th February, 2023
Town & Country Ballroom C

Chair

Cindy Nowinski
Northwestern University Feinberg School of
Medicine, Chicago, USA

Summary Abstract:

Cognitive Impairment (CI) is estimated to affect more than 16 million people, the majority of whom are 65 and older (Centers for Disease Control and Prevention, 2011). Moreover, there are about 5.8 million Americans currently living with the most common type of dementia, Alzheimer's Disease, which is projected to increase to 13.8 million people by 2050 (Alzheimer's Association, 2020). Clearly, the ability to detect early indicators of and risk factors for brain disease AND differentiate these from typical cognitive aging is crucial to supporting healthy aging. To date, there are few sensitive assessment tools for detecting normal and abnormal cognitive change that can be widely deployed in diverse research designs and

populations. In addition, clinicians and researchers struggle to conduct assessments with some of the most vulnerable populations because of access issues (e.g., rural communities, rare disease populations), which exacerbates healthcare disparities for these groups. Remote digital assessments can help overcome these barriers by enabling repeated testing in naturalistic conditions, reducing participant burden and expense, and increasing research accessibility for under-represented populations.

This symposium will begin with an overview of the Mobile Toolbox (MTB), an app-based assessment tool and technology platform developed to address challenges in conducting longitudinal cognitive assessments over the adult lifespan. MTB enables completely remote, self-administered assessment using participants' own smartphones with additional capabilities for study set-up and data management and analysis. Our second presentation describes the initial evidence for the reliability and validity of the eight core Mobile Toolbox Cognitive tests, as well as associations with age in a healthy population. The third presentation will describe one site's experience using the MTB platform in a large, remote longitudinal study. The final presentation will consider the issues involved when studies utilize both in-person and remote assessment. Using the NIH Toolbox V3 Examiner version, from which several of the MTB tests were inspired, we will review the advantages and disadvantages of including remote assessments alone and in combination with face-to-face examination. To conclude, we will summarize the state of the current research and recommendations for neuropsychologists interested in using MTB in their future work.

Keyword 1: cognitive functioning

Keyword 2: assessment

Keyword 3: technology

1 The Mobile Toolbox for Monitoring Cognitive Change

Richard Gershon, Cindy J. Nowinski, Aaron Kaat
Northwestern University Feinberg School of
Medicine, Chicago, IL, USA