

Results: SCD was negatively associated with BFLT T1 ($r = -0.406$, $p = 0.003$), T1T2 ($r = -0.331$, $p = 0.019$), T1T3 ($r = -0.323$, $p = 0.022$), Total Learning ($r = -0.283$, $p = 0.046$), Immediate Recall ($r = -0.322$, $p = 0.023$), Delayed Recall ($r = -0.318$, $p = 0.025$), and Retroactive Interference ($r = -0.388$, $p = 0.005$) and positively associated with Proactive Interference ($r = 0.308$, $p = 0.029$). There was no significant difference in correlational strength between any of these BFLT scores and SCD. Adjusting for demographics, SCD predicted Immediate Recall ($B = -0.273$, $p = 0.029$), Total Learning ($B = -0.253$, $p = 0.040$), T1 ($B = -0.412$, $p = 0.002$), T1T2 ($B = -0.326$, $p = 0.010$), T1T3 ($B = -0.299$, $p = 0.017$), Proactive Interference ($B = 0.292$, $p = 0.050$), and Retroactive Interference ($B = -0.330$, $p = 0.025$).

Conclusions: Eight of the nine assessed BFLT scores were strongly correlated with age-anchored SCD and age-anchored SCD predicted seven of the nine assessed BFLT indices when adjusted for demographics. Although additional work is needed, these findings suggest SCD's sensitivity to changes in visuospatial learning and memory, supporting its use as an early marker for preclinical AD. Likewise, our results suggest that an abbreviated version of the BFLT could be utilized that shortens testing time and reduces participant fatigue without a decrease in clinical relevance. Through ongoing longitudinal work, we hope to further disentangle the relationship between SCD and visuospatial learning and memory as measured through the BFLT and to examine how associations between SCD and the BFLT assessment change over time.

Categories: MCI (Mild Cognitive Impairment)

Keyword 1: memory complaints

Keyword 2: dementia - Alzheimer's disease

Keyword 3: visuospatial functions

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89 The Effect of Personality Traits on the Development of Predementia Cognitive States: Results from the Einstein Aging Study

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Objective: Recent research has found associations between the Five Factor Model (FFM) personality traits (Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism) and risk of developing subjective cognitive decline (SCD), mild cognitive impairment (MCI), and/or dementia. It has therefore been proposed that personality should be incorporated into conceptual models of dementia risk, as personality assessments have utility as readily available, low-cost measures to predict who is at greater risk for developing pathological cognitive decline. The objective of the present study was to explore the relationship between FFM personality traits and predementia cognitive syndromes including SCD, amnesic MCI (aMCI), and non-amnesic MCI (naMCI). The first aim was to compare baseline personality traits between participants who transitioned from healthy cognition or SCD to aMCI vs. naMCI. The second aim was to determine the relationship between FFM personality traits and risk of transition between predementia cognitive states. The third aim was to explore relationships between levels of FFM personality traits and performance on a comprehensive cognitive battery.

Participants and Methods: The participants for this study were 562 (Aim 3; Mean Age = 78.90) older adults from the Einstein Aging Study, 378 of which had at least one follow-up assessment (Aims 1 & 2; Mean Age = 78.60). Baseline levels of FFM personality traits were measured in the EAS using the 50-item International Personality Item Pool (IPIP) version of the NEO-Personality Inventory. Baseline levels of anxiety and depressive symptoms, medical history, performance on a cognitive battery and age, sex, and years of education were also collected. A multistate Markov approach was used to model the risk of transition across the four predementia states (cognitively healthy, SCD, aMCI, and naMCI) with each FFM personality trait as covariates.

Results: Regarding Aim 1, Mann-Whitney U tests revealed no differences in levels of FFM personality traits between participants who developed aMCI compared to those who developed naMCI. Regarding Aim 2, the multistate Markov model revealed that higher levels of conscientiousness were protective against developing SCD while higher levels of neuroticism resulted in an increased risk of developing SCD. Further, the model revealed that higher levels of extraversion were protective

against developing naMCI. Finally, regarding Aim 3, exploratory correlations revealed many positive associations between levels of openness to experience and performance on neuropsychological tests. Few associations were found for the other FFM personality traits. **Conclusions:** Results from this study suggest that premorbid personality traits may play a predictive role in the risk for or protection against specific predementia syndromes. Thus, FFM personality traits may be useful in improving predictions of who is at greatest risk for developing specific predementia syndromes. These personality measures could be used (in addition to other established risk factors for cognitive decline) to enrich clinical trials by targeting individuals who are at greatest risk for developing specific forms of cognitive decline. Such measures may also be useful in diagnostic prediction models for predementia syndromes. These results should be replicated in future studies with larger sample sizes and younger participants.

Categories: MCI (Mild Cognitive Impairment)

Keyword 1: mild cognitive impairment

Keyword 2: personality

Keyword 3: neuropsychological assessment

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91 Agent Orange Exposure and Mild Cognitive Impairment in U.S. Vietnam Era Veterans

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Objective: US forces used Agent Orange (AO) during the Vietnam War and continued to store/test it at other locations after the war. AO is a powerful herbicide including dioxin, a highly toxic ingredient classified as a human carcinogen. The National Academies of Sciences, Engineering, and Medicine

periodically review the literature on the health effects of AO exposure (AOE) and concluded in 2018 that there is sufficient evidence linking AO with a wide range of adverse health outcomes, including neurologic disorders (e.g., Parkinson's disease). The VA has a list of medical disorders considered presumptive conditions related to AOE. More recently, AOE has been linked to a nearly double risk compared to those without AOE for receiving a dementia diagnosis. To our knowledge, no one has investigated the association of AOE to mild cognitive impairment (MCI), a condition thought to precede dementia.

Participants and Methods: We examined men in three waves of the Vietnam Era Twin Study of Aging (VETSA). In wave 3, participants self-reported yes/no to the question of whether they ever had prolonged or serious AOE. MCI was diagnosed by the Jak-Bondi approach. Impairment was defined as 2+ tests within a cognitive domain that were more than 1.5 standard deviations below normative means after adjusting for premorbid cognitive ability. In mixed effects models, we tested the effect of AOE on MCI status. Models were adjusted for age, ethnicity, and non-independence within twin pairs.

Results: In wave 3, 12.6% (230) of 1167 participants reported AOE. Those with AOE data had mean ages of 51.1 (wave 1), 56.0 (wave 2), and 61.4 (wave 3). Those with data on both AOE and MCI numbered 861 (wave 1), 900 (wave 2), 1121 (wave 3), and 766 had AOE and MCI at all waves. AOE was significantly related to wave 2 MCI ($p < .001$), but not to waves 1 and 3 MCI. AOE was significantly associated with the number of time points at which someone met criteria for MCI ($p = .011$). Analyses were conducted on six cognitive domains used to diagnose MCI, using available participants per wave. At all 3 waves, AOE was significantly associated with lower scores in processing speed ($p = .003$, $p = .004$, $p = .005$, respectively), working memory ($p < .001$, $p = .002$, $p = .008$) and nearly significant at all waves for executive dysfunction ($p < .001$, $p < .001$, $p = .050$). There were two other significant associations [wave 2 memory ($p = .038$), wave 3 fluency ($p = .024$)]. The semantic fluency cognitive domain was unrelated to AOE in all waves.

Conclusions: AOE was consistently associated with lower processing speed, working memory, and executive dysfunction in males ages 51-61. It was also associated with the number of