effects of each PBMI subscale score on remote assessment adherence and average performance on each task over 8 days. After adjusting for aging, we found a higher rate of false alarms (proportion of misidentified stimuli) on the WM task was associated with higher levels of both self-reported prospective control ($F(2, 86) = 4.188$, $p = .018$) and future control ($F(2, 96) = 5.003$, $p = .009$). Increased response time on the PS task was also associated with higher levels of future control when adjusted for aging ($F(2, 96) = 6.075$, $p = .003$). There was no main effect of memory self-efficacy ratings on EM. We found no main effects of memory self-efficacy ratings on assessment adherence.
Conclusions: These findings suggest perceptions of high prospective and future control are associated with positive response bias on a forced-choice WM task, and high perceptions of future control are also associated with slower response times on PS tasks. Future research should examine whether this is due to increased deliberation, cautiousness, or other factors. Limitations include the potentially limited generalizability of this largely White, highly educated, and motivated sample self-selected for AD research. Next steps for this research include comparing these results with the effects of perceived self-efficacy on in-person cognitive assessments.

Categories: Aging
Keyword 1: self-monitoring
Keyword 2: technology
Keyword 3: aging disorders
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29 Quick-Reference Criteria for Identifying Clinically Significant Multivariate Change in Older Adult Cognition: An ADNI Study

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Objective: Accurately interpreting change in cognitive functioning is an essential aspect of clinical care for older adults. Several approaches to identifying 'true' cognitive change in a single cognitive measure are available (e.g., reliable change methods, regression-based norms); however, neuropsychologists in clinical settings often rely on simple score differences rather than advanced analytical procedures especially since they examine multiple test performances. This study sought to establish quick-reference normative criteria to help neuropsychologists identify how frequently significant change occurs across multiple cognitive measures in cognitively normal older adults.
Participants and Methods: Data were obtained from the Alzheimer's Disease Neuroimaging Initiative (ADNI). Participants were 401 older adults who were classified as cognitively normal at baseline and at 24-month follow-up. In ADNI, these clinical classifications are made separately from the assessment of cognitive performance, including cognitive change. The sample was 50.1% female, 93.5% non-Hispanic White, 4.0% non-Hispanic Black, 1.5% Asian American, and 1.0% other race/ethnicity, with a mean age of 76.0 years (SD = 4.9). Mean education was 16.4 years (SD = 2.7). The cognitive battery included: Boston Naming Test, Category Fluency Test, Trails A & B, Clock Drawing Test, and Auditory Verbal Learning Test, Trial 1-5 Total and Delayed Recall. Change scores between baseline performance and 24-month follow-up were calculated for each measure. The natural distribution of change scores was examined for each measure and cut points representing the 5^{th} and 10^{th} percentile were applied to each distribution to classify participants who exhibited substantial declines in performance on a given measure. We then examined the multivariate frequency of statistically rare change scores for each individual.
Results: As expected in a normal sample, overall cognitive performance was generally stable between baseline and 24-month follow-up. Across cognitive measures, 43.6% of participants had at least one change score fall below the 10^{th} percentile in the distribution of change scores, and 21.9% had at least one score below the 5^{th} percentile. 13.0% of participants had two or more change scores that fell below the 10^{th} percentile, in comparison to 4.5% with two or more below the 5^{th} percentile. 3.2% of participants had three or more change scores below the 10^{th} percentile, versus 0.5% of participants who had three change scores below the 5^{th} percentile.
Conclusions: Among cognitively normal older adults assessed twice at a 24-month interval with a battery of seven measures, it was not uncommon for an individual to have at least one score fall below the 10^{th} percentile (43% of the

https://doi.org/10.1017/S1355617723004666 Published online by Cambridge University Press

sample) or even the 5th percentile (21%) in the natural distribution of change scores. However, only 3.2% of normals had more than two declines in test performance below the 10th percentile, and less than 1% of the sample at more than one change score at the 5th percentile. This suggests that individuals who exhibit more multivariate changes in performance than these standards are likely experiencing an abnormal rate of cognitive decline. Our findings provide a preliminary quick-reference approach to identifying clinically significant cognitive change. Future studies will explore additional batteries and examine multivariate frequencies of change in clinical populations.

Categories: Aging
Keyword 1: aging (normal)
Keyword 2: neuropsychological assessment
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30 Exploring the Differential Importance of Modifiable Fitness Variables on Cognitive Performance in Older Adults

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Objective: To identify the relative contributions and importance of modifiable fitness and demographic variables to cognitive performance in a cohort of healthy older adults.
Participants and Methods: Metrics of modifiable fitness (gait speed, respiratory function, grip strength, and body mass index (BMI)) and cognition (executive function, episodic memory, and processing speed) were assessed in 619 older adults from the Health and Retirement Study 2016 wave (mean age = 74.9, sd = 6.9; mean education = 13.4 years, sd = 2.6; 42% female). General linear models were employed to assess the contribution of modifiable fitness variables in predicting three domains of cognition: executive function, episodic memory, and processing speed. Demographics (age, sex, education, time between appointments, and a chronic disease score) were entered as covariates for each model. Relative importance metrics were computed for all variables in each model using Lindeman, Merenda, and Gold (lmg) analysis, a technique which decomposes a given model's explained variance to describe the average contribution of each predictor variable, independent of its position in the linear model.
Results: When all variables were entered into the general linear model, demographic and modifiable fitness variables explained 35%, 24%, and 26% of the variance in executive function, episodic memory, and processing speed, respectively (all three models were significant, $p < 0.001$). Age, education, respiratory function, and walking speed had higher relative importance values (all lmgs > 1.8) compared to BMI, grip strength, and other covariates in all three models (all lmgs < 1.3). Gender was also relatively important in the executive function (lmg = 4.2) and episodic memory models (lmg = 5.0). Of the modifiable fitness variables, walking speed and respiratory function had the greatest lmg values (5.8 and 6.4 respectively) in the executive function model, similar to demographic variables age (lmg = 6.0) and education (lmg = 8.9). When demographic variables were entered as covariates, modifiable fitness variables collectively accounted for an additional 9.7%, 6.3%, and 6.0% variance in the executive function, episodic memory, and processing speed models respectively (all three models were significant, $p < 0.001$).
Conclusions: Our findings indicate that walking speed and respiratory function are of similar importance compared to "traditional" demographic variables such as age and education in predicting cognitive performance in a cohort of healthy older adults. Moreover, modifiable fitness variables accounted for unique variance in executive function, episodic memory, and processing speed after accounting for age and education. Modifiable fitness variables explained the most unique variance in executive function. These results extend the current literature by demonstrating that modifiable fitness variables, even when assessed with brief and relatively coarse measures of physical performance, may be useful in predicting cognitive function. Moreover, the results highlight the need to assess metrics of cognitive reserve, such as education, as well as modifiable fitness variables and their respective roles in accounting for cognitive performance. The data further suggest that relative contributions of physical performance