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## Genetic Contributions to Memory Ratings and Memory Concerns in Older Men

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### ABSTRACT:

Subjective memory ratings and memory concerns are associated with increased risk for Alzheimer's disease. Using data from the Vietnam Era Twin Study of Aging, we explored the genetic and environmental etiology of subjective memory ratings and concerns and their covariance with objective memory assessed at ages 56, 62, and 68 years. At each assessment, participants rated their: i) subjective memory ("rate your memory in terms of the kinds of problems you have" and ii) memory concerns ("how concerned you about your memory are?"). Responses were dichotomized into reporting any problem in subjective memory, yes or no, or memory concerns, yes or no. Multivariate biometric modeling in OpenMx revealed that subjective memory ratings across time were best explained by a heritable common factor ( $A=0.65, 95\%CI:0.08-1.22$ ). Longitudinal subjective memory concerns were also best explained by a heritable common factor ( $A=.84, 95\%CI:.26, 1.42$ ). Phenotypic correlations between the objective and each of the subjective memory items were small ( $r_p = -.11$  and  $-.15$ ). The genetic correlation for subjective memory ratings and objective memory was  $r_G = -.27$  ( $95\%CI: -.53, -.01$ ); for subjective memory concerns and objective memory,  $r_G = -.37$  ( $95\%CI: -.63, -.10$ ). Our results indicate modest shared genetic influences on the very small shared phenotypic variance between subjective and objective memory. The model-fitting results, showing high heritability of subjective memory ratings and concerns, suggest that they are trait-like, but if they are indicators of imminent dementia-related changes, they should be state-like. Thus, what underlies subjective memory and why it is predictive of dementia remains unclear.

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