MEASUREMENT OF APOE-E4 IN RELATION TO NEUROPSYCHOLOGICAL MEASURES OVER TIME

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The progression of cognitive decline over time for individuals with Apolipoprotein E-epsilon 4 (APOE-e4) has been well documented (e.g., Hofer et al., 2002; Small, Basun, & Bäckman, 1998), though which memory domains are affected and the contribution of demographic variables is less clear. We examined whether APOE allele type (n=156 non-e4; n=60 e4) had a significant effect on change among neuropsychological measures over three years, after controlling for age and gender. The sample included 216 healthy, community-dwelling older adults (Mean age 72.27, SD age=7.56, range=59-95 years) from the Seattle Longitudinal Study who had complete data at both time points and had been genotyped for APOE. A 4 (Domains: Working Memory, Episodic Memory, Delayed Memory, Cognitive Status) by 2 (Test: two cognitive tests per domain) by 2 (Time: 1997, 2000) by 2 (Allele type: non-e4, e4) by 2 (Age group: 59-74, 75-95) by 2 (Sex) MANOVA was calculated for three within subject variables and three between subject variables. Repeated measures results indicate those in the e4 allele group had greater mean change (0.25-0.46 SD) on nearly all the measures of the four domains. After controlling for the demographic variables, the domain contrasts indicated the greatest decline for the Episodic Memory versus Delayed Memory domain pairing ($p<.05$) and the Delayed Memory versus Cognitive Status domain pairing ($p<.01$) over time. Those most at risk for change in performance over time on the cognitive domains were those in the old-old age group, particularly those who were also in the e4 allele group and male.