

Experiences at every stage of life contribute to cognitive abilities in old age

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Early life experiences, such as childhood socioeconomic status and literacy, may have greater influence on the risk of cognitive impairment late in life than such demographic characteristics as race and ethnicity, a large study by researchers with the UC Davis Alzheimer's Disease Center and the University of Victoria, Canada, has found.

"Declining cognitive function in older adults is a major personal and public health concern," said Bruce Reed, professor of neurology and associate director of the UC Davis Alzheimer's Disease Center.

"But not all people lose cognitive function, and understanding the remarkable variability in cognitive trajectories as people age is of critical importance for prevention, treatment and planning to promote successful cognitive aging and minimize problems associated with [cognitive decline](#)."

The study, "Life Experiences and Demographic Influences on Cognitive Function in Older Adults," is published online in *Neuropsychology*, a journal of the American Psychological Association. It is one of the first comprehensive examinations of the multiple influences of varied demographic factors early in life and their relationship to [cognitive aging](#).

The research was conducted in a group of over 300 diverse men and women who spoke either English or Spanish. They were recruited from senior citizen social, recreational and residential centers, as well as

churches and health-care settings. At the time of recruitment, all study participants were 60 or older, and had no major psychiatric illnesses or life threatening medical conditions. Participants were Caucasian, African-American or Hispanic.

The extensive testing included multidisciplinary diagnostic evaluations through the UC Davis Alzheimer's Disease Center in either English or Spanish, which permitted comparisons across a diverse cohort of participants.

Consistent with previous research, the study found that non-Latino Caucasians scored 20 to 25 percent higher on tests of semantic memory (general knowledge) and 13 to 15 percent higher on tests of executive functioning compared to the other ethnic groups. However, ethnic differences in executive functioning disappeared and differences in semantic memory were reduced by 20 to 30 percent when group differences in childhood socioeconomic status, adult literacy and extent of physical activity during adulthood were considered.

"This study is unusual in that it examines how many different life experiences affect cognitive decline in late life," said Dan Mungas, professor of neurology and associate director of the UC Davis Alzheimer's Disease Research Center.

"It shows that variables like ethnicity and years of education that influence cognitive test scores in a single evaluation are not associated with rate of cognitive decline, but that specific life experiences like level of reading attainment and intellectually stimulating activities are predictive of the rate of late-life cognitive decline. This suggests that intellectual stimulation throughout the life span can reduce cognitive decline in old age."

Regardless of ethnicity, advanced age and apolipoprotein-E (APOE

genotype) were associated with increased cognitive decline over an average of four years that participants were followed. APOE is the largest known genetic risk factor for late-onset Alzheimer's. Less decline was experienced by persons who reported more engagement in recreational activities in late life and who maintained their levels of activity engagement from middle age to old age. Single-word reading—the ability to decode a word on sight, which often is considered an indication of quality of educational experience—also was associated with less cognitive decline, a finding that was true for both English and Spanish readers, irrespective of their race or ethnicity. These findings suggest that early life experiences affect late-life cognition indirectly, through literacy and late-life recreational pursuits, the authors said.

"These findings are important," explained Paul Brewster, lead author of the study, a doctoral student at the University of Victoria, and a pre-doctoral psychology intern in the UC San Diego Department of Psychiatry, "because it challenges earlier research that suggests associations between race and ethnicity, particularly among Latinos, and an increased risk of late-life [cognitive impairment](#) and dementia.

"Our findings suggest that the influences of demographic factors on late-life cognition may be reflective of broader socioeconomic factors, such as educational opportunity and related differences in physical and mental activity across the life span."

Provided by UC Davis

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