

Alzheimer's risk factors may be measurable in adolescents and young adults

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Risk factors for Alzheimer's dementia may be apparent as early as our teens and 20s, according to new research reported at the Alzheimer's Association International Conference (AAIC) 2020.

These risk factors, many of which are disproportionately apparent in African Americans, include heart health factors—such as high blood pressure, high cholesterol and diabetes—and social factors like education quality. According to the Alzheimer's Association Alzheimer's Disease Facts and Figures report, older African Americans are about twice as likely to have Alzheimer's or other dementias as older whites.

"By identifying, verifying, and acting to counter those Alzheimer's risk factors that we can change, we may reduce new cases and eventually the total number of people with Alzheimer's and other dementia," said Maria C. Carrillo, Ph.D., Alzheimer's Association chief science officer.

"Research like this is important in addressing health inequities and providing resources that could make a positive impact on a person's life."

"These new reports from AAIC 2020 show that it's never too early, or too late, to take action to protect your memory and thinking abilities," Carrillo said.

The Alzheimer's Association is leading the U.S. Study to Protect Brain Health Through Lifestyle Intervention to Reduce Risk (U.S. POINTER), a two-year clinical trial to evaluate whether lifestyle interventions that simultaneously target many risk factors protect cognitive function in [older adults](#) who are at increased risk for cognitive decline. U.S. POINTER is the first such study to be conducted in a large, diverse group of Americans across the United States.

African American Youth At Higher Risk of Dementia

In a population of more than 714 African Americans in the Study of Healthy Aging in African Americans (STAR), Kristen George, Ph.D., MPH, of the University of California, Davis, and colleagues found that high blood pressure and diabetes, or a combination of multiple heart

health-related factors, are common in adolescence and are associated with worse late-life cognition. Study participants were adolescents (n=165; ages 12-20), [young adults](#) (n=439; ages 21-34) and adults (n=110; ages 35-56). Mean age at cognitive assessment was 68.

Cognition was measured using in-person tests of memory and executive function. The researchers found that, in this study population, having diabetes, [high blood pressure](#), or two or more heart health risk factors in adolescence, young adulthood, or mid-life was associated with statistically significantly worse late-life cognition. These differences persisted after accounting for age, gender, years since risk factors were measured, and education.

Before this report, little was known about whether cardiovascular disease (CVD) risk factors developed prior to mid-life were associated with late-life cognition. This is an important question because African Americans have a higher risk of CVD risk factors compared to other racial/ethnic groups from adolescence through adulthood.

According to the researchers, these findings suggest that CVD [risk factors](#) as early as adolescence influence late-life brain health in African Americans. Efforts to promote heart and brain healthy lifestyles must not only include middle-aged adults, but also younger adults and adolescents who may be especially susceptible to the negative impact of poor vascular health on the brain.

Early Adult BMI Associated With Late Life Dementia Risk

In what the authors say is the first study to report on the issue, higher early adulthood (age 20-49) body mass index (BMI) was associated with higher late-life dementia risk.

Relatively little is known about the role of early life BMI on the risk of Alzheimer and other dementias. The scientists studied a total of 5,104 older adults from two studies, including 2,909 from the Cardiovascular Health Study (CHS) and 2,195 from the Health, Aging and Body Composition study (Health ABC). Of the total sample, 18% were Black and 56% were women. Using pooled data from four established cohorts spanning the adult life course, including the two cohorts under the study, the scientists estimated BMI beginning at age 20 for all older adults of CHS and Health ABC.

For women, dementia risk increased with higher early adulthood BMI. Compared to women with normal BMI in early adulthood, dementia risk was 1.8 times higher among those who were overweight, and 2.5 times higher among those who were obese. Analyses were adjusted for midlife and late life BMI.

They found no association between midlife BMI and dementia risk among women.

For men, dementia risk was 2.5 times higher among those who were obese in early adulthood, 1.5 times higher among those who were overweight in mid-life and 2.0 times higher among those who were obese in mid-life, in models also adjusted for late life BMI.

For both women and men, dementia risk decreased with higher late life BMI.

Adina Zeki Al Hazzouri, Ph.D. of Columbia University and colleagues found that high BMI in adulthood is a risk factor for dementia in late life. The researchers suggest that efforts aimed at reducing dementia risk may need to begin earlier in life with a focus on obesity prevention and treatment.

Quality of Early-Life Education Influences Dementia Risk

In a diverse group of more than 2,400 people followed up to 21 years, higher quality early-life education was associated with better language and memory performance, and lower risk of late-life dementia. Results were somewhat different between men and women, and between Blacks and Whites in the study.

The study included 2,446 Black and White men and women, age 65 and older, enrolled in the Washington Heights/Inwood Columbia Aging Project who attended [elementary school](#) in the United States. A school quality variable based on historical measures included: mandatory school enrollment age, minimum dropout age, school term length, student-teacher ratio, and student attendance.

People who attended school in states with lower quality education had more rapid decline in memory and language as an older adult. Black women and men and White women who attended schools in states with higher quality education were less likely to develop dementia. According to the scientists, the results were explained, in part, because people who attend higher quality schools end up getting more years of school.

Justina Avila-Rieger, Ph.D., a postdoctoral research scientist at Columbia University Irving Medical Center and colleagues say the findings provide evidence that later life [dementia](#) risk and cognitive function is influenced by early-life state educational policies.

Provided by Alzheimer's Association

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