

Do Personality Traits in Teens Indicate Future Dementia Risk?

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October 21, 2019

Having a vigorous, calm, and mature personality during adolescence has been associated with a lower risk for dementia in later life, new research suggests.

Investigators assessed personality traits in more than 80,000 individuals from a national sample of high school students in 1960 and found that adolescents who rated higher on the "vigor" scale were 7% less likely to be diagnosed with dementia 5 decades later.

Calmness and maturity were also associated with lower dementia risk, but only in participants whose parents had higher socioeconomic status (SES).

"This study supports other similar research [suggesting] that if we want to lower dementia risk, one strategy would be to prioritize early-life cognitive, medical, and mental health," study investigator Jennifer Manly, PhD, professor, Taub Institute for Research on [Alzheimer's Disease](#) and the Aging Brain, Department of Neurology, Columbia University Medical Center, New York City, told *Medscape Medical News*.

"We should help parents and teachers create safe, equitable, and engaging environments where kids can develop skills like being calm in the face of challenge, being physical active, and practicing mature responses," she said.

The study, which was supported by the National Institute on Aging, was [published online](#) October 16 in *JAMA Psychiatry*.

Investigating Resilience

"There has been accumulating evidence that the risk of dementia later in life is influenced by early life experiences," said Manly.

"Our research team is interesting in identifying resilience factors — social, biological, or individual factors that might protect older adults against cognitive decline," she added.

"Given the rapid rise in proportion of older adults in our population in the next 1 to 30 years, dementia is projected to become even more of a burden on society than it is today. If we can identify resilience factors, we hope to be able to reduce this burden," she said.

To investigate the question, the researchers studied participants in Project Talent, a national sample of individuals who were in high school in 1960 and who completed a series of tests and questionnaires that assessed an array of abilities, background information, and personality traits.

A subset of these participants (n = 82,232; mean [SD] age, 15.8 (1.7) years at baseline) was then linked to Medicare claims data for the period 2011–2015. The mean age of the participants was 69.5 [1.2] years at follow-up — an average span of 53.7 years.

The cohort was divided evenly between men and women.

The Project Talent Personality Inventory consisted of 150 questions designed to measure 10 personality traits: sociability, social empathy, social sensitivity, impulsivity, leadership, vigor, calm, tidiness, culture, self-confidence, and maturity.

The researchers also analyzed variables such as school grade at baseline, sex, race, and family SES — a composite that consisted of parental educational level, income, occupation, housing, and property ownership.

Other variables included participant height, weight, and intelligence quotient.

Personality Phenotype

In the unmoderated analysis, vigor (defined as "an energetic disposition" and characterized as a trait of "high extraversion") was found to be associated with a 7% lower dementia risk (hazard ratio [HR] for 1 SD, .93 [95% confidence interval [CI], .90 – .97; $P < .001$).

Being older in 1960, being of African American race, and being female were all associated with higher dementia risk (HR, 1.75 [95% CI, 1.57 - 1.96] for seniors vs freshmen; HR, 1.69 [95% CI, 1.40 – 2.00]; and HR, 1.12; [95% CI, 1.04 - 1.21] for females vs males; for all, $P < .001$).

Calm (defined as "freedom from distressing emotions" and characterized as a "low neuroticism" trait) and maturity (defined as "responsibility and reliability" and characterized as a "high conscientiousness" trait) also were predictive of lower risk for later dementia, but only among those with higher SES: each 1-SD increase in calm and in maturity was associated with lower dementia risk (HRs of .89 [95% CI, .84 - 0.95] and .90 [95% CI, .85-.96], respectively, at SES levels of 1 SD; $P = .001$ for both interactions).

There were no significant interactions between race and personality. On the other hand, vigor remained strongly protective, even in those with higher body mass index (BMI).

"The statements that were summarized for the vigor scale were all about physical activity and physical stamina — for example, 'I play games for hours without getting tired,' " said Manly.

Previous research has shown some continuity of physical activity from adolescence to adulthood as well as an association between "activity" in middle-aged and older adults and lower dementia risk, the authors state. This suggests that vigor during younger years may carry into midlife, thereby reducing later dementia risk.

In addressing the protective effect of vigor even for those with higher BMI, the authors point out that BMI is an "imperfect proxy for physical activity." They note that some items in the vigor scale refer to more general markers of enthusiastic life engagement (eg, "I am full of pep and energy" or "People seem to think I lead a vigorous life").

These features of the phenotype "could extend beyond physical forms of activity to other qualities, such as purpose in life and/or social engagement," the researchers suggest. They note that although SES may "shape the specific type or content of one's life activities, the beneficial nature of energetic enthusiasm appears to be constant across the SES spectrum."

The protective nature of calm may be attributable to better physiologic responses to chronic stress, and the SES gradient "is a proxy of exposure to chronic stress arising from everyday social environments rife with challenges," they write.

Components of the lives of adolescents of lower SES (eg, financial stress, transportation problems, housing problems, and increased exposure to crime) thus "may effectively negate the benefits of a calm disposition on stress response pathways implicated in dementia," the authors speculate.

"Truly Impressive"

The study is "remarkable for the large sample size and the assessment of personality during adolescence to predict risk of dementia over 50 years later," commented Antonio Terracciano, PhD, to *Medscape Medical News*. Terracciano is a professor with the Department of Geriatrics, Florida State University College of Medicine, Tallahassee. He was not involved with the study.

Terracciano noted that "considerable changes [occur] over 50 years, and it is truly impressive to find any associations."

Previous research has suggested that personality traits "predict several of the behavioral and health risk factors for dementia — for example, physical inactivity and sedentary behaviors, which, in turn, are risk factors for dementia," said Terracciano.

Moreover, the association between the "calm" trait and lower subsequent dementia risk has been supported by other research showing that individuals who are less calm — for instance, those with a high score in neuroticism — have lower brain derived neurotrophic factor, which plays a "crucial role in neuron growth and survival," he said.

"My number one message for practicing clinicians is to spend additional time speaking with older patients about cognitive and functional decline, especially changes in memory, executive function, and language," he said.

Terracciano emphasized that those with lower SES "are more vulnerable to cognitive decline, and so we should spend even more time asking older patients [with low SES] and their family about cognitive decline."

JAMA Psychiatry. Published online October 16, 2019. [Full text](#)

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Cite this: Do Personality Traits in Teens Indicate Future Dementia Risk? - *Medscape* - Oct 21, 2019.