Early Risk = Later Decline

Risk factors in early adulthood linked to later cognitive decline

Can your lifestyle and health decisions from earlier life lead to a higher risk of dementia later? Certain cardiovascular risk factors present in early adulthood are associated with greater late-life cognitive decline according to this study published in the journal Neurology. The researchers pooled data from 15,001 participants to determine which cardiovascular risk factors are associated with late-life cognitive decline. They also determined timing of risk factor exposure between early adult, midlife, and late-life periods.

During each period, elevated body mass index (BMI), fasting glucose, and systolic blood pressure were all associated with greater late-life cognitive decline. The greatest change was seen in subjects who had risk factors present in the early adult time period with a doubling of the mean 10-year decline.

Abstract

- Background: Cardiovascular risk factors (CVRFs) are associated with increased risk of cognitive decline, but little is known about how early adult CVRFs and those across the life course might influence late-life cognition. To test the hypothesis that CVRFs across the adult life course are associated with late-life cognitive changes, we pooled data from four prospective cohorts (n=15,001, ages 18-95).
- Methods: We imputed trajectories of body mass index (BMI), fasting glucose (FG), systolic blood pressure (SBP), and total cholesterol (TC) for older adults. We used linear mixed models to determine the association of early adult, mid-life, and late-life CVRFs with late-life decline on global cognition (Modified Mini-Mental State Exam (3MS)) and processing speed (Digit Symbol Substitution Test (DSST)), adjusting for demographics, education, and cohort.
- Results: Elevated BMI, FG, and SBP (but not TC) at each time period were associated with greater late-life decline. Early life CVRFs were associated with the greatest change, an approximate doubling of mean 10-year decline (an additional 3-4 points for 3MS or DSST). Late-life CVRFs were associated with declines in early late-life (<80 years) but with gains in very late-life (≥80 years). After adjusting for CVRF exposures at all time periods, the associations for early adult and late-life CVRFs persisted.
- Conclusions: We found that imputed CVRFs across the life course, especially in early adulthood, were associated with greater late-life cognitive decline. Our results suggest that CVRF treatment in early adulthood could benefit late-life cognition, but that treatment in very late-life may not be as helpful for these outcomes.

When discussing prevention and wellness with people, I often cover the three things that 80% of us will die from: heart disease/stroke, cancer, and neurodegenerative disease (mainly dementia). Many of us don't start thinking about these things until we are on the far side of age 50. However, this study suggests that behaviors during our younger years can double our chance of developing dementia later. It is important to look at the specific behaviors linked to cognitive decline. They are BMI, fasting glucose levels, and systolic blood pressure. All three of these are linked since people with higher BMI tend to have higher blood glucose readings and blood pressure readings. Obesity in young adulthood may be a large risk factor for later dementia and should be a target for intervention. This supports what we already knew about midlife risk factors. It was interesting that total cholesterol was not linked to increased risk of cognitive decline since we spend a lot of time focusing on this parameter.

I like to talk about our "health 401K" with younger patients. We are truly lowering our risk for later disease by living a healthier lifestyle in our younger years – building up our health 401K account. But adding to your 401K at any age is better than a withdrawal.

Cardiovascular Risk Factors Across the Life Course and Cognitive Decline: A Pooled Cohort Study. Kristine Yaffe, Eric Vittinghoff, Tina Hoang, Karen Matthews, Sherita H Golden, Adina Zeki Al Hazzouri; Neurology Mar 2021, 10.1212/WNL.0000000000011747; DOI: 10.1212/WNL.0000000000011747