

Inflammatory Diet and Dementia

Inflammatory diets may increase risk of dementia

As a man eateth, so a man thinketh...

Not exactly as the author James Allen wrote it but could this be the case? Can what we eat when we are younger affect our cognition when we are older? Can we change course even if we are older? Can eating a specific way help us to “thinketh” better? What specifically can we do and when should we start?



Abstract

- Background and objectives: Aging is characterized by a functional shift of the immune system towards a proinflammatory phenotype. This derangement has been associated with cognitive decline and has been implicated in the pathogenesis of dementia. Diet can modulate systemic inflammation; thus, it may be a valuable tool to counteract the associated risks for cognitive impairment and dementia. The present study aimed to explore the associations between the inflammatory potential of diet, assessed using an easily applicable, population-based, biomarker-validated diet inflammatory index (DII), and the risk for dementia in community-dwelling older adults.
- Methods: Individuals from the Hellenic Longitudinal Investigation of Aging and Diet (HELIAD) were included in the present cohort study. Participants were recruited through random population sampling, and were followed for a mean of 3.05 (SD=0.85) years. Dementia diagnosis was based on standard clinical criteria. Those with baseline dementia and/or missing cognitive follow-up data were excluded from the analyses. The inflammatory potential of diet was assessed through a DII score which considers literature-derived associations of 45 food parameters with levels of pro- and anti-inflammatory cytokines in the blood; higher values indicated a more pro-inflammatory diet. Consumption frequencies were derived from a detailed food frequency questionnaire, and were standardized to representative dietary intake normative data from 11 different countries. Analysis of dementia incidence as a function of baseline DII scores was performed by Cox proportional hazards models.
- Results: Analyses included 1059 individuals (mean age=73.1 years; 40.3% males; mean education=8.2 years), 62 of whom developed incident dementia. Each additional unit of DII was associated with a 21% increase in the risk for dementia incidence [HR=1.21 (1.03 – 1.42); p=0.023]. Compared to participants in the lowest DII tertile, participants in the highest one (maximal pro-inflammatory diet potential) were 3 [(1.2 – 7.3); p=0.014] times more likely to develop incident dementia. The test for trend was also significant, indicating a potential dose-response relationship (p=0.014).
- Conclusions: In the present study, higher DII scores (indicating greater pro-inflammatory diet potential) were associated with an increased risk for incident dementia. These findings might avail the development of primary dementia preventive strategies through tailored and precise dietary interventions.

As we age, our immune system gradually deteriorates. We have all seen this throughout the COVID-19 pandemic where the elderly are more affected than the young. They don't respond as vigorously to the vaccines and are overall at higher risk of severe outcomes. As our immune system deteriorates, a pro-inflammatory state becomes prominent. This is our body attempting to protect itself by creating inflammation to fight off perceived attacks. Unfortunately, this also leads to a higher risk of chronic diseases including dementia by decreasing our supply of neural growth factors and the creation of oxidative stress.

This study evaluated 1059 individuals and categorized their diets into ratings of inflammation categorized as low, intermediate, or high. They found that those who consumed the highest inflammatory diets had 3X this incidence of dementia as compared to the low inflammation diet group. The low inflammation diet group ate more vegetables, fiber, and fish. The inflammatory group ate more red meat, processed meat, alcohol, and sugar.

Studies have shown that changes due to nutrition can start after age 40. This means that the earlier one transitions to a low inflammation diet, the better. The MIND diet has been studied and found to slow brain aging and lessen the risk of

developing Alzheimer's disease. Perhaps like our character is a sum of our thoughts, our cognition is the sum of our nutritional habits.

Diet Inflammatory Index and Dementia Incidence: A Population-Based Study. *Neurology* 2021 Nov 10;[EPub Ahead of Print].