Does Cancer Protect Against Memory Loss?

Study sheds light on the inverse association between cancer and Alzheimer's disease.

July 9, 2019 By Liz Highleyman

Older people who develop cancer appear to have better memory—and a slower decline in memory function over time—than those who remain cancer-free, suggesting that cancer may have a protective effect against cognitive impairment and ultimately Alzheimer's disease, according to recently published research.

Many people living with cancer are familiar with "brain fog" or "chemo brain"—which is not limited to people using chemotherapy. Medications, radiation therapy and cancer in the brain itself can all contribute to impaired cognitive function. But less is known about the link between cancer and more severe long-term dementia, including Alzheimer's disease.

In a study described in JAMA Network Open, Monica Ospina-Romero, MD, of the University of California, San Francisco, and colleagues compared long-term memory changes in people who developed cancer and individuals of a similar age who were not diagnosed with cancer.

Prior observational studies have found that people with a history of cancer have a lower likelihood of later developing Alzheimer's and other forms of dementia, the study authors noted as background. This has led some researchers to hypothesize that the process of cancer development, known as carcinogenesis, may be inversely associated with neuron degeneration.

However, other factors, such as survival, may help explain the link. People who survive long enough to develop cancer may represent a select group of healthy individuals, and the same factors that promote survival of people with cancer may also protect against Alzheimer's disease, the authors suggested.

Ospina-Romero's team conducted a population-based cohort study that included more than 14,500 Americans born before 1949 in the Health and Retirement Study. At the start of the study period, they had no history of cancer. They were assessed by interviews every other year from 1998 through 2014. The average age was 66, and 58% were women.

Over an average follow-up period of 11.5 years, 2,250 participants (about 15%) were diagnosed with cancer, excluding nonmelanoma skin cancers, while 12,333 had no cancer diagnosis. The

average age at cancer diagnosis was 72.

People who were subsequently diagnosed with cancer had modestly higher average memory scores than those of a similar age who did not develop cancer, according to a standardized test involving immediate and delayed word list recall (or the assessment of a spouse or other proxy for those too impaired to complete the test). Memory function was better among people with cancer at all time points—despite a dip in the immediate short-term period after diagnosis—compared with cancer-free individuals, the authors reported.

Among people later diagnosed with cancer, the rate of memory decline during the decade before their diagnosis was 10.5% slower than the decline seen in cancer-free people of a similar age. After cancer diagnosis, the rate of decline was 3.9% slower than the decrease in people without cancer.

“In this population-based cohort study of middle-aged and older U.S. adults, individuals with an incident cancer diagnosis had better memory function and slower memory decline before and after their diagnosis compared with similarly aged individuals who remained cancer-free during the follow-up period,” the study authors concluded. “These novel findings support the possibility of a common pathologic process working in opposite directions in cancer and Alzheimer’s disease.”

The researchers discussed some potential explanations for the inverse association, including genetic factors. Some common mechanisms involved in carcinogenesis and development of dementia may work in opposition. Chemical signals that promote tumor growth could also protect against neuron death. For example, the PIN1 enzyme both promotes cancer cell proliferation and appears to suppress the buildup of abnormal amyloid and tau proteins found in people with Alzheimer disease.

“Elucidation of these potential common factors associated with cancer and dementia could contribute to developing preventive and treatment strategies for Alzheimer disease,” the researchers suggested.

“Overall, the study results support prior reports of the negative effects on memory that cancer or cancer treatment may have in the acute phase, and patients who survive indeed appear to have better memory outcomes over the long term,” Olivia Okereke, MD, of the Harvard T.H. Chan School of Public Health, and Mary-Ellen Meadows, PhD, of Dana-Farber Cancer Institute in Boston, wrote in an accompanying editorial. “[T]heir compelling results speak to the need for further work to address the origins of the inverse association between cancer and Alzheimer disease, with a view toward identifying new paths to prevention and treatment of both diseases.”

Click here to read the study.

© 2026 Smart + Strong All Rights Reserved.
http://beta.docker.cancerhealth.com/article/cancer-protect-memory-loss