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Helping Older Adults Cope with Psychosocial Stressors of Cancer

Providing supportive care to individuals with serious illness goes well beyond pain and physical symptom control. **Kelly M. Trevino, PhD**, and her colleagues in the Center for Research on End of Life Care in the Division of Geriatrics and Palliative Medicine at NewYork-Presbyterian/Weill Cornell Medical Center, are specifically focused on addressing psychosocial issues, including severe anxiety, that can affect older adults with cancer and their families.

Dr. Kelly M. Trevino

"Older adults experience particular challenges when coping with cancer," says Dr. Trevino, a clinical psychologist specializing in geropsychology and psychosocial oncology. "We now understand that we may not be able to take what we have developed in terms of psychosocial interventions in a younger population and just apply them without modification to older adults. Dr. Stuart Lichtman of Memorial Sloan Kettering Cancer Center has said that all oncologists are geriatric oncologists because the population of older adults, including those with cancer, is growing. However, one of the challenges – not just in psychosocial work, but also in medicine – is that

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Study Finds Dietary Flavanols Reverse Age-Related Memory Decline

Dietary cocoa flavanols – naturally occurring bioactives found in cocoa – reversed age-related memory decline in healthy older adults, according to a study led by Columbia University Medical Center scientists. The study, published in the December 2014 issue of *Nature Neuroscience*, provides the first direct evidence that one component of age-related memory decline in humans is caused by changes in a specific region of the brain and that this form of memory decline can be improved by a dietary intervention.

Cocoa flavanols are the beneficial phytonutrients – also known as plant-based nutrients – found naturally in cocoa. (Courtesy of Mars, Incorporated)

As people age, they typically show some decline in cognitive abilities, including learning and remembering such things as the names of new acquaintances or where they parked the car or placed their keys. This normal age-related memory decline starts in early adulthood but usually does not have any noticeable impact on quality of life until people reach their fifties or sixties. Age-related memory decline is different from the often-devastating memory impairment that occurs with Alzheimer's, in which a disease process damages and destroys neurons in various parts of the brain, including the memory circuits.

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Helping Older Adults Cope with Psychosocial Stressors of Cancer *(continued from page 1)*

research studies do not focus on or even include the older adult population. There is a dearth of information on how these treatments actually apply to and are effective in older adults."

Dr. Trevino is currently developing Managing Anxiety from Cancer (MAC), a pilot study funded by the National Institute on Aging and the American Federation for Aging Research, to evaluate the impact of a psychological intervention for anxiety in older adults with cancer. "We're not necessarily talking about patients who have a lifelong history of anxiety, but rather those who suffer anxiety as a result of the diagnosis," says Dr. Trevino.

Cancer is stressful for anyone, but some older adults are able to manage their anxiety so that it does not interfere with daily living and their ability to engage in their medical care and communicate with their physician. "However, there are patients who find coping with the stressor of having cancer and managing anxiety is much harder," says Dr. Trevino. "We're focusing more on this group of individuals so that we can help improve the quality of their lives."

The MAC Study

MAC is being developed, in part, through discussions with patients and their primary and informal caregivers as to what they think would be helpful. The study is designed to provide patients and caregivers with cognitive behavioral therapy (CBT), including relaxation strategies and cognitive techniques, to manage anxiety so that it does not control their lives.

"Over the next few years, we will implement CBT with a group of 60 patients, 65 years and older, and their families to determine if patients are able to manage and reduce their distress over time," says Dr. Trevino. "A clinician trained in MAC will work with each patient once a week for seven weeks. Each session will present a different tool for managing anxiety, and together patients and clinicians will identify the strategies that work best."

MAC also incorporates the unique strength of older adults – the expertise or knowledge that they have developed over the course of their lives. "We try to take a strengths-based perspective in that older adults have a lifetime of experience that they bring to the illness experience," says Dr. Trevino. "We need to recognize the changes in older adulthood that can make navigating a serious illness more difficult, but also focus on the strengths that these older adults have and help them to capitalize on them. For example, many older adults who have cancer have had prior health problems. So they have some experience thinking about illness and navigating the healthcare system; whereas for a 30-year-old diagnosed with cancer, it might be the first time they have ever had any medical problem. Everything is new to them. They don't have the resources that an older adult might have internally to manage that."

The intervention includes exercises that patients complete between each session such as an "anxiety worksheet," where they record any symptoms of anxiety experienced, as well as situations that brought on the anxiety. Patients will also be given breathing exercises and help with communicating their needs to healthcare providers, as well as family members and friends. Other sessions encourage patients to examine their thoughts rather than automatically accepting them. "These thoughts are treated as guesses rather than facts and are examined to see whether they are realistic," says Dr. Trevino. "We then walk through steps on how to react to these thoughts."

According to Dr. Trevino, the integration of psychosocial care can also be effective when a range of healthcare providers, including social workers and nurse practitioners, provide the interventions. "This is true particularly for older adults who might be working with different specialists," says Dr. Trevino. "There are a lot of factors to consider with this population, and it is so important to have that interdisciplinary, integrated perspective."

Dr. Trevino hopes that the MAC study will eventually become a multisite investigation to help patients in larger groups and in more diverse populations.

The MAC study is designed to provide patients diagnosed with cancer and their caregivers with CBT, including relaxation strategies and cognitive techniques, to manage anxiety so that it does not control their lives.

In another geriatric-specific study published in the June 2015 issue of *Cancer*, Dr. Trevino and her Weill Cornell colleagues examined patient relationships with their oncologist, particularly in the terminal cancer population, and how that relationship is related to quality of life.

"We believe this is an unexplored aspect of patient care and want to determine how we can capitalize on that as a modifiable factor to improve patient well-being," says Dr. Trevino. "From a psychotherapeutic perspective, mental health professionals are expected to build strong relationships with their patients. That's also a strong indicator of how effective therapy will be. However, from a patient-oncologist or patient-physician perspective, understandably so, this can be less of an emphasis, given the importance of the clinical aspects of care. But we are finding that a stronger relationship between patients and their oncologists predicts better outcomes and improved caregiver-bereaved adjustment. An interpersonal style that helps patients feel more comfortable, more connected, and more trusting of their provider and to see that their provider cares about them both clinically and emotionally could prove quite beneficial in the long term for patients and their caregivers."

Reference Article
Trevino KM, Maciejewski PK, Epstein AS, Prigerson HG. The lasting impact of the therapeutic alliance: patient-oncologist alliance as a predictor of caregiver bereavement adjustment. *Cancer*. 2015 Jun 4. [Epub ahead of print]

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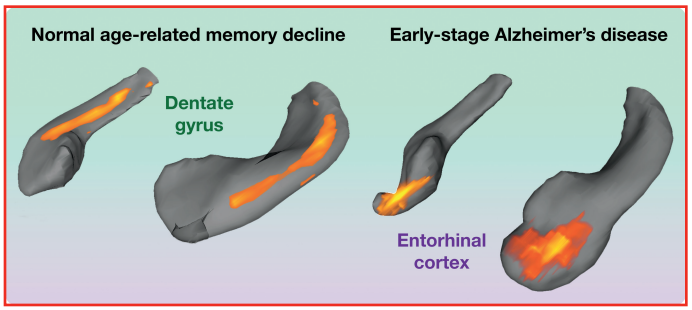
Study Finds Dietary Flavanols Reverse Age-Related Memory Decline *(continued from page 1)*

Dr. Scott A. Small

Previous work, including investigations in the laboratory of senior author **Scott A. Small, MD**, Director of the Alzheimer's Disease Research Center at Columbia University, and the Boris and Rose Katz Professor of Neurology, Psychiatry, and Radiology in the Taub Institute for Research on Alzheimer's Disease and the Aging Brain, had shown that changes in a specific part of the brain – the dentate gyrus – are associated with age-related memory decline. Until now, however, the evidence in humans showed only a correlational link, not a causal one. To see if the dentate gyrus is the source of age-related memory decline in humans, Dr. Small and his colleagues tested whether compounds called cocoa flavanols can improve the function of this brain region and improve memory. Flavanols extracted from cocoa beans had previously been found to improve neuronal connections in the dentate gyrus of mice.



The dentate gyrus is distinct from the entorhinal cortex, the hippocampal region affected in early-stage Alzheimer's disease. (Courtesy of Columbia University Medical Center)

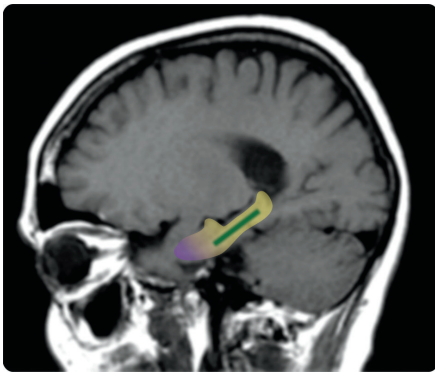
A cocoa flavanol-containing test drink prepared specifically for research purposes was produced by the food company Mars, Incorporated, which also partly supported the research, using a proprietary process to extract flavanols from cocoa beans. Most methods of processing cocoa remove many of the flavanols found in the raw plant.

In the Columbia University study, 37 healthy volunteers, ages 50 to 69, were randomized to receive either a high-flavanol diet (900 mg of flavanols a day) or a low-flavanol diet (10 mg of flavanols a day) for three months. Brain imaging and memory tests were administered to each participant before and after the study. The brain imaging measured blood volume in the dentate gyrus, a measure of metabolism, and the memory test involved a 20-minute pattern-recognition exercise designed to evaluate a type of memory controlled by the dentate gyrus.

"When we imaged our research subjects' brains, we found noticeable improvements in the function of the dentate gyrus in those who consumed the high-cocoa-flavanol drink," says lead author **Adam M. Brickman, PhD**, Associate Professor of Neuropsychology at the Taub Institute.

The high-flavanol group also performed significantly better on the memory test. "If a participant had the memory of a typical 60-year-old at the beginning of the study, after three months that person on average had the memory of a typical 30- or 40-year-old," says Dr. Small. He cautioned, however, that the findings need to be replicated in a larger study that he and his team plan to undertake.

Flavanols are also found naturally in tea leaves and in certain fruits and vegetables, but the overall amounts, as well as the specific forms and mixtures, vary widely. The precise formulation used in the Columbia University study has also been shown to improve cardiovascular health. The researchers point out, however, that the product used in the study is not the same as chocolate, and they caution against an increase in chocolate consumption in an attempt to gain this effect.



Brain area outlined in yellow is the hippocampus; the dentate gyrus is shown in green and the entorhinal cortex in purple. (Courtesy of the Lab of Scott A. Small, MD)

Two innovations by the investigators made the study possible. One was a new information-processing tool that allows the imaging data to be presented in a single three-dimensional snapshot, rather than in numerous individual slices. The tool was developed in Dr. Small's lab by **Usman A. Khan**, an MD-PhD student, and **Frank A. Provenzano**, a biomedical engineering graduate student at Columbia. The other innovation was a modification to a classic neuropsychological test, developed by Drs. Brickman and Small, that allowed the researchers to evaluate memory function specifically localized to the dentate gyrus.

Besides flavanols, exercise has been shown in previous studies, including those of Dr. Small, to improve memory and dentate gyrus function in younger people. In the current study, the researchers were unable to assess whether exercise had an effect on memory or on dentate gyrus activity. "Since we didn't reach the intended VO_2 max [maximal oxygen uptake] target," says Dr. Small, "we couldn't evaluate whether exercise was beneficial in this context. This is not to say that exercise is not beneficial for cognition. It may be that older people need more intense exercise to reach VO_2 max levels that have therapeutic effects."

Reference Article
Brickman AM, Khan UA, Provenzano FA, Yeung LK, Suzuki W, Schroeter H, Wall M, Sloan RP, Small SA. Enhancing dentate gyrus function with dietary flavanols improves cognition in older adults. *Nature Neuroscience*. 2014 Dec;17(12):1798-803.

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