

Using Foods to Prevent Depression in Older Adults

By Joanna Cosgrove, *Nutraceuticals World*

Researchers at Duke University find an increased association between depression and low intake levels of antioxidant-rich fruits and vegetables.

For most people, the holiday season is often met with a mix of enthusiasm and stress. But for those who struggle with depression, the added emotions associated with the holidays can make an already complex condition even more difficult to manage. More than 120 million people are affected by depression and according to a recent study in the *Journal of the American Academy of Nutrition and Dietetics*, eating the right foods might be the key for managing and/or preventing depression in older adults.

Led by Martha Payne, associate professor in Duke University's Department of Psychiatry and Behavioral Sciences, senior fellow in the Duke Center for Aging and Human Development, and co-director of the Duke Neuropsychiatric Imaging Research Laboratory, researchers cited two studies connecting late-life depression (occurring after age 60 years) with a higher risk of dementia, heart disease and its significant impact on healthcare costs. The first can be found [here](#); the second [here](#). They also noted the prevalence of poor nutrition among depressed patients, which the researchers said could be both a "contributor to and consequence of" depression.

Because a fundamental component of good nutrition is the adequate consumption of fruits and vegetables, and the consequent intake of antioxidant nutrients, the researchers designed a study that examined the cross-sectional associations between clinically diagnosed depression and intakes of antioxidants, fruits and vegetables in a cohort of older adults. Researchers assessed the antioxidant, fruit and vegetable intakes of 278 elderly participants aged 60+ (144 with depression, 134 without depression) using a food frequency questionnaire administered between 1999 and 2007.

"We hypothesized that fruit, vegetable and antioxidant intakes would be lower in members of a depressed group compared with a nondepressed control group," the team wrote. "Further, we hypothesized that antioxidant differences would be limited to those from food sources."

The researchers said that while previous studies have shown an association between depression and both antioxidant levels and oxidant stress, they generally have not included intakes of antioxidants and antioxidant-rich fruits and vegetables. The team did not incorporate an analysis of supplement-form antioxidants. "...Although plant foods and food-derived phytochemicals have been associated with health benefits, antioxidants from dietary supplements appear to be less beneficial and may, in fact, be detrimental to health, therefore the use of supplement-form antioxidants were excluded from the

study,” the researchers wrote.

Upon examining their data, the researchers found vitamin C, lutein and beta cryptoxanthin intakes were “significantly lower” among individuals with depression. In addition, fruit and vegetable consumption—a primary determinant of antioxidant intake—was lower in individuals with depression. The researchers postulated that those associations partially explained the elevated risk of cardiovascular disease among older individuals with depression.

In the report, the Duke team suggested potential mechanisms to explain the protective associations linking antioxidants and depression, namely the antioxidant role in the defense against oxidative stress. “The brain is especially susceptible to oxidative stress due to high levels of aerobic respiration, as well as the high content of polyunsaturated fatty acids, which are susceptible to damage from reactive oxygen species,” they wrote. “Another explanation for the antioxidant–depression relationship is that antioxidants have beneficial effects upon inflammatory markers which are known to be elevated in depression. Alternatively, the observed associations may be due not to antioxidants but rather to other dietary factors such as folate that also occur in fruits, vegetables, and plant-rich diets.”

In their conclusion, the researchers found the consumption of fruits and vegetables with naturally occurring antioxidants, (specifically vitamin C and beta cryptoxanthin) were found to be “inversely associated with depression...although no association was found with antioxidant supplements.”

They acknowledged that while antioxidants were important components of fruits and vegetables, other properties, such as phytochemicals, likely play a role in mental health as well. As such, they said, antioxidants from dietary supplements may not confer the same benefits. “Future studies are needed to confirm these findings, establish an etiological relationship between antioxidants and depression, and to clarify the mechanisms by which fruits and vegetables may influence depression and brain health,” they wrote. “If low intakes of fruits, vegetables, and antioxidants are found to cause or exacerbate late-life depression, it may be possible to prevent depression or to lessen its negative effects through dietary intervention.”