

Boosting fruit intake during midlife can ward off late-life blues, study finds

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Populations are rapidly aging worldwide, and there is an increased prevalence of late-life depressive symptoms among older adults, which include depressed feelings, lack of pleasure, delayed cognitive

processing and reduced volitional activity, often accompanied by loss of appetite, insomnia, poor concentration, and increased fatigue.

This has been related to underlying neurodegenerative changes in the brain associated with aging. The growing imperative to keep older adults in good health has spurred extensive research into approaches that could prevent late-life depression, and accumulating evidence has revealed the plausible role of dietary factors in protecting against depression in aging. Could specific diet or food items consumed earlier in life have an impact on mental well-being in later years?

In a [longitudinal study](#) conducted by the Yong Loo Lin School of Medicine, National University of Singapore (NUS Medicine), involving 13,738 participants from the large population-based Singapore Chinese Health Study that tracked participants through their midlife to later life spanning about 20 years, researchers found that participants who consumed higher quantities of fruits earlier in life exhibited a reduced likelihood of experiencing [depressive symptoms](#) later in life.

The authors studied a total of 14 fruits most commonly consumed in Singapore and found that the consumption of most fruits, including oranges, tangerines, bananas, papayas, watermelons, apple and honey melon, was associated with reduced likelihood of depression.

The association could possibly be the high levels of antioxidants and anti-inflammatory micronutrients in fruits—such as vitamin C, carotenoids and flavonoids—which have been shown to reduce oxidative stress and inhibit inflammatory processes in the body that may affect the development of depression. Consumption of vegetables, on the other hand, was found to have no association with the likelihood of depressive symptoms.

The findings, published in the [Journal of Nutrition, Health and Aging](#),

provide valuable insights into the [potential benefits](#) of eating sufficient fruits in mitigating depressive symptoms later in life.

Professor Koh Woon Puay from the Healthy Longevity Translational Research Programme at NUS Medicine and Principal Investigator of the study, said, "Our study underscores the importance of [fruit](#) consumption as a preventive measure against aging-related depression. In our study population, participants who had at least 3 servings of fruit a day, compared to those with less than one serving a day, were able to reduce the likelihood of aging-related depression significantly by at least 21%.

"This can be achieved by eating one to two servings of fruit after every meal. We did not see any difference in our results between fruits with high and low glycemic index. Hence, for those with diabetes, they can choose fruits with low glycemic index that will not raise blood sugars as much as those with high index."

At the initial stage of the study from 1993 to 1998, when participants were of average age of 51 years, they were asked to answer a structured questionnaire on how often they consumed a standard serving size of each food item daily, for 14 fruits and 25 vegetables. From 2014 to 2016, when participants were of average age of 73 years, depressive symptoms were examined using a standard test (Geriatric Depression Scale) and 3,180 (23.1%) participants who reported having five or more symptoms were considered to have depression in our study.

After adjusting for factors that could potentially confound the relationship, including medical history, smoking status, level of physical activity, sleep duration, and aging-related factors, the team found that higher consumption of fruits, but not vegetables, was associated with lower odds of depressive symptoms in a stepwise manner.

Prof Koh added, "Our study aimed to examine the relationship of

midlife consumption of fruits and vegetables with the risk of depressive symptoms in late life. Although other studies have also examined the associations of fruits and vegetables with risk of [depression](#), there are inconsistencies in the results, and many of them were done in Western populations. To our best knowledge, ours is the largest population-based study in an Asian population to study this association."

These findings suggest that promoting fruit consumption for individuals in mid adulthood, typically defined as ages 40 to 65 years, could yield long-term benefits for their mental well-being at late adulthood beyond 65 years. Hence, the study's results hold significant implications for public health education and initiatives to make fruits more accessible for the general population. Following the study, the research team is looking into the association of other modifiable behavioral factors, such as sleep duration, smoking and other dietary factors, with the mental health of [older adults](#).

More information: Huiqi Li et al, Association between consumption of fruits and vegetables in midlife and depressive symptoms in late life: the Singapore Chinese Health Study, *The Journal of Nutrition, Health and Aging* (2024). [DOI: 10.1016/j.jnha.2024.100275](https://doi.org/10.1016/j.jnha.2024.100275)

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