

Carotenoids May Improve Brain Function in Elderly

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A ground-breaking, first-of-its-kind study from France has found a positive correlation between levels of the carotenoids, lycopene and zeaxanthin, and cognitive ability among seniors. The research, which was published in the *Journal of Gerontology: Medical Sciences*, was conducted among 589 healthy, highly-educated, community-living, elderly adults with an average age 73.5 years.¹

The researchers used five neuropsychological tests, Mini-Mental State Examination, Trail Making Test Part B, Digit Symbol Substitution, Finger Tapping Test, and Word Fluency Test, to determine the cognitive performance of the individuals. In addition, the researchers collected blood samples which were then tested for seven specific carotenoids: lutein, zeaxanthin, beta-cryptoxanthin, lycopene, alpha-carotene, trans-beta-carotene and cis-beta-carotene. The researchers found that those individuals with the lowest cognitive scores were most likely to have low plasma (blood) levels of lycopene and zeaxanthin. They did not find any other statistical association between cognitive function and any of the other carotenoids. At this point it is not know why lycopene and zeaxanthin have a correlation with cognition, whether the low levels cause poor cognition, or if the low levels result from the poor cognition. The researchers noted that low levels of zeaxanthin and lutein are also associated with age-related macular degeneration, and that high levels of zeaxanthin and lutein accumulate in the retina and macula. It could also be that other areas of the brain may "have the same affinity for some specific carotenoids."

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1. Akbaraly, N. T., H. Faure, et al. (2007). "Plasma carotenoid levels and cognitive performance in an elderly population: results of the EVA Study." *J Gerontol A Biol Sci Med Sci* 62(3): 308-16.