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B Vitamins and the Aging Brain Examined

B vitamins-B-6, B-12 and folate-all nourish the brain. But much remains to be discovered about the relation between these essential nutrients and our brainpower.

U.S. Department of Agriculture (USDA) nutritionist Lindsay H. Allen has collaborated in ongoing research that has taken a closer look at the role these nutrients may play in preventing decline in brain function. The investigations, led by Mary N. Haan of the University of California-San Francisco, are part of the multiyear Sacramento (Calif.) Area Latino Study on Aging, or "SALSA." Begun in 1996, the study attracted nearly 1,800 Hispanic seniors, ages 60 to 101, as volunteers.

According to Allen, the research is needed because many studies of B vitamins and brain function have given inconsistent or conflicting results. Allen is director of the Agricultural Research Service (ARS) Western Human Nutrition Research Center in Davis, Calif. ARS is the chief intramural scientific research agency of USDA. Scientists from the University of California-Davis (UCD) and the UCD Medical Center also are collaborating in the research.

An analysis of volunteers' blood samples showed that lower levels of one B vitamin, folate, were associated with symptoms of dementia and poor brain function, also called "cognitive decline," as determined by standard tests of memory and other factors. The impairments were detectable even though less than 1 percent of the volunteers were actually deficient in folate.

In women, but not men, low levels of folate were associated with symptoms of depression. In fact, female volunteers whose plasma folate levels were in the lowest third were more than twice as likely to have symptoms of depression as volunteers in the highest third. That finding provided new evidence of an association between lower blood folate and depression. Depression is already known to affect brain function.

In research with vitamin B-12, the SALSA team determined that a protein known as holoTC, short for holotranscobalamin, might be key to a new approach for detecting cognitive decline earlier and more accurately.

The researchers have published these and other findings, beginning in 2003 and continuing through this year, in the American Journal of Clinical Nutrition, Clinical Chemistry and Laboratory Medicine, The European Journal of Clinical Nutrition, The Journal of Nutrition, and The Journal of Nutrition, Health, and Aging.

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