

Low vitamin B12 levels may lead to brain shrinkage, cognitive problems

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Older people with low levels of vitamin B12 in their blood may be more likely to lose brain cells and develop problems with their thinking skills, according to a study published in the September 27, 2011, print issue of *Neurology*, the medical journal of the American Academy of Neurology. Foods that come from animals, including fish, meat, especially liver, milk, eggs and poultry, are usually sources of vitamin B12.

The study involved 121 people age 65 and older living on the south side of Chicago. Their blood was drawn to measure levels of vitamin B12 and B12-related metabolites that can indicate a B12 deficiency. The participants also took tests measuring their memory and other cognitive skills. An average of four-and-a-half years later, [MRI scans](#) of the participants' brains were taken to measure total [brain volume](#) and look for other signs of brain damage.

Having high levels of four of five markers for vitamin B12 deficiency was associated with having lower scores on the cognitive tests and smaller total brain volume.

"Our findings definitely deserve further examination," said study author Christine C. Tangney, PhD, of Rush University Medical Center in Chicago. "It's too early to say whether increasing vitamin B12 levels in older people through diet or supplements could prevent these problems, but it is an interesting question to explore. Findings from a British trial with B [vitamin supplementation](#) are also supportive of these outcomes."

On the [cognitive tests](#), the scores ranged from -2.18 to 1.42, with an average of 0.23. For each increase of one micromole per liter of homocysteine—one of the markers of B12—the cognitive scores decreased by 0.03 standardized units or points.

Tangney noted that the level of vitamin B12 itself in the blood was not associated with cognitive problems or loss in brain volume. She said that low vitamin B12 can be difficult to detect in older people when looking only at blood levels of the vitamin.

Provided by American Academy of Neurology

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