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Austin Quan Yin Newsletter
The Better Health News

Special Interest Articles:

- Protect your brain with vegetables
- Diet and dementia
- Exercise and dementia
- Dementia and vitamin B_{12}
- Vitamins C and E protect from dementia
- Vitamin D and dementia
- Antioxidants and dementia

Green Tea and Memory

One way to think of oxidative stress is to think of the chemicals that cause it as firing electrons, which are like little chemical bullets. Nutrients that we call antioxidants are like little bullet-proof vests that protect the cells. Oxidative stress can cause the dementia that comes with aging. Polyphenols are powerful antioxidants that are found in green tea.

Research appearing in *Biogerontology* (Sept 7, 2006) found that consumption of polyphenols from green tea may prevent oxidative damage to brain cells and help delay memory loss. From the age of 1 month until the age of 15 months, mice were fed water that contained a 0.02% concentration of polyphenol from green tea. The extract acted to prevent memory loss and oxidative damage to DNA.

Fats, Oils and Dementia

The risk for developing dementia may have something to do with the type of fats and oils in the diet. Research appearing in the *Archives of Neurology* (2006; 63(11)" 1545-50) looked at 899 elderly subjects who were free of dementia (76 years median age) and followed them for an average of just over nine years. During the course of the study, 99 subjects developed dementia (71 of which had Alzheimer's disease). Those with high plasma DHA (docosahexaenoic acid, an omega-3 fatty acid) had a reduced risk of developing dementia.

Other research appearing in *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences* (2007; 62(10): 1120-6) also found a connection between low omega-3 fatty acid levels and dementia. A study in the *Annals of Neurology* (1997;42(5):776-782) looked at fat intake in the diets of 5,386 subjects without dementia. Fish consumption was inversely related to the incidence of dementia. Dementia increased with increased intake of saturated fat and cholesterol.

Protect Your Brain with Vegetables

A study appearing in the Journal of Neurology, Neurosurgery and Psychiatry (Published online ahead of print, doi 10.1136/jnnp.2007) found a connection between folic acid levels and the tendency for dementia.

Eat your vegetables and protect yourself from dementia. Vegetables are high in folic acid; the word "folic' comes from the word "foliage". Adequate folic acid levels may protect you from dementia. The most common form of dementia is Alzheimer's disease, affecting about 13 million people worldwide. By mid century the prevalence of Alzheimer's disease is expected to quadruple.

A study appearing in the *Journal of Neurology, Neurosurgery* and *Psychiatry* (Published online ahead of print, doi 10.1136/jnnp.2007) found a connection between folic acid levels and the tendency for dementia. Researchers followed 518 elderly individuals (average age 73) for a 2.4 year period. At the beginning of the study, none of the subjects had dementia.

Homocysteine is an amino acid that is associated with various health problems, including osteoporosis and heart disease. The body needs folic acid and vitamin B_{12} to convert homocysteine to more useful products. The subjects were tested at the beginning of the study and 20% had high levels of homocysteine, 17% had low vitamin B_{12} levels and 3.5% were deficient in folic acid.

At the end of a 2.4 year period, 45 of the subjects developed dementia; 34 of those were diagnosed with Alzheimer's disease. The researchers noted that the development of dementia was much more likely in those subject with low folate levels and high homocysteine levels. So eat your vegetables, get plenty of folic acid and protect your brain.

Diet and Dementia

Dementia is a growing problem, according to the "Delphi Consensus Study", appearing in the *Lancet* (2005; 366(9503): 2112-7), there is a new case of dementia every seven seconds. The authors predict that the number of cases of dementia will double in developed countries between 2001 and 2040. There are 23.4 million cases of dementia worldwide, with 4.6 million additional new cases each year.

Diet may, in part, help to prevent dementia. Research appearing in the *Archives of Neurology* (Dec 2006; 63: 1709–17) indicates that the Mediterranean diet may lower the risk of Alzheimer's disease. The researchers analyzed the diets of 194 Alzheimer's patients and 1,790 people without the disease. Subjects were rated on their adherence to the Mediterranean diet on a scale from 0 to 9, and using a 61-item version of Willett's semiquantitative food frequency questionnaire. Strictly following the diet was associated with a decreased incidence of Alzheimer's disease. The risk was lowered between 19 and 24% for each point (on the 0-9 scale used by the researchers). Those in the top 1/3 of dietary compliance had a 68% reduced risk when compared to those not following the diet.

Exercise and Dementia

According to the "Global Prevalence of Dementia: a Delphi Consensus Study", appearing in the *Lancet* (2005; 366(9503): 2112-7), the number of people with dementia in developed countries will double between 2001 and 2040. There are over 23 million people with dementia worldwide, with a new case coming every seven seconds. There are 4.6 million new cases every year.

There is evidence that physical activity reduces the risk for developing dementia. A prospective, cohort study appearing in the *Archives of Internal Medicine* (2006; 144(2): 73-81) looked at the exercise habits in 1,740 subjects over the age of 65. Over the course of the study, those who exercised three or more times each week had a lower incidence of dementia.

Other research appearing in *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences* (2008; 63(5): 529-35) also found that exercise decreased the likelihood of developing dementia. The subjects in this cohort study were 2,263 men between the ages of 71 and 92.

In the *Archives of Neurology* (March 2001;58:498-504) 9,008 men and women over the age of 65 and without any cognitive impairment or dementia were studied. Of that number, 4,615 were available for a five-year follow-up. In the five year follow-up 436 of the subjects were found to be cognitively impaired and 285 were found to have actual dementia. It was found that regular exercise decreased the risk for both cognitive impairment and dementia. Also, the protection was proportional—the greater the amount of activity, the lower the incidence of cognitive impairment or dementia.

Exercise even improves brain power according to a report presented at the annual meeting of the Society of Psychophysiological Research in Montreal, Canada October 18, 2001. The study looked at the thinking ability of 20 subjects between the ages of 18 and 24 after running for a half-hour. After the exercise the subjects were connected to an electroencephalogram (EEG), a device designed to measure brain waves. They were given computer tests before and after the exercise. The brain wave measurements showed that the decision making process was faster after the exercise.

Exercise can even improve the mood of depressed individuals, according to research appearing in the *Journal of Sports Medicine and Physical Fitness* (December 2001;41:539-545). Eighty volunteers took a mood test prior to an aerobics class, 52 of the subjects were determined to be in a depressed mood. The questionnaire was given again, after the class. Participating in the class reduced fatigue, tension and feelings of anger.

Exercise even improves brain power according to a report presented at the annual meeting of the Society of Psycho-physiological Research

Dementia and Vitamin B_{12}

Good nutrition may play a role in preventing Alzheimer's disease and other forms of dementia. A recent study, appearing in the *American Journal of Clinical Nutrition* (Nov. 2007, Vol 86, Number 5, pp. 1384-1391) followed over 1600 subjects for 10 years and found that high levels of Vitamin B_{12} (measured as holotranscobalamin) reduced. The researchers measured Vitamin B_{12} levels (by testing methylmalonic acid and holotranscobalamin—both are indicators of Vitamin B_{12} status). They measured cognitive function three times over the ten year course of the study. Doubling the holotranscobalamin levels resulted in a reduction in the rate of cognitive decline of 30%. Mark Goodman Ph.D. believes that many patients diagnosed with Alzheimer's disease actually have dementia caused by a lack of vitamin B_{12}. Dr. Goodman has an accredited Ph.D. in behavioral medicine (with a specialization in clinical neuropsychology) from the University of Maryland School of Medicine.

Dr. Goodman is quoted in an interview by Kirk Hamilton that appeared in *Clinical Pearls*. Dr. Goodman says, " I initially suspected vitamin B_{12} limits were too low, when I encountered on consultation, geriatric patients admitted with Alzheimer's diagnosis whose frontal lobe functioning was obviously intact. This is inconsistent with Alzheimer's diagnosis. They were exhibiting other global neuropsychological deficits with a systemic/metabolic profile. They were all following cardiac lipid- lowering diets."

He went on to say that he believed that there are many elderly individuals who are sub clinically B_{12} deficient. Many times these patients have normal blood levels of B_{12}. He points out that people who are B_{12} deficient experience neurological changes before there is changes in their blood count (pernicious anemia) and that a good dietary history is an important part of the evaluation. According to Dr. Goodman, "In the convalescent facility diet there is little red meat due to expense and the desire to have residents on a lipid lowering regime. Also, there is a normal increase in gastric atrophy in the elderly which reduces vitamin B_{12} absorption. Thirdly, there is a down-regulation of the enzymes required for the formation and the manufacture of vitamin B_{12} when less vitamin B_{12} is consumed." Dr. Goodman points out that if there is no frontal lobe degeneration, the dementia is not Alzheimer's disease.

Dr. Goodman says that high doses of vitamin B_{12} are without any serious adverse side-effects. Some reports of reversible symptoms of diarrhea, cutaneous rash, polycythemia and possibly peripheral vascular thrombosis, but these are minor and reversible.

Vitamin B_{12} deficiency is fairly common in older people. Even when the tests for B_{12} levels are normal, symptoms like forgetfulness, fatigue and depression respond to B_{12} supplementation. Dr. Goodman's point is that the symptoms of this deficiency can be so severe that the patient is often diagnosed with Alzheimer's disease—even when the blood tests are normal.

Vitamins C and E Protect from Dementia

In a study, published in the journal, *Neurology* (March 2000;54:1265-1272) 3,385 Japanese American men ages 71-93 were surveyed and tested for dementia over a nine year period. Forty-seven of the men were diagnosed with Alzheimer's disease. Thirty-five of the participants were diagnosed with vascular dementia. Another 50 of the men were diagnosed with other types of dementia. Low cognitive test scores (without a diagnosis of dementia) were seen in 254 of the men. Most of the men (2,999) showed no cognitive difficulties.

Participants taking both vitamin E and C supplements regularly (at least once a week) in 1988, were 88% less likely to have vascular dementia four years later. The group taking the supplements was also 69% less likely to have forms of dementia other than vascular or Alzheimer's related dementia or mixed forms of dementia. There was no significant reduction in the occurrence of Alzheimer's disease four years later for the men taking the supplements.

Participants without dementia were evaluated for mental performance and function. Those who reported taking vitamin E and C supplements in 1988 had an approximately 20 percent greater chance of having better cognitive function during the 1991-93 examination than those who did not. However, men taking the supplements in both 1982 and 1988 had an approximately 75% greater chance of better mental performance. This suggests that long-term use of the supplements could significantly improve cognitive function in late life.

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Researchers believe that the antioxidant vitamins protect the brain tissue against damage. Oxidative stress is caused by toxins, inflammation, viruses. It is like little chemical “bullets” that damage tissue. Antioxidants are like chemical “bullet-proof” vests. Brain and nerve tissue are very susceptible to oxidative damage.

Vitamin D and Dementia

Research appearing in the *American Journal of Geriatric Psychiatry* (2006; 14(12): 1032-1040) looked at 40 subjects with mild Alzheimer’s disease and 40 subjects without dementia and compared cognition and mood to serum vitamin D levels. Low vitamin D levels were associated with poor cognitive function (according to the Short Blessed Test) and poor mood.

God heals, and the doctor takes the fee.—*Benjamin Franklin*

Antioxidants and Dementia

In some cases, there may be a connection between oxidative stress and dementia. A study appearing in the *Archives of Gerontology and Geriatrics* (2001;Suppl. 7:325-331) compared 30 subjects between the ages of 90 and 107 years with dementia to 32 healthy people in the same age range and found that men with dementia had higher thiobarbiuric acid-reactive substances and lower vitamin E levels (indicators of oxidative stress). Lipid peroxidation seemed to play a role in dementia in men, but not in women. Research published in *Neurobiology and Aging* (2005; 26(7): 987-94) looked at 1033 subjects over the age of 65 and found that a low level of vitamin E in the blood was associated with an increased incidence of dementia.

Another study that appeared in the *American Journal of Geriatric* Psychiatry (e-published ahead of print, Nov 10, 2009) looked at dementia in Swedish twins. There were 3,779 subjects; 355 of whom were diagnosed with dementia. The study found that greater consumption of fruits and vegetables reduced the chance of developing dementia. Another study, appearing in *Neurology* (2000;54:1265-1272) looked at 3,385 men between the ages of 71 and 93, found that taking a combination of vitamins A and C had a protective effect against vascular dementia. The supplementation also had some protective effect against mixed or other dementia, but not against Alzheimer's disease.