

## Special Interest Articles:

- Curry and Alzheimer's Disease
- Name That Food
- Nutrition and Alzheimer's Disease
- Diet, Supplementation and Dementia
- Elemental Diet and Crohn's Disease
- Fatty Acids and Dementia
- Eat Vegetables and Prevent Dementia

Name that food:  
SportsDrink

## Is it Alzheimer's Disease or B<sub>12</sub> Deficiency?

Mark Goodman Ph.D. believes that many patients diagnosed with Alzheimer's disease actually have dementia caused by a lack of vitamin B<sub>12</sub>. He is quoted in an interview by Kirk Hamilton that appeared in *Clinical Pearls*, saying, "I initially suspected vitamin B<sub>12</sub> levels 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."

Many elderly individuals are sub clinically B<sub>12</sub> deficient.

Many times these patients have normal blood levels of B<sub>12</sub>. He points out that people who are B<sub>12</sub> deficient experience neurological changes before there is changes in their blood count. High doses of vitamin B<sub>12</sub> are without any serious adverse side-effects. Vitamin B<sub>12</sub> deficiency is fairly common in older people. Even when the tests for B<sub>12</sub> levels are normal, symptoms like forgetfulness, fatigue and depression respond to B<sub>12</sub> 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 for B<sub>12</sub> are normal.

## 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.

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## Curry and Alzheimer's Disease

*The lowest incidence of Alzheimer's disease in the world is in villages in India.*

The lowest incidence of Alzheimer's disease in the world is in villages in India. Only about 1% of Indians over the age of 65 get the disease. Curcumin is an antioxidant found in turmeric. Turmeric is a perennial plant, botanically related to ginger that is native to India, China and Indonesia. It is a component of curry powder and prepared mustard. It is used in traditional Chinese medicine and in Indian (Ayurvedic) medicine for its anti-inflammatory properties. So, perhaps the consumption of curry may be the reason that there are

so few cases of Alzheimer's disease. Curcumin, found in turmeric, has been shown to fight the build up of the amyloid plaques found in Alzheimer's disease. Dr. Sally Frautschy, of the University of California, Los Angeles, presented these findings at the 2005 annual meeting of the Society for Neuroscience in San Diego, California. Her paper was entitled: *Curcumin Reduces Oxidative Damage and Amyloid Pathology in an Alzheimer Transgenic Mouse.*

## Name That Food

This is a little exercise in label reading. Diet and lifestyle play a large role in health and disease. Many of the things that pass for food in our society act to undermine our health. Dietary indiscretion can cause health problems. Look at the information taken from the label of a commonly consumed food and see if you can guess what it is:

*WATER, SUCROSE SYRUP, HIGH FRUCTOSE CORN SYRUP (GLUCOSE-FRUCTOSE SYRUP), CITRIC ACID, NATURAL LIME FLAVOR WITH OTHER NATURAL FLAVORS, SALT, SODIUM CITRATE, MONOPOTASSIUM PHOSPHATE, PHOSPHORIC ACID, YELLOW DYE #5, BLUE DYE #1*

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## Nutrition and Alzheimer's Disease

An article written in the *Journal of Alzheimer's Disease* (1999;1:197-201) gives an overview of some of the dietary factors involved with Alzheimer's disease. Oxidative stress and inflammation are contributing factors. Total dietary fat is also a contributing factor, however diets rich in monosaturated fatty acids, like the Mediterranean diet, have been shown to slow cognitive decline. Similarly, eating fish and taking omega-3 fatty acid supplements also lowers the chance of developing the disease. Antioxidants, like vitamin E, have been shown to reduce the risk for developing Alzheimer's disease. Another inflammatory marker, homocysteine, has been linked to Alzheimer's disease. Vitamin B<sub>12</sub>, folic acid and B<sub>6</sub> can all help to keep homocysteine levels low.

Antioxidants are especially important. The *Journal of the American Medical Association* (June 26, 2002;287(24):3261-3263) supports the idea that oxidative stress plays a role in Alzheimer's disease. The article notes two observational studies that showed higher dietary intake of vitamins A and C to be associated with a decreased risk for developing the disease.

Omega-3 fatty acids may play a role in preventing Alzheimer's disease. Research appearing in *Family Practice News* (July 1, 2005:47) looked at 935 subjects aged 65 or over. Of the group, 153 had cognitive impairment without dementia, 57 had dementia and the remaining 725 were free of dementia or any cognitive problems. The serum omega-3 fatty acid concentration was the lowest in the

group with dementia, and highest in the group with normal cognition. Other research appearing in the *Archives of Neurology* (2006; 63(11)" 1545-50) found that high levels of plasma DHA and phosphatidylcholine were associated with a reduced risk for dementia.

Paying attention to diet, especially the intake of omega-3 fatty acids and antioxidants, is an important step in preventing dementia. In the US there are about 360,000 new cases of Alzheimer's disease each year. That number is expected to triple in the next 40 years. Reducing the number of new cases, and delaying the onset of new cases with nutrition can be of tremendous social and economic benefit.

An interesting side note, Omega-3 fatty acids are good for cognition in children. DHA is an omega-3 fatty acid found in fish oil. It is important for brain development in children. A recent study, published in *Clinical Pediatrics* (2008 May;47(4):355-62) looked at 175 healthy four-year-olds who were supplemented with 400 mg per day of DHA or a placebo. Prior to supplementation and after four months of supplementation, the children were given four tests of cognitive function.

The group given the DHA had blood levels of DHA increase by 300%. Higher DHA levels were associated with improved performance in listening comprehension and vocabulary as measured by the Peabody Picture Vocabulary Test. For each increase of 1% in serum DHA, there was as much as a nine-point improvement in the test score.

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## Diet, Supplementation 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, and the authors predict that the number of cases of dementia will double in developed countries between 2001 and 2040. Currently 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.

Obesity seems to increase the risk of dementia, according to research appearing in the *British Medical Journal* (2005; 330(7504): 1360). Researchers gathered data from 10,276 men and women over a 27 year period. Between 1964 and 1973, subjects aged 40 to 45 years were given health evaluations. Follow-up exams were performed about 20 years later, between 1994 and 2003. Subjects who were obese at the time of

initial evaluation had a 74% greater chance of developing dementia compared to subjects who were of normal weight.

Exercise also may help to prevent dementia. Research appearing in *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences* (63:529-535 (2008)) looked at physical activity in 2263 men aged 71–92 years without dementia. There were 173 incident cases of dementia with a mean follow-up of 6.1 years. The incidence of dementia was lower with increasing physical activity and function. For men with low physical function, high levels of physical activity were associated with half the risk of dementia versus men who were the least active. The authors concluded that increasing general physical activity in elderly men with poor physical function can possibly have a protective effect and delay the onset of dementia. Like so many other diseases, diet and exercise play a role in dementia.

Supplementation is always a good idea to help prevent dementia. Also, sometimes when someone is a little forgetful, supplementing with rubidium is helpful. According to Dr. Harry Eidenier, elderly folks who keep their vitality into old age have higher levels of rubidium. Also some of the CRS (can’t remember stuff) suffered by the elderly can be remedied with supplementation with vitamin B<sub>12</sub>. To prevent dementia, consider improving the diet and supplementing with antioxidants and omega-3 fatty acids.

## Elemental Diets and Crohn's Disease

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*Elemental diets are liquid diets that put no stress on the digestive system. They contain all the nutrients your body needs, but the nutrients are usually in digested form.*

Elemental diets are liquid diets that put no stress on the digestive system. They contain all the nutrients your body needs, but the nutrients are usually in digested form. They supply the body's nutritional needs while giving the digestive system a rest. Research appearing in *Inflammatory Bowel Disease* (2005; 11(6): 580-8) looked at the effect an elemental diet had on 28 patients with Crohn's disease over a period of four weeks. The

researchers looked at chemical markers for inflammation and the appearance of the cells. The Crohn's disease patients were compared to 30 controls without any inflammation. Chemical markers for inflammation were reduced to levels comparable to the control group after the four weeks. Cellular improvements were noted and clinical remission occurred in 20 of the patients.

## More on Fatty Acids and Dementia

Research appearing in the *Archives of Neurology* (Oct, 2006;63(10):1402-08) looked at omega-3 fatty acid supplementation in patients with mild Alzheimer's disease. Over a six month period, subjects with mild Alzheimer's disease received a daily dose of 600 mg of eicosapentaenoic acid (EPA) and 1.7 grams of Docosahexaenoic acid (DHA), or a placebo.

Although most of the subjects did not have any difference in the rate of cognitive decline, one group of patients did seem to respond to the omega-3 fatty acid supplementation. Subjects with very mild cognitive impairment did respond to the supplementation. Also, the subjects with very mild cognitive

impairment who were in the placebo group had significant decline that improved when they received the omega-3 supplements during the second half of the study.

Other research appearing in the *Archives of Neurology* (July 2003; vol 60, #10) shows that eating fish may reduce the risk of Alzheimer's disease. Subjects who ate fish one or more times each week had a 60% less risk of developing Alzheimer's disease when compared to those who rarely or never ate fish. In the same journal (December 2005, vol 60; #12), researchers came to the conclusion that fish consumption slowed cognitive decline.

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Happiness: a good bank account, a good cook and a good digestion.—  
*Jean Jacques Rousseau*

## Eat Vegetables and Prevent 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<sub>12</sub> to convert it 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<sub>12</sub> levels and 3.5% were deficient in folic acid.

At the end of a 2.4 year period, 45 of the subject 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.

