

Homocysteine and Alzheimer's

Here is additional invaluable information for those of you who are getting older. During the 1990s, the number of Alzheimer's cases has jumped at such an alarming rate that the Alzheimer's Association now predicts that, in less than 25 years, as many as 22 million people will be diagnosed with the disease, worldwide.

If you have read my book, *International Meat Crisis*, you will know that this rapid increase may partly be due to mad cow disease (from meat eating), which has been diagnosed as Alzheimer's.

HOMOCYSTEINE AND ALZHEIMER'S

Elevated levels of the amino acid, homocysteine, have been linked with Alzheimer's disease and other forms of dementia.

In addition, research has disclosed that foods and supplements rich in vitamins B₆, B₁₂, and folic acid (all B complex vitamins) help reduce homocysteine levels.

Having read the above two paragraphs, you do not need to read further. But, for those who want additional information, here it is:

In a project done in Sacramento, researchers from the University of California checked the relationship of plasma homocysteine concentration and cognitive (thinking) function of more than 1,700 people over the age of 60. They found that B vitamins provide some protection against cognitive decline among the elderly.

A 1996 research study of elderly Americans, published in the *American Journal of Clinical Nutrition* (AJCN), found that those with high homocysteine levels performed poorly on cognitive tests, compared with those who had low homocysteine levels. In addition, low levels of vitamin B₁₂ and folic acid were also associated with low cognitive test scores.

A six-year study, concluded in 1997 (also reported in the AJCN), found that people who took vitamin B₆ and B₁₂ supplements performed better on cognitive tests, including recall ability.

A 2002 study of more than 1,000 participants on the Framingham Heart study showed that those people who had no cognitive problems in 1992, but had elevated homocysteine levels in 2002, were more likely in 2002 to have an onset of dementia.

In addition, homocysteine levels have also been associated with an increased risk of cardiovascular disease, heart attack, stroke, and Parkinson's disease.

When homocysteine in the diet is not properly absorbed and metabolized, levels of the amino acid rise. But vitamins B₆, B₁₂, and folic acid help metabolize homocysteine. These nutrients are found in dietary sources such as asparagus, lentils, chickpeas, most varieties of beans, and especially spinach and other leafy green veg-

etables. But many people do not absorb B vitamins very well, and need to also take vitamin-mineral supplements.

Supplements of the antioxidant amino acid, N-acetylcysteine (NAC) also lowers homocysteine levels. In one 24-week study of 47 patients in 2001, those who took NAC showed improvement in nearly every outcome measure, with no negative side effects.

The next time your physician takes a blood sample, ask him to check your homocysteine level. It can be measured at any time of the day with a simple blood test. An amount above 12 micromoles per liter (μmol per L) is considered high. If your homocysteine level is 12 to 15 μmol per L and you have blockages in any blood vessel, you need to lower your homocysteine to less than 12 μmol per L. If you have no other major risk factors for cardiovascular disease and you do not have atherosclerosis, it may be okay for you to have a modestly high level of homocysteine (12 to 15 μmol per L).

MORE INFORMATION ON HOMOCYSTEINE

Homocysteine (ho-mo-SIS te-en) is an amino acid (a building block of protein) that is produced in the human body. Homocysteine may irritate blood vessels, leading to blockages in the arteries, called atherosclerosis.

High homocysteine levels in the blood can also cause cholesterol to change to something called oxidized low-density lipoprotein, which is more damaging to the arteries. In addition, high homocysteine levels can cause blood clots to form more easily than they should, increasing the risk of blood vessel blockages. A blockage might cause you to have a stroke or a problem with blood flow. Up to 20% of people with heart disease have high homocysteine levels.

Homocysteine is normally changed into other amino acids for use by the body. If your homocysteine level is too high, you may not have enough B vitamins to help this process. Or you may not have enough of the enzymes to process homocysteine.

The usual recommended vitamin and folate doses for lowering homocysteine levels are as follows: a daily multivitamin containing 400 μg of folate and less than 5 mEq of iron. An additional 800 μg of folate per day for 8 weeks. If this does not lower your homocysteine level, you may need a higher dose.

It is important to get your homocysteine level rechecked after you have been taking the multivitamin and folate for 8 weeks. If your homocysteine level remains high, you may need to take more folate (2 mg per day). If you have had a high homocysteine level, you may need to have your level checked later.