

## **Helping Patients Prevent Alzheimer's disease: Top 10 nutrition/lifestyle strategies**

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Alzheimer's disease is the sixth-leading cause of death in the United States and the only cause of death among the top 10 in the United States where medical treatments are unable to prevent or slow the progression of the disease to any appreciable degree. Currently, an estimated 5.4 million Americans are living with Alzheimer's disease. One in eight older Americans has Alzheimer's disease and nearly half of all people over 85 years of age are afflicted. Currently, Alzheimer's disease consumes \$200 billion of the US health care budget annually. Unless baby boomers take preventive action immediately Alzheimer's disease statistics will begin to soar in the very near future, as the leading edge of the baby boomers began turning 65 yrs old in 2011 (1,2).

### **Advice For Baby Boomers and Young Seniors**

Research reveals that only 2% of all Alzheimer's disease cases are linked to genetic inheritance (2). So, what is causing the other 98% of cases? In recent years many studies have shown that specific dietary and supplementation practices play a major role in the development of Alzheimer's disease, and in its prevention. The following is a quick list of the lifestyle recommendations you should implore your baby boomers and young senior patients to implement immediately to help them prevent the development of Alzheimer's disease, according to the pooled evidence of peer-reviewed research:

1. Keep your blood cholesterol below 3.9 mmol/L (150 mg/dL) by consuming a low animal fat diet, avoiding as much trans fats, hydrogenated fats, and organ meats as possible, as well as other foods high in cholesterol (e.g. egg yolks). These foods elevate blood cholesterol levels, which clog brain arteries leading to cerebrovascular disease – a major contributing factor to dementia and Alzheimer's disease. Vascular dementia, which is the second most common form of dementia after Alzheimer's disease, is caused by insufficient blood flow to brain cells. It is a direct extension of atherosclerosis due to high cholesterol levels, and often compounded by hypertension, diabetes and smoking (3).
2. Keep your fasting blood sugar (glucose) level below 5.0 mmol/L (90 mg/dL), as higher glucose levels (and insulin levels, which result from high glucose) lead to type 2 Diabetes – a form of Alzheimer's disease caused by high blood glucose and insulin. It is well established that individuals with type 2 diabetes have twice the risk of developing Alzheimer's than non diabetic patients. Insulin-dependent diabetics have four times the risk. One reason for this is explained by the fact that there is an enzyme in the brain that breaks down both insulin and amyloid plaque – a hallmark feature of Alzheimer's disease. Thus, in cases where insulin levels are high, which occurs when blood sugar is too high, the brain enzyme is so busy breaking down insulin that it allows amyloid plaque to build up. High levels of amyloid plaque (a protein known also as beta-amyloid

protein), in essence, strangles brain cells from the outside and generates copious amounts of free radicals – which further damages brain cell structure and function.

High blood sugar also increases brain inflammation, which contributes to Alzheimer's disease development (4). As well, Alzheimer's brains demonstrate insulin resistance, which is triggered by sustained high blood sugar levels (5).

3. Remain at your ideal body weight. Over weight individuals have a higher risk of Alzheimer's disease, primarily due to higher circulating insulin (insulin resistance produced by larger fat cells) and glucose levels – leading to type 3 Diabetes (1,2).
4. Take a high potency multiple vitamin and mineral each day that contains a B-50 complex, 1000 IU of Vitamin D (6) and the following antioxidant levels (Vitamin E- 400 IU, Vitamin C – 1000 mg). Studies show that after age 60 the brain begins to shrink (atrophy) by 0.5 – 2.0% per year. People who develop cognitive dysfunction (a prelude to Alzheimer's disease) and Alzheimer's disease show a faster rate of brain atrophy . The only intervention shown to slow brain atrophy, thus far, is supplementation with B- vitamins (7). Other studies show that Vitamin E and Vitamin C supplements act as antioxidants in the brain, slowing brain oxidation (free radical damage to brain cells). Brain oxidation is a consistent feature in Alzheimer's disease, and some studies show that individuals taking Vitamin E and Vitamin C supplements (at a minimum threshold dosage) are less prone to future onset of Alzheimer's disease (8). Vitamin E supplementation has been shown to slow the progression of Alzheimer's disease in several clinical trials (9).
5. Take an essential fatty acid supplement each day that contains fish, flaxseed and borage seed oil. The capsule should contain 400 mg each of these three oils. The daily dosage of 3 capsules per day provides the amount EPA and DHA shown to reduce risk of Alzheimer's disease in large population studies (epidemiological studies). Eating fish twice per week is also helpful in this regard. Eating fish more than three times per week is linked to increased risk of mercury toxicity, which may damage the brain, according to the Environmental Protection Agency. Thus, essential fatty acid supplementation is a critical component of Alzheimer's disease prevention (10-21).
6. After age 40, take a melatonin supplement one hour before bedtime. By age 40 melatonin secretion rates from the pineal gland in the brain have declined significantly. Melatonin is a vital brain antioxidant, sleep inducer and immune modulator. Low melatonin levels are

linked to cognitive impairment and Alzheimer's disease. Studies show that providing cognitively impaired patients with melatonin supplements blocks the transition to Alzheimer's disease in a high percentage of cases. No medical treatment is available that shows a similar effect (22-29).

I recommend that individuals over 40 take a supplement containing the following:

Melatonin – 500 mcg

5 HTP – 10 mg

GABA – 25 mg

Bacopa Monnieri – 15 mg

Take one to four capsules, one hour before bedtime, based on the dosage that enables one to fall asleep, remain asleep through the night, and wake up refreshed in the morning.

Start with one capsule, and increase the dosage until arriving at the ideal dosage. As one gets older the dosage usually increases due to the steady decline in melatonin secretion with advancing age.

7. After age 55 take a supplement each day that helps preserve brain levels of the memory chemical acetylcholine. After 55 brain synthesis of acetylcholine declines. Low levels of acetylcholine are a hallmark feature of dementia and Alzheimer's disease. There are no drugs that increase brain synthesis of acetylcholine, only supplements have been shown to do this. (30-60).

After age 55 I recommend that patients take a supplement each day containing:

- CDP-choline
- Phosphatidylserine
- Bacopa Monnieri
- Huperzine A

8. Avoid known brain-damaging substances. Don't drink alcohol. Alcohol kills brain cells. If you drink then have no more than 3 alcoholic drinks per week. Don't smoke. Free radicals in cigarette smoke cause brain oxidation and increase risk of cerebrovascular disease. Don't use recreational drugs, as many are known to cause brain damage, including marijuana (61).
9. Keep your brain active by learning a new activity or new language. Some examples include learning a musical instrument, taking dance lessons, playing ping pong (mind-body activity), or learning a new skill or subject that is outside of your usual skill set, career endeavour, or leisure time hobbies. This helps to carve new brain circuits, which keep the brain young. It may interest you to know that individuals with lower education have higher rates of Alzheimer's disease. Use your brain power throughout all of adult

life, and continue to learn things outside of your usual frame of reference. This is vital to preserving brain health (61).

10. Avoid head injuries by wearing a helmet when cycling, skiing, rollerblading etc, and avoiding high-risk head injury activities (61).

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