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The Latest Research Finds Vegetables, Tea, Fish Help Fend Off Alzheimer's

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Following a healthy diet, exercising regularly, watching your weight and managing stress will keep your body strong and healthy, but can it keep your mind healthy too? Scientific evidence does indeed suggest that good nutrition and physical activity, combined with mental stimulation and social interaction, may help prevent you from developing Alzheimer's disease. It may even be able to slow progression for people in the early stages of the illness.

Studies presented at this year's Alzheimer's Association International Conference on Prevention of Dementia in June in Washington, D.C., point to diet as a major factor in prevention. *EN* was there to report on the latest research on ways to keep Alzheimer's at bay.

Nature vs Nurture. Alzheimer's disease is a form of dementia characterized by a buildup in the brain of plaques and tangles made of proteins called beta-amyloids. The progressive disease affects memory, reasoning and a variety of other brain processes.

Experts estimate that about 50% of the 26.6 million cases worldwide are inherited. But if you fall into the other 50%, what you do in your everyday life may well determine your risk. Even for those who already have Alzheimer's, lifestyle factors may make a difference.

Vitamin E From Food Protects Best. Because antioxidants destroy free radicals, which contribute to the degeneration of brain and nerve cells, much Alzheimer's research has focused on their role in prevention. So far, results have been mixed.

Vitamin E received the most attention when studies found that people with high vitamin E intakes experienced less cognitive decline over time; other studies, however, have shown no effect. In the Chicago Health and Aging Project (CHAP), researchers followed 815 healthy men and women for nearly four years. Those with the most vitamin E in their diets (10 or more International Units a day) were about 70% less likely to develop Alzheimer's than those getting the least (less than 7 IU a day). However, this relationship was seen only with the natural vitamin E in foods, not the E in supplements. A larger scale study from the Netherlands revealed similar findings.

The reason for the equivocal findings may be due to the many forms of vitamin E, according to Martha Clare Morris, Sc.D., a Chicago researcher at Rush University Medical Center.

"Supplements typically contain high doses of only one form of vitamin E [alpha-tocopherol]," says Morris, "There are actually eight forms found in nature and it may be the combinations found in food that are important."

Other Antioxidant Evidence. Research findings on other antioxidants, such as vitamin C and beta-carotene, are even less clear-cut. While the Netherlands study did find links between C, carotenoids and flavonoids from foods, the CHAP study did not. However, a recent study from France found that people with the highest intakes of flavonoids had significantly less cognitive loss over 10 years than those with the lowest intakes.

Moreover, when researchers analyzed fruit and vegetable intake in 3,718 CHAP participants, they found that those who ate three servings of vegetables a day experienced a 40% slower decline in cognitive ability than those who ate less than one serving a day. Green leafy vegetables proved most potent. Fruit had no effect.

B Is for Your Brain. Inadequate levels of B6, B12 and folate result in elevated levels of homocysteine, which contribute to clogged arteries, a risk factor for Alzheimer's. But too much of some Bs can actually be detrimental to brain health.

Scientists in the CHAP study found that people who got more than 400 micrograms a day of folate from food and supplements saw their cognitive abilities decline significantly faster than those who didn't take supplements.

High folate levels may be a problem only because they mask a B12 deficiency, which is known to cause neurologic problems. Getting enough B12 can be hard for older adults, because absorption of the vitamin typically declines with age. In the CHAP study, 80-year-olds who got 20 micrograms of B12 a day (from supplements) experienced a 25% slower cognitive decline than those who took in just 2.4 micrograms a day (the Recommended Dietary Allowance).

Fishing for Fats. Your brain is loaded with omega-3 fatty acids, particularly docosahexaenoic (DHA), the same healthful fat found in fish. As you age, DHA levels drop; eating seafood can help replace these losses. According to CHAP findings, as little as one meal of fish a week cuts cognitive decline by 12%. Scientists suspect omega-3s work by reducing inflammation and improving transmission of nerve impulses in the brain.

But other fats can have the opposite effect. Rush's Morris found that high intakes of saturated fats or trans fats doubled the risk of Alzheimer's compared to low-fat diets.

And that's not all. Many studies link chronic diseases like diabetes, heart disease, hypertension and obesity to higher rates of Alzheimer's, making a high-fat diet and a sedentary lifestyle detrimental to brain health in less direct ways. One study found that as few as 15 minutes of exercise three times a week cut the risk of dementia by nearly a third.

A Case for Coffee and Tea. A few years ago, Portuguese researchers noticed that Alzheimer sufferers consumed much less caffeine during the 20 years before diagnosis than people without the disease. This led to several animal studies, the most convincing by Gary Arendash, Ph.D., of the Byrd Alzheimer's Institute in Tampa. He used mice bred to have Alzheimer's and compared their cognitive function to that of normal mice after giving them either water or 500 milligrams

of caffeine daily (equivalent to about five cups of brewed coffee).

After several months, Arendash found that the caffeine-drinking Alzheimer's mice performed just as well as the normal mice, while the Alzheimer's mice that were given only water saw their cognitive function decline drastically.

"Caffeine is a stimulant," says Arendash, "so it increases activity in the brain and blocks the enzymes responsible for producing the bad protein, beta-amyloid, that develops in Alzheimer's."

Several studies have shown that both green and black tea may help prevent Alzheimer's, but researchers have yet to find any other factor than caffeine. Some experts suggest it's the antioxidant EGCG (epigallocatechin-3-gallate) in green tea, but research is sparse.

Total Alzheimer's Prevention Package. Although diet is only one piece of the puzzle, researchers like **Nancy Emerson Lombardo, Ph.D.**, of Boston University Alzheimer Disease Center, think it is the most potent. Preliminary data from a small study of diet, activity and mental health are promising and show lifestyle changes are potentially effective and doable.

The most recent study on total diet comes from Columbia University, in which researchers scored the eating habits of 2,258 older adults based on how closely they matched the traditional Mediterranean diet. They found that people whose diets scored the highest were 40% less likely to get Alzheimer's than those whose diets scored the lowest.

The Bottom Line. While more research is needed, it's becoming clear that a diet rich in vegetables, whole grains and fish that's also low in fatty meat and full-fat dairy—with perhaps a cup of tea or coffee—may help you maintain a mental edge in your older years. Check out "*EN's 7 Secrets for Staying Sharp*" (above, right) to put it all into practice.

EN's 7 Secrets for Staying Sharp

- Eat at least one serving a week of fatty fish like light tuna, mackerel, salmon or sardines.
- Include vegetables daily, especially dark leafy greens, as well as a variety of whole grains (for vitamin E).
- Munch daily on a handful of nuts (particularly almonds, walnuts and pecans) for vitamin E, omega-3s and antioxidants.
- Drink at least one cup of green or black tea or coffee daily.
- Substitute olive oil or canola oil for other vegetable oils (for E and omega-3s).
- Avoid saturated fat by limiting full-fat dairy products and fatty cuts of meat.
- Exercise a minimum of 15 minutes three times a week, preferably 30 minutes or more on most days of the week.