ANTI AGING PART 2: BRAIN BOOSTERS

By Gary Null Ph.D.

Memory Loss and Alzheimer's Disease

Memory loss is a generally accepted as an inevitable part of aging, with Alzheimer's disease being the most feared end of the spectrum. Dr. Arthur Winter, a neurosurgeon and the author of Brain Workout: Easy Ways to Power Up Your Memory, Sensory Perception, and Intelligence says that our basic beliefs about our brain potential is all wrong: "That the brain develops so far and nothing more can be added is not true. From our research, we know that the brain is plastic. [Brain development] starts before birth when the baby receives certain sensations from the mother. If she hears music her baby responds; if she's upset the baby responds; if she takes alcohol or smokes, it affects the development of the baby's brain. At birth, you can add to it by giving the baby an enriched environment, which means that the brain must be stimulated. There's a golden window of education, up until three to four years. If you want to enlarge the brain, you can teach the child languages, music, and so on, and the brain will absorb it like a sponge.

"But the process continues throughout life. Your brain is like a library of knowledge. It acquires a vocabulary; it acquires concepts. And that continually grows. So there's no limit to how long the brain can develop. Education should never stop. When you reach adulthood, there's never a loss of memory when a person has had a highly developed education. And why is that so? Because more cells are developing for their transmission. In other words, the number of cells may diminish, but the function continues to improve. You can do this forever."

Another expert in the field of brain health, Dr. Ward Dean, co-author of Smart Drugs and Nutrients and Smart Drugs 2: The Next Generation says that rather than hope to have our full mental faculties in our latter years, we can look to the latest research in anti-aging for greater insight into why the brain deteriorates and for ways to avoid or repair damage. According to Dr. Dean, the accumulation of aluminum is largely responsible for the problem of Alzheimer's disease: "Aluminum always seems to be at the heart of these plaques that are forming in the brains of Alzheimer's patients. Although we've been taught

that aluminum is not absorbed by the body, it really is. And we're exposed to aluminum all the time in antiperspirants, cookware, antacids, and toothpaste.

"The problem with aluminum is that it has three binding sites as opposed to the normal two of calcium. Aluminum will often replace calcium in areas of the brain. Then it will form cross links because of the third binding site. As a result, we will get both intermolecular and intramolecular cross links. These cross links can be equated to someone going through a factory handcuffing workers together. Pretty soon, the factory will slow down until it stops and goes broke. That, in fact, is the rationale for the cross linking theory of aging, put forth by Dr. Johann Bjorksten who believed in using chelation therapy to reverse the problem."

Reversing the Problem with EDTA Chelation Therapy

Ethylene diamine tetraacetic acid (EDTA) is a synthetic amino acid that was developed during World War II as an antidote for poison gas contamination. After the war, chelation therapy became the treatment of choice for victims of lead poisoning, and it still remains unsurpassed for that purpose. But chelation therapy has additional advantages. Especially noteworthy is its ability to improve cardiovascular function and other degenerative conditions involving impaired blood flow.

Chelation therapy binds toxic metals and minerals from the body's tissues, transporting them to the bloodstream and eliminating them through the kidneys. It also removes calcium deposits from parts of the body in which it is not needed (but never from parts of the body where it is needed). This ability to draw out harmful plaque and increase blood flow makes it an excellent treatment for many age-related disorders, including memory loss, Alzheimer's disease, impotency, heart disease, and arthritis.

Antioxidants to Nourish the Brain

"The brain is perhaps the most vulnerable of all the organs simply from the hazards of modern living," notes cell biologist Dr. Parris Kidd. "Cumulative wear-and-tear, occasionally from incidents of damage, perhaps from accidents, and sustained emotional stress, but generally, the wear and tear from the inexorable progression of damage from free radicals. That's the largest single factor. And that's something that's impossible for us

to avoid because our bodies are producing free radicals all the time and getting too many free radicals from the environment."

Dr. Dean adds that aging is a chronic disease that everyone past 35 gets, and, therefore, needs to treat in an ongoing manner with safe substances. He states, "When we're treating an acute illness, we can take a chance on using a drug that has some toxic effect because it's temporary. However, when we're fighting the aging process, we want something that has positive effects and few or no adverse affects because we're in it for the long pull. The nice thing about most of the cognitive-enhancing drugs and nutrients is that we can take them long-term without adverse effects." Here are the best antioxidants for the brain nourishment:

Lecithin contains phosphatidylcholine, which helps to stabilize nerve cell membranes. It is also a precursor of acetylcholine, a chemical that is deficient in most Alzheimer's patients. As a neurotransmitter, acetylcholine conveys messages from one brain cell to another. Dimethylaminoethanol (DMAE) also works as a precursor of acetylcholine. Additionally, it helps remove aging pigment (commonly known as liver spots), which accumulates externally, on older people's hands, and internally, on various organs, including the brain and heart. Scientists consider these spots intracellular garbage.

Vitamin C should be taken in fairly high doses. Optimum levels are at bowel tolerance, the point just before one gets diarrhea and a stomach upset.

Vitamin E taken in conjunction with vitamin C protects the body from premature aging. It has been given to Alzheimer's patients in amounts ranging from 400 to 600 IU daily. Coenzyme Q10 will increase cellular energy and is particularly helpful to nerve cells. Anywhere from 60 to 180 mg a day can be of benefit.

Zinc is an important mineral for Alzheimer's patients, with about 25 mg a day being the recommended dose.

Magnesium tends to be deficient in most American diets resulting in an impairment of calcium absorption. And the reverse is true as well. So much stress is placed on the importance of calcium that we may, in fact, be taking in too much and harming magnesium

absorption. We need to place more emphasis on magnesium-rich foods and supplements, as we should actually be taking in more magnesium than calcium. This mineral has multiple functions, including the ability to calm nerves and significantly improve such conditions as Parkinson's disease, prostate problems, and epilepsy.

Acetyl-l-carnitine is an amino acid which has been shown to increase cognitive performance, thereby reversing the symptoms of age-related memory impairment, even Alzheimer's disease. Studies reveal that acetyl-l-carnitine rejuvenates cellular membranes of mitochondria, the storehouses of energy contained in every living cell. It restores flexibility and functioning which is usually impaired with aging. Recommended dosage is between 1,000 and 3,000 mg daily, taken on an empty stomach.

Melatonin has a reputation as a sleep enhancement, and is especially helpful to the elderly, who almost uniformly have sleep disorders as natural stores of the hormone decline. Melatonin helps keep the body in sync with its natural cycles so that we sleep well during the night and are more alert during the day. Additionally, Melatonin is a powerful antioxidant that has been shown in laboratory studies to increase cellular resistance to radiation injury. It's also noteworthy for its ability to maintain communication between the cells, making it an important supplement for Alzheimer's disease patients. Anywhere between one and three mg of melatonin, taken at bedtime, is recommended.

DHEA, a hormone that our adrenal glands naturally produce, begins to decrease after the age of 30 or 35. Low levels have been associated with fatigue, allergy, breast cancer, Alzheimer's disease, Parkinson's disease, diabetes, and coronary artery disease. DHEA is an inexpensive hormone to replace, and well worth the investment.

Gingko biloba has been used for memory improvement for thousands of years in the Orient and has recently been acknowledged by the Journal of the American Medical Association (JAMA). The herb is a vasodilator which means that it increases the diameter of the arteries, in order to help the heart and the brain function better to prevent coronary artery disease and stroke.

Hydergine is a non-toxic prescription drug that can enhance brain cell metabolism. Like DMAE, it has been shown to remove lipofuscin, the aging pigment. And most impressively,

recent studies have shown hydergine to improve dendritic density, connections of nerve cells with other nerve cells. Dendritic density lessens with age, and hydergine restores these connections back to youthful levels. High levels of hydergine, up to 5 or 6 mg daily, can be taken by patients with dementia. If too much hydergine is taken, it will produce jitteriness, a sign that the amount should be slightly cut back.

Phosphatidylserine (PS), taken with acetyl-l-carnitine, and hydergine, is excellent nutritional therapy for Alzheimer's disease, according to Dr. Dean. This is because PS will resensitize the brain's receptors for cortisone or cortisol, which become less sensitive with age. By doing so, PS reduces circulating levels of cortisone which are damaging to tissues. Dr. Parris Kidd adds that PS is by far the more researched substance for brain health, and that the findings are indeed exciting. Even the New England Journal of Medicine (NEJM) recognizes its value. Kidd reports that PS is "a building block for all known cells that is located in the membrane systems, which are the areas where most of the business of the cells take place. It's associated with crucial membrane proteins that are involved in transport, signaling, and neurotransmitter production." PS has been shown to benefit memory, learning, concentration, word retrieval skills, and mood, such as anxiety, depression. Even Alzheimer's patients have been studied and found to interact somewhat better with their relatives and caregivers. Kidd states that "It seems to be almost rejuvenative. And if it's too late to be rejuvenated, which apparently is the case in advanced Alzheimer's patients, it can still, to some degree, revitalize the brain."

Pregnenolone is a neurosteroid, naturally produced by the adrenal glands, brain cells, and nerve cells, that is especially important for support of the brain and central nervous system. As we age, there is a sharp decrease in the amount produced. Experiments performed in the 40's yielded promising results with pregnenolone for arthritis, cognitive disorders, anxiety, and depression, but lack of funding caused research to be discontinued. Recently research has been revived, and scientists are finding that pregnenolone may have important benefits with regard to memory. Pregnenolone is a precursor of DHEA, which is a precursor of 18 steroidal hormones, including estrogen, progesterone, and testosterone. This means that pregnenolone plays an important role as an anti-aging hormone. Pregnenolone is readily available as an over-the-counter nutritional supplement. People usually start with small amounts, around 10 mg a day, and gradually work up to 100 mg. Both pregnenolone and DHEA are best taken only in the morning, when natural

levels are normally up. Pregnenolone is often effective in people who do not respond to DHEA. Both can be taken together.

A Program to Reverse Memory Loss

Dr. Winter helps his memory loss patients with a strict protocol, which keeps them away from neurotoxins and gets them involved in a good nutrition and exercise program. His protocol includes good habits of eating, supplemented by 1,000 mcg B12 injections, 400-800IU of vitamin E, vitamin C, and multivitamins.

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