

ALZHEIMER'S DISEASE

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We are all worried about the diseases which threaten to either give us disability, impairment, pain, suffering, or loss of mental functions. Certainly, heart disease and cancer rank high among the diseases which threaten us, but even ordinary arthritis can cause problems in terms of minor or major disability that it can be as much of a problem as some of the more serious diseases. Alzheimer's disease (AD) is in a class by itself in terms of what it does to a person and how it affects those who have it.

First of all, it is helpful to look at what the real pathology is in the brain which causes symptoms and signs of AD, and hopefully as this is studied more we will be able to determine some of the best ways of prevention as well as palliation or cure.

The disease causes twisted protein "tangles" in brain cells and a decline in the levels of acetylcholine (a neurotransmitter) that is important to memory formation and retention. AD patients also demonstrate beta-amyloid deposits which are called senile plaques in the brain. There is significant oxidative damage to the brain cells which is probably caused by free radicals in the body as well as the end-products of glycation which occur when protein and sugar are in high levels in the body. The advanced glycation products are present in higher amounts in brain biopsies of Alzheimer's patients. The risk for AD is associated with diet, previous educational level, current mental activity, stress, diabetes, and multiple other factors. Like many other diseases, it is caused by a genetic flaw which allows this progressive deterioration to occur, but the level of "penetration" of the gene depends on multiple lifestyle and concomitant disease factors. The ApoE4 gene is associated with a high incidence of Alzheimer's disease, but even these people can avoid the disease if the best diet as well as good physical and mental pathways are followed. Some medications and supplements may help as well.

Other diseases such as Type 2 diabetes and heart disease are present in those who have genes which are responsible for these conditions, but both of those can be prevented or improved by maintaining a better dietary intake and exercise. Over the course of a nine-year study, borderline diabetes was associated with a nearly 70% greater risk of developing dementia and Alzheimer's in individuals over the age of 75. It was also more pronounced in people with high blood pressure who also have vascular changes in their body as well as their brain. In a study from Kaiser Foundation in Oakland, California of 22,852 patients with Type 2 diabetes, they found that patients with poor blood sugar control were most likely to develop dementia. This can be measured by certain blood tests, and these patients need to be closely supervised in order to prevent AD from occurring clinically.

Trans-fats found in hydrogenated vegetable oils and margarine can worsen insulin sensitivity. If the insulin resistance is higher, AD will be more likely to develop. In fact,

any product or food which acts as a free radical on the body and in particular the central nervous system can increase the possibility that the gene for Alzheimer's disease can be activated.

Speaking of genetics, there are three genes which are closely associated with Alzheimer's disease, either negatively or positively. The ApoE2 gene seems to protect a person from getting Alzheimer's, and with only a little effort they will remain free of the disease. ApoE3 is more neutral, but you can still get AD with this gene if you are not careful with your diet and lifestyle habits, and particularly your weight. The ApoE4 gene is present in one-fourth of Americans, and it greatly increases the risk for Alzheimer's disease if other factors are present. I will try to outline some of the things you can do to prevent this gene from penetrating and causing full-blown symptoms of AD.

To start with, omega-6 oils increase the incidence of Alzheimer's disease. This would be sunflower, safflower, corn oil, and soybean oil. Read the labels on any processed food and that's what you'll find. Regular oils such as saturated fat in small quantities, coconut oil, olive oil, and nut oil are better, but you have to take into account their shelf life. One problem with omega-6 oils is that they are polyunsaturated and must be hydrogenated in order to prevent rancidity.

Omega-3's which are found in salmon and other cold-water fish increase a protein called SorLA/LR11 which reduces the incidence of Alzheimer's disease. Fish oil supplements include omega-3's and play a strong role in prevention, whereas cod liver oil only has a small amount of omega-3's and a lot of vitamin A. Increased folic acid uptake by diet and supplement combination is also known to help prevent AD. Eating more vegetables, spices, raw nuts, and small quantities of meat and seafood improve the outlook for AD.

Increased belly fat increases the risk of Alzheimer's disease by a factor of 6. Getting older increases the risk and over age 65 the risk doubles every 5 years. Drinking milk increases the risk. Vitamin C and alpha-lipoic acid tend to decrease the risk, while cruciferous vegetables such as cabbage and Brussels sprouts also decrease the risk. Garlic, cinnamon, grapeseed extract, CoQ10, niacin, and B12 decrease the risk for AD, as does eating more fiber.

In regards to the brain itself, a good education early in life decreases the risk for AD later, but mental exercises throughout life and particularly over 60 decreases the risk. Drinking coffee helps sharpen the mind for mental tasks as does a good sleeping pattern, and both decrease the risk. Interestingly, sunshine and vitamin D which are linked together can decrease the risk as can Ibuprofen and antioxidants.

Elevated blood pressure and cholesterol increase the risk for AD, while daily exercise decreases it. A history of head injury will slightly increase the risk.

In summary, we have a disease which many of us are afraid of developing. It is possible to be gene tested to find out what your risk levels are if you really want to know. However, if you are in the high risk group, you might live the rest of your life worrying

about this and never acquire the disease. However, it might also show you how much you have to conform to good diet and lifestyle habits in order to prevent penetrance of the gene, which is dependent on the factors mentioned, and there is no question but there are many people walking around healthy with good mental facilities at a very old age who have the ApoE4 gene. Therefore, remembering all the things that you know about diet and nutrition and living up to your standards on these can help prevent the development of Alzheimer's disease in you or family members.