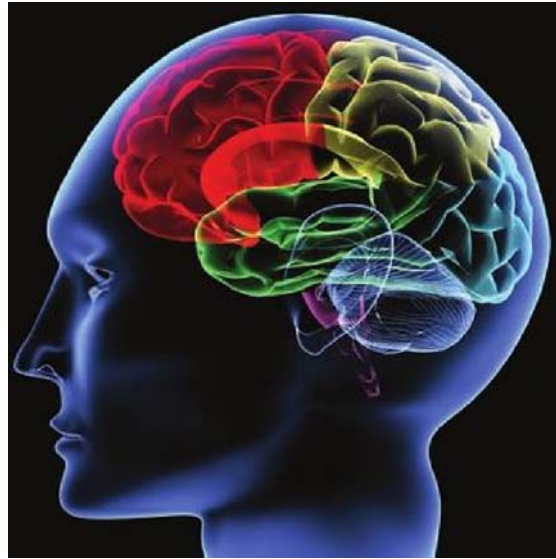


NUTRITIONAL INTERVENTIONS FOR PROTECTING THE BRAIN:

Help for Preventing Memory Loss



by Bernarda Zenker, M.D.

More forgetful? Not thinking as clearly? Simple arithmetic coming more slowly? Worried that mental functions are worsening? Are the processes of aging catching up? There is much that can be done to prevent worsening mental functioning and memory loss. For some, memory loss heralds the onset of dementia. Regardless of a person's occupation or social environment, loss of memory is the most feared consequence of aging.

The brain is responsible for cognition and memory. The human brain has been estimated to contain 50–100 billion neurons, or nerve cells, signaling to each other via approximately 100 trillion synaptic connections. The main body of the nerve cell has projections, called dendrites that connect to other nerve cells, making these communication synaptic connections. The nerve axon is the long projection from the cell body, and is protected by a lipid-filled myelin sheath.

In the scientific literature, many reasons for declining mental functioning are given. All neurological and mental difficulties are due to nerve cells or neurotransmitter chemicals being affected in some way. Toxins, infections and insults can affect the differing parts of individual nerves, as well as the formation of the chemical neurotransmitters. Some reasons for memory loss are attributed to injury, infection, inherited disorders, depression, tumors, and decreased blood supply, such as following a stroke. Preventable causes may also include exposure to toxins in food, fluids and environment.

The prevailing question, irrespective of the cause of memory loss, is what can be done to prevent, correct, or slow memory decline? Some causes of memory loss can be reversed, but some cannot. A complete physical, biochemical, and laboratory evaluation should be conducted. Testing that can be done to identify toxic elements that affect the function and integrity of nerves includes evaluation for lead, mercury, cadmium, antimony, tin, arsenic, thallium and uranium.

Determining and eliminating the identifiable causes of declining memory is essential. If heavy metal or environmental toxicities are identified, careful detoxification can be considered. If abnormal levels of neurotransmitters in urine testing are found, specific neurological problems can be addressed with targeted intervention for the specific abnormalities. Thoroughly washing all fruits and vegetables prior to consumption, and eating organic foods, can help diminish intake of toxic substances from unsuspected food sources.

Specific nutritional interventions and nutritional supplements can help to detoxify and protect individual cells of the brain and nervous system:

– **Phospholipids include phosphatidylserine and phosphatidylcholine:** The phospholipids fortify and protect the myelin sheath that surrounds nerve cells, and stimulates the production of acetylcholine—the major neurotransmitter for memory and recall. Foods most enriched in phospholipids are eggs, muscle and organ meats, milk, and peanut butter.

– **Omega-3 Fatty Acid (fish oil capsules):** Over 70% of the brain is comprised of lipid fats. Over 90% of this lipid content of the brain is comprised of docosahexaenoic acid, the “DHA” component of Omega-3 Fatty Acids. DHA is essential for the body and fortifies the lipid content of the brain. High-quality pure fish oil supplements are the best source for DHA Omega-3 Fatty Acids.

– **Alpha Lipoic Acid:** Alpha lipoic acid is a fatty acid found naturally inside every cell in the body and needed by the body to produce the energy. Alpha lipoic acid is also an antioxidant, a substance that neutralizes potentially harmful chemicals called free radicals. Alpha lipoic acid uniquely functions in both water and fat, unlike the many other common antioxidants, and it appears to be able to recycle antioxidants such as vitamin C and glutathione after they have been used up. Alpha lipoic acid increases the formation of glutathione, an important antioxidant that helps the body eliminate potentially harmful substances. Alpha lipoic acid is thought to be particularly helpful for removing mercury. If purchased as a nutritional supplement, use of a slow-time-released preparation is best. Foods that have the highest content of alpha lipoic acid include green plants that are rich in chloroplasts, and animal meats rich in mitochondria.

– **Magnesium Malate:** Magnesium is an essential mineral needed in over 300 enzyme reactions in the body. These reactions include energy transport, proper nerve function and neurotransmitter activity. Malic acid is a natural fruit acid that is important in enzymes' need for energy-function synthesis and production in the mitochondria of the cells of the body. Magnesium malate chelates and removes

aluminum from the body. It is thought that once magnesium malate is absorbed in the body, the malic acid and magnesium separate. Malic acid and magnesium diffuse separately into tissues. The malic attaches and removes aluminum molecules, allowing magnesium then to fill the emptied receptor site. Magnesium malate is often recommended for fibromyalgia and chronic fatigue syndrome.

Though magnesium malate can be purchased as a nutritional supplement, they are not found combined naturally in foods. Malic acid is the principal acid contained in apples and many other fruits and vegetables. Magnesium is richly found in pumpkin seeds, brazil nuts, almonds, cashews, peanuts, hazelnuts, pine nuts, mixed nuts (raw is best), spinach, quinoa, white beans, pollock, walleye, lima beans, cowpeas, artichokes, beet greens, tofu, okra, oat bran, bulgar, brown rice, haddock, and spirulina.

-Vinpocetine: Vinpocetine increases cerebral blood flow and makes red blood cells more pliable. Vinpocetine is a

chemical substance synthesized from vincamine, a natural constituent found in the leaves of Vinca minor, the lesser periwinkle plant. Vinpocetine has blood-thinning effects, which suggests that people with bleeding disorders or who are taking anticoagulant or other blood-thinning medications should consult a doctor before taking vinpocetine. Vinpocetine is a nutritional supplement, as it is not readily available in a food.

Please consult your health care provider prior to beginning any nutritional supplement.

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