



*Vitamins
And Minerals*
FOR MENTAL CLARITY

If you are over 50 – or even closing in on 50 to be honest – you know the irritation of getting up and walking across the house only to forget *why* you did so. Or the embarrassment of being unable to come up with the name of the old friend you ran into at the store. Or the frustration of trying to remember something that you know you know but being unable to do so.

We are told that memory loss is just part of getting older and that may be true, but research shows that memory loss starts long before people begin to think of themselves as “older” or “aging.”

The medical science periodical *Neurobiology of Aging* conducted a 7-year study of the cognitive patterns of 2000 healthy adults from 18 to 60. Their findings were surprising. They saw “subtle declines in cognitive skills” occurring throughout the study. There was “a noticeable drop in abstract reasoning, brain speed, and puzzle solving skills” in subjects at 27 years of age. Further, they marked age 37 as the period where memory decline was detected.

So, based on that information, we have actually been losing our memory for years and we are only just now noticing.

Regardless of how long we have been losing our memory and mental clarity, it is never too late to turn back the hands of time and revitalize your sleepy brain. The right combination of vitamins and mineral are the first step. A healthy brain is a sharp brain.

What Vitamins and Minerals Should You Be Getting?

In his book *The UltraMind Solution: Fix Your Broken Brain by Healing Your Body First*, Dr. Mark Hyman said that only people who “eat wild, fresh, organic, local, non-genetically modified food grown in virgin mineral and nutrient rich soils that has not been transported across vast distances and stored for months before being eaten... and work and live outside, breathing only fresh, unpolluted air, drink only pure, clean water, sleep nine hours a night, move their bodies every day, and are free from chronic stressors and exposure to environmental toxins, then it is possible they might not need supplements.”

While this statement makes a clever point, it is wise to check with your doctor before beginning any regiment of supplements. You may even get some recommendations tailored just for you. For a basic understanding of what your body needs, we have assembled a list.

(1) Omega 3 Fatty Acids

Research of Omega 3 fatty acids has shown that of the more than a dozen types the chief types, EPA (eicosapentaenoic acid) and DHA (docosahexaenoic), are essential for

optimal brain health. DHA makes up a large portion of the gray matter of the brain. EPA improves blood flow to the brain which boosts overall function. These fats in the brain are responsible for forming cell membranes and play a vital role in how cells function.

A University of Pittsburg study found that middle aged people who have higher DHA levels did better on several tests including mental flexibility, nonverbal reasoning, vocabulary, and working memory. Omega 3 fatty acids are beneficial to people of every age but are especially important for people who are getting into their 50s and beyond. As we age, levels of omega 3 fatty acids determine the rate and progression of loss of memory neural and degradation.

In addition, omega 3s are linked to increase in brain size which is vital for older people as it has been shown that our brains literally begin to shrink as we age. Omega 3s are also shown to increase the speed of neural transfers, support more efficient energy production, and increase memory.



Omega 3 is found in the fatty fish of fresh water lakes and rivers. Not inherent to the fish themselves, omega-3 is created from the algae these fatty fish ingest. Salmon,

mackerel, herring, sardines, lake trout, and tuna are some of the richest sources of omega 3s.

If fish is just not your thing, you can also find omega 3 fatty acids in dark orange and green veggies and fruits. Also, taking omega 3 supplements can help.

There is a concern about the amount of mercury that is found in some of these fish. If consumed in large enough amounts, mercury can cause brain and nervous system damage. Larson says, "It's important to choose the smaller fish that have less mercury."

The low fat trend of the last 50 years or so has caused a severe deficiency in omega 3 fatty acids that the brain needs to function optimally. It has also been linked to an increase in diabetes, obesity, and other problems.

While there is no set RDA (recommended daily allowance) for omega 3s, the consensus seems to be that 250 -500 milligrams (mg) of each per day should be good for healthy adults. It is important to note that most agree a lower dose taken multiple times throughout the day is preferable to large doses taken once a day. To be sure you are getting the right amount, consult your doctor.

(2) *Vitamin E*

This powerful antioxidant is thought by some experts to be able to help reverse memory loss. As such it has been studied in the treatment of Alzheimer disease and memory loss.

Vitamin E preserves brain function and protects against neuronal degeneration and may prevent or slow the rate of age related cognitive decline.

While that may not be a proven benefit, the fact that Vitamin E protects neural linings surrounding your nerves is. Basically, this vitamin protects what protects your nerves. This is important, especially for older people whose neural linings have had longer to degrade, because the nerves are the messengers of the brain and without them the brain cannot function properly.

This vitamin helps protect the functions of the brain. There is a tremendous amount of activity that occurs in the brain and high levels of oxidation occur because of it. Being one of the most potent antioxidants, Vitamin E can help reduce this oxidation before it does any damage.

Research has also shown that this vitamin can help reduce stress on the brain through providing energy and stress relief. It will help return energy levels throughout the body to normal, which allows the brain to produce clearer thoughts. People who follow low fat

diets are often deficient in vitamin E and studies correlate low fat dieting with Alzheimer's disease.

The best way to increase your Vitamin E level is through eating foods rich in this nutrient such as spinach, almonds, sunflower seeds, eggs, wheat germ, sweet potatoes, avocados, and leafy greens. If this is not possible or if it is insufficient, supplementation can help fill the void.

You should always consult your doctor before beginning any new supplement. Vitamin E has been shown to interfere with the way the body processes some medications. For example, it may increase the risk of bleeding in those who take blood thinners.

May interfere with the way the body processes some drugs. May increase risk of bleeding. Signs of a serious deficiency include vision problems, muscle weakness, and unsteady walking.

(3) Vitamin C ... also known as the Sunshine Vitamin



Vitamin C is vital to proper cognitive function. It accumulates in the central nervous system, with neurons of the brain having particularly high levels. Vitamin C is required for making the neurotransmitter norepinephrine, which affects the part of your brain where attention and responding actions are controlled.

As a powerful antioxidant, vitamin C protects your brain against free radicals, unstable molecules that cause cell damage. Vitamin C is known as ascorbate within the body. The highest concentrations of ascorbate within the body are found in the brain

and neuroendocrine tissues, where most of the body's energy is most used. Ascorbate is a regulator for over a dozen different neurochemicals and can reduce the risk of stroke.

Signs of a deficiency include anemia, nosebleeds, bleeding gums, easy bruising, dry skin, and decrease rate of healing for wounds.

Vitamin C-rich foods include fruits (particularly citrus such as oranges), broccoli, cantaloupe, bell peppers, kiwi, spinach, strawberries, tomatoes, mango, Brussels sprouts, pineapple, and potatoes. The RDA for adults is 75 mg a day for women and is 90 mg for men. One medium orange, contains 70 milligrams of vitamin C, and a 3/4-cup serving of orange juice contains 93 milligrams.

(4) B6 (Pyridoxine)

Having enough of this vitamin is essential to keeping your memory sharp. Vitamin B-6 is required for production of several neurotransmitters, including serotonin, norepinephrine, dopamine, and GABA. Neurotransmitters are chemical messengers that carry signals between neurons – specialized cells that send and receive electrical signals within your body.

Serotonin is important for memory. Adequate levels influence whether or not memory moves from short term to long term. It also lowers the levels of homocysteine, one of the amino acids used to naturally destroy damaged tissues. This is a good thing unless there is too much, excessive levels of this amino acid are linked to memory loss.

Two of the warning signs for deficiency of B6 are depression and memory loss. Confusion or lack of concentration can be symptoms of serious vitamin B-6 deficiency. For adults under 50 years, the RDA is 1.3 milligrams per day. The RDA for adults 51 years and older is 1.5 milligrams for women and 1.7 milligrams for men. Good food sources of vitamin B-6 include legumes, soy products, fish, poultry, meat, potatoes, bananas and watermelons.

(5) B12 (cobalamin)

This one has a big impact on neuro health. B12 is responsible for and one of the primary nutrients for the production of the myelin sheath that covers the nerves. When a deficiency arises, this sheath becomes exposed, which leads to neuropathy, pain, disorientation, memory loss, problems with concentration, and even dementia.

Getting sufficient vitamin B-12 is vital for ensuring your brain's proper function. According to the Linus Pauling Institute study, vitamin B-12 deficiency affects 10 to 15 percent of adults over the age of 50. Good food sources of vitamin B-12 include milk,

cheese, fortified cereals, fish, poultry, egg and meat. The RDA for men and women age 14 and older is 2.4 micrograms daily.

(6) Thiamine (B1)



In the brain, Thiamine can help improve moods and ward off depression. It's important in the creation of the proper amino acids and enzymes. It helps regulate the production of adenosine triphosphate (ATP). ATP is a usable form of energy for cells - the energy is "trapped" in a chemical bond that can be released and used to drive other reactions that require energy. This helps the body keep energized and functioning regularly.

Various studies indicate that thiamin may increase energy, strengthen the immune system, enhance learning abilities, prevent memory loss, and be of benefit for people with Alzheimer's disease among other benefits.

Signs of a Thiamine deficiency include depression, weakness, memory loss, headache, and nausea. The best way to keep your Thiamine levels up is to eat foods rich in it such as beef, beans, asparagus, green peas, sunflower seeds, oranges, and oats.

(7) Riboflavin (B2)

Vitamin B2, riboflavin, is responsible for proper transmission of neuro impulses. Lacking riboflavin can lead to migraines, Parkinson and Alzheimer's diseases, epilepsy, and multiple sclerosis. Several metabolic syndromes are aided with riboflavin supplementation. But, like all B vitamins, it is not stored in the body, so excess supplementation is just wasted.

(8) Niacin (B3)



Nicotinic acid is well known for helping to reduce cholesterol levels and modulating the body. In fact, without niacin we would not be able to produce nicotinamide adenine dinucleotide (NAD) which is a chemical that occurs naturally in the body and plays a vital role in the chemical process that generates energy.

Supplementation with niacin improves energy levels, which is why it is included in most nootropic stacks for brain stimulation.

Your brain requires niacin, vitamin B-3, to maintain a constant supply of glucose to meet its energy needs. Severe niacin deficiency, which can occur in cases of chronic alcoholism and in people who have problems absorbing nutrients and it, can result in neurologic symptoms such as poor concentration, confusion and memory loss.

Niacin-rich foods include whole grains, potatoes, poultry, fish and meat. The recommended dietary allowance (RDA) for adults is 14 milligrams per day for women and 16 milligrams for men. A 3-ounce serving of cooked yellowfin tuna, for example, contains 18.8 milligrams, and a 3.5-ounce serving of oil-roasted peanuts provides 13.8 milligrams of niacin.

(9) Folate (B9)



Folic acid is a synthetic form of folate and the most common used in supplementation. It helps reduce homocysteine in the brain. But reducing these levels, dementia and Alzheimer's disease progression can be halted. It can help protect the brain from the oxidative stresses of heavy studying and work stresses.

Folate also works to maintain oxygen in the blood and produce healthy blood cells.

A deficiency in B vitamins in later life can lead to brain shrinkage, dementia, and Alzheimer's disease and is also linked with neuropsychiatric disorders, including: seizures, migraines, chronic pain, and mood disorders. Older adults considered high risk for a B deficiency. The first signs of a deficiency can be hard to spot as they are common among all adults. For example, tiredness is the earliest sign followed quickly by distractedness and moodiness. If these feelings and behaviors become a constant or severe then you should consult your doctor immediately.

Top food sources for folate are spinach, beans, liver, lentils, asparagus, avocado, and broccoli. It is always better to get your nutrients from food sources but if this is inefficient or impossible then supplementation may be an alternative to discuss with your doctor.

(10) Vitamin D

Essential for memory and brain health, vitamin D receptors are found throughout the brain. It plays a pivotal role in several of the most basic functions of the brain. This includes making memories and learning new things. It is also one of the catalysts in the brain that turns on and off neurotransmitter synthesis and nerve growth systems.

A number of studies have linked vitamin D shortage to cognitive impairment in older men and women. A study published in the Journal of Alzheimer's Disease found that vitamin D3 – the active form of vitamin D – may stimulate the immune system to rid the brain of beta amyloid, an abnormal protein believed to be a major cause of Alzheimer's disease.

When your vitamin D levels are low, your ability to keep and form new neuro connections is inhibited. Research is looking to be promising in the use of high levels of vitamin D supplementation for Alzheimer's and dementia prevention and reversal.

Vitamin D is one the nutrients you don't need a supplement for. In healthy people, 15-30 minutes of sunlight exposure over 25% or more of the body is enough to produce all the vitamin D for a day. However, vitamin D levels tend to vary greatly depending on factors like skin color, weight, age, sunscreen, air pollution, and location.

In the event that you cannot get your vitamin D through sunlight, then 1000 to 2000 IU (International Units) are the RDA. Proper levels of Magnesium needed to transform absorbed vitamin D into its active form.

(11) Magnesium

The mineral magnesium is used in over 300 processes in the body and over 50 in just the brain alone. It improves neural plasticity, meaning the nerves are able to adapt and avoid damage easier. More importantly, magnesium is critical to proper energy production.

If we are deficient – it's estimated that 70 to 90% of the population is – we are unable to convert sugars into energy. Low energy and diabetes are a result of this deficiency. Early signs of magnesium deficiency include nausea, loss of appetite, fatigue, confusion, poor memory, and irritability.

The list of benefits magnesium provides includes improved focus, memory, and sleep, fighting off stress and depression, crucial for the production of energy and

neurotransmitters, and having a calming effect on the nervous system. Foods rich in magnesium include pumpkin seeds, spinach, brown rice, avocado, nuts, black beans, and leafy greens.

You should be absorbing between 300 mg and 400 mg of magnesium per day. However, it is often difficult to absorb adequate amounts of magnesium. The same receptors in our digestive track that takes up magnesium also takes up calcium, but it takes up the calcium first. So, all those supplements with calcium and magnesium are a waste of money.

Add to that the fact that even in optimal conditions our bodies can only absorb about 50% of available magnesium and it is no wonder that so many people are deficient. A time released supplement or taking small doses multiple times per day are the best ways to make sure supplementing is effective.

(12) Iron



Iron deficiency is one of the most common nutritional deficiencies in the USA. Signs of an iron deficiency include cold hands and feet, pale skin, brittle nails, dizziness, and fatigue. Not symptoms that jump out at you, a blood test is the surest way to access the possibility of an insufficiency.

The brain benefits of optimizing iron levels include improved attention and concentration, and stimulated cognitive ability. Iron also contributes to the production of neurotransmitters such as serotonin and dopamine.

Iron rich foods include nuts, leafy greens, beef, pumpkin seeds, peas, seafood, and lentils. Natural is the way to go as always but is especially important with iron. This is a supplement of which you do not want to take too much. Health risks from excessive iron include gastric upset, constipation, nausea, Alzheimer's disease, and Parkinson Disease.

Too much iron can also accelerate dementia and brain deterioration. However, too little causes energy problems. Iron is a primary component in our blood, and without it we become anemic and fatigued ... just do not overdo it.

(13) Zinc



If you get sick, zinc helps bring you back to health. It boosts the immune system and in the brain, it helps control neuro impulses. High doses of zinc are known to help reduce epileptic seizures. Increasing your zinc can also help smooth neuro connections and make recall easier.

The highest amount of zinc found in the body is in the brain, plays role in the brain and body's response to stress, and low levels are linked to depression. Zinc rich foods include oysters, beef, spinach, chocolate, pumpkin seeds, nuts, and wheat germ.