NUTRITIONAL SUPER-STARS FOR RESTORATIVE NEUROLOGY

A SUPPLEMENT TO
Dr. Alan Pressman’s Restorative Neurology: The Natural Healing Protocol for Preventing and Reversing Cognitive Decline
In this report, we will review how each of the star ingredients of your “Brain Brew” (as outlined in Your Comprehensive Brain Plan) contributes to the overall goals of restorative neurology.

GLUTATHIONE

Following is a report released from the Institute of Medical Science in New Delhi India published in the *Journal of Biochemical Research*. This report will help give you a good idea of why the nutrient glutathione is so important…

“New research by a team of Indian scientists suggests that magnetic resonance imaging scans looking for a protective chemical in the brain may aid early diagnosis of Alzheimer’s disease and help evaluate its treatment.

The researchers at the National Brain Research Centre (NBRC), Manesar, and the All India Institute of Medical Sciences (AIIMS), New Delhi, have found that the brains of patients with Alzheimer’s disease have depleted levels of a chemical called glutathione.”

This is why glutathione is in the Restorative Neurology brain brew. It gets dramatically depleted in people with brain disorders such as Alzheimer’s. And it is not a result of Alzheimer’s, but rather an etiological factor of Alzheimer’s.

Glutathione is a very simple molecule that is produced naturally all the time in your body. It is a combination of three simple building blocks of protein or amino acids—l-cysteine, glycine, and glutamine. The depletion of glutathione and the failure of the body to synthesize glutathione from these three amino acids lead to disease.

Following is another excerpt from the article quoted above:

“Glutathione is an antioxidant chemical found in the major organs of the body, including the brain, where it scavenges harmful molecules produced during the body’s housekeeping process [autophagy].

*Earlier studies have suggested that damage to cells and their internal cellular machinery by such harmful biological byproducts might be among factors contributing to neurodegenerative diseases such as Alzheimer’s disease.*”

Did you get that? Your brain is the most metabolically active organ in your body.

Because of this, it gives off a lot of waste that must be cleared out, including tau protein and plaque. Your natural detox system is totally dependent on your glutathione levels, because glutathione is essentially in charge of the maintenance crew. Not only will it help clear the brain of biological waste, it’s critical for the removal of external toxins as well, including BPA (bisphenol-a) and plastics such phthalates, endocrine disrupters, cigarette smoke, household cleansers, dry cleaned clothes, new carpeting, etc…

You’ll find your glutathione levels tend to be most depleted in the morning after a night of autophagy. Serotonin, a neurotransmitter, gets released around 4pm-5pm in the afternoon and starts to relax you to slow down so you can go to sleep and so on… Around 9pm there is a major methylation reaction that converts serotonin to melatonin. Not only does melatonin relax you and help you go to sleep, it also increases the rate of the synthesis of glutathione. So by the morning, your levels of glutathione are pretty low.

People don’t realize just how important this process is. And it’s why glutathione is included in the “brain brew.”

And as the article above noted, glutathione is a major antioxidant. Antioxidants are substances in the body that help scavenge harmful molecules produced during the housekeeping process—especially in your brain. The report goes on to say:

“*Earlier studies have suggested that damage to cells and the intercellular machine by such harmful biological byproducts might be among the factors contributing to neurodegenerative disease such as Alzheimer’s.*”

Basically, this bioaccumulation of waste
is responsible for the etiological factors of Alzheimer’s and Parkinson’s disease.

Other researchers are now looking into the use of measuring glutathione levels for early detection. As one article reported, “Now, NBRC scientist Pravat Mandal and his colleagues have shown through MRI scans that glutathione levels are reduced in specific regions of the brains of men and women with Alzheimer’s disease compared to glutathione levels in healthy adults.”

“We’re investigating glutathione as a possible biomarker for Alzheimer’s disease,” said Mandal. “We’re hoping that MRI scans could be used to monitor changes in glutathione levels and help in early diagnosis.”

It’s interesting to note, that in this study the drop in glutathione levels were observed in opposite hemispheres of the brain in male and female patients with Alzheimer’s disease. The left frontal cortex in women and right frontal cortex in men—reflecting gender differences in glutathione distribution. The study, whose results have appeared in the journal *Biochemical and Biophysical Research Communications*, was based on MRI scans of 24 men and 20 women in their 20s and six men and three women diagnosed with Alzheimer’s disease.

So here’s what we know about glutathione…

1. It’s a major antioxidant.
   - It’s produced by every cell in the body
   - It neutralizes free radicals in the body
   - It recycles other antioxidants such as vitamins C and E and then glutathione is recycled by alpha lipoic acid (so you may want to consider supplementing with 100 mg of alpha lipoic acid as well).

2. It’s the most effective detoxifier in the body.

3. It helps modulate immune response, meaning it helps bring it back into balance and protect it from being underactive or overactive.

4. It regulates the cells vital functions such as the synthesis and repair of DNA, the synthesis of specific protein, and the activation and regulation of enzymes.

**Take care in how you get more glutathione**

Many scientists say glutathione is “essential” for the body…but, unfortunately, you can’t just supplement with glutathione.

The two institutes that have done most of the research on glutathione are McGill and Emory Universities. And they have come to the same conclusion:

In pill form, glutathione is not properly absorbed and will be eliminated by the liver before reaching the blood stream. Cysteine, the biological precursor to glutathione, is not well absorbed taken orally. And IV glutathione gets degraded by the time it gets to the cell.

So what are you to do? How can you effectively increase glutathione levels in the body?

Experts agree the most effective way to get glutathione absorbed by the body is by supplementing with a bioactive, un-denatured whey protein. Regular intake of whey protein has been shown to dramatically increase cell levels of glutathione.

A great report from Emory University says,

> “Glutathione is involved in the removal of compounds through biochemical processes that can benefit cells and tissues depending on the bioavailability of its precursor cysteine. Un-denatured whey protein is the best source for the absorption of glutathione.”

But that’s not all…un-denatured whey protein also contains at least 10 immunoglobulins that also help support brain immunity.

**MULTIVITAMIN/MULTIMINERAL**

In addition to un-denatured whey protein, an essential part of the Restorative Neurology brain...
brew is a high-quality, powdered multivitamin/multimineral.

Following are just a few of the reasons why… starting with the importance of the B vitamins.

Take a look at the headlines. The first one comes from an article on research out of Oxford University: “High Dose B Vitamins Help Prevent Alzheimer’s.”

The researchers found that in those with high homocysteine levels, the specific areas of the brain associated with Alzheimer’s disease shrank 8 times more slowly in those taking B vitamins than in those on placebo.

Homocysteine is an amino acid which is a risk factor for brain atrophy (wasting/shrinkage), cognitive impairment, and dementia.

The researchers found that those taking B vitamins with folic acid had average brain shrinkage of 0.76 percent per year. The placebo group had average brain shrinkage of 1.08 percent.

This research is strongly supported by other studies that show B vitamins can substantially slow down or potentially arrest the disease process in those with early cognitive decline. And it’s the first treatment that has been shown to slow brain shrinkage. Medications can’t even do it.

The report also pointed out the potential benefit of early screening and at the first signs of cognitive decline, from age 39, 40, 50 and up along with homocysteine testing.

In a study from Swinburne University in Australia, researchers found that a daily multivitamin and mineral support may boost episodic memory in older men.

After eight weeks of supplementation, researchers found improvement in recognition memory. They noted that B vitamins may influence neurotransmitter production and may also assist in rescuing the brain cell metabolism that is so necessary for maintaining neuronal health.

And indeed without vitamin B6 there is no neurotransmitter production whatsoever, since it plays an essential role in the process that produces the precursors to neurotransmitters.

Additional studies in the Journal of Alzheimer’s Disease and the British Journal of Nutrition have also reported on the benefits of multivitamins for supporting short-term memory and overall brain function. In addition, research also points out the benefits of vitamins D and E in particular as well.

Now if you just stopped there—with the whey protein for glutathione and a high-quality, powdered multivitamin—based on my experience, you would already see an improvement. But there are a few more individual nutrients worth including in the overall “brain brew” and discussing in further detail. I refer to them as the “neurologicals”…

### THE HOMOCYSTEINE-B VITAMIN CONNECTION

Homocysteine is a non-protein amino acid, synthesized from methionine and then either recycled back into methionine or converted into cysteine with the aid of the B vitamins. About 50% of homocysteine is converted back to methionine by a process called re-methylation. This requires active folate and vitamin B12, in order to donate a methyl group. Active folate is known as 5-methyltetrahydrofolate (5-MTHF).

A minor pathway for the conversion of homocysteine back to methionine also exists, involving methylation with trimethylglycine (TMG) as the methyl-group donor. The remaining homocysteine is trans-sulfurated to cysteine, with vitamin B6 as the co-factor.

Elevations of homocysteine can also occur in the rare hereditary disease homocystinuria. High levels of homocysteine can lead to endothelial injury, vascular inflammation, coronary artery disease, neuropsychiatric illness, and bone health.
PHOSPHATIDYLSERINE (PS)

Phosphatidylserine (PS) is essential to cell-to-cell communications/signaling. It works to control the entry of nutrients into cells…and plays a part in so much more:

- the clearance of waste
- nerve impulse control
- receptor of molecular messages from outside the cell
- metabolic response to messages
- cell-to-cell communication
- improves memory
- improves learning and verbal ability
- improves mood
- improves concentration
- reduces anxiety
- balances cortisol
- recycles old cells of the immune system
- normalizes the secretions of the adrenal glands
- involved in cellular detox

Need I go on? There is an enormous amount of literature to support what PS does. And its role in the body is vast and important. This is why PS is a key ingredient in my Restorative Neurology brain brew. And the best source of phosphatidylserine is a non-GMO, soy-based lecithin.

CHOLINE/ACETYLCHOLINE

Choline is another nutrient that has a tremendous amount of research to support it.

Choline is actually a member of the B complex family and comes in multiple forms. One report on acetylcholine (a neurotransmitter) showed that increased consumption of choline could help long-term memory and attention-holding capacity.

The international team of researchers analyzed the influence of supplementation with the B vitamin choline from childhood to adulthood. They found that choline is directly involved in attention and memory processes…particularly long-term memory, attention span, and learning.

A report in the Journal of Neurology from John Hopkins says choline is a building block. According to the article, “Oral administration of choline supplementation activates the biosynthesis of phospholipids of neuronal membranes.” Remember the importance of neuronal membranes…as the neuronal membrane goes, so goes the neurons…Choline is responsible for the biosynthesis of that neuronal membrane.

The article goes on to say choline also increases brain metabolism and supports the following:

- Increases norepinephrine and dopamine levels in the central nervous system.
- Provides neuro-protective activity in ischemic conditions like strokes.
- Improves performance and learning in animal models of brain aging.
- Restores mitochondrial function in the cells.
- Inhibits cerebral ischemia, neurodegeneration, vascular disease, head trauma, cognitive disorders of different causes and age-related decline.

Another article from the University of Colorado School of Medicine reports on the benefits of choline supplementation in the prevention of schizophrenia.

So you definitely want to increase levels of acetylcholine in the brain…and you do that by supplying the body with choline…

Some of the foods that contain choline are broccoli, wild salmon, organic peanut butter, and organic eggs.

Also look for a supplement that contains phosphatidylcholine along with
glycerylphosphorylcholine, or GPC.

GPC has been shown over and over again in clinical studies to improve memory, focus, and concentration. It also helps maintain brain health during the aging process.

All forms of choline are actually precursors to acetylcholine, and are very important to memory. Acetylcholine is also the neurotransmitter of the Vagus nerve which has a very important impact on your heart, lungs, and the GI tract.

Old adults showed increased reaction time when taking GPC. Researchers from McGill University reported that GPC in supplement form quickly raises choline levels in the brain which helps boost acetylcholine involved in memory.

ACETYL-L-CARNITINE

Acetyl-l-carnitine (ALC) is a nutrient responsible for and essential for making energy. And of course without energy, the brain can’t get anything done.

Acetyl-l-carnitine has a few substantial modes of action:

- Transports fatty acids into the mitochondria
- Makes ATP, the energy currency of the body
- Helps regulate and make the pathway that actually makes acetylcholine

Therefore it’s important to include acetyl-l-carnitine in your Restorative Neurology brain brew.

One more ingredient in your brain brew is Ginkgo Phytosome…

GINKGO PHYTOSOME

An article from the Medical College of China says that ginkgo biloba will increase brain function by increasing brain stem cell growth.

And according to recent research in rats, supplementation with an extract from ginkgo biloba may help to battle memory loss and cognitive impairments associated with dementia by encouraging the growth and development of neural stem cells.

Formation of new neurons suggests that gingko extract improves memory loss and cognitive impairment in patients with senile dementia.

The study published in *Neural Regeneration Research* investigated the effects of ginkgo extract on the formation of neurons in rat brains after previous findings suggested that the ginkgo extract EGB76 (which contains high levels of flavonoids and terpenoids) improves memory loss and cognitive impairment in patients with senile dementia.

FLAVONOIDS

So let’s move on to the flavonoids. Part of the brain brew for addressing restorative neurology includes a powdered blend of extracts high in flavonoids.

These natural constituents of plants play an important part in gene expression and cell signaling.

There are six groups of flavonoids. The first two, anthocyanins and flavanols are the most important categories for the brain. Following is the complete list:

1. Anthocyanins—found in blue, black, and red berries, red grapes and red wine
2. Flavanols—found in green tea, chocolate, apple, apricot, red grapes and red wine
3. Flavonones—found in citrus fruits, oranges, grapefruits, and lemons
4. Flavonols—found in onions, kale, leeks, broccoli, apples, blueberries, and cranberries
5. Flavones—found in parsley, thyme, celery, and hot peppers
6. Isoflavones—found in soy foods, soy beans, and legumes
Researchers from Harvard found that men and women who regularly ate foods rich in anthocyanins (like blueberries) had a lower risk of developing Parkinson’s disease. The effect was greater in men, cutting risk by up to 40 percent.

A study done through the USDA research center on aging at Tufts University presented at the Annual meeting of the Society of Neuroscience found: “Extracts of acai, blueberry and strawberry may enhance the neuronal house-keeping function [autophagy] and potentially protect the brain as we age.”

The report emphasizes the importance of autophagy and further says this system of cleansing declines as we age…but berry extracts enhance the process and contribute to overall brain health. They found that acai in particular protected against pro-inflammatory compounds and works on a cellular level.

Another study out of the University of Cincinnati reports, “Blueberries boost memory in older adults.” In the study, one group of volunteers in their 70s with early memory decline drank the equivalent of 2-2 1/2 cups of blueberry juice for 12 weeks. And after just 12 weeks, subjects showed improvements in learning and memory tests. There was also an indication of reduced symptoms of depression.

Blueberry consumption has also been linked to reduced risk of Alzheimer’s disease. Researchers believe blueberries may exert their effects on learning and memory by:

- Enhancing neuronal connections/synapses
- Improving cellular communications
- Stimulating neuronal regeneration

A study from the University of Houston looked at the effect of blueberries on age-related mental decline and found that supplementing with blueberries for just one month can slow and even reverse the decline of mental function.

And according to research out of the University of Pennsylvania and the University of Leeds in the U.K., flavonoids help regulate glucose transport to the brain. Glucose (sugar) is the main nutrient the brain needs for energy.

Based on my clinical experience, patients can see a change in how they feel mentally the same day they start taking their brain brew. I’ve also seen a 40 percent reduction in inflammatory markers.

**COENZYME Q10**

Coenzyme Q10 (CoQ10) is a vitamin-like compound that speeds up the rate that chemical reactions take place in the body. It’s made in the body from tyrosine, the same amino acid that aids in the production of dopamine, adrenaline, and noradrenaline.

One of the reasons why it helps to supplement with CoQ10 is because tyrosine is in high demand in the body, and the process that transforms it into CoQ10 is incredibly complex. Add to that the fact that by the time you are 70 years old or older, the amount of CoQ10 in the body is about 80 percent less than what it was when you were 30.

CoQ10 was discovered by Dr. Frederich Crane at University of Wisconsin in 1957…he found that the heart and brain get their energy from CoQ10. This was later confirmed by British biochemist Peter Mitchell—a Nobel-Prize winner for Bioenergetics (for energy transfer). Mitchell found that in order for energy to be generated in body, based on mitochondrial function, you have to have CoQ10 and a few other nutrients, like ribose, carnitine, and magnesium.

It is now known that 95 percent of all energy in the body is related to the amount of CoQ10 in the body. We also now know that the heart needs CoQ10 at all times. One of highest concentrations of CoQ10 in body is in the heart muscle.

Research now also shows that CoQ10 is crucial for neuro-cognitive function. A study from UCLA in the *Annuals of Neurology* reported that
CoQ10 supplementation increases the brain’s mitochondrial energy and that dopamine-producing sections of the brain are protected.

When CoQ10 is taken orally, it is then incorporated into mitochondrial cells throughout the entire body. The UCLA researchers found that after 2 months of supplementation with CoQ10, mitochondrial energy production increased by 29 percent. It also helped protect against brain damage.

Studies show that even short-term supplementation, with moderate amounts of CoQ10 (300 mg per day) produced profound anti-aging effects in the brain.

Another interesting finding was that CoQ10 levels were 35 percent lower in someone with Parkinson’s as compared to matched controls.

There is evidence for dosages from 300 mg to 1200 mg a day in neuro-degenerated patients. Generally speaking, I start with 300 mg once a day.

FISH OIL

The research on the benefits of fish oil is tremendous. And there’s really no question it can play a huge part in keeping your brain functioning at optimal levels. Here’s just one study from the Journal of Biochemistry: “Omega 3 reduces the risk of neurodegenerative disease.”

In this study, researchers found that an increased intake of the omega-3 fatty acids EPA and DHA from fish oil reduced signs of oxidative stress. And this is one of the first studies to show that DHA actually helps activate the production of glutathione, which you now know is essential to brain health.

Another study, from the American Journal of Clinical Nutrition, found that fish oil may preserve thinking ability in the elderly. They looked at 210 healthy men 79-89—those who ate fish on a regular basis had slower decline than those who didn’t eat fish at all. In another study of 2,250 men—high blood levels of EPA/DHA resulted in less verbal decline.

Researchers believe it’s the anti-clotting and anti-inflammatory abilities of fish oil that work together to prevent decline of cognitive function.

Louisiana State University scientists say they have discovered how the fatty acids found in fish oil help protect the human brain from the type of cognitive decline associated with Alzheimer’s disease. Their study shows that DHA (found in cold-water fish such as mackerel, sardines, and salmon) reduces levels of a protein known to cause damaging plaque in the brain and damage to neurons.

And researchers from Kings College in London chalk this protective ability of omega 3s up to the following properties:

- Protects the nerve cells
- Limits inflammation
- Prevents buildup of amyloid protein

And a report in the Journal of Neurology found that omega 3s may help keep the brain from shrinking.

These studies are just scratching the surface of the research available on the benefits of fish oil. From its potential to help boost gray matter…to improving mood…and even minimizing the damage from eating a diet high in junk food…there’s little doubt fish oil is essential to long-term brain function.
Board Certified Dietician, Nutritionist and Author, Dr. Alan H. Pressman is the host of the highly-acclaimed radio program, Healthline, airing Monday through Friday 6-7PM on WMCA 570AM and AM 970 The Answer. He can also be heard on WLIB 1190 Wednesdays 10-11am. Healthline is dedicated to sharing cutting-edge, breakthrough alternative and medical technologies so listeners have the chance to heal themselves - choices beyond prescription drugs and surgeries. Dr. Pressman is currently the Director of Research at the Institute of Rehabilitative Nutrition.

Dr. Pressman has eight board certifications and has written eighteen books, including two text books published by Williams and Wilkins. He has been in private practice since 1963.

Dr. Pressman has been a Professor of Nutrition Research and Chairman of the Department of Clinical Nutrition at New York Chiropractic College. He served as Associate Professor of BioNutrition at the University of Bridgeport. He has taught Nutritional Chemistry at the Chiropractic Institute of New York and the New York Institute of Technology. He was also appointed as a Consultant to the New York State Athletic Commission Medical Advisory Board and taught nutrition and health to the dance division of The Julliard School in New York City.

Dr. Pressman is also Founder, Diplomate and Past President of the American Clinical Board of Nutrition and a member of the Advisory Board and Diplomate of the Chiropractic Board of Clinical Nutrition.

He is also a Charter Member, Director of Education and Research and past President of the Council on Nutrition of the American Chiropractic Association. He was also a Dana Scholar and member of the Board of Associates at the University of Bridgeport.

For more about Dr. Alan Pressman’s Restorative Neurology complete healing protocol, visit:

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