

Brain Building Strategies

Use the tests in what Dr. Bredesen calls a cognoscopy to determine what is stimulating the synaptoclastic activity, change to a mild ketogenic diet that feeds the brain, exercise to keep the fluids moving, heal the gut, get the right kind of sleep, heal the blood brain barrier, reduce stress and live a lifestyle that encourage brain development. Once the diet and synaptoclastic over activity has been addressed, botanicals can be employed to maximize synaptoblastic signaling and accelerate cognitive health. Keep in mind this is a guide based on research when his book was written in 2016. Dosages should be adjusted based on severity of condition, rate of recovery, and commitment to diet and the other lifestyle strategies outlined. I have taken the liberty of putting the Biotics products where appropriate to the right of the ingredient.

MCT oil 1-3 grams twice a day - **Bio-MCT** - 1 tsp bid
 Circumin 1000 mg bid – **CurcumRx** - 2 bid
 Ashwagandha 500 mg bid – **Bio-Ashwagandha** -1 bid
 Gotu kola 500 mg once or twice a day-
 Ubiquinol 100 mg as in **CoQ-Zyme 100 Plus** –1
 PDG 10-20 mg
 Resveratrol 100 mg – **ResveraSirt** -1
 Nicotinamide Riboside 100 mg
 Omega 3: DHA 1 gram ; EPA 0.5-1 gram – **Biomega-1000** 1 bid
 Liposomal Glutathione 250 mg bid – **NAC**- 1 tid
 Probiotics and Prebiotics – **BioDoph-7 Plus**- 2 at bed
 Vitamin D and Vitamin K2 (MK-7) – **Bio-DK Caps**- 1 bid
 Mixed tocopherols and tocotrienols 800 IU

If memory is the main issue and no results in 3 months are seen, consider Huperzine A 200 mcg – **Cognitive Enhancer** -2 bid.

Bio-MCT - MCT oil or medium chain triglycerides contain 6-12 carbons, The C-8 fraction is the one most researched for neurologic issues and appears to raise ketones the highest. Bio-MCT oil by Biotics Research Corporation contains approximate-ly 98% of the C-8 fraction. If ketones are present in circulation, even at low levels they can increase cerebral blood flow by as much as

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40%.” Dr. Haltiwanger reinforced that ketones used within mitochondria can be used to drive the chain reaction that produces ATP. Ketones, by increasing ATP, reduce the generation of free radicals, increase production of endogenous glutathione and act as an anti-inflammatory agent.

CurcumRx 2 bid -Amyloid plaque has been associated with Alzheimer's and Parkinson's disease. Studies have shown that curcumin reduces amyloid plaque by at least 8 different mechanisms. Curcumin easily enters the brain and acts as a heavy metal chelator to neutralize toxic metals and naturally raises glutathione levels. Curcumin also down regulates or inhibits two important cell signaling pathways, mTOR and NF-kB. Curcumin causes the death of cancer cells through apoptosis as well as stimulates autophagy where malfunctioning parts of the cell are cannibalized and recycled. Curcumin must be emulsified before it can be used by the body.

CurcumRx uses a patented emulsification technology that not only natural turmeric compounds but delivers a range of over 200 beneficial turmeric nutrients. Based on the emulsification technology studies show 5-6 times better absorption than competitive brands Typically 500 mg of **CurcumRx** provides 232.5 mg of curcumin. (1.)

Bio-Ashwagandha 1 bid for over 4000 years ashwagandha has been studied as adaptogenic , anti-oxidant, anticancer, antianxiety, antidepressant, cardio-protective, thyroid modulating, immune-modulating, antibacterial, antifungal, anti-inflammatory, neuroprotective, cognitive enhancing. A recent double-blind, randomized, placebo controlled study of the effects of ashwagandha on stress found that it reduced symptoms of stress and inability to concentrate and reversed forgetfulness in a dose-dependent manner at 500 mg/day.

CoQ-Zyme 100 plus-1- Based on the updated research showing higher doses of CoQ are necessary for some forms of mitochondrial repair, **CoQ-Zyme 100 Plus** couples the phosphorylated B vitamins that are needed in the Krebs Cycle with 100 mg of emulsified COQ. Biotics' emulsified CoQ is not water soluble, but is micro-emulsified into tiny microscopic droplets and is water dispersible. The process of micro emulsification increases the surface area and electro-magnetic field of the oil. Emulsified oils are then easily absorbed by the villi of the intestines into the lymph ducts. This emulsified form raises blood levels approximately 3X that of the dry forms. (3)

ResveraSirt -1- Resveratrol is what turns on or activates the sirtuins which activates the enzymes to increase mitochondrial function and repair. Just like electric current, the enzymes are present but someone has to activate or flip the switch. Resveratrol activates sirtuin enzymes which, as a result, cause mitochondria to function better. That's why so many different systems are affected. When sirtuins are activated they promote longevity and health.(4) Because of its ability to activate Sirt 1 Resveratrol supports multiple systems as it increases e-nitric oxide syn-thase and nitric oxide, reduces reactive oxygen species (ROS), reduces oxidized LDL and TNF- α . Resveratrol decreases endothelial dysfunction has anti-hypertensive properties, increases e-nitric oxide synthase and nitric oxide which creates a vasodilatation effect. It has anticarcinogenic properties as it inhibits angiogenesis. As an antioxidant it increases catalase and glutathione peroxidase and acts as an ROS scavenger. Resveratrol is also neuroprotective as an immune modulator and as an anti-inflammatory agent. Finally it helps regulate insulin and reduces dyslipidemia. (5)

Biomega-1000 -1 bid – Each capsule yields 1000 mg of omega-3 oils, 572mg of EPA and 429 mg of DHA caught from anchovies off the coast of Chile. The smaller sustainable fish contain fewer toxins and due to a unique and gentle patented process used to purify the oil they contain record-setting low toxicity/rancidity levels. Most fish oils “sit” for over a YEAR before being encapsulated.

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These oils are a year old before they even make it into a capsule. BioMega 1000 is the freshest fish oil on the market and therefore boasts a 3 shelf life.

NAC - 1 tid One of the ways to increase intracellular glutathione is with N-acetyl-L-cysteine (**NAC**). Numerous authors have shown that NAC can actually help increase glutathione. Russell Blaylock, a noted neurosurgeon, in his book "Health and Nutrition Secrets That Can Save your Life," amplifies the benefits of NAC. He says "There are ways to increase glutathione in cells even brain cells. Three of the best methods are to supplement your diet with ascorbate, NAC and alpha lipoic acid. "Mercury causes a loss in glutathione; however, NAC can effectively chelate mercury. Dr. Blaylock discourages large amounts of dietary glutathione because even though it can be absorbed through the GI tract by most cells, the brain cells cannot. Tumor necrosis factor-alpha or TNF-alpha is a powerful inflammatory cytokine in the muscles. Dr. Blaylock notes "NAC used to increase cellular glutathione levels also decreases TNF-alpha levels which may explain in part why diabetics show significant improvement with NAC supplementation."

BioDoph-7 Plus - 2 at bed. Each capsule contains 20 billion probiotics as well as the prebiotics necessary to feed the healthy bacteria.

Bio-DK Caps -1 bid – Each capsule deliver an impressive 125 ug (5000 IU) of emulsified vitamin D₃, with added 500 mcg of K1 and 50 mcg of K2 as MK-7. K2 as MK-7 offers benefits in the following conditions: Heart Disease, Osteoporosis, Diabetes, Cancer, Dementia, Joint Health, Skin Health, Dental Health, Muscle Function, Neuropathy, Neurodegenerative diseases, Mitochondria repair, Cardiac Function and Aging.

Cognitive Enhancer -2 bid