THE TUESDAY MINUTE

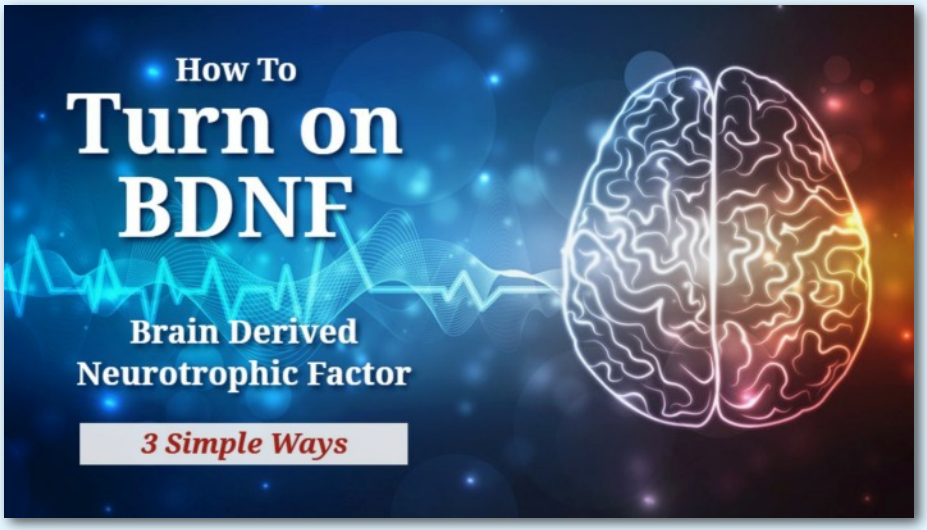
IT'S TIME TO FEEL GOOD AGAIN

THIS WEEK'S TOPIC

Increase BDNF For Optimal Brain Function

"Just as exercise can increase BDNF in the muscles, intellectual stimulation or mental exercise can also increase BDNF in the brain."

I don't know about you, but I am always asking myself the question, "What are the underlying mechanisms that increase brain function?" I mean you could take 20 or 30 different nutrients to increase brain function and each one of them has some rationale. But let's consider "principles" that promote brain power rather than a specific "take this miracle product" approach.



We now know, contrary to our earlier understanding, that parts of the brain can regenerate though a process called neurogenesis. To stimulate and control neurogenesis, certain chemicals called neurotrophins are involved. One of the most exciting factors and one of the most active is a protein called BDNF, "brain derived neurotrophic factor." BDNF is an essential key player in creating new neurons and protecting old ones. Some of the factors that are involved in turning on BDNF are voluntary exercise, caloric reduction, and intellectual stimulation.

I say "voluntary" exercise because lab animals that were stressed or forced to exercise did not have the same benefits as those who could exercise at will. Dr. Lautenschlager of the University of Western Australia found that elderly individuals who exercised the equivalent of 20 minutes a day for 24 weeks showed an 1,800 percent increase in memory, attention, and other cognitive functions.

One reason exercise may be so important is that brain derived neurotrophic factor or "BDNF" is also found in skeletal muscle. And we now know that BDNF crosses the blood brain barrier. So "as BDNF in the muscle increases so does BDNF in the brain."

Next, let's consider caloric reduction. More and more research reports the benefits of caloric reduction and one of those benefits is an increase in BDNF. It's not surprising that "BDNF levels are low in those with obesity and also in patients with Type II diabetes." The average American consumes an average of 500 more calories per day than they consumed in 1970. So... to increase BDNF, reduce calories from the estimated 3,700 daily to 2,000 daily for women and 2,500 daily for men.

We must continue to communicate to our patients that "Food" is like a drug. Whether we know it or not, it affects the brain. Also, just as exercise can increase BDNF in the muscles, intellectual stimulation, or mental exercise can also increase BDNF in the

brain. BDNF is increased with problem solving, intellectual stimulation, and according to neurologist Dr. David Purlmutter, even meditation.

Of course, just as these three principles increase BDNF, we need to point out that other factors like stress can reduce BDNF and "negatively" affect brain health. We can break stress into 4 major categories: inflammatory stress, oxidative stress, toxic stress from both internal and external toxins, and of course emotional stress.

Poor diet and raised insulin levels create inflammatory stress. Let's not forget that food allergies particularly gluten and diary cause leaky gut. Leaky gut means leaky blood brain barrier. One marker for oxidative stress is elevated homocysteine. Although many lab values suggest 13 as an upper limit anything over 10 deserves immediate attention. I like to see levels of 7 or less.

Oxidative stress occurs as a natural process of life but can be accelerated by depletions of natural antioxidants, the presence of heavy metals, or an overabundance of healthy minerals like iron or copper. According to cardiologist, Dr. Thomas Levy, smoldering or hidden infections are also a major cause of excess oxidative stress.

Toxic stress or environmental stress comes from pesticides, herbicides, flavor enhancers, preservatives, coloring agents, and more.

Add emotional stress, and we have an equation for "compromised" brain power. Cellular repair mechanisms need energy to re-build, repair and reproduce healthy cells. Brain power can be enhanced by supplying core or what I like to call foundational nutrients like ProMulti-Plus or VasculoSirt to support mitochondrial function.

And let's not forget our brains are more than 60% fat, and DHA makes up 90% of the omega-3 fatty acids in the brain. So fatty acids like Optimal EFAs, EFA-Sirt Supreme or Biomega-3 Liquid are essential. Both EPA and DHA are beneficial to promote healthy brain plasticity between synapses of brain cells. A good goal is 2 gram of omega-3s for prevention and 4-5 grams for therapeutics.

KappArest, by Biotics Research, used to reduce NF-kappa B contains emulsified curcumin, green tea extract, resveratrol, and lipoic acid which have all been shown to increase BDNF. Additionally, KappArest contains Bioperine to increase curcumin absorption. 3 capsules, 2-3 times a day provide a therapeutic dose.

It may seem over simplified, but we reap numerous benefits by practicing core principles. More specifically I'm referring to wellness "principles" that encourage and promote life. Consider voluntary exercise, caloric reduction, intellectual stimulation, to compliment core nutrients to support optimal brain function. Thanks for taking time to join me, I look forward to being with you again next Tuesday.