THE TUESDAY MINUTE

THIS WEEK'S TOPIC

Lipoic Acid And Telomere Lengthening

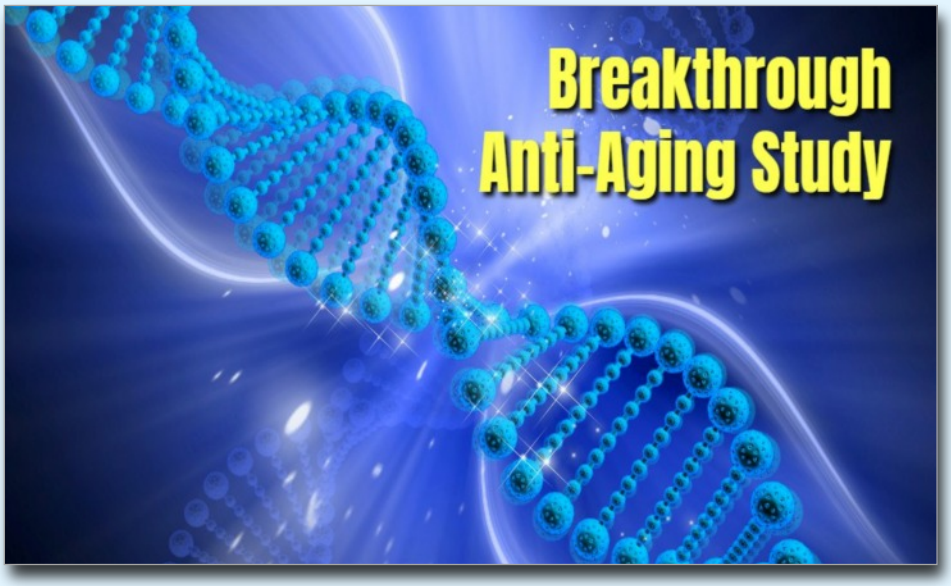
"New data suggest lipoic acid lengthens telomeres; and longer telomeres are associated with long life with less chronic disease."

Ever since I learned that lipoic acid is protective of the blood brain barrier, it has become one of my favorite nutrients. And now new data suggest lipoic acid lengthens telomeres, the caps that protect your chromosomes.

Shortened telomeres are correlated with DNA damage and therefore a host of diseases. Longer telomeres are associated with long life and a life that has less chronic disease.

Scientists at Emory University School of Medicine supplemented mice with alpha lipoic acid and found that alpha lipoic acid stimulated telomerase, the enzyme that lengthens telomeres. I have seen many reports on nutrients that protect telomeres and stop the degeneration, but this is the first study that I have seen where telomeres are actually lengthened.

Let's consider the process and two acronyms that will be very common in the wellness community in the next 10 years.



The first is PGC -1a, which stands for "peroxisome proliferator-activated receptor coactivator 1α".

The second is TERT which stands for "telomerase reverse transcriptase".

Scientists explain that if you down regulate PGC-1a, TERT is downregulated as well. Reduced TERT creates telomere shortening and DNA damage. This results in an increase in vascular aging, atherosclerosis, as well as a host of other chronic diseases.

Conversely, if PGC-1a is unregulated, TERT is upregulated, telomeres are repaired, DNA damage is reduced and the mechanisms for senescence, aging, and associated chronic disease are repaired.

You can see why I said we will be hearing a lot more about PGC-1a and TERT. But here's how the authors connect the dots to alpha lipoic acid and PGC-1a and TERT. "Furthermore, alpha lipoic acid, a non-dispensable mitochondrial cofactor, upregulates PGC-1α-dependent TERT and the cytoprotective Nrf-2-mediated antioxidant/electrophile-responsive element (ARE/ERE) signaling cascades, and coun-

teracts high-fat-diet-induced, age-dependent arteriopathy."

I am sure one of the reasons why alpha lipoic acid has this profound quality is that it has both fat and water soluble antioxidant capacities. Dr. Blaylock, in his book, "Health and Nutrition Secrets", states that Lipoic acid as well as N-Aceytl-L-Cysteine (NAC) and the ascorbate form of vitamin C increases glutathione levels in cells. Alpha lipoic acid has the ability to carry out its antioxidant functions in the extracellular tissues, within the blood, intracellularly and within the brain." It also works in the cell membranes throughout the body which is why I think it protects the blood brain barrier.

Alpha lipoic acid is also important for energy production as it increases cellular levels of Coenzyme Q10.

Alpha lipoic acid possesses the capacity to chelate the neurotoxic effects of mercury and other brain toxins. It binds tightly to mercury in the nervous system, neutralizing its toxicity.

Alpha lipoic acid not only protects the blood barrier but it also has the ability to easily cross the blood brain barrier, allowing it to reach into the brain to remove destructive metals.

So if something protects the brain, chelates heavy metals, increases glutathione, AND as we now know increases telomere length, it is no surprise that research has seen positive correlations in diabetic management and immune modulation.

It is one of Dr. Vasquez's favorite products to restore mitochondrial health. Alpha lipoic acid slows the progression of many neurological diseases like Alzheimer's and Parkinson's, protects the skin and lungs and as the authors suggested prevents and treats hardening of the arteries, hypertension and nerve damage sometimes called neuropathy.

Here's another quality I didn't know. Alpha lipoic acid protects reproductive organs from "fake" estrogens like BPA (bisphenol A).

In terms of dosing, the preventative range is 50-100 mg. R-Alpha lipoic acid can be found with the combination of ingredients in Vasculo-Sirt at 50 mg per dose. But primarily, consider a new product R-Lipoate CBG which contains 100 mg per capsule of R-Alpha Lipoic Acid, as well as 50 mg vitamin C, 300 mcg Biotin and 50 mg Green Tea Extract.

Keep in mind, R-Alpha Lipoic Acid is considered to be 2 times stronger than conventional forms.

Dr. Vreeland suggest for healing the blood brain barrier - 100 mg twice a day; to assist blood sugar stabilization - 300 mg twice a day; for chelating mercury out of the brain - 100 mg every 3 hours, 5 days on and 2 days off.

Since taking alpha lipoic acid with a meal decreases its bioavailability, it is generally recommended that it be taken on an empty stomach (one hour before or two hours after eating).

Another product that has telomere protective properties is KappArest. You can see a link to the right for more information and the article we discussed.

It is exciting to see how nutrition is really the foundation for so many complex signaling pathways. Researchers will race to find pharmaceuticals that stimulate factors like PGC-1a and TERT, but remind your patients we can use natural approaches to feed the body now.

These are exciting times; I encourage you to take time to share your enthusiasm with your patients. It's important for them to know that you are on the cutting edge of so many important developments.

Thanks for reading this week's edition. I'll see you next Tuesday.