

Aging with Amino Acids

Introduction

When we think about our health the general public has been educated to connect nutrition with wellness and longevity. However, they typically lack adequate information to integrate optimum nutrition into their lifestyle. I believe the general public has never been taught to translate nutrition into nutrients. It's such a simple leap. But, a powerful leap towards true health.

The most common approach to improved nutrition, besides improving the diet, is to purchase specific nutritional products such as a multivitamin/mineral or a single cofactor such as vitamin B, D, K, folic acid and or minerals such as calcium, iron and or zinc. Some people choose to select the essential fatty acids supplements such as omega 3 fish oil. There is also a new movement to purchase a high quality probiotic for gastrointestinal health. Given our body's needs for these essential nutrients to restore and maintain health, these are all actually extremely good choices as a starting point.

However, what I have observed over a 25-year career as a practicing health physician is that most individuals taking expensive nutritional supplements, for the most part, still have the chronic ailments that led them to take the supplements in the first place.

In the early 2000's I began introducing my patients to free form amino acid supplements as an adjunct to chiropractic care—as a type of metabolic tune up. I first started using single high doses of amino acids, such as L-Tryptophan for mood and sleep disorders; Tyrosine for a short memory problem and depression and GABA for anxiety. These are a few of the classic approaches to individual's ailments and the use of amino acid therapy.

What I discovered during my quest to find the perfect metabolic tune up for my patients is the robust potency of supplementing with broad spectrum free form amino acids. This nutritional approach to health—

amino nutrients—provides the synergy necessary for wellness and longevity.

According to Dr. Robert Lue, Ph.D. of Harvard University, “We have over 70 trillion living cells in our body.” These cells range from heart cells, bone cells, brain cells, pancreas cells, gastrointestinal cells and so on. “In each of these trillions of cells there are tens of thousands of enzymatic chemical actions occurring every second.” Think about that! These are astronomical numbers. The essential needs of fueling these cells every second and the fuel for these enzymes are ALL amino acids. It is staggering and also demonstrates the beauty and miracle of the body and the universal intelligence that allows all this to happen in an order that maintains our human health.

Amino acids are the building blocks for all protein structures. Amino acids are the precursors, the building blocks, to ALL the enzymes in your body. Other jobs these amino acids have are to strengthen our immune system, construct and synthesis over 50 neurotransmitters in your brain and central nervous system. They strengthen your bones and in fact are over 80% of the density of the bone marrow. Amino acids build strong nails, hair and provide healthy skin. The list of the values of amino acids goes on and on, as amino acids are the building blocks for every cell in your body.

Additionally, of the classic 22 amino acids, 10 essential and 12 non-essential, one third of them tear down tissue and or aid to detoxify pollutants in your system that are produced from environmental chemicals, body waste, medicines, nicotine, alcohol, refined processed foods and so on. Amino acids are the most critically misunderstood essential nutrient requirement for healthy support to the body from infancy, childhood, adults and senior citizens.

As We Age

As we age nutritional needs may actually increase as appetite may decrease. [23] Amino acids have been found to be lower in both blood and muscle of aged humans. [63,77] Amino acid supplements have shown exciting potential to restore and maintain the health of aging men and women, improving muscle mass, protecting from heart

damage, increasing muscle strength, improving insulin sensitivity and more. [1,5,10,12,27,30,40,43,55,57,60,61,66,68,71-74,78]

We are all concerned about the seemingly inevitable increases in heart disease, adult onset diabetes, sarcopenia (muscle wasting associated with aging), age related depression, and loss of memory. Research over the past few years has shown daily supplementation of essential amino acids improves muscle mass with or without exercise [3,29,58], as well as improving insulin resistance, [2,60,61,72-74] a common complication of aging and precursor to the development of type II adult onset diabetes.

Amino acid supplements protect the brain and heart and increase muscle mitochondria while reducing muscle fibrosis (inactive fibrous tissue replacing healthy muscle). [10,28,55] Mitochondria are the powerhouses of all of our cells and aging is associated with decreased mitochondria in muscle and brain. Restoring essential mitochondria is an important part of any anti-aging program.

Amino acid supplements increase the production of essential enzymes which enhance and protect muscle (including the heart) and brain. We often think of enzymes in terms of digestion, and amino acids do support healthy digestion, but every metabolic change throughout the body and brain is controlled and modified by enzymes. [5,61,65,70,78]

Exercise is important for both body and brain. Significant daily exercise reduces blood pressure, heart disease, insulin resistance, obesity, osteoporosis and even depression. [4,22,23,26,45,46,49,50,53,54,58,67,80] When exercising is difficult, because of fatigue, weakness, or muscle insufficiency, amino acid supplements have been shown to improve exercise capacity. [1,6,21,23,69-71]

Inactivity, often accompanying aging and illness, alters the body's ability to utilize protein. Amino acid supplements, which require no digestion, show potential to reverse this condition, as well as the muscle wasting caused by corticosteroid medications. [25,56] This in turn may allow one to begin a regular program of physical activity further increasing longevity.

Total Amino Solution™ is a complete amino acid supplement which addresses issues of aging by providing not just a complement of essential amino acids but further increases its effectiveness by providing several conditionally essential amino acids. These include L-carnitine to improve fat burning, cognitive function, and heart function [35,38,39,44,48,51], and taurine, a membrane stabilizer, antioxidant, and calcium stabilizer, as well as a key component of the functioning muscle, heart, brain and eye. [11,14,20,33,36,41,47,52,62,64,79] In addition, taurine, along with other aminos, has shown benefit to learning and memory retention and is necessary for a functioning immune system. [19,65]

Total Amino Solution™ has been further enhanced by the addition of a complement of the B vitamins niacinamide, riboflavin, pyridoxal-5-phosphate, and B-12 which provide the essential elements for production of critical enzymes throughout the body and brain. These B vitamins have been clinically shown to decrease homocysteine, a problematic by product of metabolism that when elevated is associated with dementias, heart disease, osteoporosis, depression, and even mobility. [7-9,15-17,24,31,34,37,42]

B vitamin status is often overlooked in the diet of seniors. Hyperhomocysteinemia (elevated homocysteine) is a common finding in this group and both additional B vitamins, especially B-6, folic acid and B-12, and protein, which might include a complete amino acid such as Total Amino Solution™, lower homocysteine. [7,13,32,76]

Further B-12, folic acid, and elevated homocysteine have been shown to be related to thyroid insufficiency in aging. [75] These two important B vitamins have also been associated with hearing loss in older adults. [18,59] Thyroid problems increase incidence of immobility and depression and dramatically decrease quality of life, as does loss of hearing.

The amino acids found in Total Amino Solution™ combined with the complex of B vitamins synergistically support healthy aging. As we age understanding our decreased need for calories combined with an increased need for essential nutrition, including amino acids and B vitamins, gives us the knowledge we need to support our bodies so that we may enjoy a long and healthy life.

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