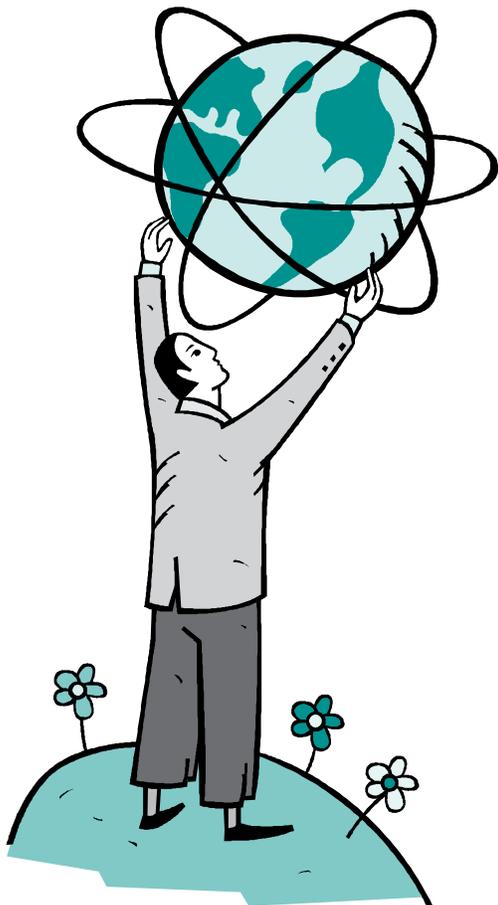


# Alpha Lipoic Acid

## what's in it for me?

by Margy Squires

What if there was a **single nutrient** that could **protect you** on multiple fronts, **from the inside out**, outside in, spark up energy and help keep you “younger”? **Alpha lipoic acid offers a multiplicity of health benefits that are well-documented by research to back this claim to fame.** No wonder it's called the “universal antioxidant”! What can this infamous nutrient do for you? **From anti-aging to energy, seems like everything!**



**I**nside you right now, every cell every day faces the onslaught of free radical damage just making the energy that keeps you alive. Mitochondrial “factories” in each cell spin off these free radicals in the normal process of converting glucose into cellular energy. From the outside, you encounter free radical damage in the environment (including the sun), pesticides, cigarette smoke and so on. If allowed to accumulate, free radicals disrupt and destroy body “parts” by their very nature. This damage (also called oxidative stress) translates to premature aging, feeling “old and worn out” and can predispose you to age-related disorders like heart disease, cancer, brain dysfunction, impaired immunity and type 2 diabetes. How we age depends partly on genetics but mainly on our supply of antioxidants which quench these kamikaze radicals.

### ANTIOXIDANT POWER

Why consider alpha lipoic acid (ALA) as a supplement? Let me count the ways! Renowned antioxidant researcher Lester Packer, Ph.D. cites ALA as “the most versatile and powerful antioxidant in the entire antioxidant defense network”. Formed naturally in your body, ALA synthesis declines as we age so we may not have enough of it around just when we need it the most for older, less efficient enzyme and immune systems, cells and organs.

How can one nutrient make that much difference? ALA is technically not a vitamin since it's produced in your body but is considered “conditionally essential”. As an antioxidant, ALA possesses two unique traits which make it so important. 1) It has the ability to work in both water and fat soluble parts of your body. ALA is one of the few agents that can cross the blood-brain barrier to exert a protective effect on nerve and brain integrity. 2) ALA is the primary regenerator of glutathione, the “master” antioxidant.

Your body synthesizes glutathione from the amino acids cysteine, glutamic acid and lysine, with the highest quantity found in your liver. As your detoxifying organ, some health experts believe you are as healthy as your liver is. By supporting glutathione levels, ALA helps strengthen liver function.

### ENERGY POWER

As mentioned, ALA is directly involved in converting glucose into energy. ALA also helps increase the uptake of glucose into insulin-resistant cells to normalize glucose metabolism in type 2 diabetes. Thus, ALA's most notable research involves diabetes and the complications which result in damage to vision, cardiovascular, kidney, liver and nerves. A particular focus is therapeutic use in painful peripheral neuropathy.

On closer inspection at the cellular level, ALA supports energy and mitochondrial function by shielding mitochondria from free radical damage – especially its DNA – and encouraging biogenesis. Studies show some cells actually have “larger” mitochondria or energy factories. Energized mitochondria have the ability to give you energy, metabolize sugar more efficiently and keep cells alive. (One theory of aging is multiple cell deaths which compromise organ function).

*Continued*

# Alpha Lipoic Acid

*continued*

## MORE ACCOLADES

ALA is remarkable antioxidant with a resume of beneficial traits as shown by just a few of the studies I've shared on the right. Many human studies have already documented these effects. Investigative studies continue to explore the far-reaching influence of ALA for Alzheimer's, mitochondria gene expression, cancer (breast, lung, pancreas, prostate, thyroid) protection against radiation damage (including chemotherapy-induced neuropathy), migraines, muscle fatigue, chronic obstructive pulmonary disease, lipid regulation, insulin resistance and metabolic disease risk, and of course wrinkles.



Finally, take a look at the profile of the major members of the antioxidant family. Vitamin C covers the water soluble front while co-enzyme Q10 and vitamin E are fat soluble defenders. Aging and degenerative diseases are characteristically low

in synthesis and recycling of these antioxidants. Only ALA has a dual water and fat soluble nature and the capability to regenerate the others, including glutathione.



ALA may just be the proverbial "fountain of youth". Antioxidant, energizer, anti-aging nutrient. Now you have a glimpse into what "universal antioxidant" can do for you.

## ALA in the TyH Online Health Library

- ◆ *Aiding the Treatment of Diabetes*
- ◆ *Defending Your Liver*
- ◆ *The Energizing Antioxidant*

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## Alpha Lipoic Acid (ALA) Studies

*Healthy benefits for a healthy you!*

### Anti-Aging Skin Topicals

One of the ways skin ages from the inside is by losing its collagen firming elasticity. Outside environmental factors result in signs of photo-aging (spots, uneven tone). Tsuii-Naito et al demonstrate "for the first time that ALA enhances the biosynthesis of new collagen" in human skin cells. In a review article, Matsugo et al cite "skin protection from photodamage and aging is one of the functional aspects of ALA". Sources: *Connet Tissue Res* 10/10 & *Coll Anropol* 9/10



### Lung Function

Reactive oxidative stress (ROS) contributes to allergic airway inflammation and structural changes in tissue. The aim of drug protocols for asthma and COPD is ROS reduction. Seoung's study reports antioxidants, particularly ALA "remarkably reduced ROS production". Glutathione is a major player in lung protection and ALA specifically preserves and promotes glutathione levels. Source: *Int J Mol Sci* 6/12

### Burning Mouth Syndrome (BMS)

BMS is a chronic or recurrent "burning" sensation inside your mouth, appearing suddenly without an obvious cause. After 2 months of ALA 200 mg three times a day, 97% of subjects improved symptoms. At one year follow-up, 70% had continued relief. Source: *J Oral Rehabil* 10/09

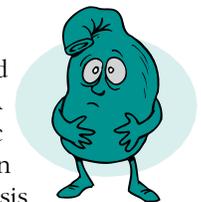


### Bone Density

Specific enzyme signaling is involved in the breakdown of bone cells may be influenced by ROS activity. In both in vitro (glass) and in vivo (human) a 2013 study shows ALA exerted its own signaling mechanisms as a coenzyme on bone cell signaling, to protect bone mass. An earlier study by Kim et al concluded their data provided evidence that "ALA has the therapeutic potential for bone erosive disease". Sources: *Am J Physiolendocrinol Metab* 3/13 & *Free Radic Biol Med* 5/06

### NSAID Gastric Damage

"All doses (50, 75, 100, 150, 200 and 300 mg/Kg body weight) of ALA reduced the ulcer index" for gastric damage caused by the common NSAID indomethacin. In tissue analysis, ALA reduced oxidative damage and activated immune cells for healing, plus increased the protective defense by raising glutathione levels. Source: *J Food Sci* 10/12



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