Interview with Nicholas Perricone, MD on Aging Skin and ALA

by Lily G. Casura

Perricone: ALA is a universal antioxidant: it goes everywhere in the cells, it’s metabolic, because it increases cellular energy, therefore it increases repair, and it goes to the cell membrane and all that. It’s also a powerful anti-inflammatory.

Casura: Can you describe a little bit about how it works on the skin?

Perricone: We now know that a lot of damage that gets done to the skin, with collagen and elastins is because those proteins are around for a long time: they’re made and they sit there for a very long period of time. They’re very susceptible to damage, by attachment of sugar to the protein. The term for that is “non-enzymatic glycosylation of the protein.” This goes on all the time and it accumulates. And when a sugar attaches to a protein, it causes cross-linking; and therefore the skin loses its resiliency. Sugar attaching to proteins is the enemy. Now obviously it’s much more pronounced in diabetics who have high levels of glucose, but the effects are cumulative, even in people with normal blood sugar.

Now, the neat thing about ALA is, it’s a powerful, powerful inhibitor of glycosylation of proteins. As far as I’m concerned, it’s the first powerful anti-glycosylation agent that’s been used on skin thus far. I think a lot of the long-term clinical improvement we’re seeing, and the preventive effects we’re seeing from using lipoic acid on a daily basis; is not only because it’s a powerful anti-oxidant and repairs the cell membrane; and not only because it boosts energy levels; and not only because it’s an anti-inflammatory; but also because it prevents this glycosylation of proteins.

There’s a theory of aging called “Advanced Glycosylation End Products” or “AGES” that actually affect our body and our brain and everything; which contributes to or controls the aging process.

Casura: Can you describe that theory a little?

Perricone: The theory basically is that the long-term exposure of our proteins, especially the longer proteins, like collagens and elastins, are eventually damaged by the sun and by glycosylation, and all this cross-linking makes the proteins very, very stiff and they don’t function correctly; and therefore we get a lot of malfunction in our arteries and capillaries, and skin collagen. There’s also some theories that this protein can attach sugar and protein to various structures, within the central nervous system, causing advanced glycosylation end products. But I think that’s not as certain; but it’s certainly worth looking into as a theory.

Casura: How long has that theory been around, and who advanced it?

Perricone: It’s been around for four or five years; maybe longer. There have been some medications designed to try to block or even reverse that process, but they’re still experimental. So here’s lipoic acid, which is a food-grade product that’s been around, has no toxicity; and yet is a powerful inhibitor of that process. Amazing.

Rescuing Wrinkles with Alpha-Lipoic Acid

by Lily Casura

What’s so special about an ingredient one medical dictionary defines as “a bacterial growth factor found in liver and yeast”? It turns out that alpha-lipoic acid, also known as lipoic acid or ALA for short, may benefit aging skin in several key ways.

Alpha-lipoic acid, also known as thiotic acid, hasn’t been well-known until recently as an over-the-counter supplement, but it has been the subject of quite a bit of research. Today, however, it’s being looked to as a possible super-molecule that may help inhibit aging and restore skin damage from the sun, environment, and advancing years, even scars. Known as a universal anti-oxidant because it is soluble in both fat and water, ALA is rapidly showing promise as a potential ageing-fighter in humans, both as a nutritional and a topical antioxidant.

According to a recent article by David Wolfson, ND, lipoic acid was first discovered in the 1950s; then, a decade later, research emphasis switched from physiological interest to potential therapeutic applications. With German scientists leading the way in studying the supplement, applications have been found as varied as protection from atherosclerosis, macular degeneration, cataracts, and the dangers of irradiation, as well as usefulness in HIV and diabetes therapies, including diabetic neuropathy.

In the US, one of the leading proponents of ALA is Nicholas V. Perricone, MD, an assistant clinical professor of dermatology at Yale Medical School, and a “cosmeceutical” developer with his own line of skincare, who has been granted a number of US and international patents. He’s also gained something of a celebrity status with the publication of his book, The Wrinkle Cure.

What is ALA?

ALA is a naturally-occurring substance that our bodies, in fact, produce; though in relatively small amounts. It’s also available from potatoes and red meat, among other foods, and today it’s also possible to supplement with additional ALA. Like vitamin C, which is soluble in water, and vitamin E, which is fat-soluble, ALA is also an anti-oxidant, one which works with vitamins C and E to increase their effectiveness. In fact, where lipoic acid is deficient, the effectiveness of other anti-oxidants in the body is compromised.

In addition to being a powerful anti-oxidant, ALA also performs a number of other vital roles. Research has shown that it helps prevent cataract formation; improves and perhaps even reverses diabetic neuropathy; slows the progression of Alzheimer’s and Parkinson’s disease; and appears to stall the progression of HIV to AIDS. As a chelating agent, it also acts to remove heavy metals such as lead and cadmium from the body – so it’s liver-protective effects are significant as well. It’s an important co-factor in glucose metabolism, and shows great promise in treating diabetics. ALA has also been helpful in protecting from radiation damage, and has been used to treat children exposed to radiation from Chernobyl. It improves energy continued on page 128
Casura: You can supplement with ALA, and also use it topically?

Perricone: Absolutely.

Casura: What would your recommendations be?

Perricone: For a healthy adult, I'd say 50 to 100 mg. a day, taken orally. Topical products, of course, are a must. For someone who has problems with diabetes, heart disease, other problems—much more—300 mg. a day, but under the supervision of a physician.

Casura: What about for patients with hemochromatosis: it's suggested that vitamin C makes iron storage worse.

Perricone: If you want to stay away from vitamin C, because you have hemochromatosis, you can take lipoic acid. And what it does is it spares vitamin C and vitamin E, so that levels will go up in your body; give you protection of extra vitamin C, but will not increase your iron absorption.

Casura: And how would it do that?

Perricone: Well, the way vitamin C makes you get overloaded with iron, is that vitamin C increases the absorption of iron in the diet, so that when it's in your stomach, it's causing this increased absorption. Now, ALA is also a chelating agent, that means it grabs onto metals, and there's a good chance that taking lipoic acid could lower the excess iron levels in your body too.

Casura: It sounds like it'd be a smart thing for people with liver problems to take, in general, doesn't it?

Perricone: Oh yes, there's some pretty good evidence that it's really protective of the liver, and a whole host of other good things. It slows down progression of Alzheimer's, other central nervous system diseases, it's just a great, great thing.

Casura: So when it comes to aging skin, it's your #1 thing to propose?

Perricone: Yes, ALA is just fabulous.

Casura: And what other things do you recommend consumers use?

Perricone: I think that it's wise to use a sunscreen. I also think—I've gotten some great results by using vitamin C ester combined with lipoic acid, topically. One in the morning, one at night. Because the vitamin C esters tend to boost collagen production. And ALA, we already know all the things that it does—we get the best of both worlds.

And finally, I just spoke about this recently at the plastic surgeons' meeting in Dallas. It's this technology, based on dimethylaminoethanol, or DME. And this is exciting, because what it does—it causes increased tone in the skin, because it's a precursor of nutrients that increase tone. As we get older, we lose tone. And DME appears to rapidly bring back tone.

Casura: What concentration of ALA should people look for in topical applications?

Perricone: My OTC product contains 1%; and then I have one that's available through doctors that's 5%.

Casura: What's your personal theory on aging skin, at this time?

Perricone: We know that collagen is constantly being "remodeled" all the time in our skin. However, when AT1 is activated by, say, UV radiation from the sun, it transcribes for things called metalloproteinases. There are about 13 metalloproteinases that we've identified so far. Even small