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A Better Form of Lipoic Acid



Lipoic acid has become one of the most popular dietary supplements in the United States. The reason for this is a series of extraordinary scientific findings showing that lipoic acid possesses biological properties that exceed that of ordinary antioxidants.

For instance, lipoic acid is both water and fat-soluble. This unique property enables lipoic acid to reach parts of cells that other antioxidants cannot. Once inside cells, lipoic acid is able to regenerate vitamins C and E and increase levels of glutathione to help protect against age-induced mitochondrial decay.¹⁻⁷

One study showed a combination of lipoic acid and acetyl-L-carnitine restored vitamin C levels in the liver cells of old rats to those seen in young rats.⁸ Another study showed that lipoic acid restored heart muscle cell structure in old rats to that of young rats after only two weeks of administration.⁹ In addition, lipoic acid was able to reverse the age-related increase in a dangerous pro-inflammatory cytokine, a natural bodily substance, called interleukin-1b.¹⁰

What impressed us the most were studies published in the Proceedings of the National Academy of Sciences showing that lipoic acid and acetyl-L-carnitine:^{8,11-15}

1. Improved ambulatory function in old rats, with a significantly greater degree of improvement in old rats compared to young ones.
2. Partially reversed the decline in mitochondrial membrane function while inducing an increase in oxygen consumption, thereby improving cellular metabolic function in old rats.
3. Improved memory and reversed age-associated neuronal mitochondrial decay in old rats.
4. Restored an enzyme required for mitochondrial energy production (carnitine acetyltransferase), while simultaneously protecting against lipid peroxidation in old rats.

Alpha lipoic acid consists of two different forms (isomers) that have vastly different properties. The “R” form is the biologically active component (native to the body) that is responsible for lipoic acid’s phenomenal antioxidant effect. The “S” form is produced from chemical manufacture and is not very biologically active. Alpha lipoic acid supplements consist of the “R” and “S” form in a 50/50 ratio. That means a 100 mg alpha lipoic acid supplement is providing 50 mg of the biologically active “R” form.

The human body normally produces and uses R-lipoic acid, the active form. R-lipoic acid significantly reduces inflammatory reactions and has been shown to be more potent than the combined “R” and “S” form that comprise alpha lipoic acid.¹⁶⁻²⁵ R-lipoic acid increases cellular and mitochondrial antioxidant activity and prevents mitochondrial decay associated with aging.²⁶ Because of this, the increase in oxidative stress with aging is said to be reduced.^{27,28} R-lipoic acid is neuroprotective and has been shown to help improve poor memory, while slowing cognition deficits associated with aging.^{15,29-33} R-lipoic acid has also demonstrated its ability to reduce the gain in body fat from aging by improving metabolic function.^{34,35} Studies have also shown R-lipoic acid to reduce oxidative damage to fats in the body and to block damage to the heart from stress.^{36,37} R-lipoic acid can increase glucose uptake in insulin resistant cells because it can mimic insulin’s properties.³⁸⁻⁴⁵ This active “R” form of lipoic acid can regenerate the oxidized forms of antioxidants by recycling coenzyme Q10, vitamin C, vitamin E, and glutathione back into their active state.^{3,6,7,46-50}

In the February 2005 issue of *Life Extension* magazine, there will be an in-depth article about the multiple benefits of R-dihydrolipoic acid, which is more effective than even R-lipoic acid. In the meantime, members will soon have access to R-dihydrolipoic acid. This new R-dihydrolipoic acid supplement will come in 150 mg liquid capsules that provide more biologically active ingredient compared to the 250 mg alpha lipoic acid members have previously used.

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