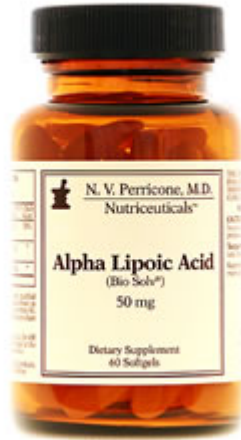


~ Ask Granny Earth ~

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Alpha Lipoic Acid

Ask Granny Earth

My neurologist told me to start taking Alpha Lipoic Acid. Do you know anything about this product? Where does it come from and what does it do?

Alpha Lipoic Acid is a medium chain fatty acid, and an essential co-factor in energy metabolism (a co-factor is a substance that must be available in order for another substance, such as an enzyme, to produce a specific result). Under normal conditions, our bodies contain small amounts of Lipoic Acid, however it may be difficult to consume adequate levels of in the normal diet to prevent free radical damage.

Lipoic Acid is found in food derived from sources where active energy production is occurring, such as the leaves of plants containing mitochondria and non-photosynthetic plant tissues, such as potatoes. Another source, which is very high in mitochondria is 'red meat'. Taking a daily supplement of Alpha Lipoic Acid would be preferable to eating red meat, of course.

Lipoic Acid is readily absorbed and transported across cell membranes, where it is broken down into DHLA (dihydrolipoic acid). DHLA acts directly to destroy certain oxygen species such as superoxide radicals, hydroperoxy

radicals and hydroxyl radicals. It is therefore what we call a “free radical scavenger”. When present in sufficient quantities, Lipoic Acid acts as an anti-oxidant. It also functions as a co-factor for a number of vital enzymes, which are responsible for the conversion of glucose fatty acids into chemical energy called adenosine triphosphate (ATP). Our bodies use ATP to provide energy for muscle use.

The first step in converting blood sugar (glucose) into energy is called glycolysis. Lipoic Acid is a co-factor in this process, which occurs inside our cells, within the mitochondria (some-times called the powerhouse of the cell) where food is converted into energy.

Since Lipoic Acid facilitates the conversion of blood sugar into energy, a shortage can cause a slowing down of the energy process, and therefore, supplementation benefits people with defective enzymes of the multi-enzyme complex. The symptoms of this condition are: reduced muscle mass, cerebral cortical atrophy and severe lactic acid accumulation. Or in lay-man’s terms: lack of energy. If a person lacks energy because of a deficiency in Lipoic Acid, supplemental Alpha Lipoic Acid will restore that person’s energy level to normal- over a period of time. The effects are subtle, because it works at a cellular level.

Lipoic Acid keeps the glucose level in the blood under control. Reduced levels of glucose, means less glycation (the process of forming sugar-damaged proteins). Blood sugars react spontaneously with collagen, a major protein found in skin, blood vessels, connective tissue and myelin. High glucose levels can be responsible for accelerated tissue aging, kidney damage, and arteriosclerosis, which are common complications of diabetes. Diabetes is a group of diseases in which the body cannot properly metabolize food into energy. The result is a build-up of blood sugar that causes the long-term glycation damage.

Alpha Lipoic Acid has been used in Germany for about 40 years to reduce the secondary effects of diabetes, including damage to the retina, nerve and heart damage, as well as increasing energy levels. German studies have shown that long-term treatment (of diabetes) with Alpha Lipoic Acid induces growth of new nerve fibers, which results in reduction of pain and numbness with no adverse effects from a high dosage of 600 milligrams per day.

Alpha Lipoic Acid reduces glycation, normalizes blood sugar levels, allows nerves to recover, thereby reducing pain and numbness. The typical daily dose range for healthy adults is 20 to 50 milligrams. For treatment of diabetic neuropathy, many health care professionals recommend 300 to 600 milligrams a day.

*Information for the above article was taken from: [Lipoic Acid: the Metabolic Antioxidant](#), by Richard A. Passwater, Ph.D. and [Alpha Lipoic Acid Fact Book](#), by NatureWorks.