Tocotrienols – Research Highlights on Promoting Healthy Cholesterol

Numerous studies have clearly proven that the tocotrienol form of vitamin E is a top choice for cardiovascular protection and heart health. Vitamin E is actually a whole family of related antioxidant compounds including four "tocopherols" and four "tocotrienols," each labeled alpha, beta, delta, or gamma. The unique structure of tocotrienols enables them to do many things that tocopherols cannot do: easier access to cells, better antioxidant function in cells, a better ability to move around in cells, and the activation of a wide variety of gene signals including cholesterol regulation.

Scientists continue to uncover unique biological properties of the tocotrienol class of vitamin E compounds. Compared to tocopherols, tocotrienols have been found to have greater ability to improve serum lipids and reduce cardiovascular risk factors.[1]

Tocotrienols Research on Cholesterol

One Singapore study focused on specific cholesterol measurements in humans. Each subject was given 120 mg per day of annatto sourced (delta & gamma) tocotrienol for eight weeks in a double-blind, placebo-controlled trial.[2] Triglyceride levels plummeted by 28% while very-low density lipoprotein (VLDL) dropped by 13%.

Other research supports these findings, with tocotrienols reducing total cholesterol and LDL levels by as much as 37% in aging individuals with abnormal lipid profiles and as much as 42% in diabetics.[3-5]

Their potent antioxidant ability is thought to be responsible for their ability to stop the narrowing of carotid arteries in patients at high risk for stroke.[6] As powerful antioxidants, they also have the ability to block LDL from becoming oxidized and thus being able to form arterial plaque.[7]

Tocotrienols versus Tocopherols

The tocotrienols (T3s), especially delta tocotrienol has been shown to have the most potent cholesterol lowering, neuroprotective, anti-oxidant activity and anti-cancer effects that are often not exhibited by tocopherols.[8]

Tocotrienols are more valuable than tocopherols in protecting the interior cell membranes, such as those that surround the cell nucleus and mitochondria, because of their greater fluidity and ease in being incorporated into cellular membranes [9]

One feature in the origin of disease and aging is the overproduction of reactive oxygen species (ROS). Tocotrienols possess excellent antioxidant activity and have been suggested to suppress ROS production more efficiently than tocopherols.

Some of the research has also shown that taking tocotrienols simultaneously with tocopherols reduces the benefit of the tocotrienols. The benefit of annatto based tocotrienol is that it is pure tocotrienol. [10]

References:

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