

Eastman NUTRIENE™

tocotrienols

The facts

Tocotrienols

Tocotrienols are members of the vitamin E family of antioxidants. Eight different compounds make up the vitamin E family. Food sources contain all eight compounds. However, most supplements contain only one: alpha-tocopherol.

The vitamin E family

Tocopherols	Tocotrienols
• alpha-tocopherol	• alpha-tocotrienol
• beta-tocopherol	• beta-tocotrienol
• gamma-tocopherol	• gamma-tocotrienol
• delta-tocopherol	• delta-tocotrienol

Tocotrienol synergy

All eight members of the vitamin E family function as antioxidants and can work synergistically in our body. In addition to supporting the established benefits of vitamin E, individual members may offer other important benefits. Researchers are just now discovering the combined potential of tocopherols and tocotrienols to contribute to overall well being:

- Tocotrienols may help reduce the risk of cardiovascular disease by lowering cholesterol and by reducing the formation of plaque on arterial walls.
- Some research suggests that tocotrienols in combination with tocopherols provide a wider spectrum of support to the skin to help it cope with UV radiation and environmental pollutants.
- In vitro tests suggest tocotrienols may have a beneficial impact on the rate of growth of breast cancer cells. In addition, they may work synergistically with statin drugs offering a novel approach to cancer chemo-prevention and/or therapy.
- Research suggests that gamma-tocopherol may be effective at fighting nitrogen radicals formed in our bodies. Some scientists believe that these radicals may contribute to the development of arthritis, multiple sclerosis (MS), and diseases of the brain, such as Alzheimer's.
- A metabolic product of gamma-tocopherol appears to have natriuretic effects that may play an important role in supporting healthy blood pressure, as well as a healthy heart and liver.

Tocotrienols and vitamin E

Tocotrienols and vitamin E have unique functions in the body. So, while tocotrienols do not replace the suggested RDI for vitamin E, alpha-tocopherol alone does not appear to fulfill the myriad of potential health benefits supplied by the tocotrienol family. Just as nature provides a mixture of antioxidants in plants and food sources, it seems appropriate to imitate that blend of antioxidants in the dietary supplements we take.

Tocotrienol dosages

Individuals participating in a human clinical study were given approximately 200–240 mg mixed tocotrienols daily.^{1,2,3} In another study, the participants were given 306 mg of mixed tocotrienols and 360 mg of mixed tocopherols for a combined total of 666 mg of rice bran derived tocotrienols and tocopherols.⁴ Those interested in enhancing their antioxidant intake as part of a long-term nutrition plan should consult their doctor or nutritionist to determine the appropriate daily intake for their needs. Commercial products currently offer daily supplements of mixed tocotrienols ranging from 25 to 60 mg.

Other healthy components in Eastman NuTriene™

In addition to tocotrienols and tocopherols, Eastman NuTriene™ contains phytosterols, squalene and rice bran wax. Research suggests that these components may provide additional benefits ranging from reducing cholesterol and triglycerides to skin moisturization and can also supply two essential fatty acids — linoleic and alpha-linolenic acids.

¹ Tomeo, A.C. et al (1995). Antioxidant effects of tocotrienols in patients with hyperlipidemia and carotid stenosis, *Lipids*, 30(12), 1179-1182.

² Qureshi, A.A. et al (1995). Response of hypercholesterolemic subjects to administration of tocotrienols, *Lipids*, 30(12), 1171-1178.

³ Wahlqvist, M.L. et al (1992). Differential serum responses of tocopherols and tocotrienols during vitamin supplementation in hypercholesterolaemic individual without change in coronary risk factors, *Nutr Res* 12, Supplement 1, S181-S201.

⁴ Watkins, T.R. et al (1999) Hypocholesterolemic and antioxidant effect of rice bran oil non-saponifiables in hypercholesterolemic subjects, *Envir and Nutr Interactions*, 3, 115-122.

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Eastman background

With more than 50 years of experience in supplying natural vitamin E, Eastman has long provided top-quality ingredients for the nutritional supplement industry. Eastman NuTriene™ tocotrienols are a naturally occurring mixture of tocotrienols and tocopherols extracted and concentrated from rice bran oil, a common cooking oil in many Asian countries. NuTriene tocotrienols are used as a dietary supplement and are suitable for incorporation into many dietary supplement formulations.

For more information on where to find Eastman NuTriene™ tocotrienols or research presented here call 1-800 EASTMAN, (327-8626), x1759 or 1-423-229-1759 or visit www.nutriene.com.

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