Vitamin E reborn: how to correctly use tocopherols and tocotrienols for skin and health.

If you ask a hundred doctors to name a natural antioxidant, about eighty will bring up vitamin E. Indeed, vitamin E is one of the best known antioxidants found in the human body. Its key biological function is to protect lipids from oxidation and free radical damage. Lipids are the building blocks of cell membranes and other important biochemical structures. Lipid-based entities are so vulnerable to oxidation that if left unprotected, they disintegrate in a matter of hours. Therefore, a lipid protector, like vitamin E, should be a good and necessary thing. Well, it is. However, few things in this world are as simple as they appear. And vitamin E is no exception.

As with any other vitamin, the complete lack of vitamin E in the diet is fatal. However, the minimum amount of vitamin E sufficient for basic health is so small that almost any diet has enough to prevent overt deficiency (except perhaps a diet with large amounts of overcooked oil). For decades, many experts maintained that amounts of vitamin E over and above the minimum requirement provided additional benefits (such as reducing the risk of cataracts and heart disease, as well as slowing down skin aging). A few years ago, however, the public image of vitamin E was tarnished. Some large and respectable clinical studies demonstrated that long-term high dose supplementation with vitamin E had little or no effect on the risk of heart disease. What's more, in at least one study, vitamin E seemed to have made the matters worse. Suddenly, supplemental vitamin E looked like a politician after a devastating scandal: he may be allowed to keep a low profile job but will never again be on the podium.

Fortunately, new research on vitamin E is helping restore its reputation. In fact, it appears that properly formulated vitamin E may be even more useful than originally thought. However, you can't use vitamin E products blindly. The devil is in the details - and you need to understand them to get to the benefits.

Most vitamin E supplements contain only alpha-tocopherol, or to be precise DL-alpha-tocopherol, which is a mixture of two optically different forms of alpha-tocopherol, D and L. Even though DL-alpha-tocopherol is perhaps sufficient to prevent vitamin E deficiency, it is not optimal for health when used alone. It is now believed that vitamin E represents a much wider family of related but distinct natural compounds including alpha, beta, delta and gamma tocopherols as well as alpha, beta, delta and gamma tocotrienols.

Natural vs synthetic

In many cases, synthetic vitamins (if properly produced) are as effective as the natural ones. Vitamin E is one of the exceptions. Natural vitamin E comprises only D forms of tocopherols and tocotrienols, while the synthetic one is usually an equal mixture of D and L forms. Isolating the D form from the mixture is possible but expensive, so most manufacturers don't bother. L form appears to be less biologically effective than the natural D form, particularly when it comes to oral supplementation. Despite higher cost, it is best to use the natural form unless the manufacturer expressly states that the supplement contains D form only.

Skin care implications

As of the time of this writing, there were no studies directly comparing the skin effects of oral or topical alpha-tocopherol with a balanced mixture of tocopherols and tocotrienols. It is likely, however, that topical mixture of tocopherols and tocotrienols turns out to be more effective than alpha-tocopherol alone. When shopping for a vitamin E supplement, make sure to get the one with the balanced mixture of tocopherols and tocotrienols. Unfortunately, topical skin care products usually contain only alpha-tocopherol. However, if you can't find a cream containing mixed tocopherols and tocotrienols, or if it is too expensive, you can easily make one yourself.

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