Natural vs. Synthetic Vitamin E

Nova-E™ Natural-Source Vitamin E

Introduction

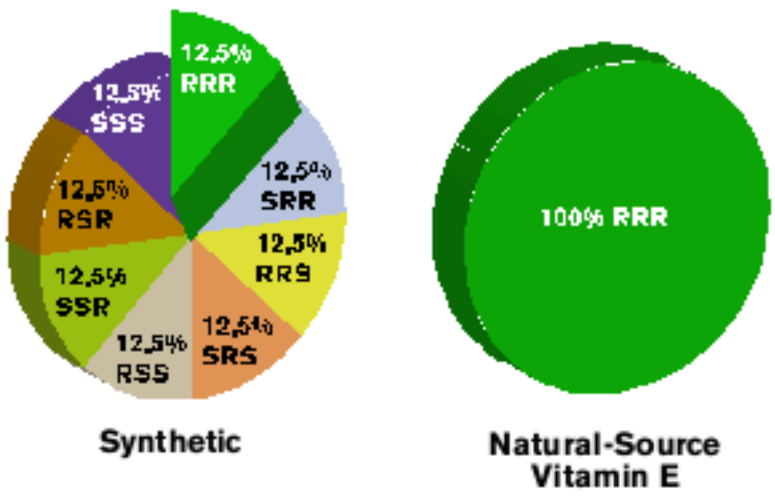
Most manufactured vitamins produced as synthetics are made with the same molecular configuration as the natural forms. The synthetic molecules look and behave exactly the same as the natural molecules. Therefore, there is no difference in the effectiveness of the vitamins. This is not so for vitamin E. There are differences in the molecular structures of the two forms, which affect how well the vitamin is retained in the body and, in turn, its biological availability.[1]

The Chemical Difference

Natural-source vitamin E is derived from vegetable oils, primarily soybean, canola, and sunflower oils. The vitamin E found in nature is known as d-alpha-tocopherol or more correctly, RRR-alpha-tocopherol. For maximum stability, RRR-alpha-tocopherol is converted to RRR-alpha-tocopheryl acetate for animal diets.

Synthetic vitamin E, commonly referred to as dl-alpha-tocopherol or all-rac-alpha-tocopherol, is a mixture of eight alpha-tocopherol stereoisomers in equal amounts. Only one of these stereoisomers, 12.5% of the total mixture, is RRR- or d-alpha-tocopherol, the natural form. The remaining seven stereoisomers have different molecular configurations due to the chemical randomization in the manufacturing process.

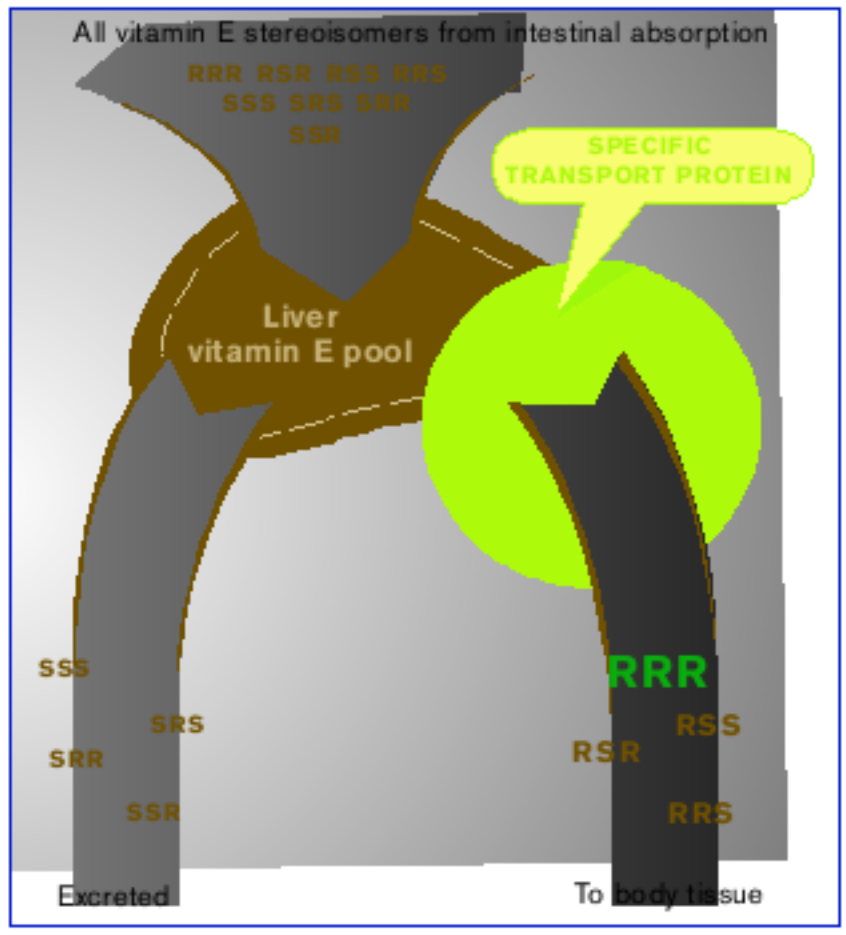
Natural-Source Vitamin E is Chemically Unique



The Biological Difference

Both natural-source vitamin E and synthetic vitamin E are absorbed in the body. However, after absorption, a specific transport protein in the liver known as RRR-alpha-Tocopherol Transport Protein (α-TTP) recognizes the natural d-alpha-tocopherol and gives it priority over the synthetic forms.[1-2] The unrecognized forms of synthetic vitamin E are preferentially excreted.[3]

Natural-Source Vitamin E is Biologically Superior



Owing to this discriminatory process, d-alpha-tocopherol, the natural form, is retained better and for longer time in the body when compared to the synthetic form. The bioavailability (availability for use by the body) is approximately 2:1 for natural-source vitamin E over synthetic vitamin E.[3-4] To compensate for the lower retention of synthetic vitamin E, an animal would have to retain multiple amounts (2-8 times) of synthetic vitamin E (by weight) to match the bioavailability of the natural form.

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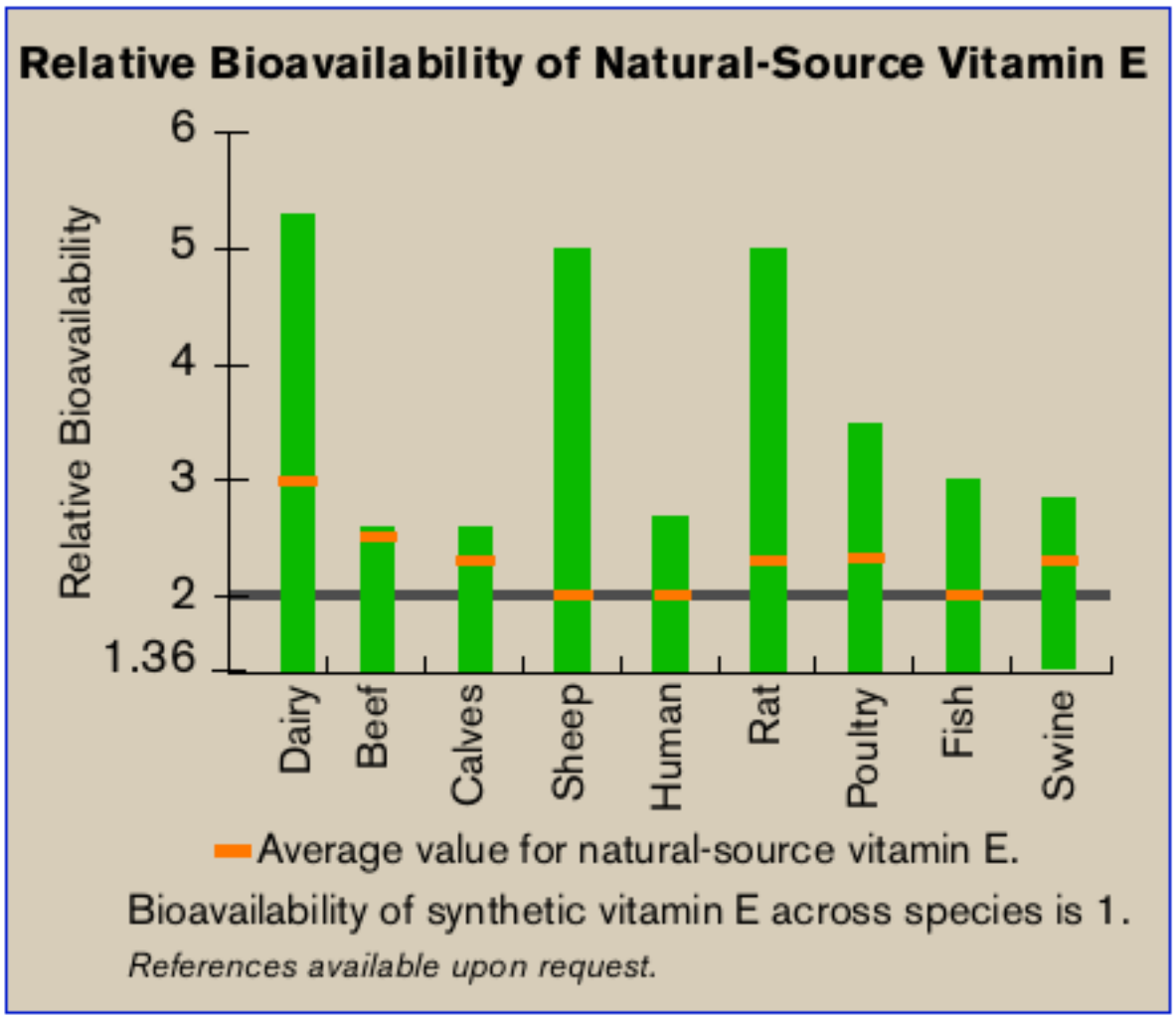

The Advantage

A number of recent studies have shown significant differences between natural-source and synthetic vitamin E. They have also shown that natural-source vitamin E is more efficiently used by the body than its synthetic counterpart. Simply put, the body has a preference for natural-source vitamin E over synthetic vitamin E.[1]

ADM produces only natural-source vitamin E. In fact, ADM is one of the world's largest producers of natural-source vitamin E, and you can be assured that ADM produces only the highest quality.

References available upon request.

Summary

Natural-source vitamin E is:

1. 100% d-alpha-tocopheryl acetate (RRR-alpha-tocopheryl acetate)
2. Natural-source extracted from vegetable oilseeds
3. Chemically unique and biologically superior
4. Research has shown it improves:
   - Immune system health
   - Antioxidant protection
   - Reproduction
5. Made in the USA

Available Product Options

Super E 20	(d-alpha: 22.05 IU/g; 10,000 IU/lb) (dl-alpha: 22.05 IU/g; 10,000 IU/lb)
Nova-E 405	(405 IU/g; 183,708 IU/lb)

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