Kyäni Sunset™:

The Science Behind Kyäni Sunset™

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Kyäni Sunset™ contains the purest form of vitamin E called tocotrienols, which are found in the annatto bush of South America. The health benefits of tocotrienols are vast and well documented. Additionally, Sunset provides Omega-3s, Astaxanthin, and Vitamins A and D. Together, they serve a lipid-soluble power-house protectant to the body's lipid infrastructure (especially cellular membranes) which accounts for 20-30% of the body. Please note that this document discusses the formulation of Kyäni Sunset for the United States. Other countries may have formula variations.

Omega-3:

A daily dose of Kyäni Sunset contains 500mg of omega-3s derived from a blend of pristine Wild Alaskan Sockeye Salmon and other wild fish. Omega-3s are polyunsaturated fatty acids important in brain development, nerve function, and anti-inflammation, but also have particular benefits for cardiovascular and cardiometabolic health. Consumption of omega-3 is associated with reduced risk of coronary heart disease, reduced susceptibility to ischemia-induced arrhythmia, and reduced heart rate accompanied by improved myocardial efficiency, while omega-3 renders the donut-shaped red blood cell pliable to reach arterial extremities. In combination with tocotrienols, omega-3s improve the oxygen- carbon dioxide (O_2-CO_2) and nutrient-waste exchanges efficiently. Omega-3s and tocotrienols work in concert to reduce elevated triglyceride levels that are often a culprit in metabolic disorders such as diabetes and prediabetes. In addition, tocotrienol may aid in suppressing the rise of LDL cholesterol (Table 1) [1].

Table 1. Effects of EPA and DHA on Serum Lipids

Omega-3	LDL	Triglycerides	HDL
EPA	-	↓	-
DHA	-	↓↓	↑
Tocotrienol	↓↓	↓↓	↑

VITAMIN A

Vitamin A plays a crucial role in vision, bone growth, reproduction, cell division, and cell differentiation. (7-11) It also helps to regulate the immune system, (7, 12-16) and may help lymphocytes fight infections more effectively. Vitamin A promotes healthy surface linings of the eyes and the respiratory, urinary, and intestinal tracts. (14) When those linings break down, it becomes easier for bacteria to enter the body and cause infection. Vitamin A also helps the skin and mucous membranes function as a barrier to bacteria and viruses. (15-17)

Vitamin A is divided into two categories—preformed vitamin A and provitamin A carotenoid. The vitamin is classified according to its original source from a plant or animal. Preformed vitamin A is the form of vitamin A found in foods that come from animals. It is absorbed in the form of retinol, one of the most easily usable forms of vitamin A. Good sources of preformed vitamin A include liver, whole milk, and some fortified food products. Retinol can be made into retinal and retinoic acid (other active forms of vitamin A) in the body. (7)

The form of vitamin A found in colorful fruits and vegetables is called provitamin A carotenoid, a family of molecules which can be made into retinol in the body. Common provitamin A carotenoids found in foods that come from plants are beta-carotene, alpha-carotene, and beta-cryptoxanthin. (17) Among these, beta-carotene is most efficiently made into retinol. (7, 19-21) Alpha-carotene and beta-

cryptoxanthin are also converted to vitamin A, but only half as efficiently as beta-carotene. (7)

Of the 563 identified carotenoids, fewer than 10% can be made into vitamin A in the body. (18) Lycopene, lutein, and zeaxanthin are carotenoids that do not have vitamin A activity but have other health promoting properties. (7) The Institute of Medicine (IOM) encourages consumption of all carotenoid-rich fruits and vegetables for their health-promoting benefits.

Some provitamin A carotenoids have been shown to function as anti-oxidants in laboratory studies. (7)

VITAMIN D

Vitamin D is actually a group of lipid-soluble vitamins with steroid-like structures, called secosteroids. In humans, vitamin D is unusual in two ways: it functions as a prohormone and the body is able to synthesize it (as vitamin D3) when sun exposure is adequate. For this reason, it is sometimes known as the "sunshine vitamin."

Vitamin D3 has several forms (22):

- Cholecalciferol, (sometimes called calciol), an inactive, unhydroxylated form of vitamin D3
- Calcifediol (also called calcidiol, hydroxycholecalciferol, 25-hydroxyvitamin D3 and abbreviated 25(OH)D), one of the forms measured in the blood to assess vitamin D status
- Calcitriol (also called 1,25-dihydroxyvitamin D3), the active form of D3

Calcitriol is made in the kidneys and circulates as a hormone, regulating the concentration of calcium and phosphate in the bloodstream and promoting the healthy growth and remodeling of bone. Vitamin D prevents rickets in children and osteomalacia in adults, and, together with calcium, helps to protect older adults from osteoporosis. Vitamin D also affects neuromuscular function, inflammation, and influences the action of many genes that regulate the proliferation, differentiation, and death of cells. (23)

The evidence for the health effects of vitamin D supplementation in the general population is inconsistent. (24-26) Published studies have suggested benefits in cardiovascular health, diabetes mellitus, cancer, multiple sclerosis, allergy, asthma, infection, psychiatric health, pain and overall mortality. (22) The best evidence of benefit is for bone health (27) and a decrease in mortality in elderly women. (28)

There is a U-shaped mortality curve associated with vitamin D levels – in other words, it is not good to have either too little or two much. (29) Experts are divided as to the lower limit of the normal range (30), but most reports suggest that optimal levels on testing in the blood are between 40 and 50 ng/mL. The current Reference Daily Intake (RDA) is 400IU. It is important to note that many, many people have very low levels of vitamin D.

Astaxanthin:

The sockeye salmon oil in Kyäni Sunset™ contains the highest natural concentration of astaxanthin in any fish oil without the synthetic colorant canthaxanthin often found in farm-raised salmon. Astaxanthin is a carotenoid, and as such gives the Wild Alaskan Sockeye Salmon its brilliant red color. It is also considered to be a potent lipid-soluble antioxidant, protecting membranes from free radical damage in applications such as skin, eyes, and endothelium [3-7].

Summary:

Kyäni Sunset™ is a powerful supplement combining the nutritional benefits from pure Amazonian tocopherol-free annatto tocotrienol and a blend of omega-3s from the Wild Alaskan Sockeye Salmon and other Alaskan wild fish. Annatto tocotrienol is the most potent, best-in-class form of vitamin E used to support health benefits of chronic and age-related conditions, while omega-3s replenish the desperate lack in modern-day foods loaded with omega-6s. Together, the tocotrienol-omega-3 combo in Kyäni Sunset optimizes the complimentary platform of health: anti-aging, anti-inflammation, anti-oxidation – all of which promote health to the heart, artery, eye, nerve, and cell.

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