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Review: Ruth Winter, *Vitamin E: Your Protection Against Weakened Immunity, Heart Disease, Cancer, Aging, Diabetic Damage, Environmental Toxins*, Three Rivers Press, New York, NY, 1998

Pages: 224

Shady Lady Brought Into the Light

This examines the somewhat maligned vitamin alpha-tocopherol and shows good reason for many health benefits at a reasonable IU supplementation level.

There is also considerable physiology and disease aetiology so the reader can understand the pathway the vitamin might be using.

A valuable book in the library of any health-conscious individual.

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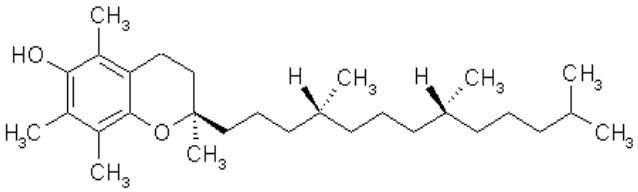
α-Tocopherol (Vitamin E)

- Found in wheat germ oil of whole-grain bread, & other foods.
- Protects artery walls & hinders atherosclerosis.
- Reduces reperfusion injury post-heart bypass surgery.
- Lowers retinopathy and cataract formation.



"And wine *that* maketh glad the heart of man, *and* oil to make *his* face to shine,
and bread *which* strengtheneth man's heart."
Psalm 104.15, Authorized Version

See Ruth Winter, *Vitamin E: Your Protection Against Exercise Fatigue, Weakened Immunity, Heart Disease, Cancer, Aging, Diabetic Damage, Environmental Toxins*, Three Rivers Press, New York, NY, 1998

Introduction (pp. 7-8)

Vitamin E is colloquially the "shady lady of nutrition" and the "vitamin in search of a disease".

Studies have shown a 34% lower heart disease risk, lower stomach cancer, and 40% cataract risk reduction.

I) The Discovery (pp. 9-14)

In 1922, Dr Evans found that Several daily drops of golden wheat germ oil proves to be remedial.

Vitamin E was then named by a Greek professor from Τοκος ("childbirth") Φηρρειν ("to give birth"), and *ol* (for alcohol); "tocopherol".

E is fat soluble.

Deficiency leads to encephalomalacia brain disease in chickens.

There is no definitive disease associated with E deficiency, like scurvy with C, night blindness with A, and beriberi of B.

Lack of E makes RBCs more fragile.

II) The Shady Lady Fights Your Free Radicals (pp. 15-17)

III) Vitamin E and Your Blood (pp. 18-26)

Hematocrit measurement is the amount of RBCs per blood volume and is 47% in men and 42% in women.

RBCs live for 120 days meaning 50,000 per cm^3 must be replaced daily.

Severe anaemia causes roaring in the ears, eye spots, psychosis, muscle weakness and wasting.

Fe and E combined impairs the absorption of both.

Premature infants in 100% oxygen environments become blind due to free radical damage.

Glucose phosphate dehydrogenase deficiency (G6PD) makes RBCs more easily damaged by O_2 and is found in people with low E levels. Sickle-Cell anaemia likewise has low E.

E inhibits platelet aggregation.

Palm oil is a good source of E.

400IUs per day of E over four weeks significantly reduced platelet pileup.

E competes with K by blocking the enzyme's ability to initiate clotting meaning an overdose can cause hemorrhagic stroke.

Blood-starved (ischaemic) organs result in rapid increase in O_2 radical damage to cells.

IV) Vitamin E and Your Heart (pp. 27-50)

400IU does better than 800IU per day in preventing coronary heart disease.

Arterial atherosclerosis invokes the aorta, coronary circulation, cerebral circulation, and legs and kidney circulations.

Lipoproteins are tiny packages of fat and protein in a disk-like shape produced in the liver and intestines for release into the bloodstream.

HDLs pick up cholesterol and take it back tot he liver, but LDLs drop contents along artery walls as it travels from the liver to its destination.

Total cholesterol should be <200mg/dl, LDL <100mg/dl, and HDL > 35mg/dl.

High cholesterol *per se* does not cause clogged arteries, it is the *oxidation* of the molecule (the rancid fats cause great damage).

Early signs of atherosclerosis is the accumulation of *monocytes* (foamy white blood cells filled with oxidised LDL cholesterol).

Ischaemia obstruction requires a heart bypass, which is risky due to *reperfusion* injury as richly oxygenated blood is reflooded into the heart. E protects against such injury.

Angina pectoris is caused by a lack of oxygen in the heart.

Intermittent claudication is inadequate blood supply to calf muscles, usually while walking.

E helps restless legs syndrome in 90-100% of cases.

Strokes are the number three killer in the US: the *cerebral thrombosis* (blood to the brain); the *cerebral embolus* (wandering brain clot); the

subarachnoid haemorrhage (brain vessel surface rupture); and the *cerebral haemorrhage* (burst brain artery).

Risk factors include uncontrolled BP, high cholesterol and blood fat, diabetes, family history, and premature atherosclerosis.

The carotid artery in the side of the neck is usually blocked. Operations to clean this out is a superior prophylaxis.

Secondary stroke incidence is 7-10% p.a. and many first-stroke patients soon afterwards have a heart attack.

There is an inverse relationship between C intake and average artery wall thickness.

Diabetics have lower antioxidant concentrations and more LDL cholesterol. Their eye blood flow is also 16% lower.

Protein glycolation is the joining of blood sugar and protein.

The CHAOS study of E intake found a lower heart disease rate but higher deaths, however, the deaths were earlier in the study and may have been due to the plaque-releasing effects of the E causing heart attack.

Prior to 1911, heart attacks were unknown. This was the year that milling began removing the wheat husk (containing the E) to create “white bread”.

Nearly all vegetable oils contain E.

The E RDA is only 10mg (15IU) per day for men.

V) Vitamin E and Cancer (pp. 51-68)

Cancer develops as initiation then promotion stages.

Saccharin is a cancer promoter.

The liver stores A which works synergistically with E.

Even 1ppm of ozone air exposure over the year causes sever lung damage in rats.

Nitrosamines are highly carcinogenic and are derived from nitrates like potassium nitrate (saltpeter and niter), and nitrites (which are nitrates after air exposure).

Potassium nitrite is used as a colour fixative for cured meats and sodium nitrite for preserving meat as it resists *Clostridium botulinum* spore growth.

Nitrites combine with stomach and body chemicals to form *nitrosamines*.

Baby food manufacturers voluntarily removed nitrites from baby foods in the early seventies.

In 1982, amyl and butyl nitrite use in sodomites were linked to Kaposi's sarcoma.

Importantly, E inhibits nitrosamine formation from nitrites in the stomach.

Selenium, though essential, is more toxic than arsenic and mercury, but less abundant than gold.

VI) Vitamin E and Muscle Power (pp. 69-79)

The body has about 620 voluntary muscles.

The heart is an involuntary striated muscle

The intestines, blood vessels and bladder are all "smooth" muscles.

Strenuous exercise can increase oxygen consumption fifteen fold creating oxidative stress and DNA breakage in some WBCs.

Stretching, E, and quinine sulfate can treat leg cramps.

Ceroids are oxidised fat deposits.

Cystic fibrosis is an inherited disease of the exocrine glands where secretions pour out of the body rather than into the blood.

VII) Vitamin E and Your Lungs (pp. 80-84)

Higher C improves pulmonary function.

Baseline breath pentane excretion is higher in smokers indicating free-radical oxidation.

VIII) Vitamin E and Your Skin (pp. 85-93)

The integumentary system can be afflicted by over 2,100 diseases.

The top layers of the *epidermis* are the *stratum corneum* which is really a scaly layer of dead skin cells.

E in acetate form is UV protective.

UVB is the prime suspect in sunburn damage.

E can reduce scarring and progressive scleroderma.

E is readily absorbed in the skin, passing through the epidermis to the dermis.

Wrinkles are caused by loss of subcutaneous fat and connective tissue degeneration.

E capsules rarely contain tocopherol acetate.

IX) Vitamin E, Sex, and Fertility (pp. 94-100)

Plaque buildup may interfere with blood flow causing erectile dysfunction.

Unsaturated fatty acids in sperm membrane oxidise.

X) Vitamin E Against Aging (pp. 101-125)

Aging makes cells either not work properly or not at all.

Beta-carotene is converted by the body into A.

Band 3 brain proteins are the first to break down in aging (E can protect these).

Interleukin-2 transmits signals between WBCs.

Down's syndromers are eighteen times likely to have leukaemia and twenty-six times for cancer. These go bald and wrinkly in childhood.

Selegiline boosts the neurotransmitter dopamine.

Parkinson's causes tremors, rigidity, and abnormal gait.

Cataracts are age-related opacities. Exposure to UV light is a causal factor but C, glutathione, A and antioxidant enzymes are protective.

Macular degeneration affects the area near the retina at the optic nerve in the back of the eye. It distinguishes fine detail at the centre of the vision field. Small blood vessels become constricted and hardened in the elderly.

E can relieve arthritis and support bone growth.

Increase in useful life is positively correlated with the time spent applying the free-radical approach. An estimated five to ten years can be gained from this approach.

While E lowered mortality by 27%, C alone is said to have no effect.

XI) How Much Vitamin E Do You Need? (pp. 125-138)

Unsaturated fats deplete E.

Average population E intake is 9.8IUs per person.

As E is fat-soluble, it needs bile and fat for absorption. After this, it attaches to beta-lipoprotein.

The predominant form of E in the blood is alpha-tocopherol (83%) with gamma most of the remainder.

Tea and Zn enhance E absorption.

Taking E is like health insurance.

XII) Vitamin E in Raw, Processed, and Cooked Food (pp. 139-149)

E comprises eight compounds; four tocopherols and four tocotrienols.

Nature-made E is from vegetable oils, synthetic from petrochemicals. Natural is 36% more potent.

Natural product labels should always begin with *d*.

Acetate or succinate esters may be added as preservatives against heat, light, and air [oxygen].

Alpha-tocopherol lasts up to three years.

Bleached flour destroys up to eighty percent of the tocopherols.

Freezing also destroys E as does roasting nuts.

Human milk contains 2-5IUs of E.

Peaches and prunes have small amounts .

Salmon steak has a high content.

Appendix I) Good Sources of Vitamin E (pp. 151-152)

Appendix II) Vitamin E Content of Foods (pp. 153-156)

Appendix III) Vitamin E in Edible Portions of Food (pp. 157-186)