This document contains peer reviewed studies that support ingredients found in Vitamin E Plus Wheat Germ Oil. For more information on each study, please click on the link provided.
**PEER REVIEWED STUDIES**

### Immune Health

**Recent advances in clinical research involving carotenoids**

**ABSTRACT**

Epidemiological studies show consistent decreased risk of lung cancer and certain other cancers, cataracts, age-related macular degeneration, and coronary heart disease in populations with the highest intakes of carotenoid-rich diets. Intervention studies show reductions in precancerous oral lesions, enhancement in immune parameters, and reduced incidence of cardiovascular events in individuals supplemented with β-carotene.

**Source**


**Update: effects of antioxidant and non-antioxidant vitamin supplementation on immune function**

**ABSTRACT**

The purpose of this manuscript is to review the impact of supplementation with vitamins E and C, carotenoids, and the B vitamins on parameters of innate and adaptive immunity, including the functional capacity of innate immune cells, lymphocyte proliferation, and the delayed-type hypersensitivity (DTH) response. Controlled intervention trials of B vitamin containing multivitamin supplements suggest beneficial effects on immune parameters and clinical outcomes in HIV-positive individuals.

**Source**


### Skin Health

**UVB photoprotection with antioxidants: effects of oral therapy with d-alpha-tocopherol and ascorbic acid on the minimal erythema dose**

**ABSTRACT**

Ultraviolet radiation absorption is responsible for the production of free radicals in damaged cells. This side effect may be neutralized using antioxidant substances. It has been reported that ascorbic acid and d-alpha-tocopherol scavenge reactive oxygen species. In a single-blind controlled clinical trial we studied 45 healthy volunteers divided into three groups. Group 1 received d-alpha-tocopherol 1,200 I.U. daily; Group 2 ascorbic acid 2 g daily and Group 3 ascorbic acid 2 g plus d-alpha-tocopherol 1,200 I.U. daily. Treatment was sustained for one week. Before and after treatment, the minimal erythema dose was determined in all participants. The results show that the median minimal erythema dose increased from 60 to 65 mJ/cm² in Group 1 and from 50 to 70 mJ/cm² in Group 3. No modifications were observed in Group 2. We conclude that d-alpha-tocopherol prescribed in combination with ascorbic acid produces the best photoprotective effect.

**Source**


**Multivitamin use and the risk of myocardial infarction: a population-based cohort of Swedish women**

**ABSTRACT**

**Background:**

Dietary supplements are widely used in industrialized countries.

**Objective:**

The objective was to examine the association between multivitamin use and myocardial infarction (MI) in a prospective, population-based cohort of women.

**Design:**

The study included 31,671 women with no history of cardiovascular disease (CVD) and 2262 women with a history of CVD aged 49-83 y from Sweden. Women completed a self-administered questionnaire in 1997 regarding dietary supplement use, diet, and lifestyle factors. Multivitamins were estimated to contain nutrients close to recommended daily allowances: vitamin A (0.9 mg), vitamin C (60 mg), vitamin D (5 μg), vitamin E (9 mg), thiamine (1.2 mg), riboflavin (1.4 mg), vitamin B-6 (1.8 mg), vitamin B-12 (3 μg), and folic acid (400 μg).

**Results:**

During an average of 10.2 y of follow-up, 932 MI cases were identified in the CVD-free group and 269 cases in the CVD group. In the CVD-free group, use of multivitamins only, compared with no use of supplements, was associated with a multivariable-adjusted hazard ratio (HR) of 0.73 (95% CI: 0.57, 0.93). The HR for multivitamin use together with other supplements was 0.70 (95% CI: 0.57, 0.87). The HR for use of supplements other than multivitamins was 0.93 (95% CI: 0.81, 1.08). The use of multivitamins for ≥5 y was associated with an HR of 0.59 (95% CI: 0.44, 0.80). In the CVD group, use of multivitamins alone or together with other supplements was not associated with MI.

**Conclusions:**

The use of multivitamins was inversely associated with MI, especially long-term use among women with no CVD. Further prospective studies with detailed information on the content of preparations and the duration of use are needed to confirm or refute our findings.

**Source**

Discovering the link between nutrition and skin aging

ABSTRACT
Skin has been reported to reflect the general inner-health status and aging. Nutrition and its reflection on skin has always been an interesting topic for scientists and physicians throughout the centuries worldwide. Vitamins, carotenoids, tocopherols, flavonoids and a variety of plant extracts have been reported to possess potent anti-oxidant properties and have been widely used in the skin care industry either as topically applied agents or oral supplements in an attempt to prolong youthful skin appearance. This review will provide an overview of the current literature "linking” nutrition with skin aging.

Source

Carotenoids and carotenoids plus vitamin E protect against ultraviolet light-induced erythema in humans

ABSTRACT
Background: Carotenoids and tocopherols, known to be efficient antioxidants and capable of scavenging reactive oxygen species generated during photooxidative stress, may protect the skin from ultraviolet light-induced erythema. b-Carotene is widely used as an oral sun protectant but studies on its protective effects are scarce.

Objective: The objective of this study was to investigate the protective effects of oral supplementation with carotenoids and a combination of carotenoids and vitamin E against the development of erythema in humans.

Design: A carotenoid supplement (25 mg total carotenoids/d) and a combination of the carotenoid supplement and vitamin E [335 given for 12 wk to healthy volunteers. Erythema was induced by illumination with a blue-light solar simulator. Serum b-carotene and a-tocopherol concentrations and skin carotenoid levels were assessed by HPLC and reflection photometry.

Results:
Serum b-carotene and a-tocopherol concentrations increased with supplementation. Erythema on dorsal skin (back) was significantly diminished (P < 0.01) after week 8, and erythema suppression was greater with the combination of carotenoids and vitamin E than with carotenoids alone.

Conclusion:
The antioxidants used in this study provided protection against erythema in humans and may be useful for diminishing sensitivity to ultraviolet light.

Source

Sports Nutrition

The Role of Nutritional Supplements in the Prevention and Treatment of Resistance-Induced Skeletal Muscle Injury

ABSTRACT
The topic of exercise-induced skeletal muscle injury has received considerable attention in recent years. Likewise, strategies to minimise the injury resulting from heavy resistance exercise have been studied. Over the past 15 years, several investigations have been performed focused on the role of nutritional supplements to attenuate signs and symptoms of muscle injury. Of these, some have reported favourable results, while many others have reported no benefit of the selected nutrient. Despite these mixed findings, recommendations for the use of nutritional supplements for the purposes of attenuating muscle injury are rampant within the popular fitness media and athletic world, largely without scientific support. Those nutrients include the antioxidant vitamin C (ascorbic acid) and vitamin E (tocopherol), N-acetyl-cysteine, flavonoids, L-carnitine, astaxanthin, beta-hydroxy-beta-methylbutyrate, creatine monohydrate, essential fatty acids, branched-chain amino acids, bromelan, proteins and carbohydrates. A discussion of all published peer-reviewed articles in reference to these nutrients and their impact on resistance exercise-induced skeletal muscle injury is presented, in addition to a brief view into the potential mechanism of action for each nutrient. Based on the current state of knowledge, the following conclusions can be made with regard to nutritional supplements and their role in attenuating signs and symptoms of skeletal muscle injury occurring as a consequence of heavy resistance exercise: (i) there appears to be a potential role for certain supplements (vitamin C, vitamin E, flavonoids, and L-carnitine); (ii) these supplements cannot effectively eliminate muscle injury, only attenuate certain signs and symptoms; (iii) it is presently unclear what the optimal dosage of these nutrients is (whether used alone or in combination); (iv) it is unclear what the optimal pretreatment period is; and (v) the effectiveness is largely specific to non-resistance trained individuals. Ultimately, because so few studies have been conducted in this area, it is difficult to recommend with confidence the use of selected nutrients for the sole purpose of minimising signs and symptoms of resistance exercise-induced muscle injury, in particular with regard to resistance-trained individuals.

Source