Carotenoid Complex

Protect your cells

Background: Carotenoids first took center-stage as protector nutrients in the mid 1970's when researchers at the US Department of Health and Human Services and the Centers for Disease Control and Prevention (CDC) identified their role in reducing the risk of disease[25]. National Cancer Institute researcher Regina Ziegler went on to reveal its connection to lung cancer prevention in 1986[26], and then showed a lower risk of cancer in those with the highest dietary intake of fruit and vegetable-derived carotenoids[27,28]. The National Health and Nutrition Examination Survey (NHANES) and other studies at the time found carotenoids also functioned in heart health and reduced the risk of heart disease[29,30]. Proof of benefit soon expanded to include eye health and visual acuity[31] and immune function[32].

GNLD Research: Research conducted on GNLD's Carotenoid Complex has spanned more than 15 years. It started with the first ever proof of bioavailability of whole food-derived carotenoids[33,34]. USDA researchers went on to reaffirm its bioavailability and then demonstrated its cardio-protective[35,36] *(see chart 6)* and cellular protective powers[37]. This was followed by two more studies conducted by the USDA researchers showing Carotenoid Complex's beneficial effects *(see chart 5)* on immune capacity[38,39]. In 2001, GNLD researchers reaffirmed bioavailability across an even broader spectrum of dietary carotenoids[40].

Chart 5 - Carotenoid-Flavonoid Immune Response in Women

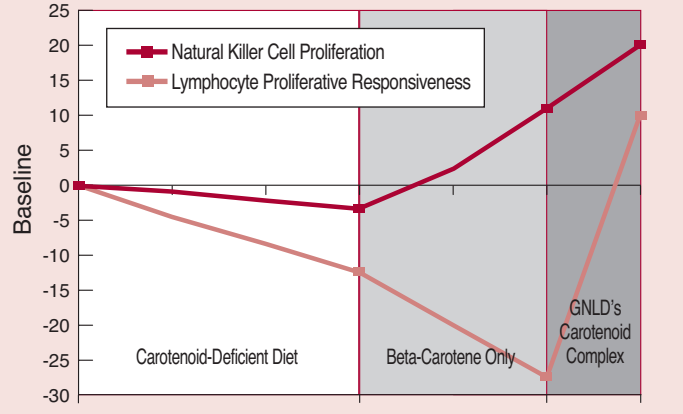
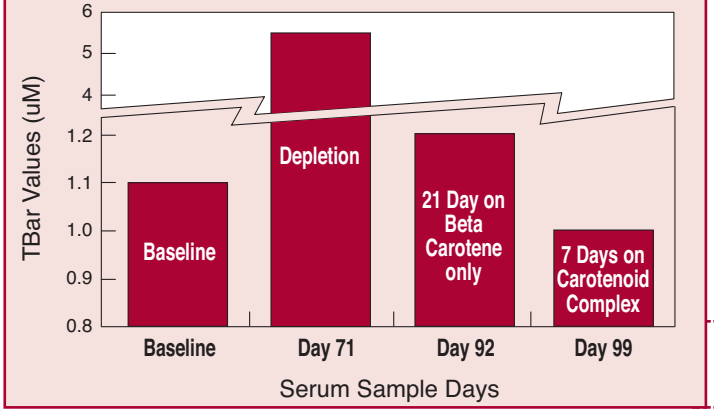


Chart 6 - Carotenoid Complex: Lipid Peroxidation Susceptibility



Latest Findings: Evidence supporting the importance of carotenoid intake for health benefits continues to mount. Concern by leading health authorities over insufficient carotenoid consumption has resulted in campaigns to increase awareness for higher levels of carotenoid intake[41,42].

Heart and cardiovascular health: A 2004 study conducted by a team at the Harvard Medical School found that men in the top quintile with higher levels of serum carotenoids (including alpha-carotene, beta-carotene, lycopene, lutein, and beta-cryptoxanthin) had a 40% decreased risk of ischemic stroke than those with the lowest serum levels.[43] Similarly, a 2008 study of 559 men showed that increased intake of alpha and beta carotene from carrots equated to a 17% reduction in risk of cardiovascular (CVD) death.[44] Swedish researchers in 2006 correlated consistently lower levels of the carotenoids lutein, zeaxanthin, and beta cryptoxanthin with coronary artery disease occurrence. The healthy controls had significantly higher levels of these carotenoids in their blood[45].

Prostate health: Since the early nineties, scientific research has reported a connection between the carotenoid Lycopene and prostate cancer risk reduction. One study showed that Lycopene (from tomatoes) present in the diet 4 to 5 times per week, attributed to a 25% reduction in prostate cancer risk. The 2-year study found that an 82% increase in blood Lycopene levels corresponded with a 42% decrease in prostate-specific antigen (PSA) levels[46].

Immune health: Swedish researchers in 2001 observed higher levels of natural killer cells (NK cells) in people with higher levels of these carotenoids, confirming the relationship between dietary carotenoid intake, immune capacity and health.

Vision health: In a 48-week intervention trial, researchers tested Lutein supplementation for vision protective-function in patients with retinitis pigmentosa (RP). They concluded: *"Comparing the development of vision measures against the natural loss expected to occur over the course of the 48 weeks, most measures showed reduced decline, and these reductions were significant for normal illumination"*[47].

Mental performance: A 2007 French study[48] showed a connection between carotenoids and cognitive performance in a healthy elderly population. Study author Tasnime Akbaraly states *"In this study, low levels of specific plasma carotenoids (lycopene and zeaxanthin) were associated to poor cognitive functioning in a highly educated, community-dwelling elderly population"*.

Inflammatory health: A 2005 UK study by Cambridge University[49] researchers showed that study subjects with the highest (top one third) daily intake of beta-cryptoxanthin had only about one-half the risk of developing polyarthritis than those in the bottom one-third. Researchers commented that even modest increases in beta-cryptoxanthin intake were associated with a significantly reduced risk of developing inflammatory disorders such as rheumatoid arthritis.

DATA SOURCE: EFFECTS OF A CAROTENE DEFICIENT DIET ON MEASURES OF OXIDATIVE SUSCEPTIBILITY AND SUPEROXIDE DISMUTASE ACTIVITY IN ADULT WOMEN; Free Radical Biology in Medicine, Vol. 17, No. 6, pp. 537 - 544, 1994.