



Nutrition for Optimal Wellness™

# Carotenoids

Natural Antioxidant Support\*



Nutrition for Optimal Wellness™

Carotenoids are naturally-occurring pigments that possess strong antioxidant and cellular protection properties. Over 700 have been identified, with several showing great promise in their ability to help support good health. NOW is pleased to offer a line of safe, potent carotenoid formulas. Be sure to look for them wherever quality health products are sold. For more information on Carotenoids, we recommend reading "7-Color Cuisine", by Marcia Zimmerman, CN.

- Responsible for the vibrant colors in fresh fruits and vegetables
- Shown in studies to exhibit strong antioxidant properties\*
- Available in single carotenoid formulas, as well as combination formulas
- Support healthy cardiovascular and immune function, vision, and development\*
- Well-researched with a history of safety and effectiveness



#### References

1. Steinmetz KA, Potter JD. Vegetables, fruit, and ... prevention: a review. J Am Diet Assoc. 1996;96:1027-1039.
2. Kohlmeier L, Hastings SB. Epidemiologic evidence of a role of carotenoids in ... prevention. Am J Clin Nutr. 1995;62(6 suppl):1370S-1376S.
3. Carson C, Lee S, De Paola C, et al. Antioxidant intake ... in the Melbourne Visual Impairment Project [abstract]. Am J Epidemiol. 1994;139(11 suppl):A65.
4. Vitale S, West S, Hallfrish J, et al. Plasma antioxidants ... Epidemiology. 1993;4:195-203.
5. Stahl W, Heinrich U, Jungmann H, et al. Carotenoids and carotenoids plus vitamin E protect ... in humans. Am J Clin Nutr. 2000;71:795-798.
6. Landrum JT, Bone RA, Kilburn MD. The macular pigment: a possible role in protection from age-related ... degeneration. Adv Pharmacol. 1997;38:537-556.
7. Richer S, Stiles W, Statkute L, et al. Double-masked, placebo-controlled, randomized trial of lutein and antioxidant supplementation in the intervention ... the Veterans LAST study (Lutein Antioxidant Supplementation Trial). Optometry. 2004;75:216-30.
8. Kucuk O, Sarkar FH, Sakr W, et al. Phase II randomized clinical trial of lycopene supplementation ... Cancer Epidemiol Biomarkers Prev. 2001;10:861-868.
9. Mohanty NK, Saxena S, Singh UP, et al. Lycopene as a ... agent ... Urol Oncol. 2005;23:383-385.

\*These statements have not been evaluated by the FDA. These products are not intended to diagnose, treat, cure or prevent any disease.



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## Health Professor





## Carotenoids, Nature's Antioxidant

Have you ever wondered why your favorite fruits and vegetables display such a fascinating spectrum of colors? It's not by coincidence. In fact, these colors represent much more than just a pleasant array of nature's beautiful possibilities. The specific shade of each fruit and vegetable—be it red, orange, yellow, or green—is determined by its carotenoids; natural pigments that possess strong antioxidant properties. Carotenoids do more than provide color, however. They are also powerful phytonutrient antioxidants that are capable of quenching impressive amounts of oxidation.

These highly unsaturated, lipid-soluble organic compounds occur naturally in plants, as well as in some algae, fungus, and bacteria strains. And despite thousands of years of consumption, only recently have we truly begun to understand the diverse role they play in human health. From cardiovascular health and immune system support, to healthy vision and respiratory function, carotenoids are teeming with compounds that have been shown to positively affect the quality of life.

To date, over 700 different carotenoids have been officially identified, though only a handful of these have been shown to possess beneficial health effects.\* Four of the most popular and well-recognized carotenoids are Beta-carotene, Lutein, Lycopene, and Astaxanthin. They have been the subject of intense research, and are now widely regarded as staples of good health. Let's take a look at these in more detail.

### Beta-carotene

If your diet doesn't include fresh fruits and vegetables, such as kale, spinach, sweet potatoes, thyme, squash, collard greens and fresh cilantro, you may want to consider including Beta-carotene in your supplement regimen. Traditionally, Beta-carotene produces the orange and yellow colors in fruits and vegetables. Its ability to merge with other phytonutrients often results in foods with shades of red and pink. Like Alpha-carotene, Beta-carotene is capable of being converted into vitamin A and possesses strong antioxidant properties. It plays a key role in human reproduction, growth, development, immune system activity, and normal cardiovascular function.\*

### Lutein

Unlike Beta- and Alpha-carotene, Lutein cannot be converted to vitamin A within the body. This does not, however, make it any less important. Despite having predominantly strong yellow pigments, Lutein is no stranger to dark green, leafy vegetables, such as broccoli, kale, spinach,

peas, zucchini, and Brussels sprouts. One of Lutein's most impressive traits is its ability to interact with the sun's harmful UV rays, making it one of the most effective, natural ways to protect the eyes and support healthy vision.\*

### Lycopene

Lycopene isn't just one of the most popular members of the carotenoid family; it's also one of the most beneficial. Red in color, Lycopene is what essentially gives tomatoes their rich, ruby appearance, though it's also found in watermelon, papaya, and pink grapefruit. Lycopene is primarily stored in the lungs and prostate, and has been shown to offer a wide range of health benefits, including cardiovascular support and fertility. Most impressive, Lycopene has been shown in a number of studies to eliminate one of the most damaging of all known free radicals—singlet oxygen radicals. These highly reactive byproducts of oxidation are formed during the metabolism of polyunsaturated acids and can be devastating to healthy cell membranes.\*

### Astaxanthin

Typically found in a type of green algae called Haematococcus pluvialis, Astaxanthin is a fat-soluble carotenoid with a unique molecular structure that makes it an extremely effective antioxidant. It has been shown to prevent the formation of oxidation, thus limiting the number of free radicals produced within the body's cellular network. Like Lycopene, Astaxanthin is very effective at quenching highly energized singlet oxygen molecules. Astaxanthin absorbs the energy produced by these destructive free radicals and dissipates it as heat, thus rendering singlet oxygen molecules to a grounded state.\*

As the nutritional sciences continue to explore the properties and functionality of these (and other) carotenoids, they continue to strengthen the notion that our planet has been blessed with everything it needs to support health and wellness. NOW Foods offers a wide selection of carotenoids, including the four mentioned throughout this article.

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## Carotenoid formulas from NOW

### Veggie Carotenoids

Mounting scientific evidence has demonstrated that many diverse carotenoids, in addition to Beta-carotene, play a number of vital roles in maintaining good health, especially in protecting against free radical damage.\* Still, many Americans do not consume nearly enough fresh fruits and vegetables. NOW® Veggie Carotenoids is formulated to provide concentrated, high quality, key phytonutrients; many of which are absent or lacking in today's modern diet.

### Lutein Esters, 20 mg

Ongoing clinical research continues to showcase the safety and effectiveness of Lutein in supporting healthy vision and ocular structures. This award-winning formula contains 20 mg of patented Lutein esters from Henkel Xangold™, as well as added Zeaxanthin and Cryptoxanthin to provide natural synergistic support. Together, this formula has become one of NOW's most popular vision support supplements.\* Lutein Esters is available in 60 and 120 count sizes.

### Beta-Carotene 25,000 IU, with Mixed Carotenoids

As the most famous member of the carotenoid family, the health benefits of Beta-carotene are well-known by many. NOW® Natural Beta-Carotene contains additional antioxidant carotenoids, Alpha-carotene, Zeaxanthin, Cryptoxanthin and Lutein as naturally occurring in *D. salina* sea algae. This natural balance of related carotenoids is what makes this product more bioavailable than synthetic Beta-carotene formulas. Natural Beta-carotene is a fat-soluble food source of pro-Vitamin A.

### Lycopene, Double Strength

Lycopene is a powerful antioxidant carotenoid and the pigment that gives tomatoes, watermelon and pink grapefruit their characteristic red or pink color. Clinical studies have indicated that natural Lycopene works through a number of mechanisms to support cardiovascular health and immune function. In addition, epidemiological studies have determined that Lycopene may be particularly important for the support of prostate function and a healthy digestive tract.\* Contains patented LYC-O-MATO® lycopene.

### Astaxanthin 4 mg

Astaxanthin belongs to the same family of fat-soluble carotenoid molecules as the yellow/orange colored Beta-carotene. It differs from Beta-carotene in that its molecular structure contains two additional oxygen groups in each ring structure. This gives it a deep red color and classifies it as a xanthophyll, with up to 10 times stronger free radical scavenging activity.\* Another difference is that, unlike Beta-carotene, Astaxanthin cannot be converted to vitamin A in the human body.



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