



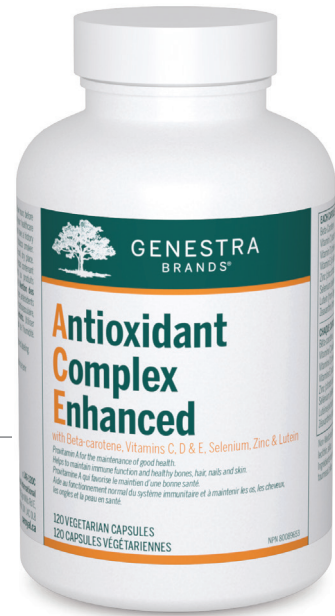
GENESTRA
BRANDS®

Antioxidant Complex Enhanced

Advanced antioxidant formula with lutein and zeaxanthin

- Combines eight important vitamins, minerals and carotenoids
- Provides antioxidants that help protect against oxidative damage caused by free radicals
- Helps to maintain immune function and healthy bones, hair, nails and skin

Antioxidant Complex Enhanced supports antioxidant defence with a comprehensive combination of vitamins and minerals, plus lutein and zeaxanthin. Antioxidants play an important role in the body by reducing the production and propagation of free radicals.¹ Vitamin C is the most effective water-soluble antioxidant in the plasma and cellular fluid, while vitamin E is known to support antioxidant defence in cell membranes.² Selenium provides further support as a component of the antioxidant enzyme glutathione peroxidase, and plays an important role in supporting thyroid health by reducing oxidative damage generated during the production of thyroid hormones.^{1,3} Antioxidant Complex Enhanced also offers lutein and zeaxanthin, the primary carotenoids in the macula and retina.⁴ Lutein provides unique antioxidant support to maintain eye health by protecting against oxidative damage from metabolic activity and light exposure.⁴ Beta-carotene is included as a source of provitamin A to help maintain eyesight, skin, membranes and immune function, while zinc further contributes to immune and skin health by stimulating the production of immune cells and supporting the repair and maintenance of skin structure.⁵ As the body's natural defence mechanisms against oxidative stress can become overwhelmed, individuals may benefit from increasing external antioxidant intakes.⁶



EACH CAPSULE CONTAINS:

Beta-Carotene	4,500 mcg
Vitamin C (ascorbic acid)	500 mg
Vitamin D (cholecalciferol)	1.67 mcg/66.8 IU
Vitamin E (d-alpha tocopheryl succinate)	100 mg AT
Zinc (zinc citrate)	10 mg
Selenium (selenomethionine)	60 mcg
Lutein (from <i>Tagetes erecta</i> herb flowering oleoresin)	0.5 mg
Zeaxanthin (from <i>Tagetes erecta</i> herb flowering oleoresin)	0.1 mg

Non-Medicinal Ingredients: Hypromellose, hyprolose, cellulose, sunflower lecithin, silica

Recommended Dose

Adults: Take 1 capsule 3 times daily with oil-containing meals, a few hours before or after taking other medications or natural health products, or as recommended by your healthcare practitioner.

Product Size

60 Vegetarian Capsules
120 Vegetarian Capsules

Product Code

03146
03146-120

NPN 80089653



Non
GMO



Gluten
Free



Dairy
Free



Vegetarian

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Antioxidant Complex Enhanced

Scientific Rationale:

Vitamin C is the most effective water-soluble antioxidant in the plasma and cellular fluid.¹ It directly scavenges reactive oxygen and nitrogen species, which can damage cells and disrupt normal cellular function.² Vitamin C further protects cells by regenerating other antioxidants, such as glutathione and vitamin E.² High levels of vitamin C are present in the eye to help decrease light-induced free radical damage, while neutrophils contain vitamin C to protect against reactive oxygen species produced during phagocytosis.² In addition, vitamin C supports the immune system by regulating lymphocyte proliferation, natural killer cell activity, immunoglobulin production and histamine release.² Low-vitamin C levels are common among the elderly, individuals of low socioeconomic status, and those with restricted diets or diets low in fruits or vegetables.^{2,3} Smokers also have lower serum vitamin C levels than non-smokers, as tobacco smoke contains oxidizing substances that can increase free radical damage in the body.² This process results in a greater turnover of vitamin C; thus, the recommended intake for this nutrient is higher for smokers.²

Vitamin E is a fat-soluble vitamin primarily known for its antioxidant activities.¹ As the major antioxidant within cell membranes, vitamin E plays a critical role in scavenging free radicals to protect polyunsaturated fatty acids from peroxidation.¹ Vitamin E can be found in vegetable oils, nuts, cereal grains, fruits and vegetables, although food processing can significantly reduce its levels.¹

Selenium is an essential trace element found in both plant and animal products, such as meat, seafood, milk, cereals, fruits and vegetables.^{4,5} Once consumed, selenium is incorporated into selenoproteins, which help support antioxidant defence and metabolize thyroid hormones.² As a critical component of glutathione peroxidases (antioxidant enzymes), selenium helps prevent the formation and stop the propagation of free radicals.⁴ In addition to this role, selenium can directly scavenge free radicals and bind metal ions to provide enhanced antioxidant support.⁶ High levels of selenium are also found in the thyroid gland, where selenium supports the metabolism of thyroid hormones thyroxine (T4) and triiodothyronine (T3).⁷ The selenium-containing enzymes glutathione peroxidase and thioredoxin reductase further support thyroid health by reducing oxidative damage generated during the production of these hormones.⁷

Lutein and zeaxanthin are the primary carotenoids in the macula and retina.⁸ Research suggests that lutein has a unique ability to protect the eye from oxidative damage produced by metabolic activity and light exposure, which can accumulate over time.⁹ In addition to directly

scavenging free radicals and reducing light-induced peroxidation in membrane phospholipids, this carotenoid absorbs and attenuates the damaging effects of high-energy blue light before it can reach retinal cells, conferring additional protection from light-induced oxidation.⁸ Higher intakes of lutein have been associated with retinal and macular health.¹⁰ Similarly, animal research has demonstrated that lutein supplementation can significantly reduce ocular malondialdehyde levels (a marker of oxidative stress), while increasing the concentration of retinal glutathione.¹¹ As the body cannot produce lutein and zeaxanthin, adequate amounts must be derived from the diet.¹² Common food sources include dark green leafy vegetables (such as broccoli), oranges, corn tortillas and eggs.^{8,12} However, research has reported that lower serum levels of these carotenoids may occur more frequently in teenagers, Caucasians, women, smokers, and physically inactive individuals.⁸

Vitamin A is a fat-soluble vitamin that plays important roles in the immune, visual and integumentary systems.⁵ Preformed vitamin A (retinol) is present in animal-based products, while oils, fruits and vegetables contain provitamin A precursors that can be converted into vitamin A by the body.⁵ One important source of vitamin A is beta-carotene, a carotenoid pigment abundant in red, orange and yellow fruits and vegetables (including carrots and cantaloupe) and leafy green vegetables (such as collard greens and broccoli).⁵ Research has found that supplementation with beta-carotene can help promote adequate vitamin A status.⁵ Once in the body, vitamin A stimulates the development of immune cells; aids in the production of rhodopsin, a pigment required for sensing light (especially in low-light environments); and helps maintain the skin's barrier function by increasing epidermal thickness and the number of glycosaminoglycans (polysaccharides that help hydrate the skin).¹³⁻¹⁵

Like vitamin A, **zinc** plays a key role in maintaining immune and skin health. This trace element supports immune function by stimulating the production of immune cells, regulating natural killer cell activity, and mediating cytokine production.^{16,17} It is especially crucial to T cell function as a cofactor of thymulin, a hormone involved in T cell maturation and differentiation.^{17,18} Zinc also has a long history of use in dermatological health.¹⁹ It helps to maintain immune function in the skin, while supporting skin structure.¹⁹ Additionally, zinc has a role in maintaining hair, nail and bone health. As the availability of free intracellular zinc can be decreased with aging, zinc supplementation may be particularly helpful for maintaining good health in the elderly.¹⁷

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