Vita Aid®
Professional Nutrition Product

Vitamin E & NAC

with Vitamin C & Selenium

VA-046/ VA-946

Protects against reactive oxygen species, replenishes glutathione and helps phlegm expectoration

Key Points:

- Contains NAC to increase glutathione production and vitamin C for glutathione regeneration.
- Complete inner and outer cell antioxidant complex.
- Naturally strengthens the immune system – increases ability to fight infections, allergic reactions and disease.
- Eases chronic obstructive pulmonary disease and helps expectoration of tracheal phlegm.

Quantity: 90 | Dosage Form: Vegetarian Capsules

Ingredients (per capsule):

N-Acetyl Cysteine	250 mg
Vitamin E (as d-alpha tocopheryl acetate) (equivalent to 67 mg of d-alpha tocopherol)	100 IU
Vitamin C (as calcium ascorbate)	54 mg
Selenium (as selenium HVP* chelate)	50 mcg

* HVP – hydrolyzed vegetable protein

Non-Medicinal Ingredients:
Microcrystalline cellulose, silicon dioxide, L-leucine, pullulan/hypromellose (capsule)

Suggested Use:
Adults - Take 1-4 capsules daily as needed or as directed by a health care practitioner.

Indication:

To help with detoxification of toxins from chemicals, drugs or alcohol.
For people with weak and/or compromised immune systems.
For people, especially smokers, with lung problems such as chronic obstructive pulmonary disease (COPD).
For people who have difficulty expectorating phlegm.

Description:

Vitamin E & NAC is a complete antioxidant and detoxification formulation for scavenging free radicals for both and outer cell defense. Vitamin E & NAC increases the level of glutathione, a component of glutathione peroxidase and an important antioxidant in the liver, for detoxification of chemical toxins such as pesticides, heavy metals, drugs and alcohol. Vitamin E & NAC also helps to promote phlegm expectoration and cell recovery in the respiratory system.

N-Acetyl Cysteine

N-acetyl cysteine (NAC) is an antioxidant amino acid that serves as a major precursor to the critical detoxifying antioxidant glutathione, which is made primarily in liver cells. Glutathione neutralizes free radicals, detoxifies chemicals and removes heavy metals to promote liver health and decrease carcinogen formation.

A number of studies have shown NAC's unique ability to maintain healthy lung tissue, support the body's defenses, and enhance cellular health and longevity. It also naturally improves the functioning of the immune system, making the body better able to fight off disease, allergic reactions, and infection.

Studies have revealed the synergistic effect of vitamin E and C, and NAC to significantly increase the amount of antioxidant activity in the body while suppressing pro-oxidant activities following a moderate-fat meal.[1] Furthermore, supplementation resulted in various beneficial health effects such as enhanced immune function and lower risk of infectious diseases.[2]

NAC is also well-known for its mucolytic activity and can beneficially influence inflammatory indices in chronic obstructive pulmonary disease. The antioxidant activity of NAC can mitigate the stimulation of NF-kB by reactive oxygen species (ROS) and cytokines, preventing the excessive expression of inflammatory cytokines, chemokines, leukocyte adhesion molecules and inflammatory enzymes.

Chronic obstructive pulmonary disease (COPD) is accompanied by both airway and systemic inflammation and by oxidative stress. The inflammatory processes in COPD stimulate reactive oxygen species production, which in turn results in an increase in pro-inflammatory factors.

Excessive transmigration of neutrophils – the key cells in the inflammatory response

in COPD – into the lung tissues and abnormal activation are largely responsible for the overproduction of ROS and release of proteolytic enzymes, such as elastase, in the lungs, breaking down the elastic fibers surrounding the airways and alveolar walls of the lungs and causing lung damage.[3] It has been shown that 600 mg of NAC daily for 14 days can lower neutrophil respiratory burst and chemotaxis, as well as inhibited release of elastase and IL-9, and NF-kB activation.[3]

Vitamin E

Vitamin E is one of the most important antioxidants due to its fat-soluble characteristics that make it an excellent lipid peroxidation inhibitor. Vitamin E has also been shown to play a role in immune function, DNA repair, and other metabolic processes.

There is compelling evidence that free radicals play important roles in the aging process and in age-associated diseases. Dietary antioxidants such as vitamin E may contribute to a rise in life span by reducing free radicals, and thus enhancing immune responses to improve quality of life.[4] Increasing dietary intake of vitamin E has been shown to increase longevity by the modulation of oxidation of low-density lipoproteins and endothelial cells interactions, and thus, reducing the risk of cardiovascular disease.

Vitamin C

Vitamin C regenerates glutathione in its reduced form so that it can continue to provide protection against oxidative stress. Additionally, vitamin C is able to restore oxidized vitamin E.

Vitamin E and C are potent antioxidants that are more effective when taken together. Since vitamin E is a fat-soluble antioxidant and vitamin C is a water-soluble antioxidant, together they can quench free radicals throughout the entire body.

Additionally, vitamin C and E work through different mechanisms. Vitamin E is a primary (chain-breaking) antioxidant and vitamin C is a secondary (preventive) antioxidant. When antioxidants with different mechanisms of action are combined, they are often more active than if used alone.[5] This synergistic effect is important in normalizing levels of antioxidants.

Selenium

Selenium is an integral addition to the formula as it is part of the complex that activates glutathione. Selenium serves its antioxidative purpose through glutathione peroxidase, an antioxidant enzyme which catalyzes the hydrolysis of inorganic and organic peroxides.[6]

Inadequate plasma selenium can adversely affect the maintenance of optimal health; mounting evidence has shown that selenium plays a significant role in the ageing process by protecting membrane lipids from oxidizing conditions.

Selenium and glutathione peroxidase have been shown to reduce the accumulation, in the skin, of the age pigment lipofuscin, an indicator of cellular membrane damage.[7] In addition, selenium deficient societies and individuals are commonly associated with many chronic degenerative diseases, including cancer. Various studies show an inverse relationship between the plasma selenium concentration with cancer, mortality, and cardiovascular disease.[8]

Cautions:

For adult use only. Consult a health care practitioner prior to use in cases of history of non-melanoma skin cancer.

References:

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2. Nantz MP, Rowe CA, Nieves C Jr., and Percival SS. Immunity and antioxidant capacity in humans is enhanced by consumption of a dried, encapsulated fruit and vegetable juice concentrate. *The Journal of Nutrition Nutritional Immunology*. 2006; 136: 2606-2610.

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The information in this guide is for use by health care practitioners as a reference only.

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