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ONCE A DAY

ONCE A DAY IMMUNE MULTI

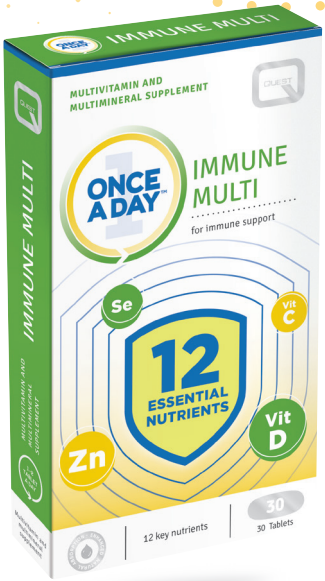
For immune support.

Nutritional Information

One tablet provides:

Vitamin A	400 µg
Vitamin C	500 mg
Vitamin D3	1000 iu
Vitamin E	100 iu
Zinc	10 mg
Copper	500 µg
Selenium	100 µg
Mixed Carotenoids (providing beta carotene, alpha carotene,cryptoxanthin, zeaxanthin, lutein)	3 mg

1-2 tablets once a day with food. Swallow with water.



- Provides 4 vitamins, 3 minerals and 5 additional factors to support the immune system
- Complete 1 a day formula for immunity
- Selenium amino acid chelate for enhanced absorption
- Superior vitamin D3 form

DESCRIPTION

Once A Day Immune Multi is a comprehensive formula designed to support the immune system. It provides fat and water soluble vitamins, amino acid chelated minerals and mixed carotenoids for their antioxidant benefits. The antioxidant nutrients provided in this formula contributes to the protection of cells from oxidative stress and to the normal functioning of the immune system. Low dietary levels of the nutrients provided in Once A Day Immune Multi are also associated with lower functioning of the immune system and increased rates of infections.

VITAMIN C

Vitamin C and the immune system: Vitamin C is a water-soluble antioxidant nutrient required for the proper function of Natural Killer T and B cells. One study showed that vitamin C was able to increase Natural Killer T and B cell function by 10-fold in patients who had immune cells suppressed by toxins. Vitamin C completely restored immune function[1]. Vitamin C stores are very quickly used up in the body during times of infections and immune challenges and need to be replaced.

Vitamin C an antioxidant nutrient: Another mode of action of vitamin C on the immune system is its electron donation and powerful antioxidant status[2]. It is essential for the immune system that oxidants are kept in check to prevent an excessive amount of reactive oxygen species (ROS) from damaging the immune cells[3]. One study reported that vitamin C enhances glutathione recovery after an oxidative challenge[4], protecting the body from oxidative damage even further.

VITAMIN E

Vitamin E and the immune system: One study found that short-term vitamin E supplementation improves immune responsiveness in healthy elderly individuals[5]. The research concluded that the improvement in the immune system was due to a decrease in PGE2 and/or other lipid-peroxidation products.

Vitamin E an antioxidant nutrient: Vitamin E is a potent antioxidant that neutralises reactive oxygen species (ROS) free radicals. It is the primary fat-soluble antioxidant in human plasma[6]. It is important to help maintain the integrity of long-chain polyunsaturated fatty acids found in cell membranes, and to maintain their function.

VITAMIN D

Vitamin D and the immune system: Vitamin D exerts a beneficial effect on T and B lymphocytes, monocytes and dendric cells, ultimately decreasing excess inflammation and supporting the effective defence against pathogens. Lower levels of vitamin D <30nmol/L blood is associated with increased rates of infections[7].

Vitamin D biochemistry: Vitamin D is a fat-soluble vitamin and exists in several forms, two of which are biologically important. These two forms include ergocalciferol (D2) and cholecalciferol (D3). Both forms are metabolised in the body by the liver and the kidneys to the active form calcitriol and 1,25-dihydroxyvitamin D retrospectively. The liver yields more calcifediol from vitamin D3, than it does vitamin D2, meaning that vitamin D3 supplementation is more effective at raising vitamin D serum levels. Studies confirm that vitamin D3 is the preferable choice for supplementation[8].

VITAMIN A

Vitamin A and the immune system: Vitamin A is a fat-soluble vitamin which is crucial for the function of the immune system. Vitamin A exerts an anti-inflammatory response and helps to regulate cellular immune responses and humoral immune processes. Vitamin A has demonstrated a therapeutic effect in the humoral immune

processes. Vitamin A has demonstrated a therapeutic effect in the treatment of various infectious diseases. A constant supply of vitamin A is required for immune associated tissues. Vitamin A promotes the proliferation and regulates the apoptosis of thymocytes and may be useful in the treatment of several infectious diseases[9].

ZINC

Zinc and the immune system: Zinc deficient individuals experience susceptibility to infections. Zinc deficiency effects the development of acquired immunity as well as the protective skin barrier[10]. An integral skin barrier is essential for the first line of defence against diseases.

T cell activation: Key T cell signalling molecules (IL-2-induced ERK) are activated in response to intracellular zinc, as well as T cell proliferation[11]. This is a key mechanism in the relationship between zinc and the immune system and resistance against pathogens, particularly viral pathogens.

COPPER

Copper and the immune system: Copper is another trace mineral essential to human health. Copper works in balance with zinc and should be taken alongside it in supplementation. Copper is required in small quantities and is needed for immunity, growth and healing. Long term or high dose supplementation of zinc alone fails to address the natural balance of trace minerals and can trigger copper deficiency.

SELENIUM

Selenium and the immune system: Selenium is required for the proper functioning of neutrophils, macrophages, natural killer cells and T lymphocytes[12]. Selenium is required for the formation of selenoprotein necessary for immune cell formation.

Selenium an antioxidant nutrient: Selenium is a co-factor in the creation of the enzyme glutathione peroxidase. Glutathione peroxidase is the body's major antioxidant and free radical scavenger. Glutathione plays a major role in the function of the immune system and for detoxification, particularly heavy metal detoxification. Glutathione also recycles vitamin C and E in the body which further supports health[13].

MIXED CAROTENOIDS

Mixed carotenoids and the immune system: As an antioxidant, beta carotene has a beneficial effect on the immune system. This is particularly the case in elderly individuals who typically have a reduced immune function[14]. Beta carotene enhances natural killer cell activity in the elderly by providing antioxidant protection to the immune cells.

Mixed carotenoids as an antioxidant: The whole spectrum of carotenoids used provide antioxidant protection in the body and support immune function. Many of the carotenoids work synergistically with each other, enhancing the overall function.

ANTIOXIDANTS

Antioxidant mechanism of action: Oxidants are highly reactive substances which are lacking an electron from their chain, making them unstable and liable to damage cells and DNA structures. The process of oxidation is where an atom loses one or more electrons. Oxidising agents accept electrons from electron donors known as antioxidants. Antioxidants give away electron to unstable molecules in a process called reduction. Intake of antioxidants, and internal antioxidant enzymes must be abundant enough to counteract the oxidation process within the body and protect cells from damage. Oxidants are produced through breathing, inflammation, infection and the consumption of alcohol and cigarettes as well as many other indigenous metabolic processes and exposure to many other environmental toxins.

Effect on health: Excess oxidants within the body can cause oxidative stress and damage to DNA, proteins and fats. Fats are particularly sensitive to oxidation. They are found in every cell membrane and oxidative changes can affect the performance of the cell membrane. DNA damage is also a major cause of diseases causes by oxidation. Damage to DNA affects cellular functions and genetic expression. Due to the negative impact on the body cells, oxidation remains the cause of many diseases including diseases of the respiratory tract as well as malignancies, inflammatory diseases, ageing and some viral infections[15].

WHY ARE AMINO ACID CHELATED MINERAL SUPERIOR?

Minerals chelated to amino acids have a greater absorbency within the gut compared to other forms of the minerals. Each mineral has a different stability within the gut and when joined to various compounds. Inorganic mineral forms such as oxides, sulphates and carbonates are not used effectively by the body. They are also disassociated from each other in the presence of stomach acid and can cause irritation to the gut. Amino acid chelated minerals however have a neutral charge, and an increased bond to each other allowing them to stay intact as they move further into the gut and bind to specific receptor sites, optimising mineral absorption.

ARE THERE ANY PRECAUTIONS BEFORE OR WHILE TAKING ONCE A DAY IMMUNE MULTI?

Once A Day Immune Multi is intended exclusively for use by adults and is not recommended for:

- Children
- Pregnant or lactating women

FEATURES

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- Complete 1 a day formula for immunity
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HEALTH NEEDS

IMMUNITY

SCIENTIFIC REFERENCES

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