T.R.I.-C-500 capsule

DESCRIPTION  Time Released Ingredients – a high-potency, 500 mg vitamin C; the sequenced release of active ingredient delivers continuous antioxidant power to tissues. Vegetarian.

FORMULATION  each capsule provides vitamin C, 500 mg, bound within special pellets that automatically and continuously release this antioxidant via the digestive tract throughout the day.

INDICATIONS  as a nutritional adjunct for managing the following conditions often linked to low vitamin C intake: seasonal symptoms; healing; physical and psychological stress including listlessness; diets low in fruits and vegetables. Additional indications: acute issues such as recovery from surgery; chronic exposure to toxins including smoking – primary and secondary smoke.

FEATURES  prolonged release vitamin C formulas provide a continuously raised bloodstream level of this strong antioxidant in humans. Each T.R.I.-500 capsule provides 500 mg (833% RDI) of vitamin C (ascorbic acid); shown effective at both preventing and reducing symptoms and fighting infections.

DIRECTIONS  normally one to two capsules daily with or without food and at the very first signs or irritated throat. For symptoms take one capsule every two to four hours thereafter, until symptoms subside. Capsules should not be opened but swallowed whole for most effective relief.

HOW SUPPLIED  as a clear gelatin capsule containing sequenced-release pellets of vitamin C; 60 or 120 count per bottle.

BACKGROUND  Common treatments to relieve symptoms include vitamin C (ascorbic acid, ascorbate) which has several decades of clinical history proving it effective for supporting a healthy immune response.

Current RDI for vitamin C - While the Recommend Daily Intake is currently a modest 60 to 90 mg, which is calculated as the minimum intake to only prevent serious human illness and harm, the amount of vitamin C which should be suggested to for case management is higher. The current, suggested RDI is also simply far below the level necessary to quickly provide relief. Such has been shown in a large study in a clinical setting where the doses given were from 3 to 6 grams per day with very successful results. This report is consistent with several earlier, smaller studies performed with fewer patients that were summarized and broadly distributed by the renowned L. Pauling.

Mechanisms of action - Many of the mechanisms for vitamin C assisted destruction of agents are understood. One critical process involves the peroxidation of the virus particle by protective neutrophil cells; the most common type of leukocytes (white blood cells of the immune system which rapidly increase in number during infection). Neutrophils and Natural Killer (NK) cells are the cells which engulf many types of viral and bacterial particles and then “digest” these by releasing powerful proteolytic enzymes (NK cells) and hypochlorous acid (bleach biosynthesized from hydrogen peroxide) into the intruders. Vitamin C protects the
tissues surrounding active neutrophils and NK cells from the deleterious effects of cytotoxins released during the phagocytic process. Neutrophils are most efficient at destroying infections in tissues with adequate levels of vitamin C but are prevented from proper function when tissue levels of C are low; efficient infection fighting requires high levels of vitamin C.

**Fatty acid oxidation** – vitamin C is oxidized during the biosynthesis of the fatty acid transport biochemical, L-carnitine. When tissues are deprived of L-carnitine due to vitamin C insufficiency, fatty acids can no longer be transported into the mitochondria and this key process for fat oxidation and energy production is shut down. By enhancing the transport and oxidation of fatty acids, L-carnitine helps maintain proper bloodstream levels of lipid particles. Adequate dietary intake of vitamin C helps maintain proper lipid levels by keeping L-carnitine levels as high as possible.

**Collagen biosynthesis** – vitamin C is an absolute requirement for two unusual amino acids critical for the biosynthesis of all members of the collagen protein family – key structural proteins in connective tissues, bones and portions of basement membranes. Vitamin C is enzymatically oxidized in large amounts during the biosynthesis of hydroxyproline from proline and hydroxyllysine from lysine, making adequate vitamin C intake a daily requirement. The hydroxyllysine in collagen is often specifically glycosylated by a vitamin C requiring enzyme, which then allows collagen to participate in basement membrane formation. People with low vitamin C intakes often exhibit pathologies of connective tissues and skin which can be simply corrected with more C7.

**In combinations and multivitamins** - vitamin C is recommended along with zinc for a number of common respiratory issues8. Zinc seems to inhibit binding to human cells, by out-competing foreign agents for specific cell binding sites, thus limiting spreading. This also allowing neutrophils and other leukocytes, more opportunity to find, engulf and destroy these invaders, thus speeding patient recovery.

**References**