



Citrus Bioflavonoids™

(500mg)

Stock #1646-4 (90 tablets)

Bioflavonoids, a term referring to biologically active flavonoids, are a large class of antioxidants found in the pulp and rinds of citrus fruits. Additional sources of bioflavonoids include vegetables, tea, flaxseed, whole grains and numerous herbs. More than 4000 varieties of flavonoids have been identified, many of which are responsible for the vibrant colors of flowers, fruits and leaves. Flavonoids have been reported to have antiviral, antiallergic, anti-inflammatory and anticancer activities. Flavonoids also function as antioxidants, preventing cell damage from oxidation by free radicals. In addition, the metal chelating properties of flavonoids suggest that they may play a role in diseases stemming from metal toxicity. Research has confirmed the ability of flavonoids to chelate both iron and copper ions, although results indicate a higher reducing capacity for copper ions than for iron ions.¹⁻⁵

Citrus bioflavonoids, in particular, are highly-effective antioxidants that have been shown to prevent free-radical cellular damage to blood vessel walls, reduce the tendency of blood clotting, and inhibit oxidation of LDL cholesterol. Multiple research studies confirm a diet high in bioflavonoids contributes to a reduced risk of heart disease. In fact, dietary intake of bioflavonoids tied with cigarette smoking as the second most important risk predictor of heart disease. Bioflavonoids also reduce inflammation and are extremely beneficial for treating vascular diseases such as varicose veins. In addition, bioflavonoids enhance the absorption and function of vitamin C.⁶⁻¹⁰

Each tablet of **Citrus Bioflavonoids** contains 500mg of vitamin C and 50mg of each of the following: lemon bioflavonoids, orange bioflavonoids, grapefruit bioflavonoids, hesperidin complex, rutin, and rose hips.

Vitamin C is an important anti-stress antioxidant and vital nutrient for adrenal function. Vitamin C is more highly concentrated in the adrenal cortex than in any other organ, and when the adrenals are under stress, vitamin C levels are depleted. Experimental and clinical evidence suggests that supplemental vitamin C in levels significantly greater than the RDA (recommended dietary allowance) can support adrenal function and decrease high cortisol levels—elevated cortisol levels suppress the immune system. Likewise, animal research has shown that megadoses of vitamin C (equivalent to several thousand milligrams in humans) significantly reduces stress-hormone levels and other indicators of emotional and physical stress, including adrenal gland enlargement and changes in the thymus and spleen.¹¹⁻¹⁷

Vitamin C is also essential for the manufacturing of collagen. Vitamin C helps improve vascular disorders by strengthening the collagen structures of the blood vessels to prevent hemorrhaging and easy bruising. Research indicates that a majority of patients with heart disease (70-80%) exhibit very low blood levels of vitamin C. A study published in the British medical journal *Lancet* provides evidence that vitamin C intake increases lifespan by reducing the chances of dying from cardiovascular disease. Furthermore, vitamin C is necessary for bone maintenance, especially since collagen forms the structural framework of bones. Several studies have shown that vitamin C improves the maintenance of bone mineral density in postmenopausal women. Research shows that vitamin C also exerts an anabolic or "building-up" effect on cartilage.^{6,7,18-20}

Hesperidin is a citrus bioflavonoid that possesses significant anti-inflammatory and analgesic (pain-relieving) effects. In fact, a deficiency of hesperidin in the diet has been linked with abnormal capillary leakiness, as well as pain in the extremities causing aches, weakness and night leg cramps. Hesperidin is used in Europe for the treatment of venous insufficiency and hemorrhoids. Hesperidin may also help combat allergic reactions by blocking the release of histamine. In addition, multiple animal studies have shown that hesperidin significantly increases HDL cholesterol, while reducing total lipid and triglyceride plasma levels. Furthermore, in vitro studies have shown that flavonoids such as hesperidin and rutin are among the most potent naturally occurring inhibitors of aldose reductase, an enzyme involved in the formation of diabetic cataracts.^{1,21-24}

Rutin is a flavonoid found in buckwheat, black tea, and several fruits, including apricots, cherries and prunes. Research indicates that rutin is an antioxidant that can effectively scavenge superoxide radicals and prevent these substances from damaging DNA. Rutin has also been shown to inhibit the oxidation of LDL cholesterol, thus indicating a possible mechanism for the beneficial effects of fruits and vegetables on heart disease. Rutin appears to have some anti-inflammatory and anticancer effects and may be useful for treating venous edema (fluid accumulation typically occurring in the ankle region) and for strengthening capillaries to prevent easy bruising.

Rutin may also help prevent the oxidation of vitamin C, thus prolonging the vitamin's protective effects.^{1,22,25-28}

Rose hips, the dried fruit of roses, are a rich source of vitamin C and the vitamin C cofactors (flavonoids) needed to increase capillary circulation and reduce capillary fragility and permeability—a condition weak capillary walls lead to leakage of blood components, causing easy bruising and, in more serious cases, hemorrhages in various body tissues. Rose hips also contain astringent tannins, which tighten tissues and slow the discharge of fluids—effects that are beneficial in the treatment of diarrhea, gastritis, hemorrhoids and varicose veins. Rose hips are commonly recommended for the prevention of colds, chills, influenza-type infections, infectious diseases and vitamin C deficiencies. Furthermore, clinical trials conducted in Germany have shown that rose hips significantly reduced pain and improved hip flexion in patients suffering from osteoarthritis. Researchers concluded that the anti-inflammatory effects of rose hips also make it a useful natural treatment for osteoarthritis.²⁹⁻³⁵

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