



C Plus Supreme



Supports a healthy immune and stress response



5 g =
1 level scoop

OVERVIEW

- > Delivers 2.043 g of ascorbic acid per serve
- > Provides PureWay-C™, a clinically studied form of vitamin C with an exceptional absorption and bioavailability profile
- > Includes a comprehensive range of supporting antioxidant ingredients hesperidin, rutoside, bioflavonoids, quercetin and annatto tocotrienols

Active Ingredients per 5 gm dose	
Ascorbic acid (PureWay-C™)	1.25 g (1250 mg)
Calcium ascorbate dihydrate	680.85 mg
Equivalent ascorbic acid	562.5 mg
Magnesium ascorbate monohydrate	139.3 mg
Equivalent ascorbic acid	125 mg
Ascorbyl palmitate	100 mg
Equivalent ascorbic acid	42.5 mg
<i>Phyllanthus emblica</i> ext dry conc.	125 mg
From dry fruit	6.25 g
Equivalent ascorbic acid	62.5 mg
Total Ascorbic Acid	2.043 g (2042.5 mg)
<i>Bixa orellana</i> ext dry conc.	166.65 mg
From dry seed	55.5 g
Equivalent total tocotrienols	50 mg
Hesperidin	100 mg
Rutoside	100 mg
Citrus bioflavonoids extract	50 mg
Quercetin dihydrate	25 mg

Pack Size	150 g
Serving Per Pack	30 serves

Designed and packed in Australia from imported ingredients.

Excipients	
Ammonium glycyrrhizinate	Modified food starch
Citric acid	Maltodextrin
Colloidal anhydrous silica	Stevia rebaudiana
Hypromellose	Thaumatococcus
Silicon dioxide	Sodium bicarbonate
Tartaric acid	Natural orange flavour

Directions for Use
Adults: take 5 g (1 level teaspoon) mixed with 200 mL water daily or as directed by your healthcare professional.

Allergen Information
No added: Gluten, dairy, lactose, soy or nuts. Contains: Sulfites.

Prescribing Information:
Caution is advised regarding use of vitamin C in individuals with iron overload sensitivities including erythrocyte glucose-6-phosphate dehydrogenase deficiency, haemochromatosis, thalassaemia major or sideroblastic anaemia. ¹

Warnings:
If symptoms persist, talk to your health professional. Vitamin supplements should not replace a balanced diet.



No Added Soy



No Added Gluten



No Added Dairy



No Added Lactose



No Added Nuts



Vegan Friendly

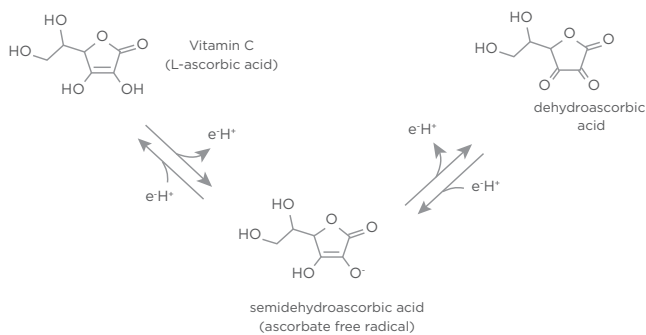


EDUCATION

Endogenous roles of vitamin C

Vitamin C, a nomenclature that encompasses both ascorbic acid and its oxidised form dehydroascorbic acid, is an essential water-soluble vitamin that the body requires from exogenous sources due to its low endogenous storage capacity and inability to enzymatically synthesise it (because of the absence of L-gulonolactone oxidase enzyme).^{2,3}

Figure 1: Linus Pauling Institute: Vitamin C and dehydroascorbic acid chemical structures.



While vitamin C is widely available in many fruits and vegetables, inadequate levels (ranging from serum levels <11.4 μmol/L [severe deficiency], <23 μmol/L [marginal deficiency] to <40-50 μmol/L [suboptimal]) are relatively prevalent across the average Western population, with vitamin C being the fourth most common nutrient deficiency in the United States.^{2,4,5}

Risk factors associated with inadequate and deficient levels include suboptimal nutrient (macro- and/or micronutrients) dietary intake patterns, gastrointestinal conditions, older age, smoking, alcohol, environmental pollution, significant physical or psychological stress, medication use (aspirin, indomethacin, oral contraceptive pill, tetracyclines, corticosteroids) and the presence of genetic polymorphisms.^{3,4,6}

Such factors influence the complex endogenous pharmacokinetics of vitamin C, with absorption, transport, metabolism and elimination regulated by intestinal absorption, tissue concentrations and renal reabsorption.^{3,5} Depending on the presence of risk factors associated with inadequate endogenous vitamin C concentrations, following oral intake plasma levels increase until reaching repletion / saturation levels (60-80 μmol/L).^{3,5}

In addition to the broad range of common risk factors associated with suboptimal or deficient levels, the involvement of vitamin C in over 150 metabolic processes emphasises the importance of maintaining optimal levels to support normal antioxidant, immune, cardiovascular, connective tissue, stress responses and functional health in the body.^{1,4}

Antioxidant

The body is continually exposed to free radicals from those generated by endogenous metabolic processes and exogenous environmental sources, and optimal vitamin C levels are required to ameliorate the impact of oxidative damage on body cells and tissues (proteins, lipids, carbohydrates, and nucleic acids) via both direct and indirect mechanisms.⁴ Direct mechanisms include donating electrons and neutralising reactive oxygen and nitrogen species, while indirect mechanisms include mitigating the impact of hydrogen peroxide, regenerating endogenous vitamin E and supporting antioxidant enzyme system function.^{4,6,7,8} Vitamin C's antioxidant mechanisms also underlie its effect on other body systems and tissues.

Immune

Vitamin C helps the immune system to maintain homeostasis and generate appropriate responses when exposed to infectious pathogens via multiple mechanisms (see table 1).

Table 1: Vitamin C immune system mechanisms⁵

IMMUNE COMPONENT	MECHANISM
Epithelial barriers	<ul style="list-style-type: none"> • Supports collagen synthesis and integrity. • Protects against reactive oxygen species damage. • Influences keratinocyte and fibroblast activity. • Supports wound healing.
Phagocytes (neutrophils, macrophages)	<ul style="list-style-type: none"> • Antioxidant. • Supports chemotaxis and phagocytosis. • Facilitates apoptosis and clearance.
B and T-lymphocytes	<ul style="list-style-type: none"> • Supports differentiation and proliferation. • Facilitates production of antibodies.
Inflammatory mediators	<ul style="list-style-type: none"> • Modulates cytokine synthesis. • Influences histamine levels.

Cardiovascular

Vitamin C's antioxidant mechanisms support cardiovascular system health by inhibiting low-density lipoprotein oxidation, supporting healthy endothelial function and homocysteine and inducible nitric oxide synthase metabolism.^{1,9,10}

The nervous system and the stress response

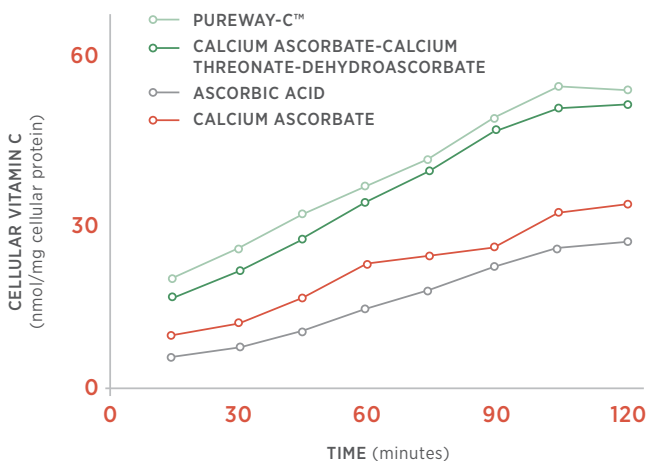
Stress, both physical and psychological, is a normal part of life and the body responds to stress with cascade of complex and coordinated sympathetic nervous and hypothalamic-pituitary-adrenal system processes.⁸ Optimal levels of vitamin C are required to support this stress response via its involvement in mitochondrial energy synthesis, adrenal glucocorticoid and catecholamine synthesis (promoting a healthy cortisol response) and antioxidant effects/mechanisms ameliorating the central nervous system's particular sensitivity to oxidative stress.^{2,4,8,11}

Connective tissue

Vitamin C is integral for the maintenance of normal connective tissue, bone and joint health as a consequence of its role in collagen synthesis and stabilisation (as a lysyl and prolyl hydroxylase cofactor), bone matrix formation and repair (promotes osteoblast differentiation, modulates chondrocyte gene expression) and antioxidant activity (reducing bone resorption).^{2,4,6,12}

PureWay-C™

PureWay-C™ is a clinically studied form of vitamin C comprised of a lipid-vitamin C complex that has demonstrated excellent absorption and bioavailability.^{13,14} Clinical studies involving healthy human subjects have shown that the proprietary fatty acid formulation allows vitamin C to rapidly enter the cells by acting as a carrier to facilitate intestinal absorption, cellular uptake and tissue distribution without effects commonly associated with concentrated doses of vitamin C.^{13,14}



References supplied on request.



PureWay-C™ and the PureWay-C™ logo are trademarks of One Innovation Labs, LLC.

Designs for Health Quality Guarantee

Designs for Health medicines that are listed on the Australian Register of Therapeutic Goods will display an AUSTL number on the label. Listed medicines in Australia need to be manufactured according to legislated standards set out in Therapeutic Goods Order 101. TGO101 legislation sets out minimum quality standards for medicines supplied in Australia that display an AUSTL number. It mandates testing for:

- Impurities such as heavy metals (including lead, mercury, cadmium and arsenic), pesticides and residual solvents
- Dissolution (to ensure the capsule will dissolve once taken)
- Uniformity (to ensure that every capsule is the same)

Final assay testing is also performed to ensure that what we have on the label is in each capsule, and microbiological testing is performed to ensure that no microbial contamination has occurred during the encapsulation and packing process.