

Nitric Oxide Ultra (stick packs)

Introduced 2014



What Is It?

Nitric Oxide Ultra (stick packs) combines citrulline, clinically researched cranberry and grape seed extracts, taurine, magnesium and vitamin C in convenient great-tasting single-serving stick packs to enhance nitric oxide production, blood flow and vascular health.*

Uses For Nitric Oxide Ultra (stick packs)

Healthy blood flow: Nitric Oxide Ultra (stick packs) offers a synergistic blend of ingredients designed to support healthy blood flow by targeting nitric oxide production and flow-mediated dilation in a convenient powder packet form. The formula offers CranLoad™, a novel fruit blend developed as part of an extensive research program with the Institute of Nutrition and Functional Foods (INAF) and Université Laval in Quebec, Canada. CranLoad™ delivers a unique cranberry and grape seed blend that has been the subject of several trials. Cranberries and grapes are particularly generous sources of proanthocyanidins and polyphenols. In addition to being powerful antioxidants, these compounds offer specific vascular support mechanisms that are associated with enhanced endothelial function. Research indicates that CranLoad™ provides statistically significant support for healthy flow-mediated dilation (FMD), an effect similar to arginine administration. FMD reflects blood vessel dilation mediated by nitric oxide synthase (NOS), an enzyme that

generates the endogenous vasodilator, nitric oxide. In a pilot study, CranLoad™ supplementation increased FMD within 30 minutes and remained elevated for 2 hours (Figure 1). The peak increase in brachial artery diameter following consumption of the CranLoad™ beverage was 2.8% at 60 minutes. A similar physiological effect has been demonstrated with arginine in which supplemental arginine at doses ranging from 3-21 g increased FMD on average 1.98%.

Citrulline is included to support nitric oxide production by NOS in the blood vessel endothelium and other tissues. Research indicates that citrulline increases plasma arginine in a dose dependent manner and to a greater degree than arginine supplementation. Unlike arginine, citrulline is not metabolized before it reaches systemic circulation. In a double-blind, randomized, placebo-controlled study, citrulline promoted arterial flexibility and the production of serum nitric oxide (NO) and NO metabolic products as compared to placebo. Taurine is included for its multifaceted vascular support properties. Research suggests that taurine promotes vascular cell health, cytokine balance, and nitric oxide production. In a randomized double-blind crossover trial, supplementation with taurine for two weeks promoted arterial flexibility and flow mediated dilation. Magnesium promotes healthy blood flow by supporting nitric oxide production, calcium channel activity, and endothelial function. Ascorbic acid is included to enhance nitric oxide activity and provide blood vessel endothelial antioxidant protection.

Increased FMD with CranLoad™

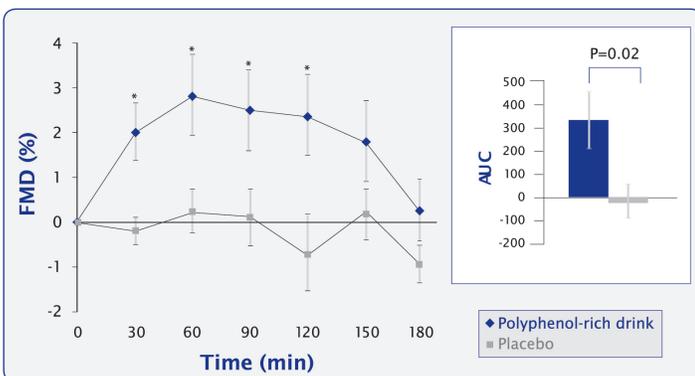


Figure 1. Flow-mediated (FMD) variation from baseline after intake of the polyphenol-rich drink and placebo; *P<0.05 versus baseline and placebo at specified time points. The insert presents the area under the curve (AUC) of the change in FMD over time above baseline (time 0) values. The Y axis is in % min.*

(continued)

*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

Athletic Recovery: Research indicates that citrulline and CranLoad™ promote blood flow and lactate clearance during high-intensity exercise, offering a capacity for enhanced recovery. In a double-blind, placebo-controlled, pilot study, the effects of pre-exercise CranLoad™ administration was investigated in high-profile athletes. The athletes performed a 3 km stationary cycling time trial after consuming either CranLoad™ or a placebo. Results of the pilot study show a significant decrease in blood lactate in those athletes consuming CranLoad™ compared to placebo (Figure 2). This study supports the concept that CranLoad™ enhances blood flow and is associated with enhanced lactate clearance during high-intensity exercise. This outcome suggests enhanced recovery.*

	CranLoad®	Placebo	% diff	P
Lactate (mmol/L)				
Post warm up	1.7 ± 0.5	2.4 ± 1.2	-30.1%	0.01
Post 3 km TT, 0 min	12.1 ± 1.4	13.1 ± 2.1	-7.9%	0.03
Post 3 km TT, 2.5 min	14.1 ± 0.8	14.8 ± 0.9	-4.8%	0.06
Post 3 km TT, 5 min	13.7 ± 0.7	14.1 ± 0.7	-2.5%	0.06

Figure 2. Effects of CranLoad™ on blood lactate pre- and post-exercise. Data from the pilot study reveals a 30% reduction in blood lactate following warm up, and reduced lactate is maintained throughout exercise.*

What Is The Source?

CranLoad™ is derived from a proprietary blend of cranberry extract derived from *Vaccinium macrocarpon* fruit and grape seed extract derived from *Vitis vinifera*. L-Citrulline is derived from corn glucose fermentation. Vitamin C and citrate are derived from corn dextrose fermentation. Magnesium is derived from earthen ore. Taurine is synthetic.

Recommendations

Pure Encapsulations recommends 1-2 stick packs daily, in divided doses, mixed with 8 oz water, between meals.

Are There Any Potential Side Effects Or Precautions?

If pregnant or lactating, consult your physician before taking this product. In research studies, grape seed extract has been associated with headache, abdominal pain, sore throat, nausea and cough, but these effects occur at rates similar to placebo. Consult your physician for more information.

Are There Any Potential Drug Interactions?

Cranberry and grape seed may be contra-indicated with blood thinning medications. Consult your physician for more information.

Nitric Oxide Ultra (stick packs)

each stick pack (5.7 g) contains v

Vitamin C (as ascorbic acid)..... 150 mg
 Magnesium (as magnesium citrate)100 mg
 L-Citrulline (free-form).....3,000 mg
 Taurine.....1,000 mg
 CranLoad™ proprietary blend..... 65 mg
 providing cranberry (*Vaccinium macrocarpon*) extract (fruit) and
 grape (*Vitis vinifera*) extract (seed)
 Stevia.....20 mg
 other ingredients: natural watermelon flavor, maltodextrin, luoo han
 guo (*Momordica grosvenorii*) extract (fruit)
 Serving size: 5.7 g (1 stick pack)
 Servings per container: 30

Take 1-2 stick packs daily, in divided doses, mixed with 8 oz water, between meals.

CranLoad™ is a trademark used by Pure Encapsulations under license.