UNIQUE PROPERTIES
Patient One Homocysteine Cardioplex supplies evidence-backed, broad-spectrum nutritional support for maintaining homocysteine levels already within normal range. Plasma homocysteine can be a serious cardiovascular, endothelial and renal risk factor. Certain B vitamins promote healthy homocysteine; however, B vitamin absorption can decline significantly with age and some patients do not respond to B-6 supplementation. Further, some patients may have genetic enzyme deficiencies that may impair homocysteine metabolism. Homocysteine Cardioplex overcomes these challenges by supplying highly absorbable and bioavailable forms of key B vitamins along with diverse methyl donor nutrients. As it opens multiple pathways for catalyzing homocysteine remethylation to methionine, Homocysteine Cardioplex balances plasma homocysteine levels and promotes overall cardiovascular wellness.

KEY INGREDIENTS
Quatrefolic®, A reduced and active form of folate (vitamin B-9), Quatrefolic, the advanced 5-methyltetrahydrofolate (5 MTHF) form, is bound with natural glucosamine salt to promote easy and complete absorption. Considered the “Fourth Generation” folate, Quatrefolic is significantly more stable and bioavailable than 5 MTHF that is bound to calcium salt. Because Quatrefolic is active when it enters the body, it is better able to influence pathways for homocysteine metabolism. Quatrefolic’s pre-converted status may be especially beneficial for patients with a genetic defect of the folate-converting enzyme methylenetetrahydrofolate reductase.

Vitamins B-6 and B-12:
Supplying vitamins B-6 (as pyridoxal-5-phosphate) and B-12 (as Dibencozide, Co-Enzyme B-12), Homocysteine Cardioplex provides two extensively researched clinical standards for nutritional homocysteine management. B-6 modulates homocysteine’s conversion into cystathione, a key step in its excretion. B-12 is an important donor for enabling homocysteine to be remethylated into methionine. B-12 also works in concert with the coenzyme methionine synthase, creating a primary pathway of remethylation of homocysteine.

N-Acetyl L-Cysteine (NAC):
A free-form amino acid, N-Acetyl L-Cysteine (NAC) is believed to block homocysteine formation at plasma protein binding sites while encouraging efficient elimination of homocysteine.

PATIENT BENEFITS
• Promotes overall cardiovascular health
• Modulates homocysteine’s metabolic pathways
• Supports homocysteine conversion into methionine and cysteine
• Optimizes endothelial health and function
via urinary excretion. Studies have suggested NAC appears to be especially beneficial in promoting healthy homocysteine levels in patients who have undergone kidney transplants. As it works to promote healthy endothelial function, NAC offers further support for overall cardiovascular wellness.

**Trimethylglycine (as betaine anhydrous):**
Trimethylglycine, also known as betaine, is considered a key player in homocysteine metabolism and has long been administered as a methyl donor for remethylating homocysteine back into methionine. Trimethylglycine (TMG) betaine is a necessary cofactor in the secondary pathway of homocysteine metabolism. Betaine is typically administered to patients who are not responsive to pyridoxine (B-6) and other B vitamins.

**Magnesium as TRAACS®:**
An acronym for The Real Amino Acid Chelate System, TRAACS is a patented range of proprietary mineral amino acid chelates. TRAACS magnesium (Magnesium Glycinate Chelate Buffered Powder) is an organic mineral form known for its safety and ease of absorption. Featuring a biological advantage in assimilation, TRAACS requires no conversion: It is an active cofactor for promoting efficient homocysteine-to-methionine conversion. Early research also suggests magnesium may support arterial health and play a role in modulating production of the destructive MMP-2 enzyme, which has been linked with homocysteine issues and collagen degradation.

**RESEARCH**

- A meta-analysis of 12 randomized trials that included 1,114 study subjects found that dietary folic acid appeared to reduce blood homocysteine levels by 25%, while vitamin B-12 was associated with another 7% reduction. Researchers concluded that daily supplementation with 0.5-5 mg folic acid and .5 mg vitamin B-12 might be able to reduce blood homocysteine concentrations by 25%-33%.

- In one placebo-controlled study, subjects took betaine, folic acid with placebo, or just a placebo every day for six weeks and were then evaluated for their homocysteine levels. At the study’s end, researchers concluded that betaine reduced fasting plasma homocysteine concentration by ~11%, leading researchers to suggest betaine appears to be highly effective in blocking a rise in plasma homocysteine levels after methionine intake.

- In another study, 60 patients with renal problems undergoing dialysis were given NAC 600 mg, folic acid 5 mg or placebo every day, intravenously, for eight weeks. At study’s end, researchers reported that NAC was associated with significant improvements; homocysteine levels dropped 88.3% in the NAC group versus 23.7% in the placebo group.

**REFERENCES**


**Supplement Facts**

**Schematic Representation of Homocysteine Metabolism**

**REFERENCES**