Arginine

An amino acid for a healthy heart

- A natural nitric oxide precursor
- Protects the heart from high blood sugar levels
- Helps in cellular energy production

Gluten Free  Vegan  Non-GMO  Circulation
Detoxification Heart Health Sports Nutrition

AOR Code  Variant
AOR04054  180 VEGI-CAPS

Details
Arginine is an amino acid with many important health benefits, but is best known for its key role in the production of nitric oxide, a potent factor in relaxing blood vessels and promoting blood flow. By increasing nitric oxide levels, Arginine has the ability to prevent plaque and blood clot formation and reduce the stickiness of platelets. Clinical studies have found high doses of arginine beneficial for many cardiovascular conditions including high blood pressure, peripheral vascular disease and angina.

In addition to its effects on blood vessels, arginine enhances the release of human growth hormone (hGH), enhances insulin sensitivity, supports liver detoxification, and has been shown to support interstitial cystitis, sperm formation, and treatment of brain injuries.

Label Info

Discussion
Arginine is a conditionally essential amino acid and the main precursor in the body in the synthesis of nitric oxide (NO), now accepted to be the “endothelium-derived relaxation factor (EDRF).” The endothelium makes up the lining of the heart and blood vessels.

Product Variation

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Supplements Facts
Serving Size: 1 Capsule  Amount
L-Arginine HCl  600 mg

Non-medical ingredients:
microcrystalline cellulose, sodium stearyl fumarate. Capsule: hypromellose.

Guarantees
AOR™ guarantees that all ingredients have been declared on the label. Contains no wheat, gluten, corn, nuts, sesame seeds, sulphites, mustard, soy, dairy, eggs, fish, shellfish or any animal byproduct.

Adult Dosage
Take 3 capsules one to three times daily on an empty stomach, or as directed by a qualified health care practitioner.

Cautions
Do not use if you have had a myocardial infarction (heart attack), if you have asthma or if you are pregnant or breastfeeding. Consult a health care practitioner prior to use if you are taking cardiovascular medications, potassium-increasing drugs or sildenafil.

Source
Biofermentation

Main Application
Supports exercise capacity
Nitric oxide production

Disclaimer
The information and product descriptions appearing on this website are for information purposes only, and are not intended to provide or replace medical advice to individuals from a qualified health care professional. Consult with your physician if you have any health concerns, and before initiating any new diet, exercise, supplement, or other lifestyle changes.

Research
Background
The amino acid Arginine was first characterized in 1886 by the Swiss Chemist Ernst Schulze. Little research was conducted subsequently, however, since there was widespread belief that adequate amounts of arginine could be synthesized in the body, which undoubtedly delayed further research. In the 1930’s, research showed that arginine deprivation decreased the rate of growth and/or led to severe metabolic disorders and even death.

In the last forty years, numerous studies have emphasized the diverse range of arginine’s physiological effects including release of growth hormone, glucagon and insulin, amino acid detoxification and for the synthesis of creatine – an important compound for generating ATP, or
“cellular currency.” Arginine is a physiological precursor of nitric oxide, a potent vasodilator. In the mid 80's the importance of nitric oxide (NO) as a ubiquitous signaling molecule was highlighted, which helped explain arginine's diverse effects.

Arginine is beneficial for improving the function of the cardiovascular system due to its nitric oxide-producing ability which reduces platelet aggregation and blood viscosity, improves blood flow and helps repair vascular injury. Arginine is considered a promising therapeutic agent for reducing the risk of restenosis and improving the outcome following heart transplantation and coronary bypass.

In people with poor blood sugar control, it is also used for reversing the effects of high vascular glucose concentration. Studies also demonstrate the benefits of arginine for supporting male infertility, interstitial cystitis and liver and brain injury.

**Research**

**Cardiovascular Health**

An interesting study by Boger and colleagues compared the effects of a standard cholesterol drug called lovastatin (Mevacor) with the effects of arginine in cholesterol-fed rabbits. Lovastatin reduced cholesterol by 32%, but had only a weak effect on the formation of plaque. Interestingly, arginine had no effect on cholesterol yet completely blocked the formation of plaque.

How did it do that? Arginine is reported to reduce the adhesion of monocytes to the endothelial cells in coronary patients and in smokers. Another mechanism through which arginine may be acting is that NO has potent free radical quenching properties and hence acts as an antioxidant.

Numerous experimental and clinical studies have demonstrated the therapeutic potential of high dose arginine to support a broad spectrum of cardiovascular issues by reducing blood vessel damage and restoring blood vessel function, including peripheral vascular disease, angina and the metabolic syndrome.

A small randomized, double blind, placebo-controlled study demonstrated that 6 grams of arginine improved exercise capacity in angina patients.

**Other Benefits**

**Interstitial cystitis**

A dose of 1.5g daily for 6 months in a clinical trial resulted in a significant decrease in urinary voiding discomfort and diminished abdominal and vaginal/urethral pain. Urinary frequency was significantly decreased.

**Spermatogenesis**

Arginine has been used for treating male infertility by improving spermatogenesis. Since arginine is a precursor of NO, and NO is a potent vasodilator, it is conceivable that arginine would be of benefit in erectile dysfunction much like the mechanism of action of Viagra.
Liver and brain injury
Animal studies have reported benefits in acute liver and brain injuries.

Market Trends
Arginine is most commonly used to enhance exercise capacity, to improve nitric oxide production, in cardiovascular disorders and for erectile dysfunction.

AOR Advantage
AOR offers a high quality arginine supplement to enhance cardiovascular and overall health.

References


Abstract
Arginine and immunity.

Popovic PJ, Zeh HJ, Ochoa JB.

For many years, dietary arginine supplementation, often combined with other substances, has been used as a mechanism to boost the immune system. Considerable controversy, however, exists as to the benefits and indications of dietary arginine due in part to a poor understanding of the role played by this amino acid in maintaining immune function. Emerging knowledge promises to clear this controversy and allow for arginine’s safe use. In myeloid cells, arginine is mainly metabolized either by inducible nitric oxide (NO) synthases (iNOS) or by arginase 1, enzymes that are stimulated by T helper 1 or 2 cytokines, respectively. Thus, activation of iNOS or arginase (or both) reflects the type of inflammatory response in a specific disease process. Myeloid suppressor cells (MSC) expressing arginase have been described in trauma (in both mice and humans), intra-abdominal sepsis, certain infections, and prominently, cancer. Myeloid cells expressing arginase have been shown to accumulate in patients with cancer. Arginase 1 expression is also detected in mononuclear cells after trauma or surgery. MSC efficiently deplete arginine and generate ornithine. Through arginine depletion, MSC may control NO production and regulate other arginine-dependent biological processes. Low circulating arginine has been documented in trauma and cancer, suggesting that
MSC may exert a systemic effect and cause a state of arginine deficiency. Simultaneously, T lymphocytes depend on arginine for proliferation, zeta-chain peptide and T-cell receptor complex expression, and the development of memory. T-cells cocultured with MSC exhibit the molecular and functional effects associated with arginine deficiency. Not surprisingly, T-cell abnormalities, including decreased proliferation and loss of the zeta-chain, are observed in cancer and after trauma.

**Platelet nitric oxide synthesis in uremia and malnutrition: A role for l-arginine supplementation in vascular protection?**


Brunini TM, Mendes-Ribeiro AC, Ellory JC, Mann GE.

L-arginine is the physiological precursor for nitric oxide (NO) synthesis, and availability and transport of l-arginine modulate the rates of NO biosynthesis in circulating blood cells and the vasculature. NO is involved in many vascular functions such as vasodilation and inhibition of platelet aggregation and adhesion. We have established that reduced plasma l-arginine and NO production and increased tumour necrosis factor-alpha (TNF-alpha), fibrinogen, and C-reactive protein levels in malnourished uremic patients are associated with increased aggregability of platelets. Our findings may explain the increased cardiovascular mortality in patients with deficient nutritional status, leading to inflammation, oxidative stress, impaired l-arginine-NO signalling, and platelet activation. The aim of this review is to evaluate whether disturbances in the l-arginine-NO signalling pathway in ... are affected by malnutrition and inflammation. We have included a brief overview of membrane transporters mediating influx of l-arginine and other cationic amino acids, as these transporters are involved in the potential benefits of l-arginine supplementation and platelet function in malnourished uremic patients.