

Arginine

Support For Protein Synthesis



- Arginine Is a Conditionally-Essential Amino Acid Important for Immune Function
- Arginine and Ornithine Are Active in the Liver's Detoxification and Elimination Pathways
- Both Arginine and Ornithine Contribute to Protein Synthesis and Creatine Production
- Arginine Promotes Normal Sexual Functioning and Sperm Health
- Both Amino Acids Encourage Proper Wound Healing and Thymic Functioning

Liver Detoxification

In the detoxification pathway known as the urea cycle, ornithine, like arginine, is essential. Arginine is required to stimulate the activity of the first enzyme of the cycle (*carbamyl phosphate*) and thus start the cycle. The whole cycle is required to remove excess ammonia – a byproduct of protein metabolism – from the tissues. Ammonia is toxic to the brain and the liver and must be excreted from the body in the urine. The urea cycle more generally controls the transport, storage and excretion of nitrogen. Because of this, arginine and ornithine exert influence over how other amino acids are used physiologically.

Heart Health

Some evidence links arginine to proper cholesterol and insulin metabolism. The most notable benefit is with regard to support of blood pressure regulation by means of improved nutritional support for nitric oxide production. This may be especially important to circulation within the brain.

Usage and Safety

Take 1 to 2 tablets of Arginine 1000 or 1 to 6 capsules of Arginine + Ornithine daily. Usage may be modified as directed by your qualified health consultant. Do not use if pregnant or lactating or experiencing a herpes virus infection.

References

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More recently, the focus of research has shifted to how arginine acts as a building block for the production of the chemical known as nitric oxide (NO). Nitric oxide is intimately involved in the regulation of blood pressure, the control of muscular activity and in regulating erections in males. Nitric oxide has a place in the woman's sexual response as well. Supplemental arginine allows the body to respond fully to the physiologic signals which control sexual arousal. In light of this information, it is interesting that arginine exists in a free state in garlic and ginseng, two famous sexual tonics.

Arginine has both old and new roles in promoting the sexual health of both men and women. In men, adequate arginine levels long ago were discovered to be supportive of the health and motility of sperm. Similarly, dietary experiments with female animals demonstrated that arginine is important for proper ovarian weight and normal ovulation. Arginine, in other words, supports fertility in both sexes.

Support For Sexual Health

Probably more important to athletes is the fact that the liver naturally produces the short-term energy molecule creatine from arginine and glycine. Creatine must constantly be replenished in muscle, and therefore having on hand adequate amounts of arginine is crucial to reducing recovery time and maximizing gains from training. Other high-energy compounds found in muscle, including guanidophosphate and phosphoarginine, also depend upon and are derived from arginine.

Another nutritional use for arginine and ornithine is to support the interaction of the hypothalamus and the pituitary in the role of these organs in producing and releasing growth hormone (GH). As a compound which helps to improve the release of GH, ornithine is roughly twice as effective as is arginine.

Under such conditions, there is a greater rate of protein turnover in the body, and therefore there is also a greater need for arginine and ornithine to support protein synthesis.

Arginine is found in meat, eggs, milk products, and in nuts and seeds, such as pecans, cashew nuts, almonds, and plentiful in dairy products, meat, and fowl. Little of either amino acid is supplied by cereal grains. One reason that very low protein diets are often associated with less than optimal immune functioning is that, unless such diets are very carefully selected, they will tend to be poor sources of arginine and ornithine.

Much of the present knowledge regarding arginine and ornithine comes from experiments in which it was discovered that supplemental arginine reduced the weight loss associated with the trauma of large wounds, surgery and burns. Recovery from injury and physical trauma was shown to place a large demand upon the available sources of arginine. An interesting finding which linked arginine to immune functioning was the discovery that in both injured and uninjured animals, supplemental arginine increased both the size and the activity of the thymus gland. Various research-ers subsequently came to view arginine as being a safe nutritional support for immune function, healing and thymic support, particularly under conditions of stress. Under such conditions, there is a greater rate of protein turnover in the body, and therefore there is also a greater need for arginine and ornithine to support protein synthesis.



The 1-2 Punch for Protein and Creatine Synthesis

Arginine is essential in humans during the early phase of active growth. Sometime after infancy and early childhood, the body develops the ability to manufacture arginine from the amino acid citrulline through a process which requires aspartic and glutamic acid. Under conditions of elevated physical stress, such as during tissue repair, the pathway to the body's synthesis of arginine may not keep up with demand. In such times, additional arginine must come from the diet for optimal health. For this reason, arginine is sometimes called a "conditionally essential" amino acid. The body uses arginine to produce ornithine which, in turn, can be used to produce additional citrulline and glutamic acid.

