

From our friends at "Back to Herbs"



(Non-Essential) Amino Acids

Amino acids play central roles both as building blocks of proteins and as intermediates in metabolism. The 20 amino acids that are found within proteins convey a vast array of chemical versatility. Humans can produce 10 of the 20 amino acids. The others must be supplied in the food. Failure to obtain enough of even 1 of the 10 essential amino acids, those that we cannot make, results in degradation of the body's proteins—muscle and so forth—to obtain the one amino acid that is needed. Unlike fat and starch, the human body does not store excess amino acids for later use—the amino acids must be in the food every day.



The amino acids that we can produce ("non-essential") are alanine, asparagine, aspartic acid, cysteine, glutamic acid, glutamine, glycine, proline, serine, taurine, and tyrosine. The essential amino acids are arginine (required for the young, but not for adults), histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine. These amino acids are required in the diet. Plants, of course, must be able to make all the amino acids. Humans, on the other hand, do not have all the enzymes required for the biosynthesis of all of the amino acids.

In Nature's Sunshine Muscle Repair and Structural Support, 3 non-essential amino acids (manufactured in the body from essential amino acids required and acquired from foods consumed) are:

L-Carnitine for fat metabolism, L-Taurine for heart and bile, L-Glycine for body protein.

Most amino acids exist in either the D or L form. These forms are the mirror reverse images of each other. The L form represents the natural type found in living plants and animal tissues. The L form is used in human protein structures and is more compatible to human biochemistry than the D form.

Carnitine (L-carnitine)

Carnitine is a nutrient that helps the body turn fat into energy. It is produced by the body in the liver and kidneys and stored in the skeletal muscles, heart, brain, and sperm. Usually, the body can make all the carnitine it needs. Some people, however, may be deficient in carnitine because their bodies cannot make enough carnitine or transport it into tissues so it can be used.

Carnitine has been proposed as a treatment for many conditions because it helps

reduce oxidative stress. Some of the conditions carnitine may help treat are serious, and in those cases, you should take the supplement under the supervision of your doctor, as an adjunct therapy to conventional medicine.

Peripheral Vascular Disease

Decreased blood flow to the legs from atherosclerosis (plaque build up) often causes an aching or cramping pain in the legs while walking or exercising. This pain is called intermittent claudication, and the diminished blood flow to the legs is called peripheral vascular disease (PVD). A number of studies shows that carnitine can help reduce symptoms and increase the distance that people with intermittent claudication can walk.

Diabetic Neuropathy

When high blood sugar levels damage nerves in the body, especially the arms, legs, and feet, the condition is called diabetic neuropathy. Some small preliminary studies suggest acetyl-L-carnitine may help reduce pain and increase normal feeling in affected nerves. It is also possible that carnitine can help nerves regenerate.

Chronic Fatigue Syndrome (CFS)

Some researchers speculate that CFS may be caused by deficiencies in a variety of nutrients, including carnitine. L-carnitine has been compared to a medication for fatigue in a study of 30 people with CFS. Those who took L-carnitine realized more improvement than those who took the medication, particularly after receiving the supplement for 4 - 8 weeks.

Hyperthyroidism

Some research suggests that L-carnitine may prove useful for preventing or reducing symptoms of an overactive thyroid, such as insomnia, nervousness, elevated heart rate, and tremors.

L-Taurine is a sulfur-containing amino acid and the second most abundant amino acid in the body second to L-glutamine. L-Taurine is abundant in muscle fiber and used in detoxification, control of muscle and nerve signaling and other biological processes. L-Taurine works to break down fat within the body by producing bile. Taurine may act as an antioxidant. It helps with brain function and regulating the amount of mineral salts and water in the blood. Taurine is used to form bile acids and proteins, maintain the stability of cell membranes and help keep the heartbeat regular. It may also be involved in insulin activity, retina function, sperm motility and regulation of your nervous system.

L-taurine is known to participate in a wide range of biological processes. According to research cited in a European Commission Report on L-taurine, supplementation has been shown to lower blood pressure and blood sugar in overweight individuals and may improve athletic performance.

Taurine helps stabilize the excitability of membranes, which is very important in the control of epileptic seizures. Taurine and sulfur are considered to be factors necessary for the control of many biochemical changes that take place in the aging process. Taurine aids in the clearing of free radical wastes.

Individuals who are at risk for a deficiency of L-Taurine include vegetarians and women of all ages. It is believed that women are more at risk for an L-Taurine deficiency, because of the presence of female hormones that restrict the production of L-Taurine within the body. One of the benefits that have been associated with L-Taurine, is a reduction of heart disease risk. This is thought to be due to the fact that L-Taurine is responsible for maintaining a normal output of potassium from the heart muscles.

Glycine is a major promoter of muscle growth and muscle development. Glycine helps

to trigger the release of oxygen to the energy requiring cell-making process. It's also important in the manufacturing of hormones responsible for a strong immune system. Glycine also does the following: plays a key roll in the development and quality of skeletal muscles, tissues, and structural integrity, helps repair tissues, is a component of glucose tolerance factor (GTF) and of the enzyme glutathione. Found in high concentrations in the skin and connective tissues, it is useful for repairing damaged tissues and promoting healing. It speeds the healing of wounds, is a factor in prostate health, and is a human growth hormone releaser. Additionally, glycine is essential for synthesis of nucleic acids, bile acids, and other nonessential amino acids within the body. Glycine has been used in treating Bipolar (Manic/Depressive) disorder and hyperactivity. Glycine readily passes the blood-brain barrier.

Supplemental use of amino acids is generally considered to have no adverse side effects or drug interactions. As always, however, it is wise for anyone with special conditions or taking other prescribed medications to consult their physicians before adding supplements to their daily regimens.



Be sure to try NSP's Free Amino Acids (60 tabs), Mega-Chel® (120 tabs) NEW SIZE! or Aloe Vera Juice (32 fl. oz.).

References:

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Yours in Good Health!

Sincerely,

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