



Cocoon Nutrition

Scientific Breakthroughs for Radiant Health

Amino Acids

What are they and how your body uses them?

Proteins, vitamins, minerals, carbohydrates and fats are the essential nutrients that make up your body. They are responsible for growth and daily function. When water and fats are eliminated, proteins make up 75% of the body solids that are left. They are essential components of muscle tissue, organs, enzymes, blood, antibodies, and neurotransmitters in the brain. Proteins are made from amino acids, which are referred to as the building blocks of life, and they regulate every biochemical reaction in the body.

There are singular (L-form) amino acids, di-peptides (2 attached amino acids that may have special functions) and polypeptides, which may be a few amino acids bound together, or 500 amino acids in a chain. Amino acids are classified as essential or non-essential, and there are 26, which make up more than 40,000 proteins in the body. The L-form (or Levorotatory) amino acids are the ones that are utilized for protein synthesis. The D, or dextrorotatory, forms are the mirror images of the L-form amino acids. Some D-forms may be converted into the L-form; others may have different functions, such as D-phenylalanine, which enables increased endorphin production for chronic pain control. Other D-forms, however, may actually interfere in the metabolism of the L-forms, and are not recommended for supplementation.

Every cell in the body is comprised of proteins made from amino acids, and they are subject to deterioration and need replacement.

The Building Blocks of Protein

Essential Amino Acids

There are nine essential (L-form) amino acids that your body requires and must be obtained from food (or supplementation), since the body cannot manufacture them from other amino acids. These are Histidine, Isoleucine, Leucine, Lysine, Methionin, Phenylalanine, Threonine, Tryptophan and Valine.

Non Essential Amino Acids

Non-essential amino acids are just as important, but are categorized as non-essential since they can be made within the body from other amino acids. This biochemical conversion is called transamination. Generally Pyridoxal 5'Phosphate (active B6) is required for this conversion, and other vitamins and minerals may be also necessary depending on the amino acid. For example Pyridoxal 5'Phosphate and Vitamin C are necessary to metabolize Lysine into Carnitine. When the body is lacking sufficient essential amino acids, or there are insufficient co-factors (vitamins) necessary for transamination, a deficiency of the non-essential amino acid can also exist. This can create a metabolic imbalance and possible health problems, since there would not be enough of all the amino acids necessary to create the many proteins that the body requires for growth and function. The non essential amino acids are: Alanine, Arginine, Asparagin, Aspartic Acid, Carnitine, Citrulline, Cysteine, Cystine, Gamma-aminobutyric Acid (Gaba), Glutamic Acid, Glutamine, Glycine, Ornithine, Proline, Serine, Taurine, and Tyrosine.

Conditionally Essential Amino Acids

Some non-essential amino acids in adults are essential in infants, and others become essential when there are conditions in the body that prevent the biochemical conversion of one amino acid into another.

Food Sources

In the diet, proteins are found primarily in meats, poultry, eggs, milk, rice and beans, although there are some amino acids in vegetables as well. The body must digest the food and break it down into singular amino acids. The food protein cannot be absorbed directly, because the food sources have polypeptides with hundreds, or even thousands of amino acids joined together in peptide bonds. These must be broken down with enzymes into the singular amino acids that the body can absorb, and then combined into the proteins that the body requires. Heat and processing destroy many amino acids in dietary sources, and not all food sources have all the amino acids necessary for proper metabolic balance. Vegetarians do not have certain amino acids in their diets, such as Lysine, which is found in eggs and poultry products. A deficiency in even one amino acid will cause a biochemical imbalance creating health problems, and the amino acid(s) should be replaced for good physical and mental health.

Why take Amino Acid Supplements?

It is necessary to constantly replace amino acids to nourish the body and repair and regenerate tissue. Although we obtain amino acids in food, perfect diets and proper balance are rarely achieved and supplementation is important to keep the body in good health. Also in times of physical and emotional stress, illness, injury and surgery the body requires more amino acids that can be obtained in foods alone. In addition, many conditions and lifestyles may cause an imbalance of amino acids and proper balance is critical for good health and longevity.

What are predigested Proteins?

These are peptide-bonded amino acids from food sources such as whey, casein, milk and eggs. They may have hundreds or thousands of peptide bonded amino acids, and your body still needs to digest them and break them down into the singular amino acids that the body can utilize. Some of them never get absorbed. These predigested proteins will also have the good characteristics from food sources that may cause allergic reactions to food sensitive individuals.

What are the Best Amino Acids?

UPS Pharmaceutical grade, or the highest quality, pure, crystalline amino acids are the singular L-form amino acids. The body best utilizes these since they do not require digestion and are easily absorbed. The best delivery system is capsules (not tablets), since heat and pressure, which are used in most tablets, can destroy amino acids.