

Protein and amino acid



Protein and Amino Acid Proteins are the building blocks of human body and are very essential nutrient. Amino acids are the basic units of proteins and are called the building blocks of protein. In general proteins are obtained from food sources, such as meats and other animal products such as eggs, cheese and milk. Proteins are broken down into simpler constituents to make it easier for digestion. Amino acids are critical for the proper functioning of the body. Some of the common functions of proteins include repairing muscles, organs, nails, hair, skin, ligaments, and glands (NutraSanus, n. pag, 2004). A lack of amino acids in daily diet will have a greater impact on all cellular development, respiration, or renewal of cells would cease. In total there are only 22 amino acids that join together to form different proteins. In fact amino acid chains combine to form up to 55, 000 different proteins, and each protein is used to produce the enzymes, neurotransmitters, and hormones that support normal growth and functioning of all organs, including the heart, brain, liver, intestine, kidneys, and sex organs (Vitaminstuff. com n. pag). Amino acids are categorized into two groups the essential amino acids that should be taken along with diet and non-essential amino acids that are produced by the body. The essential amino acids are isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine. Non-essential amino acids are those that the body can manufacture from an available source of nitrogen and a carbon skeleton. The nonessential amino acids are arginine, alanine, asparagine, aspartic acid, cysteine, glutamine, glutamic acid, glycine, proline, serine, and tyrosine (Vitamin Supplements Guide n. pag).

The benefits of taking amino acids as dietary supplements are many these include muscle protein maintenance, proper immune function, affecting

neuronal activities in the brain, tissue repair acceleration after burn or trauma, protecting liver from toxic agents, pain relief effects, lowering blood pressure, modulating cholesterol metabolism, stimulating insulin or growth hormone secretion, reducing blood ammonia, etc. (Kamiya 2002). The recommended dietary intake of protein every day is about 1 gram of protein for each kg of body weight.

There are very less side effects in taking protein supplements. However, there are some concerns regarding excessive protein supplementation. When lots of protein is taken some of it is not properly digested which results in excessive gas formation in the intestinal track (SearchWarp. com 2005). Generally, the liver breaks excess protein down into urea and is excreted through the kidneys. In cases of excessive protein intake, excessive quantities of urea pass through the kidneys. It is a known fact that urea is a diuretic and water is made to exit along with urea. As a result of this water loss minerals are also lost. Calcium is the most important mineral lost. In some cases the high purine content while consuming a high-protein diet leads to gout and kidney stones in some people. As purine breaks down to uric acid, it is crystallized in the kidneys and joints (Kennedy n. pag).

Proteins or its basic units the amino acids are the building blocks of human body and its requirement varies with age and the life stage. For instance, growing children, pregnant women, athletes and elderly people require protein in various quantities for growth and repair. Hence, it is important for every one to take adequate amounts of proteins in their diet and in case they lack protein, it is important to fulfill its need through supplementation.

Work cited

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