Taurine

Description

Amino acids are building blocks from which proteins are made as well as the end product of protein digestion. The proper combination of amino acids is necessary for protein synthesis, and protein is vital to the structure of all living things. Essential amino acids are amino acids that cannot be synthesized by the body and must be acquired by the diet. They include isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan and valine. Two amino acids, arginine and histidine, are considered to be semi-essential or conditionally essential amino acids. They are needed in increased amounts during pregnancy and for children during their growth years.

The non-essential amino acids include alanine, asparagine, aspartic acid, cysteine (2 cysteine molecules can bind to form a new amino acid called cystine), glutamic acid, glutamine (also considered to be a conditionally essential amino acid), glycine, proline, serine and tyrosine. The non-essential amino acids are manufactured by the body to build important proteins, such as hormones, hemoglobin, enzymes and antibodies.

Taurine

Taurine is a non-essential sulfur-containing amino acid that is synthesized from methionine and cysteine in the presence of vitamin B-6. Taurine is the most abundant intracellular amino acid in humans.

Clinical Applications/Research

- Cardiovascular disease including cardiomyopathy, congestive heart failure, arrhythmias, hypertension, ischemic heart disease, and recovery from post-myocardial infarct
- Diabetes mellitus
- Acute hepatitis
- Macular degeneration
- Retinitis pigmentosa
- Seizure disorders
- Nursing mothers

Taurine

Taurine is needed by pre-term and term infants from breast milk or formula. Taurine is required during hypertension, heart disease, and seizure disorders. Taurine is concentrated in heart tissue, where levels exceed combined total of all other amino acids. Taurine manifests anti-arrhythmia effects in the heart and supports the contractility of the heart. Taurine facilitates passage of sodium, potassium and possibly calcium and magnesium through the cell membrane.

Congestive Heart Failure

Taurine supplementation (3 grams per day) improved left ventricular function (Azuma J, Sawamura A, Awata N. Usefulness of taurine in chronic congestive heart failure and its prospective application. Jpn Circ J 1992;56:95-9) and symptoms of heart failure. In a double-blind, randomized, crossover, placebo-controlled study, 14 patients with congestive heart failure were studied over a 4-week period. The taurine supplemented group improved, indicating that the addition of taurine to conventional therapy is a safe and effective treatment for congestive heart failure patients (Azuma J, Sawamura A, Awata N, et al. Therapeutic effect of taurine in congestive heart failure: a double-blind crossover trial. Clin Cardiol 1985;8:276-82).

Hepatitis

Taurine supplementation may be of benefit in improving liver function in acute hepatitis patients (Matsuyama Y, Morita T, Higuchi M, Tsuji T. The effect of taurine administration on patients with acute hepatitis. Prog Clin Biol Res 1983;125:461-8).

Sources
Animal and fish protein, especially organ meats, such as brains

**Suggested Dosage**

1.5 to 6 grams daily.

**Contraindications/Toxicology**

**Safety Profile**
Taurine is generally considered to be safe in recommended dosages.

**Ulcers**
Taurine may contribute to ulcers in patients taking aspirin concurrently.

**Pregnancy and Lactation**
Insufficient data is available to determine safety during pregnancy and lactation.

**Disclaimer**
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