



MONTIFF INC

Don Tyson's Advanced Nutraceuticals

PURE L-CYSTEINE & PURE N-ACETYL-L-CYSTEINE



Cysteine, a sulfur amino acid, is essential for **Glutathione** and **Taurine** production. It is important for **skin, hair and collagen formation, detoxification of toxic compounds & heavy metals, and immune support.**

N-Acetyl-L-Cysteine increases **Glutathione** levels, and may be helpful in preventing side effects on **chemotherapy and radiation therapy, as well as enhancing the immune system, especially in those whose immune system is severely compromised.**

Each capsule of Pure L-Cysteine contains 500 mg. of the highest quality L-Cysteine HCL – monohydrate.....
Each capsule of Pure N-Acetyl-L-Cysteine contains 500 mg. of the highest quality N-Acetyl-L-Cysteine.

RECOMMENDED TO ENHANCE STRUCTURE & FUNCTION RELATING TO NUTRITIONAL NEEDS AND DEFICIENCIES PERTAINING TO:

- Formation of hair, skin and collagen
- A precursor to Glutathione, which is a powerful antioxidant and is necessary for a healthy respiratory and immune system.
- The formation of Taurine, an amino acid and antioxidant, important for myocardial health.
- Detoxification of heavy metals, and helping to protect liver and brain from free radical damage, including toxicity of alcohol, drugs, and cigarette smoke.
- Promoting healing and improving the immune system by the effect on white cell function, especially in burn and HIV patients, whose immune systems are severely impaired.
- Management the genetic sun-sensitivity disorder called Erythropoietic Porphyria.

WHAT IS CYSTEINE?

- Cysteine is a conditionally indispensable sulfur amino acid. Although it is formed in the body from Methionine, insufficient amounts are synthesized - even in healthy individuals. Severely traumatized patients, and especially burn patients, require increased amounts of Cysteine for metabolic -nutritional needs. Cysteine is a constituent of Glutathione and Coenzyme A, a precursor for Taurine, and converts to Cystine in the body, which is made up of two Cysteine molecules. Since Cysteine is more reactive than Cystine, it is generally more often recommended for biochemical support.
- Cysteine has antioxidant properties reacting with free radicals and peroxides, and chelating with heavy metals. It helps detoxify the liver and protects the liver and brain, and possibly the kidneys and bladder as well, from the harmful toxic compounds in alcohol, drugs, cigarette smoke, & radiation and chemical therapy. (N-Acetyl- L- Cysteine given to those taking chemotherapy -in doses of 1-2 grams per day- helped prevent against nausea and vomiting).
- Cysteine, part of the Cystine molecule, is found in alpha-keratin, the main protein in hair, skin and nails, and it is involved in cartilage and collagen production for healthy joints and youthful skin.
- Deficiencies have been noted in those with food and chemical sensitivities, and when the body is under severe stress with increased catabolic rates. Low levels of Cysteine are often noted in these patients and they have insufficient amounts for Glutathione synthesis. Burn patients, and those with sepsis and impaired immune system diseases, have increased oxidative damage to cells, and Glutathione is necessary to help prevent the free radical damage and help improve tissue repair and immune function.
- Cysteine supplementation has had some beneficial effects on children who have the rare, congenital sun-sensitive disorder called Erythropoietic Porphyria. These individuals have exceptional photosensitivity and have been administered L-Cysteine in place of beta-carotene with positive results.
- Oral supplementation has been more effective than parental administration in raising Cysteine levels.
- Because this is a highly reactive compound, L-Cysteine should be stored in a dark glass container to protect its integrity. Montiff supplies L-Cysteine in brown glass bottles.

- Vitamin B-6 is necessary for proper metabolism and Vitamins B-12 and Folic acid are important to prevent the abnormal metabolite Homocysteine from forming; therefore a B complex, such as Montiff B-Complete or B-Long is recommended.
- Cysteine works best when taken with Vitamin E and Selenium. For those requiring broad-spectrum protection against free radical damage, Montiff Super Antioxidant Formula is recommended, which includes N-Acetyl-L-Cysteine, Vitamin E, Selenium, Folic acid, B-12, plus Taurine, Glutathione and other important antioxidants.

CYSTEINE AND GLUTATHIONE PRODUCTION

Cysteine, along with Glutamic acid and Glycine make up the tripeptide, Glutathione, which is an important antioxidant, detoxifying chemical compounds, peroxides, and protecting cells from free radical damage. Levels of Glutathione decrease after age 40 and low levels are associated with increasing the aging process. Excessive alcohol, acetaminophen, and cigarette smoke deplete Glutathione levels. N-Acetyl-L-Cysteine may be even more effective in raising Glutathione levels in the lungs, kidneys, liver and bone marrow, than L-Cysteine or even L-Glutathione supplementation. (Also take ALA). By boosting the Glutathione levels, anti-aging effects have been noted, such as the reduced appearance of "age spots".

CYSTEINE AND TAURINE PRODUCTION

Taurine is made from Cysteine in the liver when there is sufficient B-6 present for synthesis. High concentrations of Taurine are found in the heart muscle, central nervous system and white blood cells. It is very important for developmental brain function, as well as having many other beneficial properties in the body.

N-ACETYL-L-CYSTEINE AND IMMUNE COMPROMISED DISORDERS RELATED TO HIV

The HIV virus appears to decrease natural Cysteine levels, producing a mechanism destroying the immune system. Studies have shown N-Acetyl-L-Cysteine supplementation was responsible for marked increase in immunological functions, effected the Natural killer (Nk) cells and T cell function, and plasma albumin concentrations in HIV infected patients with antiviral therapy (ART). Supplementation with N-Acetyl –L-Cysteine is recommended for patients with or without ART to increase Glutathione levels and immune system function. (Alpha Lipoic Acid is also important to help raise Glutathione levels).

N-ACETYL-L-CYSTEINE FOR ANTIOXIDANT PROTECTION RE: NEUROLOGICAL HEALTH

- N-Acetyl-L-Cysteine prevents the oxidative damage, which is the pathogenesis of ALS (Amyotrophic Lateral Sclerosis) and some preliminary studies indicated increased survival rates and motor improvement in animals.
- Protective antioxidant properties of N-Acetyl-L-Cysteine in the brain protect it from toxic compounds, which contribute to Alzheimer's disease.

DIRECTIONS: Pure L-Cysteine: take 1 capsule daily, or as needed, with a *full glass* of water or fruit juice.

It is essential that a B complex, such as Montiff B-Complete or B-Long be taken for proper metabolism, and to prevent the abnormal metabolite, homocysteine. (For Pure N-Acetyl-L-Cysteine take 1-3 capsules daily, or as needed, as above). *To help increase Glutathione levels also take Alpha Lipoic Acid (ALA).. Montiff Alpha Lipoic Acid Plus, 1-3 capsules daily.

Precautions: Cysteine is not recommended for diabetics, since it may have an effect on insulin production. Those who have Cystinuria, a rare genetic disorder involved in the formation of Cystine kidney stone, should not take Cysteine. Cysteine may cause gastric irritation. N-Acetyl-L-Cysteine appears not to cause gastric irritation with sufficient water.

REFERENCES:

- Neeley MD, Zimmerman L, et al, " Congeners on N-Acetyl-Cysteine but not aminoguanidine act as neuroprotectants from the lipid peroxidation product 4-hydroxy-2-nonenal." Free Radical. Biol Med., 2000.
- Cynober, L, editor, Amino Acid Metabolism & Therapy in Health & Nutritional Diseases, 1995.
- Balch, J., MD, Balch, P. Prescription for Nutritional Healing, 1997. - - • Packer L, Ph.D., Colman, C., The Antioxidant Miracle, 2000.
- Olivieri, Baysang et al, "N-Acetyl-L-Cysteine Protects SHSY5Y Neuroblastoma cells from Oxidative Stress and Cell Cytotoxicity: Effect on SS-Amyloid Secretion and Ta. Phosphorylation", J. Neurochem., Jan. 2001.
- Gaby, M.D., Austin, Batz, Yarnell, Brown, Constantine (Lininger, S. W. editor in chief) A-Z Guide to Drug-Herb-Vitamin Interactions, 1999.
- Breikreutz R., Pittack N, et al, "Improvement on Immune Functions in HIV Infection by Sulfur Supplementation: Two Randomized Trials," J. Mol. Med., 2000.

Copyright Montiff, Inc. 6-2001©