MONTIFF INC

Don Tyson's Advanced Nutraceuticals

PURE L- GLUTAMINE

L-Glutamine, the most abundant amino acid in muscle tissue and plasma, is a regulator Of protein synthesis, and has many important functions in the body.

Each capsule contains 500 mg. of the highest quality pure L-Glutamine. It is also available in powder form as well.

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

- Increasing glutamine in muscle tissue to produce an anabolic effect for body builders and other athletes.
- Providing glutamine to prevent muscle wasting in post surgical patients and for those with trauma and conditions causing muscle catabolism.
- Stimulating and supporting the immune system.
- Increasing mental alertness and supporting neurological health.
- Helping to promote proper Glucogenic function necessary for balancing low blood sugar levels.
- Effecting the appetite center to help reduce cravings for sweets and alcohol.
- Supporting proper intestinal function.

WHAT IS GLUTAMINE?

Glutamine is the most abundant amino acid found in muscle tissue, plasma and the cerebral-spinal fluid chord, and there are relatively high levels in many human tissues. It is a regulator of protein synthesis and is cellular fuel for tissues of the muscle, intestine, skin and the immune. Up to 60% of glutamine is metabolized in intestinal cells, which require glutamine as their principal respiratory fuel. Glutamine is the precursor to Gaba, Glutamic acid, and Glutathione and B-6 is essential for proper transamination of this amino acid as well as for the necessary metabolism of all amino acids. Although it is considered a non essential amino acid synthesized from branched chain and other amino acids, it is considered essential during periods of severe illness and surgical stress, since the body needs more glutamine than is available at these times.

GLUTAMINE FOR POST SURGICAL CARE AND CATABOLIC DISORDERS

There is an increase in Glutamine demand during times of physical and metabolic stress (including surgical, trauma, burns, infections, fasting, exercise and malnutrition) to cover vital needs of the immune system, brain liver, kidney and intestine. The demand of Glutamine exceeds the body's ability to supply it. The need for Glutamine for these functions depletes muscles of Glutamine, as well as the other amino acids necessary to produce the Glutamine necessary for protein synthesis. This can result in negative nitrogen balance and catabolism. Up to a 50% decrease in Glutamine has been documented during catabolic stress. Glutamine supplementation can increase the Glutamine pools lost at these times, help increase protein synthesis and nitrogen balance and provide the anabolic effects necessary to support the body during this stress. In addition, supplementation with Ornithine-α-Ketoglutarate can help prevent the decrease of Glutamine in the muscle tissue and increase protein synthesis.

GLUTAMINE AND THE ATHLETE

Physical stress to muscles during high intensity exercise and athletic activity results in the depletion of the Glutamine pools in the muscles, as well as the branched chain amino acids necessary to make glutamine for protein synthesis and anabolic effects. Glutamine supplementation pre and post workout or athletic activity can increase glutamine to prevent Glutamine depletion, while providing sufficient Glutamine necessary for protein synthesis and anabolic activity. Since most of it is utilized in the intestinal tract, it is recommended that, if possible, the Glutamine be emptied from the capsule (or powder form) and taken sublingually (under the tongue) to increase assimilation into the blood stream and muscle tissue.

GLUTAMINE AND NEUROLOGICAL HEALTH

Glutamine crosses the blood brain barrier, and is the precursor to Glutamate and Glutamic acid, which are excitatory neurotransmitters. It is also a precursor for GABA, which acts as an inhibitory transmitter inducing a calming effect. Glutamic acid, along with Glutamate provides glucose to provide energy for brain cells, which requires 75% of the available glucose in the body for its energy source to maintain normal brain metabolism. This energy is necessary for mental alertness and concentration. It has an effect on the appetite center in the brain, and can diminish craving for sweets and alcohol. Glutamine also detoxifies ammonia in the brain, which can lead to brain damage.

IMMUNE SYSTEM

Glutamine is necessary for the function of immunocompetent cells, and enhances the immunity of the intestinal mucosa. It is the precursor to Glutathione, a powerful antioxidant with anticarcinogenic properties, which enhances the immune protective system of cells. It may decrease tumor growth by stimulating NK (natural killer) cell activity.

INTESTINAL HEALTH

Two thirds of Glutamine is metabolized and utilized in the mucosal cells of the small intestine, and it is important for gastrointestinal function. It promotes intestinal healing and may have beneficial results in patients with gastrointestinal disorders. After surgery, trauma and catabolic stress there is a depletion of available glutamine. Since the intestinal tract has an important function in the regulation of amino acid metabolism, supplementation is advisable to supply the body's increased Glutamine demands, and maintain intestinal health to promote protein synthesis.

GLUCONEOGENESIS AND LOW BLOOD SUGAR

Glutamine is a regulator of protein, fatty acid and glycogen metabolism. Alanine and Glutamine are the primary glycogenic amino acids, regulating gluconeogenesis (carbohydrate/sugar formation) in the liver. By stimulating glucose production, it can reduce these food cravings in those with low blood sugar levels that are usually apparent mid morning and mid afternoon.

DIRECTIONS: 1-3 capsules per day, or as needed, with water or fruit juice. **Do not take with milk products.** Vitamins and minerals are recommended, such as Vita-Minz Plus and B-Complete or B-Long, for proper metabolism. For powder ¼ tsp. = 1 capsule.

For body builders and those wanting quick mental alertness and fast assimilation: the contents of the capsule (or powder) may be taken sublingually.

Ornithine-α-Ketoglutarate (1-3 capsules daily) may be added to the program of athletes, as well as for surgical, trauma, burn and catabolic conditions.

MONTIFF SUPPLIES THE *HIGHEST QUALITY* PURE L-GLUTAMINE

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