



Glutamine L-glutamine

Common Indications:

- Inflammatory bowel issues
- Treatment of gastrointestinal ulcers
- Detoxification - Precursor to glutathione production
- Wound healing, burns, healing from trauma (surgery)
- Gut mucosa support in cancer treatment
- Athletic recovery and muscle repair post exercise

General Comments:

Roughly 30% of the nitrogen in our blood stream from amino acids comes from this singular source, glutamine. Skeletal muscle claims the highest stores of glutamine, claiming 60% of our total bodily store. We are easily able to acquire glutamine from meat in our diet couple with our own cellular production of it but in times of heavy stress such as intense athletic pursuits our needs may outpace our production making glutamine supplementation helpful. Stress also includes surgical intervention and cancer treatments as these place a heavy demand on our body.

Use of medications that block acid production in the gut may reduce our ability to acquire dietary glutamine. Bowel issues such as dysbiosis, poor diet, prolonged stress, wound healing and intense athletics will all benefit from glutamine supplementation.

Benefits & Mechanism of Action

L-Glutamine is one of the precursors to the production of glutathione. Since it is typically easily acquired from diet, the use of this element to enhance detoxification is not frequent. You would typically be better served by supporting cysteine or glycine.

Gut health is a common use for glutamine as it is one of the primary fuels for the enterocytes. Intestinal cells find glutamine to be cytoprotective as it support production of epidermal growth factor receptor expression.¹²

Within muscle, glutamine promotes protein synthesis and growth. Exercise and sports in general place high demand on the myocyte and if nutritional support is not adequate then recovery will be limited. Glutamine serves secondarily to block cortisol-induced protein catabolism.

Glutamine can also be used as an energy source of neurons and so play a role in cognition and

brain health. This comes into play more acutely in older patients at risk for Alzheimers.

Symptoms of Depletion:

Glutamine is not one of the essential amino acids but like cysteine and arginine, under prolonged stress when needs are amplified, these amino acids may become semi-essential. Depletion of L-glutamine may cause an increased susceptibility for infection, particularly among certain populations such as immunocompromised patients, people experiencing unwanted weight loss, diarrhea, or low energy.

Dose: 500-2,000mg, 3 times a day.

Cautions and Side Effects:

- Side effects of Glutamine:
 - Mild chest pain, Headache, Constipation, Nausea, Abdominal pain and Cough¹¹
- There is no known toxicity when using glutamine as a dietary supplement.
- Use with caution in pregnancy and lactation.
- Glutamine may increase levels of glutamate in the brain – caution should be used with sensitive patients.
- Use with caution if you are sensitive to monosodium glutamate (MSG) or other chemical sensitivities.
- Use with caution if taking the following medications:
 - Methotrexate, as glutamine may decrease the elimination of methotrexate from the body, thereby increasing the potential for side effects.

Food Sources:

L-glutamine can be found in beans, brewer's yeast, brown rice bran, caseinate, dairy products, eggs, fish, lactalbumin, legumes, meat, nuts, seafood, seeds, soy, whey, whole grains, hydrolysis of gluten, beet root, or other proteins.

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