

# The Glutamine Report

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Exciting breakthroughs in scientific research are giving American people a new understanding of the amino acids and their importance in health and healing. Glutamine, an amino acid found in many foods, is the third most abundant in the blood and brain. Glutamine provides a major alternative fuel source for the brain when blood sugar levels are low.

Glutamine is an inhibitory neurotransmitter and is the precursor for GABA, the anti-anxiety amino acid. Glutamine helps the brain dispose of waste ammonia, which is a protein breakdown by-product and irritates brain cells even at low levels. Recent scientific research regarding glutamine demonstrates its link to the most important functions of the body's vital organs and musculoskeletal system. Glutamine aids the body in muscle development when illness causes muscle wasting. This occurs following a high fever, chronic stress, illness or a traumatic accident.

The most important function of glutamine is strengthening the immune system. Glutamine is involved with the multiplication of selected white cells, which strengthens the body's defense system. Glutamine aids other immune cells in killing bacteria. Glutamine aids in healing wounds. It supports pancreatic growth. It maintains and supports glutathione, an important antioxidant.

Scientists at NIH in 1970 found glutamine, not glucose, is the most important nutrient for the intestinal tract. During times of illness, the body uses more glutamine to aid in tissue repair in the kidneys, intestines and liver. For many years glutamine was considered a nonessential amino acid, but research the past several years has brought forth a wave of new important information that has changed this view. Everyday more research is being done on the healing power of amino acids.

In 1980 glutamine was reestablished as a conditionally essential amino acid. A conditionally essential amino acid means that under normal circumstances, the body can make (synthesize) adequate quantities of the amino acid, but in times of stress such as fever, illness, trauma, dieting or chemotherapy the body can not make as much as it requires. An additional amount of the amino acid must be taken in nutrient form to prevent a deficiency.

Research has shown glutamine is the second most important fuel for the cell lining in the colon. It also helps clear the body of waste through the kidneys and liver. For those with impending surgery, glutamine supplements should be considered before, during and after surgery. The new research demonstrates that up to one-third of the amino acids released at times of stress is in the

form of glutamine. Further research has revealed muscles synthesize glutamine as they break down in times of heavy stress. When glutamine is taken with balanced amino acids, muscle break down (atrophy) was essentially prevented.

Over the past years there has been confusion regarding glutamine, glutamic acid and glutamate. Glutamine is not glutamic acid or glutamate. Glutamine is not glutathione or gluten. Glutamine is not monosodium glutamate (MSG).

This amino acid, along with GABA and Glycine, is rapidly becoming the most important therapeutic acid of the twenty-first century.

Neurotransmitters in the brain function: The amino acid trio of glutamine, GABA and glycine, along with vitamin B6, the cofactor, are the major inhibitory neurotransmitters in the brain. Glutamine is found in the nerves of the hippocampus, the memory center of the brain, in the cranial nerves and in many other areas of the brain. These three amino acids work together and are inhibitory neurotransmitters, the chemical language of the brain. Anyone taking amino acids must take vitamin B6 to metabolize the amino acids.

Glutamine studies reported children and adults who were intellectually impaired demonstrated an increase in IQ after taking glutamine in combination with SBNC and vitamin B6. Research done by Dr. Roger Williams at the University of Texas, Clayton Foundation showed children and adults who were classified as A.D.H.D. had a marked improvement when taking glutamine, 500-1000 milligrams daily. Dosage depends on age and weight. At the Pain & Stress Center we use a Super Balanced Neurotransmitter formula along with glutamine and Teen Link. Our results have been excellent. The Super Balanced Neurotransmitter Formula assists brain communication. It allows the brain cells to talk to each other. Recent discoveries have shown that 50 or 60 neuropeptides can be found in the immune system as well as in the brain. Each unique neuropeptide has its own receptor. Communication among the brain, glands and immune system is mediated by these intercellular neuropeptides and receptors. Neuropeptide is a peptide made up of amino acids, which are building blocks of proteins. Neuropeptides and their receptors are the biochemical correlates of emotion.

GABA and glutamine are NOT only found in the brain, but in the receptor sites throughout the body. Patients presented with inflammatory bowel disease that is caused by a breakdown in the intestinal mucosa and inflammation as well as infection. Researchers documented positive results after giving 500 to 1,000

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milligrams in liquid diets. After brief trial periods all of the patients reported a marked improvement. Patients with irritable bowel syndrome who take at least 1,000 milligrams reported improvement with less digestive upset and stomach spasms. Glutamine can be mixed with water or juice and taken daily. For nervous stomach glutamine and theanine can be used together to calm the stomach. Glutamine does not interfere with medication.

For those with alcohol craving Dr. Roger Williams, pioneer in glutamine research, found that 4,000-5,000 milligrams of glutamine daily will stop the craving for alcohol and decrease the craving for sweets. Since glutamine is tasteless and mixes with water or any cool liquid it is easy to take. Our patients also reported a lift from fatigue, both mental and physical. One alcoholic stopped drinking when glutamine was administered daily. Two years later the patient was still free from the craving for alcohol. He maintained a nutritional support program. Dr. Lorene Rogers, researcher at the University of Texas, Clayton Foundation reported several cases in which glutamine was successful while placebos were ineffective. Glutamine was given to one group of alcoholics and placebos to the other. The group taking at least 5,000 milligrams of glutamine daily was free of alcohol craving.

Glutamine is converted to energy by the brain and is its main fuel. It is converted to GABA with the help of magnesium. Without continued high energy in the brain, the rest of the mind and body will NOT function properly. The brain requires a huge supply of glucose and oxygen in order to perform properly. This energy supply is delivered via the bloodstream. Proper circulation ensures the brain will have the energy it needs. Senior citizens who need a mental boost can use glutamine, huperzine, vinpocetine or acetyl-L-carnitine daily. This increases blood flow in the brain.

The main nutrient needed for intestinal repair is glutamine. Leaky gut syndrome is being seen more often due to the increased use of anti-inflammatory medications such as Motrin, Advil, Ibuprofen, Dolobid, Anaprox, Orudis, Naprosyn, etc. Leaky gut syndrome makes the intestines more permeable and allows substances and foods that do not normally pass into the circulation to cross. Food allergies can result causing more discomfort and pain. Glutamine helps the gut to heal and makes the intestines less permeable. Japanese researchers have found glutamine helps stomach ulcers heal.

In cancer patients glutamine enhances the effectiveness of chemotherapy and radiation treatments while reducing the toxicity and damage to the body. Dosages vary in amounts, but a rule of thumb is 0.5 grams daily. Patients had decreased systemic infections (sepsis), less weight loss, decreased mortality and increased healing rate of radiated intestines. For best results, glutamine should be taken prior to treatment and continued throughout therapy.

Unfortunately, foods are not a good source of glutamine. The foods highest in glutamine include meat, chicken and eggs, but in RAW form. Cooking or heat inactivates glutamine, so your best source is in supplement form.

Glutamine is truly an amazing amino acid with multiple benefits and with continued research other important factors will be found that will improve our quality of life. Glutamine is available in capsule and powder form. For in depth information using amino acids, read *Heal with Amino Acids* by Billie J. Sahley, Ph.D.

Pain & Stress Center products that contain Glutamine are HTP10, Anxiety Control, Mood Sync, Teen Link, Super Balanced Neurotransmitter Complex, and Brain Link.

## REFERENCES

- Mowrey, Daniel, Ph.D. *Herbal Tonic Therapies*. New Canaan, CT: Keats Publishing, 1993.
- Newbold, H.L. *Mega-Nutrients for Your Nerves*. New York, NY: Peter Wyden Publishing, 1975.
- Prusinev, Stanley. *The Enzymes of Glutamine Metabolism*. New York, NY: Academic Press, 1973.
- Rogers, L.L. "Glutamine in the Treatment of Alcoholism." *Quarterly Journal of Studies on Alcohol*. Vol. 18, No. 4., pp. 581-587, 1957.
- Rogers, L.L. and R.B. Pelton. "Effect of Glutamine on IQ Scores of Mentally Deficient Children." *Texas Reports on Biology and Medicine*. Vol. 15, No. 1, pp. 84-90, 1957.
- Shabert, Judy. *The Ultimate Nutrient Glutamine*. Garden City Park, NY: Avery Publishing Group, 1994.
- Souba, Wiley W., et al. "Glutamine Metabolism by the Intestinal Tract." *Journal of Parental and Enteral Nutrition*. Vol. 9 No. 5, p. 608.
- Williams, Roger. *Alcoholism: The Nutritional Approach*. Austin, TX: University of Texas Press, p. 88, 1958.
- Williams, Roger. *Alcoholism: The Nutritional Approach*. Austin, TX: University of Texas Press, p. 100, 1959.

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