

**NUTRI-SPEC**



*Live Stronger Longer*

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**THE NUTRI-SPEC LETTER**

**Volume 36 Number 4**

## **4 WEAPONS OF MASS CONSTRUCTION**

Dear Doctor,

CATABOLIC DESTRUCTION ----- That defines a Dysaerobic Imbalance.

- Catabolic tissue structural breakdown
- Oxidative Free Radical damage
  - ROS (Reactive Oxygen Species)
  - RNS (Reactive Nitrogen Species)
- Premature Aging
- Dysfunctional excess oxidation
  - Advanced Glycation End-products (AGEs)
  - Oxidative protein degradation (Indican and other nitrogenous waste in the urine = Kidney strain)
  - Oxidative fatty acid catabolism = toxic anti-metabolic polyunsaturated oils (Prostaglandin-mediated inflammation)
- Excess cell membrane permeability (leakage)
- Cholesterol leakage = increased blood cholesterol
- Tissue Alkalosis; systemic Acidosis

Not a pretty picture! ----- At this very moment, there is catabolic damage occurring in your body, causing structural damage, functional disintegration, and premature aging. And that nastiness will continue every minute of your life. The same applies to every one of your patients. The only difference between those who test as Dysaerobic on Nutri-Spec Metabolic Imbalance Testing and those who do not is a matter of degree.

The degree to which catabolic destruction is eating you alive depends on three factors ...

- How well do you prevent the formation of oxidative free radicals?
- Have you enough antioxidants to quench free radicals?
- How much re-constructive energy can you produce to rebuild?

Nutri-Spec offers you and your patients two supplements that, teamed up with your Activator, Immuno-Synbiotic, and the supplements indicated by your BALANCING PROCEDURE, will effectively quench free radicals, prevent them from forming in the first place, and support efficient anabolic recovery from the catabolic destruction. Those two supplements are Oxy-Max (the most powerful anti-oxidant you can find anywhere) and Oxygenic D.

Oxygenic D? Yes, after months of agonizing delays, we can finally offer you and your patients Oxy D once again.

Oxygenic D has been totally reformulated with a synergistic blend of anti-Dysaerobic Adaptogens. There are four nutrients in particular that are all new to Oxy D. We can call them your “4 Weapons of Mass Construction” --- as they provide the powerful energetics needed to rebuild the structure and function of tissues suffering catabolic destruction. The 4 re-integrating, rejuvenators are:

1. BENFOTIAMINE = Call it “Vitamin B1 on steroids” for its metabolic activation power ( --- also in your Activator)
2. ORNITHINE = Activates anabolic rebuilding and drives fatty acid metabolism through the Krebs Cycle, without ROS or Prostaglandin formation
3. CARNITINE = Increases mobilization of fatty acids from fat cells for revitalization and restoration ( --- also in your Activator, Adapto-Max, Oxy G & Oxy A)
4. ??? \*

\* My advice on the last of these four nutrients will seem a bit paradoxical. After I rave about the many protective and reconstructive roles of this nutrient, I am going to advise that neither you nor your patients should ever, ever, ever take this supplement. This critical anti-catabolic nutrient is the amino acid ...

**GLUTAMINE.**

Mass re-construction? Yes! Consider this study ... Dingfu Xiao, et al. The Glutamine-Alpha-Ketoglutarate (AKG) Metabolism and its Nutritional Implications. Amino Acids. 2016 Sep;48(9):2067-80. <https://pubmed.ncbi.nlm.nih.gov/27161106/>

Glutamine is an important amino acid for proper growth in most tissues and plays a critical role in the determination and protection of normal metabolic cellular processes. Intracellularly, much Glutamine can be metabolized into CO<sub>2</sub> via the Krebs Cycle for energy. Glutamine plays an important role in cellular homeostasis, not only as a precursor for protein synthesis, but also for its nutritional roles in cell growth, lipid metabolism, insulin secretion, and many other metabolic pathways.

Powerful anti-oxidant action? ----- Hamed Jafari-Vayghan, et al. A Comprehensive Insight into the Effect of Glutamine Supplementation on Metabolic Variables in Diabetes Mellitus: A Systemic Review. Nutr Metab (Lond). 2020 Sep 25:17:80. <https://pubmed.ncbi.nlm.nih.gov/32983244/>

Glutamine is a precursor for the production of Glutathione, the “Master Anti-Oxidant”. The Glutathione produced is particularly important to controlling inflammatory processes within the Beta-cells of the pancreas in both Type 1 Diabetes and advanced Type 2 Diabetes. Glutamine thus has a positive effect on glucose oxidation and Insulin Resistance.

Dyslipidemia is one of the major complications of Diabetes. Glutamine supplementation significantly reduces triglyceride levels. Furthermore, it has anti-obesity as well as anti-diabetic properties --- decreasing trunk fat, total fat, total fat-free mass, and waist circumference. Glutamine activates GLP-1 naturally ( --- in contrast to the GLP-1 mimetic drugs now destroying the health of countless thousands) leading to increased lipolysis and thermogenesis in brown adipose tissue. It leads to suppression of the appetite center in the brain, and decreases the secretion of ghrelin hormone.

Glutamine supplementation also shows a significant increase in the antioxidants Super Oxide Dismutase, and Catalase, along with Glutathione. There are also decreases in CRP, IL-6, IL-23, and MC-1 levels, indicating significant anti-inflammatory benefits.

Enough energy to support anabolic reconstruction? ----- Ralph J DeBerardinis, et al. Q’s Next: The Diverse Functions of Glutamine in Metabolism, Cell Biology and Cancer. Oncogene. 2010 Jan 21;29(3):313-24. <https://pubmed.ncbi.nlm.nih.gov/19881548/>

Glutamine can act as a respiratory substrate to produce ATP, much as does glucose. Glutamine's role in mitochondria energetics involves the supply of an electron donor to support lipid synthesis, promote nucleotide metabolism, and maintain the master antioxidant, Glutathione, in its reduced state. Proliferating (rebuilding) cells desperately need Glutamine to drive the huge amounts of energy required in reconstruction.

Protection against catabolism? Consider this study ----- Vinicius Cruzat, et al. Glutamine: Metabolism and Immune Function, Supplementation and Clinical Translation. *Nutrients*. 2018 Oct 23;10(11):1564.  
<https://pubmed.ncbi.nlm.nih.gov/30360490/>

Glutamine is routinely supplied as a component of clinical nutrition supplementation for pre- and post-operative patients, and also for many elite athletes to restore immune functions, as well as for workout recovery.

Tissue such as muscle tissue may present reduced Glutamine synthesis under certain conditions, such as reduced carbohydrate and/or amino acid intake, high catabolic situations, degenerative "Diseases of Aging," and stress. Many other factors, mainly excess glucocorticoids, thyroid hormones, growth hormone, and insulin can deplete or inhibit Glutamine.

This study also shows that plasma Glutamine is inversely associated with BMI, blood pressure, circulating triglycerides, and insulin, and positively associated with HDL. Glutamine supplementation improves glucose tolerance in subjects with or without diabetes and improves insulin resistance, even in adolescents with Type 1 Diabetes.

This study also shows the incredible benefits of Glutamine in protecting the cardiovascular system. Supplementation with Glutamine is critical in preventing the development of atherosclerosis and other CVDs. Glutamine supplementation promotes efficient endothelial function, fueling the Krebs Cycle, to fulfill the necessary energetic requirements of growing and moving cells.

Yes, Glutamine plays a major role in protecting and rejuvenating the cardiovascular system. Consider this study ----- William Durante. The Emerging Role of L-Glutamine in Cardiovascular Health and Disease. *Nutrients*. 2019 Sep 4;11(9):2092.  
<https://pubmed.ncbi.nlm.nih.gov/31487814/>

Glutamine plays a fundamental role in cardiovascular physiology and pathology. By serving as a substrate for the synthesis of DNA, ATP, proteins, and lipids, Glutamine drives critical processes in vascular cells, including

proliferation, migration, apoptosis, senescence, and extracellular matrix deposition. Furthermore, Glutamine exerts potent antioxidant and anti-inflammatory effects in the circulation.

Glutamine also promotes cardiovascular health by serving as an arginine precursor to optimize nitric oxide synthesis. Glutamine supplementation mitigates numerous risk factors for cardiovascular disease, such as hypertension, hyperlipidemia, glucose intolerance, obesity, and diabetes.

Particularly consider this study, which will show you why we have Glutamine as a feature attraction of your Oxygenic D, and more critically, how we chose the quantity for supplementation ----- Zhangling Chen, et al. Dietary Glutamine and Glutamate in Relation to Cardiovascular Disease Incidence and Mortality in the United States Men and Women with Diabetes Mellitus. *J Nutr.* 2023 Nov;153(11):3247-3258.  
<https://pubmed.ncbi.nlm.nih.gov/37660951/>

Glutamine and its evil cousin Glutamate are the two most abundant amino acids in the human body. Glutamine is a contributor to many health-maintaining metabolic pathways, while Glutamate can largely be considered an anti-metabolite. The ratio of dietary intake between the two is a critical factor in health and longevity. This particular study looked at the quantities and the ratios between dietary Glutamine and Glutamate, and how they impact cardiovascular disease risk. The study used as subjects adults with Type 2 Diabetes, and followed them over the course of decades.

Glutamine supplementation improved glucose tolerance in subjects with or without diabetes, and supplementation of Glutamine for six weeks reduced systolic blood pressure, fasting blood glucose, and improved body composition in patients with Type 2 Diabetes.

The dietary intake of Glutamine varied between the lowest Quintile at 5.6 grams per day, and the 5<sup>th</sup> Quintile at a daily intake of 8.9 grams. In Type 2 Diabetics, the study quantified the benefits of a high Glutamine versus a low Glutamine diet on cardiovascular disease incidence, CVD mortality, and total mortality. The Glutamine 5<sup>th</sup> Quintile compared to the first Quintile showed a decreased incidence of CVD by 12%, decreased CVD mortality by 35%, and decreased total mortality by 16%.

In contrast, the 5<sup>th</sup> Quintile compared to the first Quintile of Glutamate intake showed an increased CVD incidence by 30%, increased CVD mortality by 46%, and increased total mortality by 20%.

Your takeaway from this study is that if you can increase Glutamine intake by just 1 gram per day, you significantly reduce the incidence and consequence of CVD even in Type 2 Diabetic patients, but also in patients who are suffering a lesser degree of Insulin Resistance. You will confer a lifelong protection against CVD. Furthermore, considering all the other metabolic pathways enhanced by high Glutamine, the overall health and longevity benefits are extremely significant.

----- If Glutamine supplementation is accompanied by some effort to decrease Glutamate intake, benefits will be magnified. A disturbingly high percentage of the typical dietary intake of Glutamate comes from the food additive Monosodium Glutamate, found in processed meats, but also many other packaged/processed foods.

If Glutamine has so many antioxidant, reconstructive and energetics benefits, why not supplement with even more to guarantee you get enough of this health-enhancing amino acid? The study quoted above alluded to Glutamine's "evil cousin," Glutamate. Under certain circumstances, and particularly in the brain, excess Glutamine can be shunted into a Glutamate-producing pathway. Glutamate is a dangerous excitotoxin in the brain. ----- But there are other reasons to avoid excess Glutamine ...

There can be excess flux of Glutamine to the Krebs Cycle, producing metabolites that can be harmful to the arterial endothelium. ----- Also, Glutamine is a fundamental fuel for cancer cell energetics.

Glutamine also participates in the stimulation of mTOR --- which is the key driver of our Nutri-Spec model of Endogenous INFLAM-AGING, the pathological anabolic reductive stress that shortens lifespan. Excess Glutamine not only stimulates excessive cell growth, but will suppress autophagy, the healthy cell's daily "house cleaning".

Do you see why we caution to never, never supplement with therapeutic doses of Glutamine? ----- So --- how much Glutamine supplementation do you need? Think about it --- "If you can increase Glutamine intake by just 1 gram per day" --- that is all you need. Most of that is achieved by nothing more than supplementing with your reformulated Oxygenic D. But with Oxy D you are also getting all the Adaptogens supporting quick and total free radical prevention, free radical quenching, and tissue re-construction. Add Oxy-Max, the ultimate in anti-oxidant supplementation, and you have maximum protection against catabolic oxidative mass destruction.

April SPECIAL = Oxygenic D & Oxy-Max, 1 **FREE** with every 5 you buy.