



**the Natural Family Health Clinic  
& Chelation Centre**

*Preventing illness-optimizing health, naturally*

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**INTRAVENOUS GLUTATHIONE THERAPY**

Glutathione (GSH) is the body's major systemic anti-toxin, antioxidant, and free-radical scavenger. In fact the ratio of reduced Glutathione to oxidized Glutathione is one of the most accurate indicators of cellular health. This makes this valuable nutrient vital for protecting cells from damage as well as for detoxifying biotoxins and toxic heavy metals. The liver has the highest concentration of GSH in the body which makes sense since the liver is the most important organ of detoxification in the body. Unfortunately, with aging, nutrient deficiencies, toxicities, and infections, GSH can be drastically reduced, leaving the body vulnerable to the ill effects of damaging substances. Oral GSH is very poorly absorbed therefore, the most effective method of increasing GSH levels is to inject it intravenously.

Intravenous GSH has proven effective in the treatment of hypercoagulating blood disorders, jaundice caused by liver disease, and anemia. It plays a critical role in toxic metal transport, storage, and metabolism, therefore, acting to clear these lethal toxins from the body. With accurate testing toxic metals are found to be elevated in most people today. They contribute to many chronic degenerative diseases, particularly heart disease, neurological disease, and inflammatory conditions. GSH also safely removes biotoxins from the body via the liver.

Although GSH is vital to liver detoxification, it also acts as the major detoxifier of the kidneys, lungs, intestines, and all other organs systems in the body. It is vital to immune function and stimulates both B and T-cell growth and proliferation which act to protect from invading micro-organisms and toxins. GSH moderates the immune system helping to regulate both an over stimulated (allergy, asthma, eczema, auto-immunity etc) and an under stimulated or sluggish (chronic infections, fatigue, fever etc) immune system.

Conditions which can benefit from IV GSH therapy are Neurological disorders including but not limited to: Parkinson's disease, Alzheimer's, ALS, Stroke, Epilepsy, Cerebral trauma, ADD and Autism. It also has shown benefit in toxic conditions such as Chronic Fatigue Syndrome, Lyme disease, Fibromyalgia, and Chronic infections. GSH is highly protective of the brain. In one study

with Parkinson's patients, GSH was shown to be reduced by 40-50% in the part of the brain affected by Parkinson's called the Substantia nigra.

With regards to cancer therapy IV Glutathione administered before chemotherapy protects the body from some of the most devastating side effects from the chemotherapy. For example, in colon cancer treated with oxaliplatin, the group that took glutathione had much less neuropathy; in non-small cell lung cancer, glutathione protected the bone marrow from suppression so that anemia did not occur; and in ovarian cancer, glutathione combined with chemo increased quality of life, caused weight gain, and protected the nerves and the kidney from damage.

Others methods of increasing GSH levels include eating a high protein, low carbohydrate diet, consuming bioactive goat or bovine **whey protein** regularly, and by increasing tissue levels of **zinc, magnesium, selenium, vitamin E, carnosine, B-vitamins, milk thistle, alpha-lipoic-acid, cysteine and melatonin**. GSH tissue levels are depleted by petrochemicals, Tylenol (acetaminophen), alcohol, environmental toxins, household chemicals, toxic metals, and infections. Newer forms of liposomal oral glutathione have shown to reliably increase red blood cell GSH levels by 28%, increase Natural Killer cell function by 400%, and decrease oxidative stress by 25% after 2 weeks of daily use.

Intravenous GSH is administered from twice weekly to once monthly depending on the patient's condition and its severity. It is often administered along with IV phosphatidylcholine (Plaquex therapy) in a treatment called Phospholipid Exchange to further enhance detoxification and cellular revitalization.

The following are quotes from different authors on glutathione:

"Without glutathione, other important antioxidants such as vitamins C and E cannot do their job adequately to protect your body against disease." Breakthrough in Cell Defense, Allan Somersall, Ph.D., M.D., and Gustavo Bounous, M.D. FRCS(C)

"No other antioxidant is as important to overall health as glutathione. It is the regulator and regenerator of immune cells and the most valuable detoxifying agent in the human body. Low levels are associated with hepatic dysfunction, immune dysfunction, cardiac disease, premature aging, and death." The Immune System Cure, Lorna R. Vanderhaeghe & Patrick J.D. Bouic, Ph.D.

"A review article published in the Annals of Pharmacology stated that glutathione is important in DNA synthesis and repair, protein and prostaglandin synthesis, amino acid transport, detoxification of toxins and carcinogens, enhancement of the immune system, and protection from oxidation and enzyme activations." The Immune System Cure, Lorna R. Vanderhaeghe & Patrick J.D. Bouic, Ph.D.

Research suggests that abnormally low glutathione levels may increase your risk for Heart Attack. Eric Topol, MD, New England Journal of Medicine.

"Glutathione has potent anti-viral properties - if tissue and serum glutathione levels are significantly increased, the replication of most pathogens are slowed or stopped. Conversely, glutathione deficiency produces a pro-viral effect." Paul Cheney, M.D., Ph.D. and expert in the treatment of Chronic Fatigue

Syndrome. Transcribed from a workshop presentation on the clinical management of Chronic Fatigue Syndrome

Lymphocytes, cells vital for effective immune function, depend on GSH (glutathione) for their proper function and replication. IMMUNOLOGY 61: 503-508 1987

As we age, there is a precipitous drop in GSH levels. Lower glutathione levels have been implicated in many diseases associated with aging. Journal of Clinical Epidemiology 47: 1021-28 1994

Antioxidants are well documented to play vital roles in health maintenance and disease prevention. GSH is your cells' own major antioxidant. Biochemical Pharmacology 47: 2113-2123 1994

GSH plays a role in eliminating many carcinogens as well as maintaining immune function. Cancer Letters 57: 91-94 1991

Strong muscular activity, such as that experienced by athletes, generates oxyradicals [free radicals] leading to muscle fatigue and poorer performance. GSH neutralizes these radicals. Sport Medicine 21: 213-238, 1996

GSH detoxifies many pollutants, carcinogens, and poisons, including many in fuel exhaust and cigarette smoke. It retards damage from radiation such as seen with loss of the ozone. Annual Reviews of Biochemistry 52: 711-780 1983