

Glutathione Breakthrough: Advancement in Antioxidant Science

by Garry F. Gordon MD, DO, MD (H), Lyn Hanshew, M.D, and Charles M. Scott, M.D.

Glutathione (GSH) is one of the most critical molecules of the entire body. GSH plays an important role in antioxidant defense, nutrient metabolism and is key in a vast number of cellular processes including gene expression, DNA and protein synthesis, cell proliferation and apoptosis, signal transduction, cytokine production, immune response, and protein glutathionylation. GSH is ubiquitous in the regulation of pathways essential for whole body homeostasis. To date there are over 76,000 medical articles about the health benefits of Glutathione.

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“There is an epidemic deficiency of glutathione in patients today. In fact, glutathione deficiency is found in almost all chronically ill patients.”
Charles M. Scott, M.D.

Metabolic imbalance, allergies, asthma, inflammation, immunodeficiency, and diseases such as cancer, cardiovascular disease, seizure, Alzheimer’s disease, Parkinson’s disease, sickle cell anemia, liver disease, cystic fibrosis, HIV, AIDS, infection, heart attack, stroke, and diabetes

are associated with low GSH levels and high oxidative stress levels.

Despite the overwhelming benefits, there has been only limited clinical use of glutathione in medicine because of its unstable nature. The cysteine moiety of the GSH tripeptide makes its use in clinical medicine difficult at best. Oral preparations of GSH have been found to be unpalatable due to the sulfur taste and GSH is easily inactivated by stomach acid before it can be absorbed. Transdermal preparations are sticky and smell of sulfur. IV-supplementation is effective, but invasive and not readily available to most patients due to the expense and limited access to an educated practitioner. Even when GSH is given intravenously, much of the GSH is oxidized into GSSG in the IV-bag during storage, transport or while being infused. Nebulized forms of GSH have also been used but the smell and taste result in poor patient compliance and it is counterintuitive to suggest that aerosolizing a compound that is highly reactive in the presence of atmospheric oxygen is an effective strategy.

“Extensive research confirms that supplementation of Glutathione is a crucial requirement for superior health, effective treatment and prevention of disease. Advanced Cellular Glutathione now makes oral supplementing possible.”
Garry F. Gordon MD, DO, MD (H)

Advanced Cellular Glutathione (ACG)

A major advancement in Glutathione supplementation, Results RNA® has developed Advanced Cellular Glutathione (ACG). ACG Glutathione® Extra Strength is an intra-oral spray GSH that tastes great and has been proven by an independent clinical research firm to effectively increase intracellular levels of GSH by over 10% in only 7 hours. These results are significant considering that the average toxic body will immediately begin oxidizing GSH. Clearly the amount of GSH being absorbed far exceeds the intracellular levels as shown. With 787 milligrams per 5-spray serving, it is statistically reasonable to suggest that intracellular GSH



levels continue trending upward beyond the 7 hour data point.

ACG Glutathione® Case Studies

The following case studies (see the graph below) were performed by Genova Diagnostics.

Sub mucosal Absorption: Instant Bioavailability

The significant efficacy of Results RNA® intra-oral sprays such as Advanced Cellular Silver (ACS) 200® Extra Strength, Advanced Cellular Zeolite (ACZ) nano® Extra Strength, Joint Care® Intracellular and others is achieved by atomized spray delivery, sub mucosal absorption and the instant bioavailability of key molecules at the cellular level.

“The technology and science behind ACG Glutathione® Extra Strength is exceptional and provides rapid, effectual results.”

Lyn Hanshaw, M.D.

GSH is Critical in Many Cellular Reactions

- a) GSH reacts with various physiological metabolites such as, estrogen, prostaglandins, leukotrienes, and chemicals, such as bromobenzene and counteracts acetaminophen overdose
- b) GSH interacts with Nitric oxide and both have critical roles regulating lipids, glucose, and amino acid utilization
- c) GSH is involved with the removal of the carcinogen, Formaldehyde, from the body
- d) GSH is required for the prostaglandin H2 pathways
- e) GSH inhibits Influenza virus infection
- f) GSH is involved in many other important metabolic pathways, including protein metabolism
- g) GSH is required for the proliferation of cells, including lymphocytes and intestinal epithelial cells

h) GSH plays an important role in spermatogenesis and sperm maturation

i) GSH is essential for the activation of T-lymphocytes and polymorphonuclear leukocytes, and is required for cytokine production. GSH is important for successful immune responses when the host is immunologically challenged

j) GSH is involved in the process of maintaining Vitamin C and E in the active metabolic forms

Enhance Your Practice with Superior Patient Outcomes

The capability now available to effectively supplement GSH intra-orally will be life-changing for your patients. They will benefit from the substantial health benefits of optimizing GSH levels and minimizing oxidative stress levels; all with a simple intra-oral spray protocol, without the risk of side effects.

Literature Cited

1. Ballatori et al (2009) Glutathione dysregulation and the etiology and progression of human diseases. *Biol Chem.* 2009 March; 390(3): 191–214.
2. Sies, H. (1999) Glutathione and its cellular functions. *Free Radic. Biol. Med.* 27:916-921.
3. Guoyao Wu², Yun-Zhong Fang, Sheng Yang, Joanne R. Lupton, and Nancy D. Turner. (2004) Glutathione Metabolism and Its Implications for Health. *Am. Soc. Nut. Sci.*
4. Townsend, D. M., Tew, K. D. & Tapiero, H. (2003) The importance of glutathione in human disease. *Biomed. Pharmacother.* 57:145-155.

