



## **Glutathione – Nature's Natural Detoxifier and Biomedical Treatment For Autism and Related Disorders – part 2**

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Glutathione is our bodies' main defense mechanism against toxicity. It is an antioxidant chemical produced in our cells. Glutathione has many roles, including:

- *Helps prevent free radical damage from toxins throughout the body.*
- *Supports the body's immune response.*
- *Supports effectiveness and sensitivity in the brain of chemicals such as dopamine (a problem in Parkinson's Disease) and serotonin (a chemical responsible for mood and general feeling of well-being).*
- *Helps support against heart disease and cancer.*

In autism, glutathione reserves are commonly low. This leads to an inability of many autistic-children from detoxifying toxins – such as mercury and lead. These toxins adversely affect chemicals in the brain that support attention, focusing, and general awareness. Many autistic individuals have benefitted from glutathione therapy.

Dr. Perlmutter, a well-known neurologist in Florida, with a specialty in treating people with Parkinson's Disease has seen tremendous success in using glutathione. Because glutathione has a positive effect on dopamine in the brain Parkinson's patients many time have great improvement.

Glutathione is a complex of three different amino acids that support normal cellular detoxification and protects our cells from stressful chemical reactions. The problem is when our glutathione production cannot keep up with demand or genetically (as is the case with many individuals on the autism-spectrum) cannot produce normal levels to begin with.

Glutathione is available as oral capsules or liquid suspension (also called liposomal or lipopeutical glutathione). The capsule forms are not minimally effective. Blood levels do not get high enough to have much of a clinical effect.

The oral liquid forms are okay, but again limited studies exist to really show increased cell levels, particularly for conditions such as Parkinson's. There is a transdermal (skin application) form of glutathione available by prescription. This cream is applied once to twice daily and has shown some benefit for children on the autism-spectrum.



The most effective route of glutathione therapy is through an intravenous infusion. Although, not practical for some children, this route of administration has the greatest benefits – particularly for adults, and those with neurological disorders such as Parkinson’s Disease, Alzheimer’s, Multiple Sclerosis or older children, teenagers and adults on the autism-spectrum who can handle tolerate an I.V. The intravenous route is most direct, and you can obtain higher blood levels. The infusion is very simple and quick. The process takes about 3 to 4 minutes. For Parkinson’s patient’s up to two to three times per week seems more effective. Other individuals obtain benefit with less frequent dosing.

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