



## Reduced L-Glutathione

### What is Reduced L-Glutathione?

Reduced L-glutathione is a natural compound made in the body from the amino acids glutamic acid, cysteine, and glycine. As the body's major cellular antioxidant, reduced L-glutathione is crucial for scavenging damaging free radicals. It is also required for the body's natural immune response and is important in the cellular detoxification of damaging chemicals like smoke, heavy metals, and drug metabolites. Klaire Labs™ Reduced L-Glutathione also contains magnesium, an essential mineral that plays a role in maintaining antioxidant status.

### What does “reduced” mean?

Glutathione exists in the body in two forms, a reduced form and an oxidized form. Keeping these forms in balance is extremely important for maintaining health. Our bodies are constantly producing free radical molecules as a byproduct of metabolism. The reduced form of glutathione is an antioxidant that protects cells and tissues by scavenging free radicals. In this process, reduced glutathione is transformed into the oxidized form. However, reduced glutathione can quickly be depleted under heavy bouts of free radical stress or exposure to compounds that require detoxification. A shift in the ratio towards the oxidized state leaves cells and tissues vulnerable to free radical damage and inflammation. The “L” designation indicates the natural molecular structure.

### How does reduced glutathione assist detoxification?

Glutathione plays a crucial role in the body's detoxification process that occurs inside cells, particularly within cells of the liver, kidney, intestines, and lungs. As part of the cellular detoxifying process, glutathione binds to toxins and removes them from the body before they can cause further damage. A proper ratio of reduced and oxidized forms of glutathione is crucial for maintaining the body's ability to detoxify harmful chemicals such as those found in environmental pollutants, smoke and exhaust, heavy metals, and metabolites from various types of drugs.

### How do oral supplements of glutathione work?

Although reduced glutathione is a crucial cellular compound, glutathione in the diet or in the form of supplements does not easily enter into cells. Some of the ingested glutathione will be digested, absorbed, and utilized by cells as separate amino acid components and can thus help support formation of glutathione inside cells. However, probably the most important role of oral glutathione takes place within the intestinal tract. Glutathione is needed to maintain intestinal integrity and function, yet exposure to toxins and various compounds in food can deplete glutathione and severely damage intestinal cells. The intestine is especially vulnerable as it is one of the first sites of exposure to toxins from the diet. Ingested glutathione can stimulate glutathione-containing enzymes in the intestinal mucus layers to bind with toxins present outside the cell such as heavy metals, alcohol, oxidized fats, and medications. This action helps protect intestinal epithelial cells from damage to keep them working normally. It also limits access of harmful compounds to the blood and tissues.

### When are glutathione supplements needed?

Increased exposure to damaging environmental chemicals, oxidized fats, excess alcohol, certain medications, or heavy metals can shift the glutathione ratio towards the oxidized form producing a deficiency of reduced glutathione. Supplements of Reduced L-Glutathione may be used whenever there is an increased need for antioxidant protection and intestinal support of detoxification.

### How much Reduced L-Glutathione should I take?

Typical supplemental amounts used to support antioxidant protection and complement the defense mechanisms of intestinal cells range from 75 mg to 300 mg daily. Reduced L-glutathione is safe to take on a daily basis as long as needed. It can be taken indefinitely to help provide ongoing antioxidant protection.

**These statements have not been evaluated by the Food and Drug Administration.  
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