***Glutathione Benefits***

***Overview***

Glutathione is an antioxidant produced in cells. It’s comprised largely of three amino acids: glutamine, glycine, and cysteine. Glutathione levels in the body may be reduced by a number of factors, including poor nutrition, environmental toxins, and stress. Its levels also decline with age. In addition to being produced naturally by the body, glutathione can be given intravenously, topically, or as an inhalant. It’s also available as an oral supplement in capsule and liquid form.

***Glutathione benefits***

**1. Reduces oxidative stress**

Oxidative stress occurs when there’s an imbalance between the production of free radicals and the body’s ability to fight them off. Too-high levels of oxidative stress may be a precursor to multiple diseases. These include diabetes, cancer, and rheumatoid arthritis. Glutathione helps stave off the impact of oxidative stress, which may in turn, reduce disease.

**2. May improve psoriasis**

A small study indicated that whey protein, when given orally ,improved [psoriasis](https://www.healthline.com/health/psoriasis) with or without additional treatment. Whey protein had been previously demonstrated to increase glutathione levels.

**3. Reduces cell damage in alcoholic and nonalcoholic fatty liver disease**

Cell death in the liver may be exacerbated by a deficiency in antioxidants, including glutathione. This can lead to [fatty liver](https://www.healthline.com/health/fatty-liver) disease in both those who misuse alcohol and those who don’t. Glutathione has been shown to improve protein, enzyme, and bilirubin levels in the blood of individuals with alcoholic and nonalcoholic chronic fatty liver disease. A study reported that glutathione was most effective when given to people with fatty liver disease intravenously in high doses. Participants in the study also showed reductions in malondialdehyde, a marker of cell damage in the liver. Another study found that orally administered glutathione had positive effects on people with nonalcoholic fatty liver disease following proactive lifestyle changes.

**4. Improves insulin resistance in older individuals**

As people age, they produce less glutathione. Researchers at [Baylor School of Medicine](https://www.bcm.edu/news/geriatrics/glutathione-deficiency-fat-insulin-aging) used a combination of animal and human studies to explore the role of glutathione in weight management and insulin resistance in older individuals. Study findings indicated that low glutathione levels were associated with less fat burning and higher rates of fat storing in the body. Older subjects had cysteine and glycine added to their diets to increase glutathione levels, which spiked within two weeks, improving insulin resistance and fat burning.

**5. Increases mobility for people with peripheral artery disease**

[Peripheral artery disease](https://www.healthline.com/health/type-2-diabetes/peripheral-arterial-disease) occurs when the peripheral arteries become clogged by plaque. It [most commonly](http://www.heart.org/HEARTORG/Conditions/VascularHealth/PeripheralArteryDisease/About-Peripheral-Artery-Disease-PAD_UCM_301301_Article.jsp#.WgEQFmhSw2w) happens in the legs. One [study](http://www.mayoclinicproceedings.org/article/S0025-6196(11)62019-3/abstract) reported that glutathione improved circulation, increasing the ability of study participants to walk pain-free for longer distances. Participants receiving glutathione rather than a saline solution placebo were given intravenous infusions two times daily for five days, and then analyzed for mobility.

**6. Reduces symptoms of Parkinson’s disease**

[Parkinson’s disease](https://www.healthline.com/health/parkinsons/stages) affects the central nervous system and is defined by symptoms such as tremors. It currently has no cure. One older[study](http://www.mayoclinicproceedings.org/article/S0025-6196(11)62019-3/abstract) documented intravenous glutathione’s positive effects on symptoms such as tremors and rigidity. While more research is needed, this case report suggests that glutathione may help reduce symptoms, improving quality of life in people with this disease.

**7. May help fight against autoimmune disease**

The chronic inflammation caused by autoimmune diseases can increase oxidative stress. These diseases include rheumatoid arthritis, celiac disease, and lupus. According to one study, glutathione helps reduce oxidative stress by either stimulating or reducing the body’s immunological response. Autoimmune diseases attack the mitochondria in specific cells. Glutathione works to protect cell mitochondria by eliminating free radicals.

**8. May reduce oxidative damage in children with autism**

Several studies, including a clinical trial reported in Medical Science Monitor, indicate that children with autism have higher levels of oxidative damage and lower levels of glutathione in their brain. This increased susceptibility to neurological damage in children with autism from substances such as mercury. The eight-week clinical trial on children aged 3 to 13 used oral or transdermal applications of glutathione.

**9. May reduce the impact of uncontrolled diabetes**

Long-term high blood sugar is associated with reduced amounts of glutathione. This can lead to oxidative stress and tissue damage. A [study](http://care.diabetesjournals.org/content/34/1/162) found that dietary supplementation with cysteine and glycine boosted glutathione levels. It also lowered oxidative stress and damage in people with uncontrolled diabetes, despite high sugar levels

**10. May reduce respiratory disease symptoms**

N-acetylcysteine is a medication used to treat conditions such as asthma and cystic fibrosis. As an inhalant, it helps to thin mucus and make it less paste-like. It also reduces inflammation. [N-acetylcysteine is byproduct of glutathione](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2129149/). Glutathione is found in some foods, although cooking and pasteurization diminish its levels significantly. Its highest concentrations are in raw or very rare meat, unpasteurized milk and other unpasteurized dairy products, freshly picked fruits and vegetables, such as avocado, and asparagus.

***Forms***

Glutathione contains sulfur molecules, which may be why foods high in sulfur help to boost its natural production in the body. These foods include cruciferous vegetables, such as broccoli, cauliflower, Brussels sprouts, and bok choy, allium vegetables, such as garlic and onions, eggs, nuts, legumes, lean protein, such as fish, and chicken. Other foods and herbs that help to naturally boost glutathione levels include milk thistle, flaxseed guso seaweed, and whey. Glutathione is also negatively affected by insomnia. Getting enough rest on a regular basis can help increase levels.

***Side effects and risks***

A diet rich in glutathione-boosting foods does not pose any risks. However, taking supplements may not be advisable for everyone. Talk to your doctor about glutathione to determine if it’s right for you. Possible side effects may include abdominal cramps, bloating, trouble breathing due to bronchial constriction, allergic reactions, such as rash.