

4 natural ways to increase glutathione



Medically reviewed by [Alan Carter, Pharm.D.](#) — By [Jamie Eske](#) on August 30, 2019

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Glutathione is an antioxidant that occurs naturally in the cells of the body. It is also present in some foods. Recently, glutathione has been gaining popularity due to its alleged health benefits.

As an [antioxidant](#), glutathione helps neutralize free radicals and reduce oxidative stress that can damage the body's cells.

Unlike most antioxidants, which come from plant sources, the human body naturally produces glutathione in the liver.

However, glutathione levels naturally decrease with age. In fact, [researchers](#) ¹ have found links between low glutathione levels and some age-related conditions, such as [glaucoma](#) and [macular degeneration](#).

In this article, we provide four tips that may help people increase their glutathione levels. It is important to remember that the majority of the current evidence is from animal studies or preliminary clinical trials and that to date, there is little information available on the side effects.

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1. Eat sulfur rich foods



Mushrooms are one of the foods richest in sulfur amino acids.

Eating sulfur rich foods may increase glutathione levels in the body.

Sulfur occurs in several amino acids, two of which — methionine and cysteine — are precursors for glutathione and therefore [contribute to its synthesis](#) [✓].

According to a [2017 study](#), mushrooms are among the most significant dietary sources of glutathione and ergothioneine, the latter of which is a sulfur amino acid. However, levels of these compounds can vary widely.



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Other [sulfur rich foods](#) [✓] include:

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- grains, including rice, bread, and pasta
- vegetables, such as [onion](#), [garlic](#), [broccoli](#), [kale](#), and cabbage

According to a [2013 pilot study](#)[✓], one 250-gram portion of steamed broccoli increased the activity of the enzyme glutathione S-transferase, suggesting increased plasma levels of glutathione, and improved oxidative stress resistance in 10 healthy adult males who smoked.

However, few large scale clinical trials have assessed the efficacy of dietary sulfur amino acids in reducing oxidative stress. Therefore, more research is necessary to validate findings from preliminary and small scale studies.

2. Consume more dairy

Dairy products contain the protein beta-casein, which has the potential to increase glutathione levels in the body.

In a small [2015 study](#)[✓], researchers found associations between higher dairy consumption and higher glutathione concentrations in the brains of older adults.

However, increases in glutathione seem to vary depending on the type of beta-casein. Dairy milk can contain different variations of the beta-casein protein, called A1 and A2. These variations seem to affect glutathione concentrations differently.

According to one [2016 study](#)[✓], people who drank dairy milk containing only A2 beta-casein showed higher increases in plasma glutathione concentrations than those who consumed milk containing both A1 and A2 beta-casein.

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3. Consume more whey protein

Whey is another protein that is present in dairy products. It also contains large quantities of cysteine. In a [2012 study](#)[✓], researchers found that whey protein alleviated oxidative stress in human [colon cancer](#) cells, which they believed was possible because the protein increased glutathione levels.

Findings from an [earlier study](#) suggest that whey protein can decrease oxidative stress in the lungs of people with [cystic fibrosis](#) by increasing glutathione levels. However, it appears that whey protein supplementation did not improve lung function.

4. Get more exercise

Regular exercise may reduce a person's oxidative stress.

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Research has also suggested that exercise can reduce oxidative stress by increasing glutathione levels. In a [2014 study](#), researchers observed that older adults who had participated in regular physical activity throughout their lives had higher levels of glutathione.

They also noted that exercise increased glutathione concentrations among adults who led a sedentary lifestyle. However, the researchers only observed this increase in younger adults.

These findings suggest that leading a physically active life can lead to long term health benefits.

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Possible benefits of glutathione

Glutathione plays several [vital roles](#) in supporting overall health. Among other things, it can:

- neutralize free radicals
- regenerate [vitamins C and E](#)
- remove mercury from the brain
- regulate cell growth and death
- maintain mitochondrial DNA
- activate antioxidant enzymes

Due to its role in preventing cellular damage, many people believe that

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- reduce [inflammation](#) and oxidative damage
- promote cardiovascular health
- slow [cancer](#) progression
- slow aging processes
- improve immune function
- prevent neurodegenerative conditions
- minimize cell damage from liver disease
- improve [insulin resistance](#)

Although there is a need for more research, glutathione may also have condition specific benefits:

Parkinson's disease

In a [2017 study](#)[✓], researchers examined the effects of glutathione supplements in people with [Parkinson's disease](#).

Although the people who took glutathione supplements experienced improvements in their symptoms, the results did not differ significantly from those of the people who took [placebo](#) supplements.

Hypertension

At the start of a [2007 study](#), people with untreated [hypertension](#) had low glutathione levels. The same people experienced decreases in oxidative stress and increases in glutathione levels after taking antihypertensive medication for 3 months.

Oxidative stress

In a [2015 clinical trial](#) involving 54 healthy adult participants, daily glutathione supplementation increased glutathione levels by an average of 30–35% in plasma and red and white blood cells and reduced oxidative stress.

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However, these increases were time dependent, and the levels returned to normal after about 1 month.

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Possible side effects of glutathione

Few studies have focused specifically on glutathione, so there is limited information regarding its side effects.

In 2019, the [Food and Drug Administration \(FDA\)](#) published a statement to warn against using glutathione powder that Letco Medical had distributed.

They issued this warning after receiving several reports of people experiencing adverse side effects after receiving an injectable drug containing the glutathione powder in question.

According to the FDA, the glutathione powder may have contained high quantities of endotoxins. These are substances that can cause adverse health effects, such as:

- nausea
- vomiting

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- chills
- low blood pressure
- difficulty breathing

Things to consider

Research suggests that a glutathione rich diet may not produce any clinically significant results.

Glutathione is a vital antioxidant that supports various elements of human health. Preliminary studies have suggested that low glutathione levels may contribute to different disease states. Currently, however, its exact roles in disease development and prevention remain unclear.

Researchers have questioned the effectiveness of glutathione supplementation due to its [low bioavailability](#). The less bioavailable something is, the harder it is for the body to use.

The human digestive system quickly breaks down water soluble compounds such as glutathione, so eating glutathione rich foods or taking oral glutathione supplements may not produce any clinically significant results.

Summary

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Glutathione is a naturally occurring antioxidant. The human liver can produce it, and it is also present in several foods.

Glutathione levels naturally decrease with age. However, poor diet and sedentarism can also reduce glutathione levels.

People can naturally increase their glutathione levels by making dietary and lifestyle-related changes.

Researchers have found some evidence to suggest that glutathione supplementation could benefit some people, but it may cause adverse side effects.

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