

# Better Sleep and 7 Other Glycine Benefits

Log more Zs, boost longevity, and support brain health? Yes, please.

By Sydney Bueckert, C.S.C.S., NASM-C.P.T.

Fact checked by Joy Ferguson

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Need to catch some z's, pronto? Glycine can help with that, according to [Louisa Nicola](#), neurophysiologist and CEO of [Neuro Athletics](#). The celebrity performance coach who works with NFL players like Bryce Butler and NBA players like Omer

Stevenson, swears by glycine—an amino acid—to help her (and her clients) get better sleep.

Nicola takes glycine as a part of her daily sleep stack, along with other compounds that she says have demonstrated relaxation-promoting and stress-relieving properties like magnesium L-threonate, GABA, and [ashwagandha](#).

“Glycine has a powerful effect on sleep,” says Nicola. “And sleep is crucial to maintaining physical, cognitive, and emotional health.” A lack of solid sleep has been linked to a host of health issues, including obesity, diabetes, cardiovascular disease, poor immunity, poor mental health, and neurodegeneration. It can also lead to accidents on the road and in the workplace.

But better shut-eye is just the tip of the iceberg when it comes to glycine benefits. Here’s everything you need to know about glycine, and why you might want to consider adding it to your supplement stack.

## What Is Glycine?

“Glycine is one of the twenty amino acids that serves as a building block for protein synthesis in living organisms,” says Nicola. It’s a component of several proteins that play key roles in muscle maintenance and hormone regulation.

Glycine is produced naturally in the body (that’s why it’s called a non-essential amino acid). In other words, you technically don’t need to eat glycine or take a glycine supplement, since your body can produce it on its own. “While the body can produce glycine, this doesn’t negate the potential benefits of external supplementation, particularly for individuals whose natural synthesis may not be adequate for optimal physiological functioning,” says Nicola.

The average person gets about 1.5 to three grams of glycine per day from rice or other protein-rich foods like meat and fish, which is in the ballpark of the three grams Nicola recommends for sleep benefits ([1](#)).

## 8 Surprising Glycine Benefits

For a \*non-essential\* amino acid, the benefits of glycine are impressive.

### Improves sleep quality

Nicola isn’t the only one who’s experienced better sleep thanks to glycine. “In one study, 15 healthy participants aged between 24 and 53 years who reported chronic sleep dissatisfaction, experienced a reduced feeling of fatigue when administered three grams of glycine within one hour before bedtime ([2](#)),” says Nicola.

Another found that in subjects continuously experiencing poor sleep quality, taking three grams of glycine before bedtime reduced the time it took to fall asleep, improved sleep efficiency, and decreased daytime sleepiness when compared to a placebo (3).

There are two ways glycine may affect sleep: “Glycine’s sleep-promoting mechanisms are thought to involve a reduction in core body temperature and the modulation of serotonin levels,” explains Nicola.

Researchers suspect by increasing the supply of [serotonin](#) in the prefrontal cortex (the part of the brain involved in memory consolidation during sleep), glycine may indirectly affect melatonin production (4, 5).

“Since adding glycine to my nightly routine, I’ve observed a measurable improvement in sleep quality, supported by [Oura ring](#) data. I’ve seen an average increase of 12 to 15 minutes in deep sleep and a 5- to 7-point rise in my Readiness Score,” says Nicola. “Subjectively, I fall asleep more quickly and wake up feeling more refreshed. These changes are consistent with glycine’s known effects on enhancing deep sleep and improving sleep onset latency.”

## **Supports memory and mood**

Glycine stimulates the production of serotonin—aka the “feel good” hormone. Serotonin can help elevate mood, improve sleep, and enhance memory and thinking.

“Glycine also acts as a neurotransmitter in the central nervous system,” says Nicola. Meaning: it helps your brain process motor and sensory information (6). Glycine specifically acts on N-methyl-D-aspartate (NMDA) receptors to produce an excitatory effect—a process that has been linked to building neuroplasticity, learning, and memory (7).

## **Protects against muscle loss**

As a key component of [collagen](#), glycine helps provide structure and strength to bones, skin, muscles, and connective tissues. Researchers believe that collagen peaks around age 25 to 34 years, and then begins to decline. To start, you might notice changes like less skin elasticity and more fragile hair strands (8). By the time you’re in your sixties, you might be looking at deeper wrinkles and significant loss of muscle mass.

Glycine might also help preserve muscle under common conditions of muscle wasting such as aging, malnutrition, or situations where your body is under a lot of stress like cancer (9).

## **Serves as an essential component of creatine**

Glycine is one of three amino acids your body needs to make [creatine](#)—which helps your body create ATP, a source of energy used by your muscles and brain. When combined with resistance training, creatine has been shown to increase muscle size and strength ([10](#)). Interestingly, supplementing with creatine may improve short-term memory, intelligence, reasoning, and memory ([11](#), [12](#)). While your body naturally produces creatine, getting too little glycine may reduce how much you produce ([13](#)).

# The amino acid glycine

Reviewed by

Samo Borko | Chief Technology Officer



Glycine might be the smallest amino acid, but don't let its size fool you—it plays a huge role in your body. It's a building block for proteins and is essential for producing [collagen](#), the protein that keeps your skin firm, your joints flexible, and your connective tissues strong. But that's not all. Glycine also acts as a neurotransmitter in the brain, helping to regulate nerve signals. This means it can influence everything from [sleep quality](#) and mental clarity to relaxation and even longevity.

## Research: Your body's glycine might not be enough

Your body does produce glycine on its own—mainly by converting the amino acid serine through metabolic processes in the liver. Research shows that glycine production ranges from approximately 2.28 to 3.12 grams per day in adult males, depending on dietary protein intake—whether from meat, fish, vegetarian, or vegan sources.[\[1\]](#). The issue is, that might not be enough.

Research suggests that glycine, long considered a “non-essential” amino acid, may actually be “conditionally essential” under certain conditions. This means that while your body can make it, production may fall short when you need it the most—during pregnancy, aging, intense exercise, chronic stress, inflammation, or illness. Studies suggest that 10-15 grams per day could be the ideal intake for optimal health, far more than what the body naturally produces [\[2,3\]](#).

See which foods contain the most glycine and how to include them in your diet [here](#).

## The many glycine benefits

Glycine is more than just a simple amino acid—it plays a crucial role in many of the body’s essential functions. From supporting brain health and reducing stress to aiding digestion, collagen production, and even longevity, glycine has a wide range of benefits that go beyond basic protein synthesis.

Because of these many functions, the body will always prioritize using glycine—whether from diet or collagen supplements—for the most essential tasks first. This mechanism of glycine use highlights the importance of ensuring an adequate glycine intake so that all its vital roles in the body can be fully supported.

# A neurotransmitter that calms the brain

Glycine isn't just a structural component of proteins—it also acts as a neurotransmitter in the central nervous system. Your glycine receptors make sure it plays a key role in balancing nerve signals, helping to calm the nervous system and reduce overstimulation. There are other glycine health benefits – here's our rundown:

## Glycine for better sleep

Research shows that glycine can improve sleep quality by lowering body temperature at night and increasing serotonin levels, which supports melatonin production. Many people report falling asleep faster and waking up more refreshed after increasing their glycine intake. A study found that taking 3 grams of glycine before bed helped people with unsatisfactory sleep fall asleep faster, improve sleep efficiency, and feel less fatigued the next day[4].

## Glycine and anxiety relief

Additionally, glycine has been found to reduce symptoms of anxiety by promoting relaxation and stabilizing mood. Research on glycine's effects on anxiety further supports this, as a study on patients with adjustment disorder found that four weeks of glycine supplementation reduced anxiety symptoms by 31%, compared to 15% in the placebo group. The most significant improvements were seen in anxious mood, sleep disturbances, and tension, suggesting that glycine may help manage stress-related anxiety effectively[5].

# Supporting gut health and reducing inflammation

Inflammation in the gut can lead to various digestive issues, and glycine has been shown to have anti-inflammatory effects[6]. It helps maintain the intestinal barrier, reducing the risk of leaky gut syndrome. Studies also suggest that glycine could play a role in managing inflammatory bowel

diseases like Crohn's and ulcerative colitis by modulating immune responses in the gut [7].

## Collagen production for skin and hair

One of glycine's most important roles is in collagen synthesis. Collagen is like the body's natural glue, holding skin, joints, and connective tissues together. It keeps skin firm, joints flexible, and hair strong.

Read more here: [Liquid collagen benefits, dosage and possible Side Effects](#)

### Glycine benefits for skin

As we age, collagen production declines, leading to wrinkles and sagging skin. Since glycine is a key building block of collagen, ensuring sufficient intake supports skin structure and repair.

A double-blind, placebo-controlled study (Proksch et al., 2014) found that daily supplementation with 2.5–5 g of collagen peptides for eight weeks significantly improved skin elasticity compared to placebo. The effect persisted even four weeks after stopping supplementation, particularly in older participants, highlighting the importance of glycine and collagen peptides in maintaining firm, hydrated skin[8].

Related: [Hydrolyzed Collagen: What it is and its benefits](#)

### Glycine benefits for hair

Glycine plays a key role in keratin production and supports collagen formation, helping to strengthen hair and reduce breakage. Research suggests that glycine benefits for hair include improved structure and resilience. A study on a cosmetic foam with glycine, caffeine, zinc, and polyphenols found a significant reduction in the telogen rate and increased hair density after six months[9].

While the study didn't isolate glycine's effect, it suggests that glycine, as part of a nutrient-rich formula, may support healthier, thicker hair over time.

You might also find this blog interesting: [Is collagen good for men?](#)

## Muscle repair and physical performance

Glycine plays an important role in protecting muscle mass, particularly under conditions of stress, illness, or caloric restriction. It aids in protein metabolism and supports creatine production, which helps muscles generate energy during exercise. Research suggests that glycine supplementation may help counteract muscle breakdown, especially in aging individuals or those experiencing muscle-wasting conditions[10].

## Balancing blood sugar and metabolic health

New research highlights glycine's role in insulin regulation and glucose metabolism. Higher glycine levels have been linked to better insulin sensitivity and a lower risk of type 2 diabetes. It may also contribute to fat metabolism, supporting a healthy body composition [11].

## Mitochondrial health and longevity

Mitochondria, the energy powerhouses of our cells, rely on glycine for optimal function. Studies suggest that glycine may help reduce oxidative stress, a major factor in aging and age-related diseases. Some longevity research even indicates that glycine supplementation could extend lifespan by enhancing cellular function and reducing inflammation [12].

## A key player in the immune system

By acting as a precursor to glutathione, one of the body's most powerful antioxidants, glycine helps protect cells from damage and supports immune function. It plays a role in reducing chronic inflammation, which is linked to many diseases, including cardiovascular issues and neurodegenerative conditions.