

# How to Improve Sleep and Reduce Stress with GABA

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## STORY AT-A-GLANCE

- › GABA (gamma-aminobutyric acid), the brain's main inhibitory neurotransmitter, shows promise in reducing stress and improving sleep quality when taken orally
- › Research indicates GABA supplementation may help lower your stress levels, though more studies are needed to confirm its full effects
- › There's evidence suggesting GABA intake could enhance certain aspects of sleep, such as falling asleep faster and feeling more rested upon waking
- › Scientists are still working to determine the best dosage and timing for GABA supplementation to maximize its benefits
- › Natural food sources rich in GABA, like tea and fermented products, may offer similar stress-reducing and sleep-promoting advantages as supplements

GABA (gamma-aminobutyric acid) is a neurotransmitter that's gaining attention for its stress-reducing and sleep-enhancing properties. As someone who's always on the lookout for natural ways to improve health, I find the growing research on GABA particularly fascinating.

GABA is the main inhibitory neurotransmitter in your brain, meaning it helps calm down overactive neurons. It's like a built-in relaxation system,<sup>1</sup> and recent studies<sup>2,3</sup> suggest taking GABA orally, either through supplements or GABA-rich foods, has calming effects.

For example, a systematic review of 14 placebo-controlled human trials published in *Frontiers in Neuroscience*<sup>4</sup> found that GABA intake was associated with reduced stress markers and improvements in sleep quality. But here's what really caught my attention – GABA is naturally present in certain foods,<sup>5</sup> which opens up many possibilities for boosting levels through your diet.

## **Early Studies Hint at GABA's Stress-Reducing Properties**

The discovery of GABA as a natural remedy for stress and sleep issues has sparked significant interest in the scientific community. Initially identified in plants in the 1950s,<sup>6</sup> researchers soon found GABA in the mammalian brain, where it acts as the primary inhibitory neurotransmitter.

Animal studies first revealed GABA's calming effects on the nervous system. These findings aligned with traditional uses of GABA-rich foods for relaxation in various cultures. As scientists dug deeper, they uncovered GABA's potential to influence stress responses and sleep patterns in humans.

The development of biosynthetic GABA production methods opened new avenues for research. This breakthrough allowed for the creation of GABA supplements, enabling more controlled studies on its effects. Early human trials began exploring GABA's impact on stress markers, with promising results.

Preliminary sleep studies suggested that GABA intake improved certain aspects of sleep. These initial findings, while limited, provided a foundation for more comprehensive investigations into GABA's sleep-promoting properties.

As interest in natural approaches to stress and sleep management grew, so did the focus on GABA research. The early discoveries paved the way for more rigorous studies, aiming to understand the full potential of this intriguing compound.

## **Research Reveals GABA's Impact on Stress and Sleep Parameters**

GABA shows promising effects on both stress reduction and sleep improvement, according to recent studies. The research indicates that GABA intake is associated with reduced physiological stress markers and improvements in subjective stress measures.<sup>7</sup> These findings suggest that GABA influences your body's stress response in meaningful ways.

Both natural and biosynthetic forms of GABA show benefits, but their effects differ slightly. For stress reduction, effective doses of GABA range from 20 to 100 milligrams (mg). Interestingly, natural GABA sources appear to be effective at even lower doses compared to biosynthetic forms.<sup>8</sup> This discovery highlights the benefits of incorporating GABA-rich foods into our diets as a natural stress management strategy.

When it comes to sleep, GABA supplementation helps reduce sleep latency, meaning it shortens the time it takes to fall asleep.<sup>9</sup> While the evidence for overall sleep quality improvements is limited, these initial findings are encouraging for those struggling with sleep problems.

GABA helps regulate your sleep-wake cycles as well, making it easier for you to not only fall asleep but also to stay asleep longer. Some studies have found that taking GABA also helps improve the quality of early sleep stages.<sup>10</sup> Higher doses of GABA, however, appear necessary to achieve sleep benefits. As noted by study authors:

*"Repeated GABA intake across days may improve early sleep parameters; however, it is important to note that doses required to elicit sleep benefits (ranging between 100 and 300 mg for biosynthetic GABA) seem to be higher than that of stress benefits (ranging between 20 and 100 mg for biosynthetic and 2.01 and 26.4 mg for natural GABA) and seem to require a long-term use (one to eight weeks) to improve early sleep measures only.*

*Having said that, doses ranging between 100 and 300 mg seems to be efficacious in reducing sleep latency with prolonged use of one to four weeks."<sup>11</sup>*

This dosage difference between stress and sleep benefits underscores the importance of tailoring your GABA intake to your specific needs. It also raises questions about the

mechanisms behind GABA's varied effects at different concentrations.

The research on GABA's effects on stress and sleep is still in its early stages, with many questions yet to be answered. How exactly does GABA influence our nervous system to produce these effects? What are the long-term implications of GABA supplementation? As we delve deeper into the mechanisms behind GABA's actions, we'll gain a clearer understanding of how to harness its full potential for improving our well-being.

## **GABA Influences Your Nervous System Function to Make You More Relaxed**

GABA works by binding to special GABA receptors, which helps quiet down your overactive brain cells, helping you feel more relaxed and less stressed.<sup>12</sup> When you take GABA as a supplement or eat GABA-rich foods, it affects your whole nervous system. Some studies show it might lower activity in the "fight or flight" part of your nervous system and boost the "rest and digest" part instead. This shift can help your body and mind feel calmer.<sup>13</sup>

GABA seems to impact your body's stress response in several ways. It might help lower levels of cortisol, one of the primary stress hormones in your body. Some research also suggests GABA can change your heart rate variability, which is a sign of how well your body handles stress.<sup>14</sup> To summarize, here's a short list of how GABA might help with stress and sleep:

- Reduces brain cell activity
- Lowers "fight or flight" responses
- Decreases cortisol levels
- Improves heart rate variability
- Helps regulate sleep-wake cycles

Understanding how GABA works in your body is key to using it effectively for stress relief and better sleep. As we learn more about GABA's effects, we're finding new ways it

might help improve people's health and well-being on a larger scale.

## **Real-Life Examples Demonstrate GABA's Effects on Stress and Sleep**

Research on GABA's impact on stress and sleep has revealed promising results across various populations. These studies provide concrete examples of how GABA supplementation affects people in real-life situations.

For example, a study focusing on university students examined the effects of GABA-fortified tea.<sup>15</sup> The researchers found that students experiencing high levels of stress showed reduced stress responses after consuming the beverage. More importantly, these students demonstrated improved heart rate variability measures, indicating better stress management at a physiological level.

Another intriguing study investigated the effects of GABA-fortified rice consumption in middle-aged adults.<sup>16</sup> Participants reported improved subjective calmness and lower worry scores after regularly consuming GABA-enriched rice. Interestingly, the study also noted a trend for enhanced mood upon awakening, suggesting that GABA's benefits go beyond stress reduction and into overall emotional well-being.

For older adults, sleep issues often become more prevalent. A study examining GABA's effects on sleep in elderly participants yielded encouraging results.<sup>17</sup> The research showed improvements in both the onset and maintenance of sleep among those taking GABA supplements. Additionally, participants reported enhanced morning alertness and better recovery from fatigue, addressing multiple aspects of sleep quality that often decline with age.

These examples highlight GABA's versatility in addressing stress and sleep issues across different age groups and life situations. From stressed college students to middle-aged professionals and older adults, GABA shows promise in improving various aspects of mental and physical well-being. Based on these case studies, some of the notable benefits of GABA include:

- Reducing physiological stress responses in high-stress individuals
- Improving subjective feelings of calmness and reduced worry
- Enhancing sleep onset and maintenance in older adults
- Better morning alertness and fatigue recovery
- Improves overall well-being

## **Methods to Enhance GABA Intake and Effectiveness**

GABA production techniques have advanced significantly in recent years. Biosynthetic methods now allow for the production of GABA supplements with precise dosing, enabling more controlled intake for specific needs.<sup>18</sup> These advancements allow for more controlled and targeted GABA intake.<sup>19</sup> Some companies have developed GABA-containing functional beverages, combining the benefits of hydration with GABA's calming effects.<sup>20</sup>

GABA-enriched food development also offers a tasty way to boost your intake. GABA-enriched foods have been developed through fermentation processes, with kimchi and certain teas naturally containing higher levels of GABA.<sup>21</sup> These foods provide a natural source of GABA that's easy to incorporate into your daily diet.<sup>22,23</sup>

To maximize GABA's stress-reducing effects, I recommend combining supplementation with stress reduction techniques. Mindfulness and meditation practices help activate your parasympathetic nervous system, working synergistically with GABA. Deep breathing exercises further enhance GABA's calming effects by promoting relaxation.<sup>24</sup>

For better sleep, I suggest pairing GABA intake with good sleep hygiene practices. Establish a consistent sleep schedule, create a relaxing bedtime routine and limit screen time before bed. These habits work together with GABA to promote better sleep onset and quality.<sup>25</sup>

## **GABA Offers a Natural Path to Stress Relief and Better Sleep**

GABA emerges as a promising natural option for managing stress and improving sleep. The growing body of evidence supports its potential benefits, with studies showing encouraging results for stress reduction and sleep enhancement.<sup>26</sup> While more research is needed to fully confirm these effects, the current findings offer hope for those seeking natural alternatives to conventional medications.

Both natural and supplemental GABA sources show promise. GABA-rich foods like fermented products and certain teas provide a natural way to increase intake, while supplements offer more precise dosing options. This versatility allows you to choose the approach that best fits your lifestyle and needs.

However, several key areas still require further investigation. Researchers need to establish optimal dosing and timing protocols, conduct long-term safety and efficacy studies, and compare the effects of natural versus biosynthetic GABA. These studies will help refine our understanding of GABA's benefits and how to maximize its use.

As stress and sleep issues continue to affect millions worldwide, GABA offers a ray of hope. While not a magic bullet, it represents an important piece of the puzzle in developing holistic strategies for stress management and sleep improvement.

## Sources and References

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