# SUPERSLEEP

IMPROVES SLEEP QUALITY ENHANCES MOOD & EMOTIONAL WELLBEING REDUCES STRESS

SUPPORTS PHYSICAL HEALTH

#### #sleepwell

## **SLEEP BETTER**

#### INDICATION

SuperSleep<sup>™</sup> is a scientifically formulated supplement tailored to address sleep dysregulation and stress manifestations in the adolescent demographic. It comprises a combination of active ingredients, including L-Theanine, Magnesium, Zinc, Taurine, GABA, Vitamin B6, and Glycine, chosen for their evidence-based roles in promoting neuronal relaxation, enhancing sleep architecture, and modulating stress responses. Offered in both a delicious hot chocolate preparation and a neutral unflavored version, SuperSleep™ provides flexibility in administration. Incorporating this supplement may aid in achieving consistent sleep patterns, reducing stress-related physiological responses, and subsequently enhancing daytime cognitive function and mood stability in teens.

#### **KEY DELIVERABLES**

SuperSleep™ is tailored to address the unique sleep and stress challenges faced by adolescents. The product stands out for its dual-action, enhancing restorative sleep while actively tempering stress, leading to more balanced mood and heightened daytime vitality.

#### **KEY INGREDIENTS:**

L-Glycine, Taurine, GABA, L-Theanine, Magnesium Bisglycinate, Zinc, Vitamin B6, Vitamin D

#### ADDRESSING SPECIFIC HEALTH NEEDS

bioteen

SUPERSLEEP Sleep · Rest · Restore

Difficulty falling asleep or staying asleep

Persistent feelings of stress or overwhelm

Daytime fatigue or lethargy

Mood swings or increased irritability

Difficulty concentrating or focusing on tasks

Reduced academic performance or declining grades

Increased anxiety, especially in the evenings.

Physical manifestations of stress such as headaches or stomachaches.

Reduced motivation or energy for daily activities.

#### FORMAT

With two convenient formulations, a soothing hot or cold chocolate and a flexible unflavoured option, it effortlessly integrates into nightly routines.

#### **FUNCTIONAL BENEFITS**



#### **IMPROVES SLEEP QUALITY**

SuperSleep™ is designed to improve overall sleep quality, helping your teen fall asleep faster, stay asleep longer, and wake up feeling refreshed and rejuvenated.



#### **REDUCES STRESS AND ANXIETY**

SuperSleep™ contains ingredients that promote relaxation and reduce stress and anxiety, promoting a calm and restful sleep as well as down regulating the central nervous system.



#### ENHANCES MOOD AND EMOTIONAL WELL-BEING

By improving sleep quality and reducing stress and anxiety, SuperSleep™ can enhance mood and emotional well-being.

ACTIVE INGREDIENT	MECHANISM OF ACTION
<b>L-Glycine</b> (Amino Acid)	L-Glycine, a non-essential amino acid included in SuperSleep™, is pivotal for promoting restful sleep. At a dose of 3000mg, it significantly contributes to sleep quality by lowering body temperature and facilitating the onset of sleep. Glycine works by activating specific neurotransmitters and receptors in the brain that play a role in sleep regulation. It acts as an inhibitory neurotransmitter, helping to calm the nervous system, reduce core body temperature, and signal the brain that it's time to sleep. This cooling effect is essential for initiating the body's natural sleep process and achieving deep, restorative sleep phases.
<b>Taurine</b> (Amino Acid)	Known for its action in modulating GABAergic transmission, Taurine bolsters inhibitory transmission, fostering a calming effect conducive to sleep. Its influence extends to neurogenesis, neuromodulation, and the regulation of intracellular calcium levels, which collectively support CNS stability and sleep regulation.
<b>GABA</b> (Gamma-Aminobutyric Acid) Neurotransmitter	GABA plays an essential role in promoting relaxation and facilitating sleep. As the primary relaxing neurotransmitter in the central nervous system, GABA acts as a natural calming agent and helps to regulate the sleep-wake cycle by inhibiting excitatory signals and promoting a state of tranquility. When GABA binds to its receptors in the brain, it induces a sense of calmness, reduces anxiety, and eases muscle tension, all of which contribute to the initiation and maintenance of sleep. GABA activity is often targeted by medications designed to aid sleep, underlining the significance of this neurotransmitter in the complex orchestration of a restful night's sleep.
<b>L-Theanine</b> (Amino Acid)	L-Theanine, a naturally occurring amino acid found primarily in tea leaves, is a crucial component of SuperSleep™, playing a significant role in promoting relaxation and improving sleep quality. L-Theanine exerts a calming effect on the brain, crucial for individuals struggling with sleep disturbances. The primary mechanism of action of L-Theanine lies in its ability to modulate brainwave activity, specifically by increasing alpha-wave production. Alpha waves are associated with a state of relaxed alertness and mental clarity. By promoting these brain waves, L-Theanine helps in transitioning the mind into a more relaxed and stress-free state, which is conducive to falling asleep. Moreover, L-Theanine influences the levels of certain neurotransmitters in the brain, including serotonin and dopamine, which play a role in mood and sleep regulation. It also increases the production of GABA, an inhibitory neurotransmitter that counteracts the excitatory signals in the brain, further promoting relaxation. This combination of enhanced alpha brain wave activity and balanced neurotransmitter levels helps to ease the mind, reduce anxiety, and improve the quality of sleep. Unlike traditional sleep aids, L-Theanine does not cause drowsiness or a groggy feeling the next day, making it a favorable choice for those seeking a natural aid to improve their sleep cycle. In SuperSleep™, L-Theanine's inclusion is particularly beneficial for those who experience restlessness or stress-related insomnia, providing a natural and effective way to achieve a state of calm and prepare the body and mind for restful sleep.

**SUPERSLEEP<sup>TM</sup>** 

#### ACTIVE INGREDIENT

#### **MECHANISM OF ACTION**

Magnesium bisglycinate Magnesium Bisglycinate, a key ingredient in SuperSleep™, is a highly (Chelated Mineral) bioavailable form of magnesium, which is essential for numerous physiological functions, including those critical for promoting restful sleep and relaxation. This form of magnesium is chelated, meaning it is bound to the amino acid glycine, which enhances its absorption in the gastrointestinal tract and minimizes any potential laxative effects often associated with other forms of magnesium. The mechanism of action of Magnesium Bisglycinate involves its role in the nervous system and muscular function. Magnesium is a natural NMDA receptor antagonist and GABA agonist, which helps in the regulation of neurotransmitters that play a key role in sleep. By inhibiting overactive neurotransmission, it promotes relaxation and reduces the occurrence of sleep disturbances. Furthermore, magnesium is involved in muscle relaxation. It counteracts calcium, which causes muscle contraction, thereby easing muscle tension and cramps, conditions that can often impede the onset and quality of sleep. On a cellular level, magnesium is vital for maintaining the health of mitochondria, the energy-producing structures in cells. Healthy mitochondrial function is crucial for overall energy balance and can influence sleep quality. Magnesium also plays a role in regulating the body's stress-response system. By modulating the release and effect of stress hormones like cortisol, it can contribute to a more relaxed state conducive to sleep. In addition to these neurological and muscular benefits, Magnesium Bisglycinate's glycine component may also contribute to improved sleep quality. Glycine is an amino acid that has been shown to lower body temperature and facilitate the onset of sleep. By including Magnesium Bisglycinate in SuperSleep<sup>™</sup>, the product not only supports the physical aspects of relaxation but also contributes to the biochemical balance needed for restful sleep, making it an essential component for anyone seeking to improve their sleep quality. **Zinc Mineral** Zinc, an essential mineral in SuperSleep™, is integral for supporting sleep quality. It plays a vital role in neurotransmitter regulation and overall nervous (Trace element) system function. Zinc is known to interact with the central nervous system's sleep-regulating receptors and pathways. It has a calming effect on the brain, helping to reduce anxiety and stress levels, which are often barriers to restful sleep. Additionally, zinc aids in the regulation of melatonin, a hormone critical for circadian rhythm and sleep-wake cycles. Its inclusion in SuperSleep<sup>™</sup> ensures that the body maintains optimal zinc levels for healthy sleep patterns, making it an important component for those seeking to enhance their night-time rest and overall sleep health. Vitamin B6 is instrumental in the biosynthesis of crucial neurotransmitters. Vitamin B6 including serotonin and dopamine. Its significance in sleep stems from its (Pyridoxine) role in the conversion of tryptophan to serotonin, a precursor to melatonin, the sleep-regulating hormone. Thus, adequate levels of Vitamin B6 are pivotal for melatonin synthesis and the consequent regulation of the circadian rhythm.

#### Typical Nutritional Information Serving size: 15g (2 level scoops) (as packed)

Serving size: 15g (2 level scoops) Servings per container: 30

	Per 15g serving	Per 100g powder	%NRV*per serving
Energy (kJ)	128	854	-
Protein (g)	0.1	0.8	-
Glycaemic carbohydrates (g)	4.0	26.7	-
of which total sugar (g)	3.3	22.2	-
Total fat (g)	0.5	3.4	-
of which saturated fat (g)	0.3	2.2	-
Dietary Fibre** (g)	2.3	15.1	-
Total Sodium (mg)	56	371	-
Vitamin B6 (mg)	10.0	66.7	588%
Vitamin D (mcg)	15	100	100%
L-Glycine (mg)	3000	20000	-
Taurine (mg)	1000	6667	-
GABA (mg)	350	2333.3	-
L-Theanine (mg)	200	1333	-
Magnesium (mg) as Albion® Magnesium bisglycinate chelate	200.0	1333.3	48%
Zinc (mg) as Albion® Zinc glycinate chelate	17.0	113.0	155%
*NRV: South African Nutrient Reference older. **AOAC 991.43 method of analys		individuals 4	years and

#### **DIRECTIONS OF USE**



#### CHOCOLATE

2 SCOOPS IN 250-300 ML HOT/ COLD MILK / MILK SUBSTITUTE.

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1 LEVEL SCOOP ADDED TO WATER OR YOUR BEVERAGE OF CHOICE.



MIX IN A MUG INTO A PASTE AND THEN ADD MILK/ MILK SUBSTUTUTE.



30 MINUTES BEFORE BEDTIME. 1 SERVING.

For optimal results, take one serving 30 minutes before bedtime. Consult with a healthcare professional before starting any new supplement regimen.

#### REFERENCES

Bannai, M., Kawai, N., Ono, K., Nakahara, K., & Murakami, N. (2012). The effects of glycine on subjective daytime performance in partially sleep-restricted healthy volunteers. Frontiers in Neurology, 3

Inagawa, K., Hiraoka, T., Kohda, T., Yamadera, W., & Takahashi, M. (2006). **The impact of glycine ingestion before bedtime on sleep quality:** Subjective effects. Sleep and Biological Rhythms, 4(1), 75–77

Yamadera, W., Inagawa, K., Chiba, S., Bannai, M., Takahashi, M., & Nakayama, K. (2007). **Glycine ingestion improves subjective sleep quality in human volunteers, correlating with polysomnographic changes.** Sleep and Biological Rhythms, 5(2), 126–131.

Innocenti, A., Lentini, G., Rapacchietta, S., Cinnirella, P., Elia, M., Ferri, R., & Bruni, O. (2023). **The Role of Supplements** and **Over-the-Counter Products to Improve Sleep in Children:** A Systematic Review. International Journal of Molecular Sciences, 24, 7821.

Chae Ryung Ha, So Hyun Kim, Su Bin Na, Jeong Soon You. (2015). **The association among dietary taurine intake, obesity and quality of sleep in korean women.** (2015). Advances in Experimental Medicine and Biology, 803, pp.725–733.

Hepsomali, P., Groeger, J.A., Nishihira, J. and Scholey, A. (2020). Effects of Oral Gamma-Aminobutyric Acid (GABA) Administration on Stress and Sleep in Humans: A Systematic Review. Frontiers in Neuroscience, 14.

Kim S, Jo K, Hong KB, Han SH, Suh HJ. (2019). **GABA and I-theanine mixture decreases sleep latency and improves NREM sleep.** Pharmaceutical Biology, 57(1), 65-73.

Gottesmann, C. (2002). GABA mechanisms and sleep. Neuroscience, 111(2), 231-239.

Kimura, K., Ozeki, M., Juneja, L. R., & Ohira, H. (2007). L-Theanine reduces psychological and physiological stress responses. Biological Psychology, 74(1), 39-45.

Kimura, K., Ozeki, M., Juneja, L. R., & Ohira, H. (2007). L-Theanine reduces psychological and physiological stress responses. Biological Psychology, 74(1), 39-45.

Rao, T. P., Ozeki, M., & Juneja, L. R. (2015). In Search of a Safe Natural Sleep Aid. Journal of the American College of Nutrition, 34(5), 436-447.

Türközü D, Sanlier N. (2017). L-theanine, unique amino acid of tea, and its metabolism, health effects, and safety. Critical Reviews in Food Science and Nutrition, 57(8), 1681-1687.

Lyon MR, Kapoor MP, Juneja LR. (2011). The effects of L-theanine (Suntheanine®) on objective sleep quality in boys with attention deficit hyperactivity disorder (ADHD): a randomized, double-blind, placebo-controlled clinical trial. Alternative Medicine Review, 16(4), 348-54.

#### REFERENCES

Sartori, S. B., Whittle, N., Hetzenauer, A., & Singewald, N. (2012). **Magnesium deficiency induces anxiety and HPA axis dysregulation:** Modulation by therapeutic drug treatment. Neuropharmacology, 62(1), 304-312.

Zhang, Y., Chen, C., Lu, L., Knutson, K.L., Carnethon, M.R., Fly, A.D., Luo, J., Haas, D.M., Shikany, J.M. and Kahe, K. (2021). Association of magnesium intake with sleep duration and sleep quality: findings from the CARDIA study. Sleep. Apr 11;45(4): zsab276

Arab, A., Rafie, N., Amani, R. and Shirani, F. (2022). **The Role of Magnesium in Sleep Health:** a Systematic Review of Available Literature. Biol Trace Elem Res;201(1):121-128.

Cherasse, Y. and Urade, Y. (2017). **Dietary Zinc Acts as a Sleep Modulator.** International Journal of Molecular Sciences, [online] 18(11), p.2334.

Ji, X., Compher, C.W., Irving, S.Y., Kim, J., Dinges, D.F. and Liu, J. (2021). Serum Micronutrient Status, Sleep Quality and Neurobehavioral function among Early Adolescents. Public Health Nutrition, pp.1–27.

Hartmann, E., & Spinweber, C. (1979). Sleep induced by pyridoxine. Biological Psychiatry, 14(6), 983-984.

Axford, J., Heron, C., Ross, F. M., & Vaughan Williams, C. A. (1997). **The effect of vitamin B6 on cognition.** Rheumatology, 36(10), 1123-1132.

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