



PHARMATROPIA

L-THEANINE



A calming, non-sedating amino
acid from green tea

WWW.PHARMATROPIA.COM



PHARMATROPIA

Index

- Introduction to L-Theanine
- In-depth look at Key Ingredients
- Potential Health Benefits
- Dosage and Precautions
- Understanding Nitric Oxide
- References to Scientific Studies



PHARMATROPIA

Introduction to L-Theanine Capsules

A calming, non-sedating amino acid from green tea that promotes relaxed alertness, smooths stress responses, and supports sleep quality—especially helpful when combined with caffeine for clean focus and when recovering from sleep deprivation.





PHARMATROPIA

In-depth look at Key Ingredients

Mechanisms (systems view):

- *Glutamate ↔ GABA balance*: Tamps excess glutamatergic activity; supports inhibitory tone for calm focus.
- *Alpha-wave activity*: Shifts EEG toward relaxed, attentive states; assists error-rate reduction on tasks.
- *Stress axis modulation*: Softens sympathetic/adrenaline surges; may blunt stress-induced cortisol spikes; improves HRV tilt.
- *Adenosine/caffeine modulation*: Smooths stimulant profile (less jitter, steadier attention) while maintaining vigilance.
- *Vascular/autonomic*: Mild reductions in blood pressure in some; helps “wired-but-tired” autonomic states.
- *Neuroprotection under sleep loss (emerging)*: Human data show improved selective attention after acute sleep deprivation; preclinical data suggest protection of hippocampal neurons under sleep-loss stress via oxidative-stress pathways.

Why 500 mg? Single-capsule higher dose suited to acute stress, evening wind-down, and post-sleep-loss performance; typical daily ranges are 100–400 mg, but many adults tolerate 500 mg well for targeted use.



PHARMATROPIA

Potential Health Benefits

May Assist With

- Calm focus without sedation; smoother task switching
- Stress & anxious arousal; fewer jitters with caffeine
- Sleep onset & quality, especially after high-stress days
- Accuracy & reaction time on cognitively demanding tasks
- Jet lag / shift work adaptation and sleep-loss recovery (vigilance, mood stability)
- Mild blood-pressure support (individual response varies)

Onset is typically 30–60 minutes; many feel effects within the first hour.





PHARMATROPIA

Dosage and Precautions

Dosage

Product potency: L-Theanine 500 mg per capsule (L-form).

General use (adults):

- Daytime focus: 200–400 mg 30–60 min before deep work. If using this 500 mg cap, many use ½–1 cap equivalent depending on sensitivity.
- With caffeine: Start at 2:1 theanine:caffeine (e.g., 200 mg theanine + 100 mg caffeine). With a 500 mg capsule, typical pairing is 150–250 mg caffeine for peak tasks.
- Evening/sleep: 500 mg 60–90 min before bed; optionally pair with magnesium glycinate (200–400 mg) or glycine (3–5 g).

Sleep-deprivation protocol (occasional use):

- Morning (post-short sleep): 200–400 mg + 100–200 mg caffeine for vigilance/accuracy.
- Mid-day (optional): 200 mg theanine (no caffeine) to smooth irritability/jitters.
- Night: 500 mg 60–90 min pre-bed to aid rebound sleep.
- Basics: Morning light, hydration/electrolytes; avoid late-day caffeine.

Precautions

- Intended for healthy adults 18+. May mildly lower blood pressure—use caution with antihypertensives.
- Additive calming with sedatives, alcohol, anxiolytics—start low.
- If pregnant/nursing, have a condition, or take psychiatric/stimulant meds, consult a healthcare professional.
- Use caution with driving/high-risk tasks until you know your response.
- Regulatory statement: This unregistered product has not been evaluated by SAHPRA and is not intended to diagnose, treat, cure, or prevent any disease. Keep out of reach of children.



PHARMATROPIA

Understanding L-Theanine

- Origin & form: Naturally occurring in tea (*Camellia sinensis*); supplement form is L-theanine (avoid DL-theanine).
- Kinetics: Oral peak typically ~30–60 min; elimination half-life ~1 hour; crosses the blood–brain barrier.
- Tolerability: Generally well tolerated; occasional mild headache or GI upset. Works well as-needed; daily use does not appear to cause dependence.
- Stacking (minimalist):
 - Caffeine + theanine for clean stimulation and accuracy.
 - Magnesium (glycinate/taurate) for GABAergic synergy and sleep depth.
 - Glycine (3–5 g) or taurine (1–2 g) in the evening for smoother autonomic tone.



PHARMATROPIA

Scientific Studies

1. Kimura K, et al. L-Theanine reduces psychological and physiological stress responses. *Biol Psychol.* 2007.
2. Giesbrecht T, et al. The combination of L-theanine and caffeine improves cognitive performance. *Nutr Neurosci.* 2010.
3. Owen GN, et al. Combined effects of L-theanine and caffeine on cognitive performance and mood. *Nutr Neurosci.* 2008.
4. Evans M, et al. Single-dose L-theanine increased frontal alpha power under acute stress (triple-blind RCT). *Nutrients.* 2021.
5. Moulin M, et al. 28-day L-theanine reduced perceived stress and improved sleep quality (AlphaWave®). *Nutrients.* 2024.
6. Higashiyama A, et al. L-theanine (200 mg) increased alpha band and improved attention. *J Physiol Anthropol.* 2011.
7. van der Pijl PC, et al. Human disposition of L-theanine: peak ~50 min; half-life ~65 min. *J Funct Foods.* 2010.
8. Yoto A, et al. L-theanine vs caffeine: EEG, blood pressure, and mood effects; peak 32–50 min. *Biol Psychol.* 2012.
9. Karunaratne UW, et al. L-theanine improved visual selective attention in acutely sleep-deprived adults (traffic-scene task). *Nutr Neurosci.* 2025.
10. Sohail AA, et al. Review: caffeine + L-theanine as a safe cognitive enhancer. *Front Nutr.* 2021.
11. Preclinical (sleep-loss neuroprotection): L-theanine mitigated NOX4-linked ferroptosis in sleep-deprived mice, supporting hippocampal function. 2025.