

RelaxMax[®]

Neurotransmitter & Hormone Support*
Promotes Stress Resiliency*



Available in Unflavored & Cherry

Discussion

Inositol Present as the distinct isomer myo-inositol, inositol is a six-carbon cyclic polyalcohol that occurs naturally in all living cells. Fruits, beans, grains, and nuts contain some inositol; however, an 1800–2500–calorie daily diet has been shown to provide only 225–1500 mg of myo-inositol. Of the nearly 100% of ingested myo-inositol that is absorbed in the gastrointestinal tract, more than half becomes lipid bound. In contrast to low plasma concentration, the peripheral nerves have an extraordinarily high concentration of myo-inositol.^[1] Inositol is a precursor for the second-messenger phosphatidylinositol system, which affects mood status differently than precursors for neurotransmitters.^[2] Based upon validated scoring procedures, double-blind, controlled, random-order crossover clinical trials using up to 18 g of myo-inositol per day for a month have demonstrated effectiveness with minimal to no side effects.^{*[3,4]}

GABA (gamma-aminobutyric acid) GABA is an amino acid manufactured in brain cells from glutamate. This primary neurotransmitter, abundant in the cerebral cortex, increases the production of alpha waves (related to a relaxed, yet mentally focused state) while decreasing beta waves (associated with hyperactivity, nervousness, and fleeting thoughts). Sufficient GABA results in the smooth, calming, regular rhythmic flow of electrical impulses in the brain needed for emotional well-being.^[5] Supplementation in humans has shown support for the maintenance of healthy cortisol and secretory IgA levels while under stress.^{*[6]}

Taurine (2-aminoethanesulfonic acid) Taurine exists mainly in free form in the intracellular space of tissues. This conditionally essential amino acid maintains cell volume via osmoregulation, which is the process that corrects excessive or insufficient concentrations of electrolytes. Taurine also stabilizes cell membranes in the heart and brain—two electrically active tissues. Considered neuroprotective, taurine modulates the ability of mitochondria to buffer intracellular calcium during glutamate depolarization and excitotoxicity (the means by which neurons are overstimulated and damaged) and, thereby, may prevent cell death.^[7] In addition to its antioxidant and cytokine-

Clinical Applications

- » Supports Relaxed Mood*
- » Supports Inhibitory Neurotransmitter and Second Messenger Functions*
- » Supports Neurotransmitter Balance and Neuronal Stabilization*
- » Supports Healthy Blood Pressure Levels Already Within Normal Range*
- » Addresses Brain Osmotic Regulation, Glial Cell Function, and Effective Neuronal Transmission*

*RelaxMax[®] is an innovative powdered drink mix. It contains a blend of ingredients that supports the body's natural synthesis of catecholamines, the inhibitory neurotransmitter GABA, hormonal balance, and healthy glucose metabolism. RelaxMax aims to promote a calm, relaxed, well-balanced emotional and physiological state.**

balancing functions, taurine is important to neurotransmission, neuroregulation, and cardiac function.^[8,9] Taurine supplementation also increases GABA.^{*[9]}

L-Theanine (N-ethyl-L-glutamine) L-Theanine, provided as Suntheanine[®], is protected by more than 40 US and international patents for its various physiological efficacies and L-isomer-specific production processes. A naturally-occurring, biologically active, free-form amino acid, L-theanine gives green tea its characteristic taste. Although notable for its relaxation support, L-theanine may also support nerve health and cognition. Theanine lowers glutamate levels by preventing transport of glutamate's precursor, glutamine.^[10] It may also inhibit neurotransmission, cause inhibitory neurotransmission via glycine receptors, and thereby reduce neuronal overstimulation.^[11] L-theanine's ability to relax the mind without inducing drowsiness has been documented by an increase in alpha wave activity during EEG recording.^{*[12]}

Magnesium Sometimes referred to as the relaxation mineral and mainly found in the brain, bones, and muscles, magnesium assists in the transmission of nerve impulses and is essential to more than 300 enzymatic reactions in the body. Magnesium supplementation has been shown to support a healthy mood, including during the menstrual cycle when mood changes are common.^{*[13]}

More than one of the ingredients in RelaxMax may support a healthy body weight and healthy hormone, lipid, insulin, and glucose metabolism.^{*[14-16]}

RelaxMax® Supplement Facts

Serving Size: 1 Scoop (3 g)
Servings Per Container: About 60

	Amount Per Serving	%Daily Value
Magnesium (as di-magnesium malate) ^{S1}	75 mg	18%
<i>myo</i> -Inositol	2 g	**
Taurine	500 mg	**
GABA (gamma-aminobutyric acid)	100 mg	**
L-Theanine ^{S2}	50 mg	**
** Daily Value not established.		

Other Ingredients: None.

DIRECTIONS: Dissolve one scoop of RelaxMax® into 6 fl ounces of cool, pure water. Drink one to two times daily, or as directed by your healthcare professional.

Consult your healthcare professional prior to use. Individuals taking medication should discuss potential interactions with their healthcare professional. Do not use if tamper seal is damaged.

STORAGE: Keep closed in a cool, dry place out of reach of children.

FORMULATED TO EXCLUDE: Wheat, gluten, corn, yeast, soy, animal or dairy products, fish, shellfish, peanuts, tree nuts, egg, ingredients derived from genetically modified organisms (GMOs), artificial colors, artificial sweeteners, or preservatives.

S1. Albion® is a registered trademark of Albion Laboratories, Inc.

Suntheanine®

S2. Suntheanine® a patented form of L-Theanine, is a trademark of Taiyo International, Inc.

RelaxMax® Cherry Supplement Facts

Serving Size: 1 Scoop (3.9 g)
Servings Per Container: About 60

	Amount Per Serving	%Daily Value
Magnesium (as di-magnesium malate) ^{S1}	75 mg	18%
<i>myo</i> -Inositol	2 g	**
Taurine	500 mg	**
GABA (gamma-aminobutyric acid)	100 mg	**
L-Theanine ^{S2}	50 mg	**
** Daily Value not established.		

Other Ingredients: Natural cherry flavor (no MSG), malic acid, natural red beet powder, citric acid, and stevia.

DIRECTIONS: Dissolve one scoop of RelaxMax® into 6 fl ounces of cool, pure water. Drink one to two times daily, or as directed by your healthcare professional.

Consult your healthcare professional prior to use. Individuals taking medication should discuss potential interactions with their healthcare professional. Do not use if tamper seal is damaged.

STORAGE: Keep closed in a cool, dry place out of reach of children.

FORMULATED TO EXCLUDE: Wheat, gluten, yeast, soy protein, animal or dairy products, fish, shellfish, peanuts, tree nuts, egg, ingredients derived from genetically modified organisms (GMOs), artificial colors, artificial sweeteners, or artificial preservatives.

S1. Albion® is a registered trademark of Albion Laboratories, Inc.

Suntheanine®

S2. Suntheanine® a patented form of L-Theanine, is a trademark of Taiyo International, Inc.

References

- Clements, RS, Darnell B. Myo-inositol content of common foods: development of a high myo-inositol diet. *Am J Clin Nutr.* 1980 Sep;33(9):1954-67. <http://www.ajcn.org/content/33/9/1954>. Accessed October 24, 2011.
- Levine J, Barak Y, Gonzalves M. Double-blind, controlled trial of inositol treatment of depression. *Am J Psychiatry.* 1995 May;152(5):792-4. [PMID: 7726322]
- Palatnik A, Frolov K, Fux M, et al. Double-blind, controlled, crossover trial of inositol versus fluvoxamine for the treatment of panic disorder. *J Clin Psychopharmacol.* 2001 Jun;21(3):335-9. [PMID: 11386498]
- Fux M, Levine J, Aviv A, et al. Inositol treatment of obsessive-compulsive disorder. *Am J Psychiatry.* 1996 Sep;153(9):1219-21. [PMID: 8780431]
- Abdou AM, Higashiguchi S, Horie K, et al. Relaxation and immunity enhancement effects of gamma-aminobutyric acid (GABA) administration in humans. *Biofactors.* 2006;26(3):201-8. [PMID: 16971751]
- Locatelli V, Bresciani E, Tomiazio L, et al. Central nervous system-acting drugs influencing hypothalamic-pituitary-adrenal axis function. *Endocr Dev.* 2010;17:108-20. [Epub 2009 Nov 24] [PMID: 19955761]
- El Idrissi A. Taurine increases mitochondrial buffering of calcium: role in neuroprotection. *Amino Acids.* 2008 Feb;34(2):321-8. [Epub 2006 Sep 8] [PMID: 16955229]
- Fujita T, Ando K, Noda H, et al. Effects of increased adrenomedullary activity and taurine in young patient with borderline hypertension. *Circulation.* 1987 Mar;75(3):525-32. [PMID: 3815764]
- L'Amoreaux WJ, Marsillo A, El Idrissi A, et al. Pharmacological characterization of GABA receptors in taurine-fed mice. *J Biomed Sci.* 2010 Aug 24;17 Suppl 1:S14. [PMID: 20804588]
- Kakuda T, Hinoi E, Abe A, et al. Theanine, an ingredient of green tea, inhibits [3H] glutamine transport in neurons and astroglia in rat brain. *J Neurosci Res.* 2008 Jun;86(8):1846-56. [PMID: 18293419]
- Yamada T, Tershima T, Okubo T, et al. Effects of theanine, r-glutamylethylamide, on neurotransmitter release and its relationship with glutamic acid neurotransmission. *Nutr Neurosci.* 2005 Aug;(8)4:219-26. [PMID: 16493792]
- Nobre AC, Rao A, Owen GN. L-theanine, a natural constituent in tea, and its effect on mental state. *Asia Pac J Clin Nutr.* 2008;17 Suppl 1:167-8. [PMID: 18296328]
- Facchinetti F, Borella P, Sances G, et al. Oral magnesium successfully relieves premenstrual mood changes. *Obstet Gynecol.* 1991 Aug;78(2):177-81. [PMID: 2067759]
- D'Anna R, Di Benedetto V, Rizzo P, et al. Myo-inositol may prevent gestational diabetes in PCOS women. *Gynecol Endocrinol.* 2012 Jun;28(6):440-2. [PMID: 22122627]
- Unfer V, Carlomagno G, Dante G, et al. Effects of myo-inositol in women with PCOS: a systematic review of randomized controlled trials. *Gynecol Endocrinol.* 2012 Feb 1. [Epub ahead of print] [PMID: 22296306]
- Hedström, H. *GABA-Steroid Effects in Healthy Subjects and Women with Polycystic Ovary Syndrome* [dissertation]. Umeå, Sweden: Obstetrics and Gynecology Department of Clinical Sciences, Umeå University; 2011.

Additional references available upon request

All XYMOGEN® Formulas Meet or Exceed cGMP Quality Standards.

*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

© XYMOGEN
DRS-222
Rev. 06/30/22

