



Neuro Balance

Nutritional Support for
Healthy Nerve Function*

NutriDyn's Neuro Balance is a comprehensive formula that contains bioactive forms of key vitamins, minerals, amino acids, and plant extracts; due to their role in neurotransmitter production, these nutrients support healthy appetite, cognition, and mood.*

Read on to learn more about how Neuro Balance works and its unique benefits.

How Neuro Balance Works

Neuro Balance works by supporting healthy levels of key appetite-regulating neurotransmitters—particularly dopamine and serotonin. Appetite is largely a brain-related effect, thanks in part to a peptide called neuropeptide Y (NPY). Expression of NPY stimulates the mesolimbic reward center that is responsible for the pleasurable feelings during eating and other activities (mostly due to the increase of dopamine and serotonin in the brain).

Neuro Balance contains key ingredients that support healthy levels of dopamine and serotonin, which in turn emulates the feelings of pleasure and reward that NPY typically creates.* Therefore, Neuro Balance helps support healthy appetite and feelings of wellbeing.*

Vitamins and minerals in Neuro Balance, such as chromium and pyridoxine assist in production of dopamine and catecholamines through a variety of pathways.*^{1,2} Moreover, Neuro Balance contains potent herbal extracts, such as 5-hydroxytryptophan (5-HTP) and *Rhodiola rosea*. These ingredients support proper synthesis and transport of serotonin, an appetite-regulating neurotransmitter.³

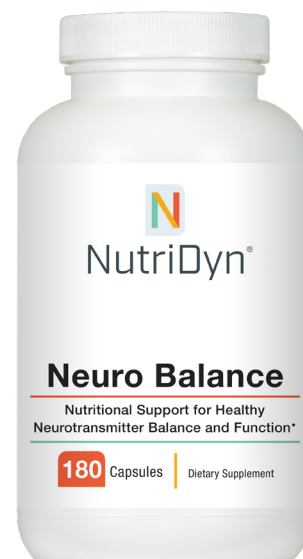
Rounding out the Neuro Balance formula are amino acids such as L-tyrosine, L-glutamine, and DL-phenylalanine, which have been shown in research to support healthy appetite and mood.*^{4,5}

Neuro Balance Supplementation

Research cited herein suggests the nutrients contained in Neuro Balance can support healthy appetite, mood, and neurotransmitter productions.* Moreover, these nutrients work in concert to support energy production and blood flow to the brain.*

To summarize, the most pertinent research-backed benefits of supplementation with Neuro Balance may include:

- Supports healthy appetite*
- Supports healthy mood*
- Supports blood and oxygen flow to the brain*
- Supports neurotransmitter production and neural tissue*



Form: 180 Capsules

Serving Size: 8 capsules

Ingredients	Amount	%DV
Vitamin C (ascorbic acid)	600 mg	667%
Vitamin B6 (as pyridoxal-5-phosphate)	50 mg	2,941%
Folate (as calcium L-5-methyltetrahydrofolate) (BioFolate®)	400 mcg DFE	100%
Calcium (as calcium citrate)	168 mg	13%
Magnesium (as magnesium citrate)	64 mg	15%
Chromium (as chromium picolinate)	1 mg	2,857%
DL-Phenylalanine	2 g	**
L-Tyrosine	1.5 g	**
L-Glutamine	750 mg	**
<i>Rhodiola rosea</i> Root Extract (standardized to 3% rosavins and 2% salidosides)	200 mg	**
L-5-Hydroxytryptophan (L-5-HTP) (as <i>Griffonia simplicifolia</i> seed extract)	150 mg	**

Other Ingredients:

Hydroxypropyl methylcellulose, vegetable magnesium stearate, silicon dioxide.

BioFolate® is a federally registered trademark of MTC Industries, Inc.

Directions:

Take as directed by your healthcare practitioner.

Caution: If you are pregnant, nursing, or taking medication, consult your healthcare practitioner before use. Keep out of reach of children.



* 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.

References:

1. Calvaresi, E., & Bryan, J. (2001). B Vitamins, Cognition, and Aging a Review. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 56(6), P327-P339.
2. Komorowski JR, Tuzcu M, Sahin N, Juturu V, Orhan C, Ulas M, Sahin K. Chromium picolinate modulates serotonergic properties and carbohydrate metabolism in a rat model of diabetes. *Biol Trace Elem Res*. 2012
3. Birdsall, T. C. (1998). 5-Hydroxytryptophan: a clinically-effective serotonin precursor. *Alternative medicine review: a journal of clinical therapeutic*, 3(4), 271-280.
4. Kalra, S. P., Dube, M. G., Pu, S., Xu, B., Horvath, T. L., & Kalra, P. S. (1999). Interacting appetite-regulating pathways in the hypothalamic regulation of body weight 1. *Endocrine reviews*, 20(1), 68-100.
5. Avraham, Y. O. S. E. F. A., Hao, S. H. U. Z. H. E. N., Mendelson, S. U. S. A. N., & Berry, E. M. (2001). Tyrosine improves appetite, cognition, and exercise tolerance in activity anorexia. *Medicine and science in sports and exercise*, 33(12), 2104-2110.

Research Review: Neuro Balance

Nutritional Support for Healthy Neurotransmitter Balance and Function*

Neuro Balance is a comprehensive formula supporting neurological wellness.* Neuro Balance contains bioactive forms of key vitamins, minerals, amino acids, and plant extracts that support a healthy balance of neurotransmitters, the chemical messengers that relay signals throughout the body.*

The nutrients in Neuro Balance work to support healthy levels of key appetite-regulating neurotransmitters, particularly dopamine and serotonin.* Appetite is largely controlled by the brain, particularly through the expression of neuropeptide Y (NPY), which stimulates the mesolimbic reward center responsible for the pleasurable feelings during eating and other activities (primarily due to the increase of dopamine and serotonin in the brain).

Neuro Balance also helps support healthy levels of several different neurotransmitters, such as serotonin, dopamine, and GABA, which work to support healthy cognition and mood.*

Neuro Balance includes a variety of nutrients:

- **Vitamins and minerals:** Chromium and vitamin B6, which can support healthy levels of dopamine and serotonin through a variety of pathways.*¹⁻⁵
- **Herbal extracts:** 5-hydroxytryptophan (5-HTP) and *Rhodiola rosea* work synergistically to support healthy serotonin levels in the brain.*³
- **Amino acids:** L-tyrosine, L-glutamine, and DL-phenylalanine, which are precursors to various neurotransmitters such as dopamine and gamma-aminobutyric acid (GABA), all of which have been shown to support healthy appetite and mood.*^{6,7}

Research suggests that the ingredients in Neuro Balance may provide support for healthy neurotransmitter balance and function.*

Chromium, Vitamin B6, 5-HTP, *Rhodiola rosea*, L-Tyrosine, L-Glutamine, and DL-Phenylalanine to Support Healthy Neurotransmitter Function*

Chromium Picolinate

Chromium picolinate is a trace mineral whose main job is to metabolize carbohydrates and help support healthy insulin.* Cognition and appetite control are positively impacted by balanced insulin levels in the brain.*⁸ Additionally, chromium has been shown to positively impact mood.*²

In a double-blind, placebo-controlled study, researchers found that food cravings were reduced with chromium supplementation compared to the placebo.⁹

Participants in another 8-week human clinical trial reported reduced food intake and hunger levels from those receiving chromium compared to the placebo.¹⁰ Researchers believe that the impacts of chromium on appetite are mediated through the brain.*

Additionally, in a double-blind, placebo-controlled trial, older adults exhibited improvement in cognitive tasks such as recall and recognition, suggesting that chromium may support cognitive function.*¹¹

Vitamin B6 (as pyridoxal-5-phosphate)

Vitamin B6 is necessary for the synthesis of several mood-regulating neurotransmitters, including serotonin, dopamine, and gamma-aminobutyric acid (GABA).^{4,5}

Several studies have shown that healthy B6 levels significantly support healthy mood.*^{12,13,14}

5-Hydroxytryptophan (5-HTP)

5-hydroxytryptophan (5-HTP) is an intermediate metabolite of L-tryptophan, an essential amino acid. The metabolization of tryptophan into 5-HTP is the initial step in the biosynthesis of serotonin.

Tryptophan cannot be produced naturally by the body, so it must be received through nutrition or supplementation. However, oral doses of 5-HTP bypass the first step of tryptophan conversion. 5-HTP, which is produced from seeds of an African plant called *Griffonia simplicifolia*, has been shown to be well absorbed and supports healthy serotonin levels.*³

Other mood-supporting neurotransmitters, such as dopamine, have also been shown to be supported with the use of 5-HTP.*³

5-HTP has been widely studied regarding its potential to support healthy mood.* In a review of 15 clinical trials of 511 subjects, 56% showed significant support in healthy mood while taking 5-HTP.*³

Rhodiola rosea

Rhodiola rosea is a root grown in the coldest regions of Asia and Europe. It contains more than 140 bioactive compounds and is considered to be an adaptogen.¹⁵ For centuries, it has been traditionally used to support healthy stress response and balanced mood.*

Rhodiola rosea is thought to have several methods of action, though adaptogen properties have mostly been attributed to salidroside, the main bioactive component. Salidroside stimulates neuropeptide-Y (NPY), which helps regulate appetite and is thought to play a role in healthy stress response through regulation of the HPA-axis.*¹⁶ As a known catechol-o-methyltransferase (COMT) inhibitor, *Rhodiola rosea* may also support healthy dopamine levels.*¹⁷

A randomized, double-blind, placebo-controlled clinical trial concluded that *Rhodiola rosea* can help support a healthy mood.*¹⁸ Additionally, mood-supporting effects were exhibited in an animal study with the administration of *Rhodiola rosea* extract containing 3% rosavin and 1% salidroside.*¹⁹

For more information, visit: www.nutridyn.com

Research also suggests that *Rhodiola rosea* may help reduce food cravings.*²⁰ It is hypothesized that *Rhodiola rosea*'s stimulation of NPY may help regulate appetite.*²⁰

Furthermore, *Rhodiola rosea* has also been shown to support healthy cognition.* In one animal study, a single dose of *Rhodiola rosea* supported memory and mood in mice. A double-blind, placebo-controlled human study also showed that cognitive function was improved.*^{21,22}

Amino Acids L-Tyrosine, L-Glutamine, and DL-Phenylalanine

L-tyrosine is the precursor to dopamine and two additional neurotransmitters—norepinephrine and epinephrine. Norepinephrine, along with dopamine, promotes alertness and has been shown to improve mood and concentration.*^{7,23} Epinephrine aids in the body's "fight or flight" response to stress.

A review of multiple human and animal studies concluded that tyrosine may help improve concentration and support a healthy response during times of acute stress.*²⁴

L-glutamine is a precursor to the neurotransmitter glutamate, which is essential for healthy brain function.* Furthermore, glutamate is required for the production of GABA, a neurotransmitter known for its calming effect.* Research suggests that L-glutamine regulates levels of GABA, which can help support a healthy stress response.*^{25,26}

DL-phenylalanine is used to make dopamine. Studies have shown that daily supplementation of DL-phenylalanine may improve mood by activating the brain's reward centers.*²⁷

Additional Ingredients to Support Neurotransmitter Metabolization*

Magnesium is required for the proper function of catechol-O-methyltransferase (COMT), the enzyme that metabolizes catechols (such as dopamine, epinephrine, and norepinephrine) to support a healthy balance of neurotransmitters.*²⁸

Folate provides methyl groups essential to the biosynthesis of the neurotransmitters serotonin, epinephrine, and dopamine.*²⁹

Why Use Neuro Balance?

Research suggests that the nutrients in Neuro Balance can support healthy appetite, mood, and neurotransmitter levels.*

Neuro Balance may provide benefits such as:

- Support for healthy appetite.*
- Support for healthy mood.*
- Support for cognitive health.*
- Support for blood and oxygen flow to the brain.*
- Support for healthy neurotransmitters and neural tissue.*

References:

1. Calvaresi E & Bryan J. *J of Geront Ser B: Psych Sci & Soc Sci*, 2001;56(6), P327-P339.
2. Komorowski JR, Tuzcu M, Sahin N, et al. *Biol Trace Elem Res*. 2012;149(1):50-56.
3. Birdsall TC. *Altern Med Rev*. 1998;3(4):271-280.
4. Clayton PT. *J Inherit Metab Dis*. 2006;29(2-3):317-326.
5. Nutt DJ. *J Clin Psychiatry*. 2008;69 Suppl E1:4-7.
6. Kalra SP, Dube MG, Pu S, Xu B, Horvath TL, Kalra PS. *Endocr Rev*. 1999; 20(1):68-100.
7. Avraham Y, Hao S, Mendelson S, Berry EM. *Med Sci Sports Exerc*. 2001;33(12): 2104-2110.
8. Cetinkalp S, Simsir IY, Ertek S. *Curr Vasc Pharmacol*. 2014;12(4):553-564.
9. Docherty JP, Sack DA, Roffman M, Finch M, Komorowski JR. *J Psychiatr Pract*. 2005;11(5):302-314.
10. Anton SD, Morrison CD, Cefalu WT, et al. *Diabetes Technol Ther*. 2008; 10(5): 405-412.
11. Krikorian R, Eliassen JC, Boespflug EL, Nash TA, Shidler MD. *Nutr Neurosci*. 2010;13(3):116-122.
12. Hvas AM, Juul S, Bech P, Nexø E. *Psychother Psychosom*. 2004;73(6):340-343.
13. Merete C, Falcon LM, Tucker KLJ. *Am Coll Nutr*. 2008;27(3):421-427.
14. Skarupski KA, Tangney C, Li H, Ouyang B, Evans DA, Morris MC. *Am J Clin Nutr*. 2010;92(2):330-335.
15. Li Y, Pham V, Bui M, et al. *Curr Pharmacol Rep*. 2017;3(6):384-395.
16. Xia N, Li J, Wang H, Wang J, Wang Y. *Exp Ther Med*. 2016;11(1):353-359.
17. Blum K, Chen TJ, Meshkin B, et al. *Med Hypotheses*. 2007;69(5):1054-1060.
18. Gao L, Wu C, Liao Y, Wang J. *J Affect Disord*. 2020;265:99-103.
19. Perfumi M, Mattioli L. *Phytother Res*. 2007;21(1):37-43.
20. Cifani C, Micioni Di BM, Vitale G, Ruggieri V, Ciccocioppo R, and Massi, M. *Physiol. Behav*. 2010;101, 555-562.
21. Palmeri A, Mammanna L, Tropea MR, Gulisano W, Puzzo D. *J Alzheimers Dis*. 2016;52(1):65-75.
22. Spasov AA, Wikman GK, Mandrikov VB, Mironova IA, Neumoin VV. *Phytomedicine*. 2000;7(2):85-89.
23. Del Campo N, Chamberlain SR, Sahakian BJ, Robbins TW. *Biol Psychiatry*. 2011;69(12):e145-e157.
24. Lieberman HR. Institute of Medicine (US) Committee on Military Nutrition Research; Marriott BM, editor. *Food Components to Enhance Performance*. Washington (DC): National Academies Press (US); 1994.
25. Wang L, Maher TJ, Wurtman RJ. *FASEB J*. 2007;21(4):1227-1232.
26. Albrecht J, Sidoryk-Wegrzynowicz M, Zielinska M, Aschner M. *Neuron Glia Biol*. 2010;6(4):263-276.
27. Wood DR, Reimherr FW, Wender PH. *Psychiatry Res*. 1985;16(1):21-262.
28. Bastos P, Araújo JR, Azevedo I, Martins MJ, Ribeiro L. *Magnes Res*. 2014;27(3): 131-1412.
29. Miller AL. *Altern Med Rev*. 2008;13(3):216-226.

* 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.