

SERETONE



CLINICAL APPLICATIONS

- Helps Maintain a Positive Mental Outlook
- Promotes Relaxation
- Boosts Serotonin Synthesis
- Supports Sleep Cycle Regulation

MOOD SUPPORT

SereTone is a synergistic blend of vitamins, minerals and 5-hydroxytryptophan (5-HTP), that have been shown to support those with mild mood imbalances and occasional sleeplessness by increasing the synthesis of the neurotransmitter serotonin. 5-HTP (5-hydroxytryptophan) is an amino acid that plays an important role in the production of serotonin. Serotonin is vital to supporting deeper stages of sleep, regulating the appetite, and promoting a positive mood. Unlike the amino acid L-tryptophan, 5-HTP is able to effectively cross the blood-brain barrier and increase synthesis of serotonin in the central nervous system (CNS). SereTone includes a 300 mg dose of 5-HTP, as well as 150 mg of magnesium glycinate chelate, 30 mg vitamin B6 as P5P, 300 mcg folic acid and 15 mg zinc glycinate chelate per 3 capsule serving, for maximum serotonin support.

Overview

Genetics, stressful lifestyles, poor diets and nutrient deficiencies are all factors that can contribute to a depletion of serotonin levels in the brain. Serotonin synthesis in the CNS depends on adequate intake of the amino acid, L-tryptophan as well as B6 and magnesium. L-tryptophan is converted into 5-HTP by the enzyme tryptophan hydroxylase. 5-HTP is subsequently decarboxylated to serotonin. As a direct precursor to serotonin synthesis, supplementation with 5-HTP bypasses the conversion of tryptophan to 5-HTP and is more efficient for supporting optimal levels of serotonin.^[1,2] Furthermore, oral 5-HTP easily crosses the blood-brain barrier and is not degraded by the enzymes that degrade tryptophan.^[1,3] Vitamin B6 and magnesium are essential co-factors in the production of serotonin, and both folic acid and zinc have

also been shown to play an important role in neurotransmitter balance.

5-HTP[†]

5-HTP can easily cross the blood-brain barrier, resulting in an increase in the synthesis of serotonin in the CNS, promoting a sense of calmness and relaxation.^[1-4] Several studies have demonstrated that 5-HTP supports a positive outlook, good energy levels, and restful sleep.^[1,5-7] Published studies have reported that doses of 5-HTP ranging between 100-600 mg/day have been effective in supporting brain function and wellness.^[8-10] In a study of 26 patients with a negative outlook, randomized to receive either another treatment with 5-HTP (300mg/day) or the treatment plus a placebo, showed that those receiving the 5-HTP had a significant improvement in mental outlook, compared to the placebo group.^[12] The 5-HTP in SereTone is naturally sourced from the seed of the African plant *Griffonia simplicifolia*.

Vitamin B6[†]

Pyridoxal 5-phosphate, an activated form of vitamin B6, plays an important role in the production of serotonin. Tryptophan hydroxylase, the rate-limiting enzyme in neural L-tryptophan to serotonin synthesis, can be inhibited by vitamin B6 depletion. B6 is also an important cofactor in the production of the enzyme which converts 5-HTP to serotonin.^[12] In a study of 140 participants, low plasma levels of pyridoxal phosphate were found to be associated with scores indicating low mood.^[13]

[†] This statement has not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

Magnesium†

Found mainly in the brain, bones, and muscles, magnesium assists in the transmission of nerve impulses and is part of more than 300 enzymatic reactions in the body. Magnesium insufficiency, like that of vitamin B6, can inhibit tryptophan hydroxylase. When magnesium levels are depleted, neuronal function can be affected and may present as symptoms of negative mood.^[14] Magnesium supplementation has been shown to support a healthy and balanced mood during changes associated with the menstrual cycle.^[15]

Folic Acid†

Folate is necessary for the proper biosynthesis of serotonin, as well as additional mood-regulating neurotransmitters including epinephrine and dopamine. Studies also suggest a link between depletion of folic acid and normal metabolism of serotonin, dopamine, and norepinephrine.^[16] The active metabolite of folate, 5-methyltetrahydrofolate, participates in re-methylation of the amino acid metabolite homocysteine, creating methionine. S-adenosylmethionine (SAME), the downstream metabolite of methionine, is involved in pathways that produce neurotransmitters and hormones, such as epinephrine and melatonin. Thus, 5-MTHF is essential for maintaining healthy mood and sleep cycle regulation.^[17] Studies suggest a link between folate depletion and impaired metabolism of serotonin, dopamine, and norepinephrine.^[18]

Zinc†

Evidence suggests that zinc supplementation may help promote a positive mental outlook.^[19] Zinc induces brain-derived neurotrophic factor gene expression, which regulates neuronal growth and function during development and in the adult brain.^[20] A placebo-controlled, double-blind pilot study, which gave patients 25 mg/day of zinc or placebo along with a conventional treatment, found zinc significantly improved mood scores after six and 12 weeks when compared to baseline.^[21] Additionally, hyper-functioning of the excitatory (stimulating) glutamatergic pathways in the CNS have been correlated with a decrease in the ability to concentrate, as well as decrease in the ability to control impulsive behavior. Studies have shown that both zinc and magnesium help lower excitatory glutamate to non-toxic levels,^[22] which is crucial for reducing adverse addictions and behaviors, as well as overall symptoms of restlessness and hyperactivity.

Directions

3 capsules per day or as recommended by your health care professional.

Does Not Contain

Gluten, yeast, artificial colors and flavors.

Cautions

Do not consume this product if you are pregnant or nursing. Consult your physician for further information.

Supplement Facts^{v2}

Serving Size 3 Capsules
Servings Per Container 30

3 capsules contain	Amount Per Serving	% Daily Value
Vitamin B6 (as Pyridoxal-5'-Phosphate)	30 mg	1,500%
Folic Acid	300 mcg	75%
Calcium (as Calcium Citrate USP)	180 mg	18%
Magnesium (as DiMagnesium Malate, TRAACS® Magnesium Lysinate Glycinate Chelate)	150 mg	38%
Zinc (as TRAACS® Zinc Bisglycinate Chelate)	15 mg	100%
5-HTP (5-Hydroxytryptophan) (from <i>Griffonia simplicifolia</i> (Seed))	300 mg	*

* Daily Value not established

ID# 582090 90 Capsules

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References

1. Juhl JH. Fibromyalgia and the serotonin pathway. *Altern Med Rev.* 1998 Oct;3(5):367-75.
2. Gutknecht L, Jacob C, Strobel A, et al. Tryptophan hydroxylase-2 gene variation influences personality traits and disorders related to emotional dysregulation. *Int J Neuropsychopharmacol.* 2007 Jun;10(3):309-20.
3. Birdsall TC. 5-Hydroxytryptophan: a clinically-effective serotonin precursor. *Altern Med Rev.* 1998 Aug;3(4):271-80.
4. Agren H, Reibring L, Hartvig P, et al. Low brain uptake of L-[11C]5-hydroxytryptophan in major depression: a positron emission tomography study on patients and healthy volunteers. *Acta Psychiatr Scand.* 1991;83(6):449-55.
5. Zmilacher K, Bategay R, Gastpar M. L-5-hydroxytryptophan alone and in combination with a peripheral decarboxylase inhibitor in the treatment of depression. *Neuropsychobiology.* 1988;20(1):28-35.
6. Caruso I, Sarzi Puttini P, Cazzola M, et al. Double-blind study of 5-hydroxytryptophan versus placebo in the treatment of primary fibromyalgia syndrome. *J Int Med Res.* 1990 May-Jun;18(3):201-09.
7. Puttini S, Caruso I. Primary fibromyalgia syndrome and 5-hydroxy-L-tryptophan: a 90-day open study. *J Int Med Res.* 1992 Apr;20(2):182-89.
8. Ribeiro CA. L-5-hydroxytryptophan in the prophylaxis of chronic tension-type headache: a double-blind, randomized, placebo controlled study. *Headache.* 2000 Jun;40(6):451-56.
9. Nagata E, Shibata M, Hamada J, et al. Plasma 5-hydroxytryptamine (5-HT) in migraine during an attack-free period. *Headache.* 2006 Apr;46(4):592-96.
10. Nicolodi M, Sicuteri F. L-5-hydroxytryptophan can prevent nociceptive disorders in man. *Adv Exp Med Biol.* 1999;467:177-82.
11. Turner E, Loftis J, Blackwell A. Serotonin a la carte: Supplementation with serotonin precursor 5-hydroxytryptophan. *Pharmacology & Therapeutics* 2006; 109: 325-338.
12. Nardini M, De Stefano R, Iannuccelli M, Borghesi R, Battistini N. Treatment of depression with L-5-hydroxytryptophan combined with chlorimipramine, a double-blind study. *Int J Clin Pharmacol Res.* 1983;3(4): 239-50.
13. Hvas AM, Juul S, Bech P, Nexø E. Vitamin B6 level is associated with symptoms of depression. *Psychother Psychosom.* 2004;73(6): 340-343.
14. Eby GA, Eby KL. Rapid recovery from major depression using magnesium treatment. *Med Hypotheses.* 2006;67(2): 362-70.
15. Facchinetti F, Borella P, Sances G, et al. Oral magnesium successfully relieves premenstrual mood changes. *Obstet Gynecol.* 1991 Aug;78(2):177-81.
16. Folic Acid Monograph. *Alt Med Rev.* 2005;10(3): 222-229.
17. Miller AL. The methylation, neurotransmitter, and antioxidant connections between folate and depression. *Altern Med Rev.* 2008 Sep;13(3):216-26.
18. Bottiglieri T. et al. Homocysteine, folate, methylation, and monoamine metabolism in depression. *J Neurol Neurosurg Psychiatry.* 2000; 69(2): 228-32.
19. Levenson C. Zinc: The New Antidepressant? *Nutr Rev.* 2006; 64(1): 39-42.
20. Nowak G, Szewczyk B, Andrzej P. Zinc and depression. An update. *Pharmacological Reports.* 2005; 57: 713-718.
21. Ranjbar E, Kasaei MS, Mohammad-Shirazi M, Nasrollahzadeh J, Rashidkhani B, Shams J, Mostafavi SA, Mohammadi MR. Effects of zinc supplementation in patients with major depression: a randomized clinical trial. *Iran J Psychiatry.* 2013 Jun;8(2):73-9.
22. Prior PL, Galduroz JC. Glutaminergic hyperfunctioning during alcohol withdrawal syndrome: therapeutic perspective with zinc and magnesium. *Med Hypothesis* 2011 77(3):368-70.