



5-HTP SUPREME™ & 5-HTP SYNERGY™

5-HYDROXYTRYPTOPHAN COMBINED WITH VITAMIN B6 IN TWO DOSAGES

5-HTP SUPREME™ | 60 VEGETARIAN CAPSULES | NPN80045818 | HTU060-CN

5-HTP SYNERGY™ | 90 VEGETARIAN CAPSULES | NPN80048189 | HTP090-CN

5-Hydroxytryptophan (5-HTP) is a precursor to serotonin biosynthesis. It is produced from the essential amino acid L-tryptophan which is naturally supplied by dietary proteins such as turkey and milk and requires vitamin B6 as a cofactor. 5-HTP is produced primarily in either the enterochromaffin cells of the gastrointestinal tract or the midline raphe nuclei of the brainstem where it is then converted to serotonin. Serotonin produced in the gastrointestinal tract stimulates physiologic functions including vasoconstriction, uterine contraction, bronchoconstriction, gastrointestinal motility, and platelet aggregation.¹ In the brain, serotonin inhibits excitatory neurotransmission and modulates wakefulness, attention, affective behavior (anxiety and depression), sexual behaviour, appetite, thermoregulation, motor tone, migraine, emesis, nociception, and aggression.¹

WHY CONSIDER 5-HTP SUPPLEMENTATION?

Serotonin cannot cross the blood-brain barrier (BBB) and therefore must be manufactured within the central nervous system (CNS).² Its precursor amino acid, L-tryptophan, easily crosses the BBB and, therefore, influences the rate of serotonin production. However, stress, elevated cortisol levels, vitamin B6 deficiency, and even high dosages of L-tryptophan (above 2,000 mg) can inhibit the production and transport of L-tryptophan from the bloodstream into the CNS. Further, the amount of L-tryptophan that passes into the brain is not only dependent on the amount found in blood, but also its concentration relative to other amino acids.¹

The conversion of L-tryptophan to 5-HTP is a rate-limited step in the production of serotonin.¹ Therefore, it can be therapeutically advantageous to bypass this reaction and directly supply 5-HTP, which is easily absorbed in the gastrointestinal tract and crosses the BBB.³ Further, human clinical studies using 5-HTP have shown excellent safety with oral administration and 5-HTP supplementation has never been shown to cause the toxic serotonin syndrome.³ However, increasing the serotonin precursor, 5-HTP, could inadvertently decrease other neurotransmitters, including dopamine and norepinephrine, and exacerbate neuropsychiatric problems.²

Insomnia: Serotonin is a precursor to melatonin, the neurohormone that modulates circadian rhythms. Insufficient serotonin can contribute to a lack of melatonin and cause insomnia; therefore, 5-HTP can help promote a balanced sleep/wake cycle by maintaining adequate levels of serotonin.⁷ Oral doses of 6 and 9mg/kg of 5-HTP was shown to increase sleep duration and decrease sleep latency time in animal studies.⁸

Appetite and Obesity: 5-HTP has been clinically studied as an influencer of food preferences which can be associated with obesity, disordered eating behaviour, and noncompliance with dietary restrictions.⁹ Conversely, macronutrient ratios affect 5-HTP concentrations. Clinical studies in which obese women were given 5-HTP (8 mg kg⁻¹ day⁻¹) for 35 days showed weight loss, decreased food intake, and early satiety.⁹

Headaches and Migraines: Classic migraine headaches are more often experienced by women and thought to be an outcome of low serotonin, high estrogen, and cortical excitability. In animal studies, 5-HTP administration in cycling female rats decreased cortical spreading depression (CSD), the likely culprit of the migraine aura experienced in women during pregnancy and menstruation.¹⁰

Fibromyalgia and Chronic Pain Syndromes: The pain and symptoms experienced in many chronic pain syndromes such as fibromyalgia are often neuropathic and rooted in a hypervigilant central nervous system. Selective serotonin reuptake inhibitors (SSRIs) are commonly prescribed for the widespread symptoms associated with these conditions.¹¹ 5-HTP is an alternative means of balancing serotonin and has been found to be deficient in those with fibromy-

algia.¹² In a systematic review, combination therapy of 5-HTP and a monoamine oxidase inhibitor (MAOI) significantly reduced pain scores in 200 human subjects with fibromyalgia, compared to monotherapy.¹³ 5-HTP co-administration has also potentiated the effects of antihyperalgesic agents.¹⁴

Irritable Bowel Syndrome: Intestinal permeability, peristalsis, mucosal secretion, and visceral sensitivity are directly associated with the serotonergic signaling pathways in the gastrointestinal tract.¹⁵ Individuals with IBS experience impaired intestinal barrier function as a result of alterations in serotonin metabolism.^{15,16} In clinical studies, oral administration of 5-HTP increased mucosal serotonergic metabolism, improving intestinal permeability in those with IBS.¹⁶

Designs for Health offers 5-HTP in two dosages: 50 mg per 1-capsule serving in 5-HTP Synergy™ and 100 mg per 1-capsule serving in 5-HTP Supreme™. Both products include vitamin B6, the necessary cofactor in the conversion of 5-HTP to serotonin.

5-HTP MAY HAVE BENEFICIAL PROPERTIES FOR:

- Mood disorders
- Excessive appetite
- Binge eating
- Carbohydrate cravings
- Obesity
- Headaches
- Migraines
- Insomnia
- Fibromyalgia
- Neuropathic pain
- Irritable Bowel Syndrome

5-HTP SUPREME

Medicinal Ingredients (per capsule):

L-5-Hydroxytryptophan (5-HTP, Griffonia simplicifolia-Seed)100 mg
Vitamin B6 (Pyridoxal 5-phosphate)..... 20 mg

Non-Medicinal Ingredients: Microcrystalline cellulose, hypromellose, L-leucine. **Recommended Dose:** Adults: Take 1 capsule three times per day, or as directed by your health care practitioner. To minimize the risk of gastrointestinal side effects, start dosing at 50-100 mg, 2-3 times per day and slowly increase to effective dose over 2 week period. Take with food. For symptoms of fibromyalgia, use for a minimum of 2 weeks to see beneficial effects. Consult a health care practitioner for use beyond one year.

5-HTP SYNERGY

Medicinal Ingredients (per capsule):

L-5-Hydroxytryptophan (Griffonia simplicifolia-Seed)..... 50 mg
Vitamin B6 (Pyridoxal 5-phosphate)..... 10 mg

Non-Medicinal Ingredients: Microcrystalline cellulose, hypromellose, L-Leucine. **Recommended Dose:** Adults: Take 1 capsule, three times per day with food, or as directed by your health care practitioner. For symptoms of fibromyalgia, use for a minimum of 2 weeks to see beneficial effects. Consult a health care practitioner for use beyond one year.

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