

# 5-HTP



## 5-Hydroxytryptophan

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### 5-HTP may be helpful for:

- Excessive appetite
- Binge Eating
- Carbohydrate Cravings
- Obesity
- Headaches
- Migraines
- Insomnia
- Fibromyalgia
- Depression
- Bipolar Disorder
- Poor Digestion

### WHAT IS-5 HTP?

5-Hydroxytryptophan, made from the amino acid L-tryptophan with the help of Vitamin B6, is a precursor to serotonin production. The amino acid tryptophan can be found naturally in protein foods such as turkey and milk. Serotonin is a very important neurotransmitter known as "the feel good hormone". In the Central Nervous System (CNS), serotonin has been implicated in the regulation of sleep, depression, anxiety, aggression, appetite, temperature, sexual behavior, and pain sensation.

### WHY SHOULD I CONSIDER 5-HTP SUPPLEMENTATION?

All serotonin used by brain cells must be made within the neurons, since serotonin cannot cross the blood-brain barrier. Therefore, the synthesis of serotonin is heavily dependent upon the availability of L-tryptophan within the CNS.

The production and transport of L-Tryptophan from the bloodstream into the CNS can be compromised by several factors including stress, elevated cortisol levels, vitamin B6 deficiency, and even high dosages (above 2,000 mg) of L-Tryptophan, which all stimulate the conversion of L-Tryptophan to kynurenine, lowering serum tryptophan levels.<sup>1-3o</sup>

According to research, 5-HTP allows for weight loss without dieting, reduces appetite, reduces cravings for carbohydrates, improves mood, helps diabetics to stay on their diets,

improves fibromyalgia symptoms, frequency and severity of headaches and even helps protein digestion.

### HOW DOES 5-HTP HELP THOSE WITH DIABETES MELLITUS?

Diabetes is associated with depressed tryptophan levels and as a result, higher incidence of depression. Diabetics also suffer from hyperphagia and carbohydrate cravings. In a study where 20 overweight patients with NIDDM were given 750 mg/day of 5-HTP or placebo for two weeks, daily energy intake decreased considerably. Carbohydrate and fat intake were both reduced. Body weight reduced as well without dietary restriction.<sup>5</sup> The conclusion of this study was: "These data confirm the role of the serotonergic system in reducing energy intake, by predominantly inhibiting carbohydrate intake, and suggest that 5-HTP may be safely utilized to improve the compliance to dietary prescriptions in NIDDM."

<sup>5</sup> Int J Obes Relat Metab Disor 1998 July;22(7):648-54

Effects of oral 5-hydroxy-tryptophan on energy intake and macronutrient selection in non-insulin dependent diabetic patients.

### IS 5-HTP SAFE?

5-HTP is available OTC, whereas the FDA no longer allows L-tryptophan to be sold OTC. Where L-Tryptophan is synthesized from bacteria, allowing for contamination, 5-HTP is made from a plant from the seeds of the African plant, Griffonia simplicifolia. L-Tryptophan supplements have been available only by prescription since the 1989 contamination catastrophe.

### 5-HTP IS WELL ABSORBED

5-HTP is well absorbed from an oral dose, with about 70 percent ending up in the bloodstream.<sup>5,6</sup> Absorption of 5-HTP is not affected by the presence of other amino acids; therefore, it may be taken with meals without reducing its effectiveness. Unlike LT, 5-HTP cannot be shunted into niacin or protein production.

Other neurotransmitters and CNS chemicals, such as melatonin, dopamine, nor-epinephrine, and beta-endorphin have also been shown to increase following oral administration of 5-HTP. This ability to increase not only serotonin levels in the brain, but also dopamine and norepinephrine, allows 5-HTP to produce some significant and unique effects on brain chemistry and on serotonin-related conditions which other substances, including LT, cannot duplicate.

# Research Studies

## Research Studies

41. Anderson IM, Parry-Billings M, Newsholme EA, et al. Dieting reduces plasma tryptophan and alters brain 5-HTP function in women. *Psychol Med* 1990;20:785-791.

### **The effects of oral 5-hydroxytryptophan administration on feeding behavior in obese adult female subjects.**

*Int J Obes Relat Metab Disord* 1998 Jul;22(7):648-54

19 obese females with BMI's between 30-40

Double-blind crossover stud

Aimed to evaluate the effects of 5 HTP on feeding behavior, mood state and weight loss.

### **Eating behavior and adherence to dietary prescriptions in obese adult subjects treated with 5-hydroxytryptophan.**

*Am J Clin Nutr* 1992;56:863-867.

*Purpose of study:*

To verify whether adherence to dietary restriction could be improved by 5-HTP (900 mg/day) vs. a placebo.

*Study design:*

Double-blinded - 2 consecutive 6 week periods

No dietary restriction first 6 weeks

Calories were controlled in the second period

### **Studies show that 5 HTP's effectiveness is comparable to SSRI's like Prozac**

#### **Also gets results similar to the tricyclic antidepressants like Elavil.**

Primary fibromyalgia syndrome is characterized by general musculo-skeletal aching, multiple tender points, fatigue, morning stiffness, and sleep disturbances.

Fibromyalgia patients have been found to have low serotonin and tryptophan levels, and some studies have shown symptomatic improvement with the use of tricyclic and SSRI antidepressants.

These findings suggest 5-HTP might be useful in the treatment of fibromyalgia.

3 clinical trials have demonstrated significant improvement in symptoms, including pain, morning stiffness, anxiety, and fatigue

5-HTP has been shown to be beneficial in treating insomnia, especially in improving sleep quality by increasing REM sleep.

01. Soulaire A, Lambinet H. Effect of 5-hydroxytryptophan, a serotonin precursor, on sleep disorders. *Ann Med Psychol* 1977;1:792-798.

2. Guilleminault C, Cathala JP, Castaigne P. Effects of 5-hydroxytryptophan on sleep of a patient with a brain-stem lesion.

*Electroencephalogr Clin Neurophysiol* 1973;34:177-184. 3. Wyatt RJ, Zarcone V, Engelman K, et al. Effects of 5-hydroxytryptophan on the sleep of normal human subjects. *Electroencephalogr Clin Neurophysiol* 1971;30:505-509.

5-HTP has been used successfully in the prevention of chronic headaches of various types, including migraine, tension headaches, and juvenile headaches

*Ann Surg* 1977 Aug;186(2):130-5

The effect of serotonin on pepsin inhibition by duodenal fat. The purpose was to evaluate the possible role of serotonin on pepsin secretion.

The results of our study suggest that serotonin increases pepsin production as follows:

1. Reserpine is a drug that depletes serotonin stores and

Pretreatment with reserpine abolished the stimulatory effect of histamine on pepsin secretion.

2. Pretreatment with a serotonin blocking agent augmented the pepsin inhibition induced by the intraduodenal infusion of fat.

3. 5-hydroxytryptophan (serotonin precursor) caused a significant stimulation of pepsin secretion.

The mode of action of serotonin is probably by a direct hormonal action on the gastric chief cells.

*Eur Neuropsychopharmacol* 1996 May;6(2):103-10

Behavioral, neuroendocrine and biochemical effects of different doses of 5-HTP in panic disorder

Purpose: To investigate the role of serotonin in the pathophysiology of panic disorder (PD)

7 patients suffering from PD and 7 healthy controls

Received an IV challenge with 10 mg, 20 mg and 40 mg 5-HTP and placebo in random order on 4 different occasions

Conclusion: "Stimulation of the serotonergic neuronal system by three different dosages of 5 HTP did not induce panic or anxiety in PD pts and healthy controls."