

5-HTP

Serotonin Booster

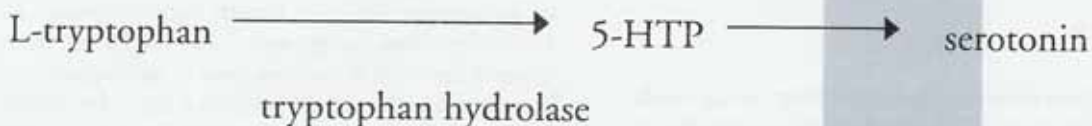
Serotonin Deficiency

Serotonin is a chemical in the brain (neurotransmitter) that regulates our moods, appetites and sleep patterns. Many lifestyle factors can cause our serotonin levels to drop, such as stress, poor diet, lack of exercise, environmental toxins, caffeine and alcohol. When serotonin levels are out of balance, disorders occur in how moods, appetites and sleep patterns are regulated.¹

Although nothing can take the place of maintaining a healthy lifestyle, a substance called 5-HTP may help to boost levels of serotonin, and improve mood, appetite, and sleep regulation.^{1, 2, 3, 4, 5}

Origin of 5-HTP

5-HTP (5-hydroxytryptophan) is a naturally-occurring chemical compound in the human body and in the seeds of an African plant called *Griffonia simplicifolia*. In the human body, it is an important intermediate step in the metabolism pathway of serotonin.



In this rate-limiting step (a step in metabolism which determines the rate at which the end product is produced, in this case: serotonin) for the production of serotonin, L-tryptophan (LT) is converted to 5-HTP by an enzyme called tryptophan hydrolase. This enzyme can be inhibited by several factors, including stress, vitamin B6 deficiency, insufficient magnesium, and insulin resistance.² If there is not enough 5-HTP made in the body, there will be a deficiency in serotonin. Ingesting 5-HTP bypasses the conversion of LT into 5-HTP by tryptophan hydrolase, so if there is a dysfunction or deficiency of this enzyme, serotonin may be made directly from the 5-HTP.²

Benefits

Depression

Depression is a serious medical condition that affects over 15 million Americans each year. In 1996, one in ten people in the U.S. were estimated to be taking antidepressant medication. Depression is mainly thought to result from disturbances in the brain's chemical system, and one of the most widely prescribed classes of antidepressant drugs, called SSRIs (Selective Serotonin Reuptake Inhibitors), work on neurotransmitters (serotonin). SSRIs (such as Prozac and Zoloft) prolong serotonin's life (by preventing its reuptake) in the brain, thereby increasing the availability of serotonin for brain functions.⁶

Several studies have documented 5-HTP's beneficial effect on depression. In one clinical study involving the use of 5-HTP for depressive patients, 5-HTP reduced the relapse rate of depressions (of both unipolar and

bipolar types).³ Other studies have compared the use of 5-HTP against other antidepressant therapies and have found 5-HTP to be as effective in many cases, and to exhibit fewer side effects.^{7,8} One author noted that 5-HTP administration seemed most successful on patients with persistent disorders of serotonin metabolism.³

Insomnia

Restful sleep is an essential part of our health. Sleep provides the body with time to repair damaged tissues and the brain with time to build its energy level. Serotonin plays an important role in helping us fall asleep, and stay asleep throughout the night. Serotonin deficiencies, on the other hand, can cause sleep disorders.⁶ 5-HTP has shown in clinical and laboratory studies a lessening of insomnia caused by a defect in the serotonin metabolism pathway.^{4,9,10,11} 5-HTP has also been shown clinically to increase the REM sleep ("dream sleep") and deep sleep times without increasing the total sleep time.¹¹

Obesity

The numbers of obese Americans keeps rising, with at least 30% classified as significantly overweight or obese. Serotonin plays an important role in the regulation of appetite by sending a signal to the brain that hunger has been satisfied. In one clinical study, administration of 5-HTP for five weeks to 19 obese female subjects resulted in decreased food intake and weight loss during the period of observation.¹² In another clinical study involving 20 obese patients, significant weight loss, a reduction in carbohydrate intake and early satiety were found to correlate with 5-HTP supplementation.⁵

Others: Fibromyalgia and Chronic Headaches

Two other areas where 5-HTP has shown promise are fibromyalgia and chronic headaches, or migraines. Fibromyalgia is a condition that is characterized by chronic generalized aches throughout the body. To be diagnosed with fibromyalgia,

one must meet several criteria regarding the location and frequency of pain, and be excluded from other disorders that may cause similar symptoms. Fibromyalgia is a fairly common condition, affecting approximately 3 to 6 percent of Americans. Serotonin levels in fibromyalgia patients have been found to be low, and 5-HTP has shown, in clinical trials, significant improvement in patients.^{2,6,13,14,15}

Generally, there are two main types of headaches, vascular and non-vascular. Vascular headaches result from changes in the blood vessels, producing a sharp throbbing pain; while, nonvascular headaches are usually characterized by steady and constant pain. Chronic, recurring headaches are experienced by over 45 million Americans. Good results with various types of chronic headaches (including migraine) have been observed with 5-HTP administration in clinical studies.^{2,6,13,16,17,18}

Suggested Use

Take 1-2 capsules, 1-3 times daily between meals, or as advised by your health care professional. Generally, initial dosage with 5-HTP is 50 mg. three times a day, and if the response is inadequate it is increased to 100 mg three times a day.² In clinical studies, daily dosages have ranged from 150 – 300 mg.^{2,3,11,12,18}

Safety

If you are pregnant or nursing consult your health care professional before using this product. If you are currently taking selective serotonin reuptake inhibitors (SSRIs—such as Prozac, Paxil or Zoloft), or any other antidepressant, consult your Health Care Professional before using this product.²

The foremost concern regarding the use of 5-HTP is the possibility of people contracting EMS (eosinophilia-myalgia syndrome) similar to the episode linked to a contaminated batch of L-tryptophan in 1983. The contamination was linked to methods of production for L-tryptophan involving bacterial fermentation and succeeding inadequate filtration. Because 5-HTP is produced by extraction from

plant sources it is unlikely for such a contamination to occur.^{2, 19}

Because the ingestion of 5-HTP elevates serotonin levels there may be a concern that taking 5-HTP could produce the serotonin syndrome occasionally seen in the use of SSRI's and MAO inhibitors (Nardilá, Parnateá). The symptoms of this syndrome include mental confusion or anxiety and high blood pressure. This syndrome is self-limiting (clearing up without treatment) and is unlikely to be life-threatening. An additional concern with 5-HTP is the possibility of contracting heart valve complications like those seen with the drugs fenfluramine-phentermine, "Phen-Fen" (Reduxá). According to Dr. Michael Murray, there have been "no reports of heart valve disease or other problems related to serotonin syndrome in people who take 5-HTP by itself".⁶

There is other scientific research available about the use and effectiveness of 5-HTP. Section 5 of the Dietary Supplement Health and Education Act requires us to present a balanced view of all available information about a dietary ingredient or substance to you. Since that is impossible to do in this fact sheet because of space limitations, we are providing this list of references to you. If you wish a copy of a referenced publication or need information on where you can retrieve it, you may call Optimal Nutrients at 1-800-966-8874.

Available Scientific Information

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The following reference presents one or more views different from that expressed in this publication about the effectiveness of 5-HTP.

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