

Tryptophan and Mood Enhancement

Serotonin has not only been shown to regulate sleep, but it also is responsible for controlling mood, including feelings of optimism, relaxation, general sense of well-being, and the ability to focus and concentrate. When serotonin levels drop, it can lead to a lowered mood, which is what people experience with seasonal affective disorder, premenstrual syndrome, and general stress. People who experience these conditions also have been shown to experience decreased levels of tryptophan, which is responsible for the decrease in production of serotonin. Tryptophan depletion has been associated with a lowering in mood of normal healthy men. In one study, women who had recovered from major depression and ended drug treatment experienced temporary but clinically significant depressive symptoms after tryptophan depletion. In many studies that were performed in the 1970s, indications of tryptophan's ability to relieve lowered mood were found. When shorter days begin in the fall and winter, negative effects on a significant percent of the U.S. population result. Some experience sadness, sleepiness, increased appetite, weight gain, and a loss of libido, which is what is known as seasonal affective disorder (SAD). A key contributor to this is the increased synthesis of melatonin that occurs during the winter months. Daylight normally inhibits the conversion of serotonin into melatonin. Since the period of nighttime is longer in the winter versus the summer, there is a longer period of melatonin secretion. Increased synthesis of melatonin depletes serotonin levels, which, in turn, increase the symptoms of SAD. Those patients who experience SAD tend to crave starchy foods and sweets more, which happens when brain serotonin levels are low. Tryptophan treatment may offer a substantial amount of help for people who are suffering from seasonal affective disorder. SAD patients who were treated with either light therapy or with tryptophan proved that patients with light therapy relapsed more quickly after the discontinued use, as opposed to those who were treated with tryptophan. Studies have also shown that SAD patients often feel better after being treated with tryptophan. Serotonin also plays an important role in behavioral inhibition. Many studies have found that there is a decrease in aggressive behavior when serotonin is increased, while decreasing serotonin leads to impulsive aggressive behavior. Another study proves that healthy men who are depleted of tryptophan show more aggressiveness. When tryptophan supplementation was studied, participants who received the tryptophan significantly decreased their quarrelsome behavior and increased in sociable and agreeable behavior. Additionally, those patients' perceptions of other participants' agreeableness also increased. Symptoms that are related to premenstrual syndrome include depression, cravings for foods that are rich in carbohydrates, insomnia, irritability, and hostility. More so, women with premenstrual syndrome dysphoria, which is a more severe premenstrual syndrome, have shown decreased levels of brain serotonin. This suggests that tryptophan may be involved, as premenstrual women who had tryptophan depletion have shown increased aggressive behavior. When tryptophan supplementation was studied on women who experienced premenstrual dysphoric disorder, mood swings, tension, and irritability, results showed that there were significantly greater improvements with L-tryptophan supplementation than with a placebo.

About the Author

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