L-THEANINE AND SLEEP QUALITY

A study from Japan presented at the 17th European Sleep Research Society suggests that ingestion of an amino acid extract from tea, L-theanine, may improve sleep quality. About 30% of US adult men report insomnia in the course of any year and it is estimated that over 50 percent of US adults aged 65 and older report some sleep disruption, while about 20 percent suffer from chronic insomnia. As men age from 16 to 50, they lose about 80% of their deep sleep and after 44 years of age, REM and total sleep reduce and wakefulness increase. The US leads in the world in cases of insomnia, followed by Germany and England, and sleep problems add an estimated \$15.9 billion to US national health care costs.

L-Theanine, a derivative of the major excitatory brain neurotransmitter L-glutamate, is an amino acid found in the tea plant Camellia sinensis. Studies have shown L-theanine to inhibit LDL oxidation, counteract the stimulatory effects of caffeine, and lower blood pressure. In its anti-stress capacities, L-theanine increases dopamine and serotonin production, decreases norepinephrine concentrations, and induces alpha-brain wave activity. It reduces cortisol levels and increases relaxation associated with recovery from a stressful task. L-theanine also directly provides neuroprotection against glutamate neurotoxicity through blockade of the N-methyl-d-aspartate (NMDA), and α -amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid (AMPA) receptors.

The Japanese study was a blind crossover design involving 22 healthy men (12 daytime workers with an average age of 28 years, and 10 students with an average age of 26 years). After a three-day acclimatization period, the subjects were given 200mg of L-theanine or a placebo, one hour before bedtime for six days and were then crossed over to the other treatment group. Sleep quality was assessed by interviews upon awakening, self reported questionnaires and a wrist actigraph, to record bodily movements during sleep. All subjects reported a significant absence of feeling exhausted and a reduced need for sleep when administered L-theanine, compared to placebo. Seven of the 10 students had improved sleep efficiency and these same subjects reported a superior mental state prior to sleep and a decreased occurrence of nightmares. Total sleeping time did not alter between the two groups.

L-theanine may be a safe, effective treatment for sleep disorders such as insomnia either alone or in combination with prescription medications. Additionally, L-theanine typically does not result in increased morning drowsiness or impaired concentration.

Reference: Shirakawa, S. Theanine supplementation and sleep quality. 17th European Sleep Research Society. 2004.

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