L-THEANINE: Nature's Chill Pill
Virtually everyone has stress. In fact, According to the Stress in America™ survey by the American Psychological Association, 39 percent of respondents said their stress increased over the past year, and 44 percent said that their stress had increased over the past five years. The question is, how well do you handle your stress, how does it affect your life, and what can you do about it? The same Stress in America survey indicates the following percentage of Americans is only fair or poor at:

- Preventing themselves from becoming stressed (44 percent)
- Managing or reducing stress once experienced (39 percent)
- Recovering fully or recharging after they've been stressed (31 percent)

The ramifications of chronic stress include increases in illness, including headaches, heart disease, immune deficiencies and digestive problems. To a large extent, this appears to be due to an increased production of stress hormones and decreased immune function.

So what can be done to help control stress and reduce its ill effects? The answer is really multifaceted and may include a program of diet, exercise, stress-management techniques such as yoga, and even psychological counseling. In addition, when stress rears its ugly head, nature's chill pill, L-theanine may be able to help.

L-THEANINE'S MECHANISM OF ACTION

Asian cultures have often used teas for relaxation effects. The relaxing effect is, at least in part, caused by the presence of a neurologically active amino acid, L-theanine (gamma-ethyl-amino-L-glutamic acid). Tea has the reputation of having less caffeine than coffee but it is the L-theanine in the tea that lessens the stimulant effect of caffeine on the human nervous system. In the brain, L-theanine increases both serotonin and dopamine production, and possibly GABA as well.

Evidence from human electroencephalograph (EEG) studies show that it also significantly increases brain activity in the alpha frequency band which indicates that it relaxes the mind without inducing drowsiness. Alpha activity is also known to play an important role in critical aspects of attention. Research indicates that L-theanine has a significant effect on improving mental alertness while promoting relaxation.

L-THEANINE AND RELAXATION

According to Mason, two small human studies showed that within 30–40 minutes of consuming 50 or 200 mg of L-theanine there is an increase of alpha wave activity/electrical signals produced by the brain. The perceived relaxation effect in the subjects coincided with the detection of alpha waves. This shows that L-theanine fosters a state of alert relaxation, which is consistent with the fact that anxious people have fewer or smaller alpha waves.

The journal Human Psychopharmacology Clinical and Experimental published a double-blind placebo-controlled study in which sixteen healthy volunteers received 200 mg L-theanine, a pharmaceutical anxiolytic or placebo. The results showed that L-theanine induced feelings of tranquility in the volunteers.

L-THEANINE, STRESS AND ANXIETY

The journal Biological Psychology published a double-blind, placebo-controlled study in which twelve participants underwent four separate trials: one in which they took L-theanine at the start of an experimental, stress-inducing procedure, one in which they took L-theanine midway, and two control trials in which they either took a placebo or nothing. The results showed that L-theanine intake resulted in a reduction in some physiological indicators of stress within 15 minutes, compared to the placebo or control condition. Moreover, analyses of heart rate variability indicated that reductions in heart rate were likely attributable to a reduction of sympathetic nervous activation, suggesting that L-theanine had anti-stress effects via the inhibition of cortical neuron excitation.

Similarly, a placebo-controlled study conducted with
pharmacy students found that L-theanine (200 mg, twice a day, after breakfast and lunch) was effective at suppressing the initial stress response of students.

The *Journal of Physiological Anthropology* published a placebo-controlled study in which 14 participants took either L-theanine + placebo, caffeine + placebo, or placebo only (L-theanine 200 mg, caffeine 100 mg) while performing mental tasks and physiological activities under conditions of physical or psychological stress. The results showed that L-theanine significantly reduced anxiety and reduced the blood-pressure increase in high-stress-response adults. Caffeine tended to have a similar but smaller inhibition of the blood-pressure increase caused by the mental tasks.

The *Journal of Functional Foods* published a double-blind, placebo-controlled study in which 18 normal healthy subjects were divided into two groups referred to as high anxiety propensity group and the minimal anxiety propensity group. Both groups received 200 mg L-theanine and placebo (at different times) (200 mg/100 ml water) and placebo (100 ml water) in a double-blind repeated measurement design protocol. When tested at 15–60 minutes after consumption, results showed significantly enhanced activity of alpha bands, descending heart rate, elevated visual attentional performance, and improved reaction time response among high anxiety propensity subjects compared to a placebo. However, no significant differences were noticed among subjects with a minimal anxiety propensity.

**L-THEANINE AND MENTAL FOCUS**

The journal *Neuropharmacology* published a double-blind, randomized, cross-over study in which 27 participants received 400 mg L-theanine, 50 mg caffeine, a combination of the two, or a placebo. The results were that L-theanine and caffeine each significantly reduced error rates during a sustained attention task. It was noted that the combination of L-theanine and caffeine did not confer any additional benefits over either compound alone.

Another study examined "sensory gating." Sensory gating describes the processes of filtering out redundant or unnecessary stimuli in the brain from all possible environmental stimuli. Being able to do this is obviously beneficial when you’re trying to focus on a mental task. In the study, L-theanine was given to 14 healthy subjects, and tests were conducted 90 minutes later. The results were that 200 mg and 400 mg significantly improved sensory gating.

**CONCLUSION**

Research shows that L-theanine is effective at helping to promote relaxation while reducing feelings of stress and anxiety. Furthermore, this amino acid is even helpful in promoting mental focus. Truly, L-theanine is nature’s chill pill.

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**References:**