

Independent Study Title The Effects of Oral Supplementation of L-Theanine and Stress formula Vitamin on The Stress Reduction

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Degree Master of Science (Anti-Aging and Regenerative Science)

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ABSTRACT

L-Theanine is an amino acid contained in green tea leaves which is known to block the binding of L-glutamic acid to glutamate receptors in the brain. Because the characteristics of L-Theanine suggest that it may influence psychological and physiological states under stress, thus this study aimed to elucidate possible effects of L-Theanine compared with Stresstab which known as multivitamins on acute stress which activated by a mental arithmetic task: an acute stressor. Then, twenty good health volunteers underwent two separate trials: one in which they took L-Theanine and one in which they took multivitamin (Baseline). The experimental sessions were performed by randomized and single-blind experiment. Our study showed that L-Theanine and multivitamin can reduce the Heart Rate Variability (HRV) stress index at the each time point period of mental arithmetic task (Rest 1, Rest 2), which is in good agreement with the Multivitamins. When compared the difference of HRV stress index of stress reduction at Rest 1 group (20 minutes after stress task) and Rest 2 (40 minutes after stress task) between L-Theanine and Multivitamins, HRV Stress index both groups, the result showed that L-Theanine group gave a difference of HRV between Task and Rest 2 higher than Multivitamins group (8.05 ± 4.31 and 1.6 ± 1.17 , $p < 0.05$), significantly. Comparisons stress reduction between L-Theanine and Multivitamins group, result

showed that HRV stress index value in L-Theanine was decreased continuously in each time point period from Task = 55.65 (\pm 11.85), Rest 1 = 52.95 (\pm 12.21) and Rest 2 = 47.6 (\pm 12.99). Between group for dependent use paired t-test showed a significant difference in mental arithmetic task testing (Task) group and Rest 2 group at ($P<0.05$). Then in this study suggest the possibility the effect of oral intake of L-Theanine and Multivitamin could reduce the HRV stress index, activated by mental arithmetic task, in a dose and time dependent fashion. In addition, this study suggested that L-Theanine and Multivitamin have an anti-stress property and moderate mechanism via the inhibition of cortical neuron excitation.

Keywords: Heart Rate Variability (HRV)/Stress index/L-Theanine/Mental arithmetic task/Stressstab/Stress formula vitamin