

Saliva Cortisol and Yawning as a Predictor of Neurological Disease

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Abstract : Cortisol is important to our immune system, regulates our stress response, and is a factor in maintaining brain temperature. Saliva cortisol is a practical and useful non-invasive measurement that signifies the presence of the important hormone. Electrical activity in the jaw muscles typically rises when the muscles are moved during yawning and the electrical level is found to be correlated with the cortisol level. In two studies using identical paradigms, a total of 108 healthy subjects were exposed to yawning-provoking stimuli so that their cortisol levels and electrical nerve impulses from their jaw muscles was recorded. Electrical activity is highly correlated with cortisol levels in healthy people. The Hospital Anxiety and Depression Scale, Yawning Susceptibility Scale, General Health Questionnaire, demographic, health details were collected and exclusion criteria applied for voluntary recruitment: chronic fatigue, diabetes, fibromyalgia, heart condition, high blood pressure, hormone replacement therapy, multiple sclerosis, and stroke. Significant differences were found between the saliva cortisol samples for the yawners as compared with the non-yawners between rest and post-stimuli. Significant evidence supports the Thompson Cortisol Hypothesis that suggests rises in cortisol levels are associated with yawning. Ethics approval granted and professional code of conduct, confidentiality, and safety issues are approved therein.

Keywords : cortisol, diagnosis, neurological disease, thompson cortisol hypothesis, yawning

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