

ASSOCIATION AMONG SALIVARY ALPHA-AMYLASE ACTIVITY AND WORKING MEMORY FUNCTIONING IN HEALTHY CHILDREN

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Salivary Alpha-Amylase (sAA) shows a statistically significant association with levels of peripheral noradrenaline under acute psychosocial stress conditions in young and healthy participants. In this study, our aim was directed to examine the relation among sAA and cognitive performance in various executive tasks in an experimental sample composed by 69 healthy children although we only could obtain the complete set of data for 44 boys and girls for this battery. The cognitive tasks employed were: Digits, Letters & Numbers, Arithmetic and Visual Span subtests of WISC-V (this full set of subtests is employed to the assessment of verbal and visual working memory). Saliva samples were obtained at baseline (10 minutes before the start of neuropsychological assessment), one minute before the start, after the end of the verbal tasks, and one minute after the end of the visual span task. Our statistical analyses showed a significant association among sAA levels and some of the parameters employed to describe the performance of each participant in the subscales of Digits and Letters & Numbers after controlling the effect of BMI. Scores in Letters & Numbers and visual span were associated with levels of salivary flow rate. These results are coherent with the findings of a previous pilot study conducted in our laboratory and are interpreted in relation with those results which have suggested a main role of the Locus Coeruleus-Noradrenaline System (LC-NA System) in the regulation of the level of arousal and executive behaviors.