

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

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Salivary alpha-amylase (sAA) is employed in basic research as a surrogate and non-invasive marker of the activity of Autonomous Nervous System (ANS) and Adrenomedullar System (AMS). In particular, sAA has showed 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 describe the relation among sAA and cognitive performance in different executive tasks in a sample composed by 69 healthy children (45 boys). The tasks employed to assess executive functioning belong to the ENFEN battery (which measures different aspects of executive functions through four subtests: Phonologic and Semantic Fluency, Trail Making Test, Towers, and Interference). Saliva samples were obtained at baseline (10 minutes before the start of neuro-psychological assessment), just one minute before and just one minute after the end of the last subtest of ENFEN. Our statistical analyses showed a direct and significant association among sAA and scores in Phonologic Fluency, Trail Making, Towers and Interference subtests of ENFEN after controlling the effect of BMI. These results show a positive lineal association among sAA and executive behavior in healthy children. We discuss these findings in relation with those studies what have suggested a main role of the noradrenergic central action mediated via Locus Coeruleus-Noradrenaline System (LC-NA System) in the regulation of executive behavior.