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The Serotonin Transporter Polymorphism (5-HTTLPR) and Coping Strategies Influence Successful Emotion Regulation in an Acute Stress Situation: Physiological Evidence

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ABSTRACT

INTRODUCTION: Emotion regulation is an important everyday-life skill to reduce harm and stress. Consequently, research shows associations between psychopathologies and emotional dysregulation. The serotonin transporter polymorphism (5-HTTLPR) has repeatedly been associated to phenotypes and syndromes related to emotional dysregulation. However, there is no study showing any direct effects of 5-HTTLPR genotype and emotion regulation. Hence, the aim of the present study was to draw a link between 5-HTTLPR to emotion regulation.

METHOD: N=91 healthy participants filled in a coping questionnaire, provided gene samples and participated in an emotion regulation experiment. In a within-subject design they viewed emotional pictures and were either instructed to suppress their emotions or not. During the emotion regulation task, skin conductance responses (SCR) were recorded.

RESULTS: Emotion regulation abilities measured by SCR were influenced by 5-HTTLPR and coping strategies, together explaining 30% of variance. S-allele carriers showed increased SCRs when watching aversive stimuli in the uninstructed condition. However, when receiving an emotion regulation instruction, they were able to downregulate their arousal resulting in comparable SCRs as observed in LL-carriers.

DISCUSSION: This is the first study showing an impact of 5-HTTLPR on physiological emotion regulation. Results show that S-allele carriers have the same emotional arousal as L-allele carriers, when they get a supportive instruction to suppress unwanted feelings. These findings have implications for psychotherapeutic treatments.

Keywords: Emotion Regulation, Coping, Stress, Skin Conductance Response, Serotonin, 5-HTTLPR/rs25531
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