

ADHD linked to interaction of genetics and psychology

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ADHD may be caused by alterations in the serotonin neurotransmission system combined with a tendency to experience psychosocial distress. Researchers writing in BioMed Central's open access journal *Behavioral and Brain Functions* found that ADHD behaviors in children and adolescents were associated with interactions between low and high serotonin activity and self-blame in relation to inter-parental conflict.

Molly Nikolas, from Michigan State University, USA, worked with a team of researchers to study a key serotonin genetic region, 5HTTLPR, and the tendency for children to blame themselves for parental arguments in 304 youths. They found that those children who reported more self-blame, and had variants of the region associated with both high and low serotonergic activity, had more ADHD symptoms.

According to the authors, "To date, studies have mostly focused on the effects of genetic and environmental influences on ADHD separately. Our work examines the interaction between a specific [gene variant](#) and a family environmental risk factor in order to determine their roles in the development of ADHD via behavioral and emotional dysregulation in children".

5HTTLPR is a functional genetic region responsible for regulating the production of a protein that transports the neurotransmitter [serotonin](#); it has previously been linked to a range of neuropsychiatric disorders and [personality traits](#). Tendency to self-blame was assessed by questionnaire. The authors stated, "Overall, these results complement growing evidence

suggesting that 5HTTLPR variants confer a liability for ADHD that is activated in particular environments, rather than conferring risk for [ADHD](#) directly".

More information: Gene x environment interactions for ADHD: synergistic effect of 5HTTLPR genotype and youth appraisals of inter-parental conflict, Molly Nikolas, Karen Friderici, Irwin Waldman, Katherine Jernigan and Joel T. Nigg, Behavioral and Brain Functions (in press), www.behavioralandbrainfunctions.com/

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