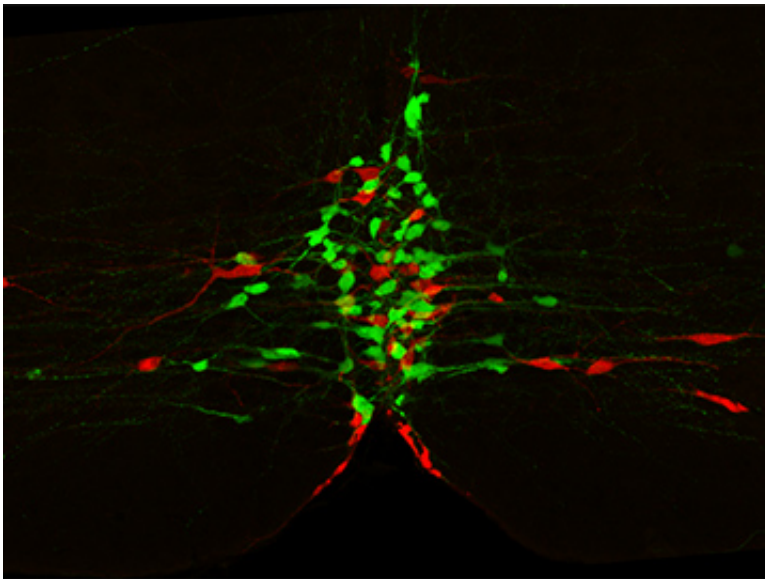


# Genetic marker in children may indicate future psychological problems

May 21 2015

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Two subtypes of serotonergic neurons, one marked green and one marked red, intermingle in a mouse brain stem, yet have different functions. Image: Rachael Brust

Researchers studying a healthy population of young children have uncovered evidence for an association between a genetic marker that modulates the uptake of a particular brain chemical ('neurotransmitter'), serotonin (5-HTTLPR), and patterns of activation in the right and left frontal lobes of the brain, that have previously been associated with increased susceptibility for later psychological problems, including depression and anxiety.

To conduct this project, Doctoral Researcher Antonios Christou recruited 70 [young children](#) from the greater Birmingham region. He then used cutting-edge methods to record electroencephalography (EEG) measures of brain activity, and collaborated with clinical geneticists at Birmingham Women's Hospital to extract several types of [genetic information](#) from their saliva. Finally, the researchers grouped the children according to the details of their genetic information in order to test particular hypotheses regarding how children with different genetic codes might exhibit different patterns of brain activity.

As predicted, the results showed that currently healthy children carrying genetic markers previously associated with significantly increased risk for later development of depression and anxiety disorders, exhibited [brain activity](#) patterns that predispose them to withdraw from new experiences and exposures. This collaborative interdisciplinary research project will be published in the journal *Development and Psychopathology*.

Dr Joe McCleery, who guided and supported Mr Christou in setting up and conducting this study, commented that "A better understanding [is needed] of how normal variation in specific genes, that increase risk for later psychological difficulties, alter [brain](#) functioning. This increased understanding can be expected to contribute not only to better surveillance and identification of individuals who are at greatly increased risk of these difficulties, but also to the ultimate discovery of new and more effective medications to treat their difficulties if and when they onset."

**More information:** "Variation in serotonin 5-HTTLPR short/long genotype modulates resting frontal EEG asymmetries in children." *Development and Psychopathology*. [dx.doi.org/10.1017/S0954579415000413](https://doi.org/10.1017/S0954579415000413)

Provided by University of Birmingham

Citation: Genetic marker in children may indicate future psychological problems (2015, May 21) retrieved 20 March 2024 from <https://medicalxpress.com/news/2015-05-genetic-marker-children-future-psychological.html>

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