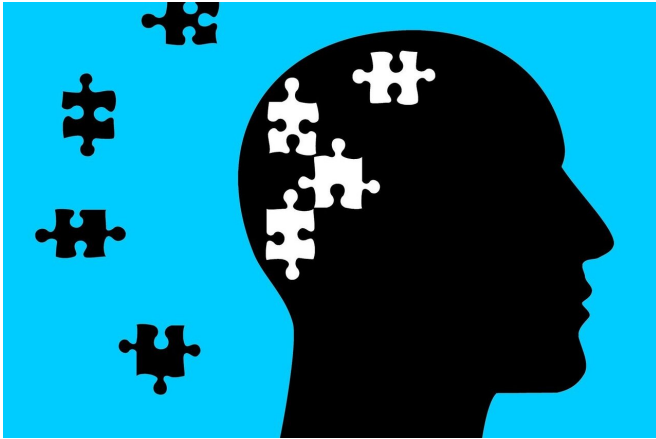


Genes underscore five psychiatric disorders

24 July 2019



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A group of international doctors has uncovered the genes that contribute to the development of ADHD, autism spectrum disorder, bipolar disorder, major depression and schizophrenia.

A collaborate research project carried out by The University of Queensland and Vrije Universiteit in Amsterdam analyzed more than 400,000 individuals to determine the genes behind these five [psychiatric disorders](#).

UQ psychiatrist Professor Christel Middeldorp said several sets of genes marked all five disorders.

"Before this analysis, we knew a lot of psychiatric disorders were related to each other due to their hereditary nature," Professor Middeldorp said.

"We often see multiple [family members](#) with mental illness in one family, but not necessarily with the same disorder.

"We investigated if specific sets of genes were involved in the development of multiple disorders, which genes are not only related to say, ADHD, but also to the other four psychiatric disorders.

"These are genes that play a role in the same biological pathway or are active in the same tissue type.

"Genes that are highly expressed in the brain were shown to affect the different disorders, and some genes were related to all the illnesses we studied.

"It shows that there is a common set of genes that increase your risk for all five disorders."

The study's lead author Dr. Anke Hammerschlag said it was due to the biological pathways shared by the genes in the brain.

"We found that there are shared biological mechanisms acting across [disorders](#) that all point to functions in brain cells," Dr. Hammerschlag said.

"The synapse plays a vital role as this is the connection point between [brain cells](#) where the cells communicate with each other.

"We also found that genes especially active in the brain are important, while [genes](#) active in other tissues do not play a role."

New pharmaceutical drugs could potentially target these shared pathways.

"Our findings are an important first step towards the development of new drugs which may be effective for a wide range of patients, regardless of their exact diagnosis," she said.

"This knowledge will bring us closer to the development of more effective personalized medicine."

This research is published in *Psychological Medicine*.

More information: Anke R. Hammerschlag et al. Synaptic and brain-expressed gene sets relate to the shared genetic risk across five psychiatric disorders, *Psychological Medicine* (2019). [DOI](#):

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