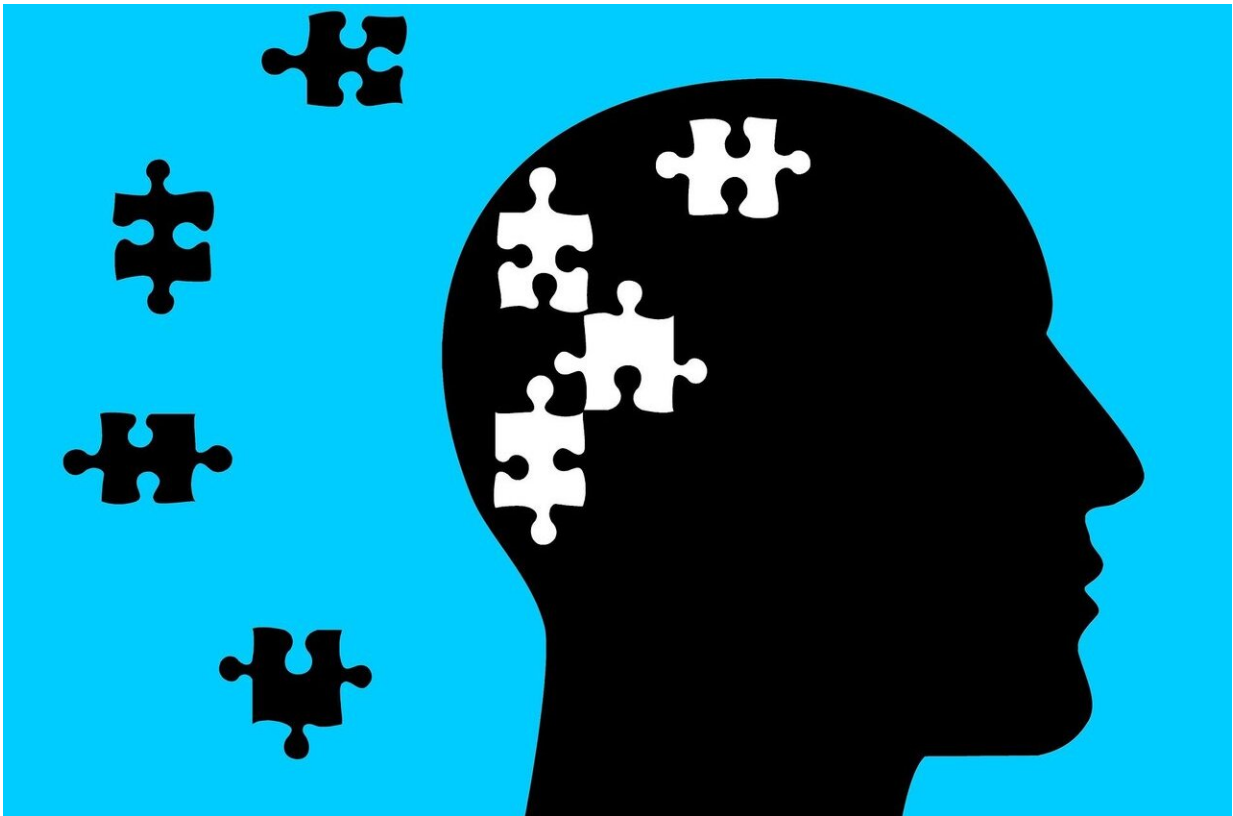


Lower IQ, family history tied to treatment-resistant schizophrenia

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Those with a family history of schizophrenia and men with lower IQ are more likely to struggle with treatment-resistant schizophrenia than others with the mental disorder, according to a study by researchers at

Karolinska Institutet in Sweden published in the journal *Molecular Psychiatry*. The researchers say the findings could be important in efforts to design novel drug treatments that improve cognition.

Schizophrenia is a [mental illness](#) that affects how a person thinks, feels and behaves. Symptoms include abnormal speech and behavior, hallucinations, disorientation and other cognitive difficulties. More than 30 percent of those diagnosed with the condition do not respond to current antipsychotic medications. This group suffers from what is called treatment-resistant schizophrenia (TRS), a condition that is associated with a higher risk for suicide and significant health costs. A person may be diagnosed with TRS after failing to respond to at least two rounds of different antipsychotic medications.

In this study, the researchers followed more than 24,000 Swedish adults for an average of 8.5 years, including about 4,800 who suffered from TRS. They used multiple national population registers such as patient, prescribed drug, multi-generation and military conscription registers to gather and link the data. The findings showed that those who had several relatives with schizophrenia and males with a low IQ at 18 years of age were at a significantly higher risk of having treatment-resistant schizophrenia than treatment responsive schizophrenia.

"These findings have not been previously associated with TRS using a large, population-based cohort of this size," says Dr. Kaarina Kowalec, affiliated researcher at the Department of Medical Epidemiology and Biostatistics at Karolinska Institutet. "Our finding of lower premorbid IQ in TRS compared to non-TRS is especially interesting given that it could be important in efforts to design novel drug treatments improving cognition."

The researchers were also able to replicate several known factors associated with TRS, including male sex, increased specialist treatment

contacts, more suicide attempts and decreased educational attainment.

In a subset of cases with extensive genomic data, the researchers looked at whether there were any [genetic links](#) between TRS and four [psychiatric disorders](#): schizophrenia, [bipolar disorder](#), depression and autism (the latter three have previously been genetically correlated with schizophrenia). To their surprise, the researchers found no genetic associations.

"It is quite striking that the genetic factors associated with schizophrenia were not associated with treatment-resistant schizophrenia," says Kaarina Kowalec. "This indicates that shared [environmental risks](#) may play a role in treatment response, given that family history of schizophrenia was associated with TRS. However, we still need larger genetic studies of treatment resistance in schizophrenia and to also consider additional [genetic factors](#)."

More information: Kaarina Kowalec et al, Increased schizophrenia family history burden and reduced premorbid IQ in treatment-resistant schizophrenia: a Swedish National Register and Genomic Study, *Molecular Psychiatry* (2019). [DOI: 10.1038/s41380-019-0575-1](https://doi.org/10.1038/s41380-019-0575-1)

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