

Individuals who attempt suicide carry an increased genetic liability for depression, regardless of their psychiatric dis

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The largest genome wide association study (GWAS) to date on suicide attempt reveals that genetic liability to depression increases an

individual's risk for suicide attempt regardless of the psychiatric disorder they are affected by, according to the work led by researchers at the Icahn School of Medicine at Mount Sinai and published June 5 in *The American Journal of Psychiatry*.

Suicide is a worldwide public health problem with more than 800,000 deaths due to [suicide](#) each year. Suicide and [suicide attempts](#) have an emotional toll on families and friends of those who died, as well as on attempt survivors. The Centers for Disease Control and Prevention report that suicide costs the US economy \$51 billion per year in medical costs for individuals and families, lost income for families, and lost productivity for employers. These stark figures highlight the urgent need for improved prevention and treatment, yet progress has been hampered by the lack of reliable methods for predicting suicidality and a poor understanding of its biological etiology.

"Like many psychiatric disorders, suicide attempt is known to have a partially genetic underpinning and [genetic studies](#) can provide invaluable insights into the underlying biology," says Niamh Mullins, Ph.D., Postdoctoral Fellow in Psychiatric Genomics. "Through the collective efforts of many researchers, we analyzed the genomes of suicide attempters and non-attempters across three major psychiatric disorders. Our data showed that suicide attempters with major depressive disorder, bipolar disorder or a schizophrenia diagnosis carry a greater genetic liability for major depression than non-attempters."

Specifically, the current study compared the genomes of 6,569 suicide attempters and 17,232 non-attempters with [major depressive disorder](#), bipolar disorder, or schizophrenia from the Psychiatric Genomics Consortium, an international collaboration for conducting large-scale genetic studies of psychiatric disorders. Samples were combined across 46 individual cohorts from Europe, the United States, and Australia. Using polygenic risk scores, which summarize an individual's genetic

liability to a disease based on the results of an independent genetic study, the research team showed that suicide attempters carry an increased genetic liability for depression, regardless of the psychiatric disorder they are affected by.

"These results indicate the existence of a shared genetic etiology between suicide attempt and major depression that is common to suicide attempt in different [psychiatric disorders](#)," says Dr. Mullins. "Our study is the first consortium-based GWAS on suicide attempt and makes significant progress in increasing numbers by combining samples across clinical cohorts. However, further [collaborative efforts](#) to amass samples on an even larger scale will be essential to identify specific genetic variants which play a role in increasing risk of suicide attempt."

This study provides novel insights into the genetic basis of suicide attempt. The ultimate goal of this research is to uncover the biological mechanisms underlying suicidality and develop new treatments and preventions, in order to reduce its burden on patients, families and healthcare systems.

More information: *American Journal of Psychiatry* (2019). [DOI: 10.1176/appi.ajp.2019.18080957](https://doi.org/10.1176/appi.ajp.2019.18080957)

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