

Promising biomarkers to predict suicide risk

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In a Review, published to coincide with the launch of *The Lancet Psychiatry* journal, Professor Kees van Heeringen from Ghent University in Belgium and John Mann from Columbia University in the USA discuss the stress-diathesis theory of suicide, in which a predisposition or diathesis interacts with stressful life experiences and acute psychiatric illness to cause suicidal behaviour. The theory explains why only a small minority of individuals are at risk of taking their own lives after exposure to such stressors.

The authors discuss the causes of the diathesis, or predisposition, to [suicidal behaviour](#), which may include genetic effects and the long-term impact on the brain and behaviour of early life adversity (eg, physical and sexual abuse). Additionally, they outline various neurobiological factors that may play a role in this predisposition to suicidal behaviour. For example, post-mortem and neuroimaging studies have identified structural and functional changes in the brains of individuals with a history of [suicidal behavior](#) that may affect regulation of mood, response to stress and decision-making, and these include biochemical deficits in serotonin function and the hypothalamic pituitary adrenal axis (HPA) stress-response. The authors suggest that these abnormalities could be used in future to develop biomarkers that may help predict who is at risk of taking their own lives, and that may serve as a target for treatment.

According to Professor van Heeringen, "Worldwide, over a million people each year die from suicide. Given that there are no reliable clinical tests to identify people who may be more predisposed to suicide, genetic and brain imaging biomarkers offer the most promising new

directions for detecting high risk individuals and to identify more personalised treatments for preventing suicidal behaviour."

Provided by Lancet

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