

Schizophrenia, bipolar, may share genetic roots with creativity



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Source:King's College London

Summary:

Genes linked to creativity could increase the risk of developing schizophrenia and bipolar disorder, according to new research. Genetic risk scores were examined in a sample of 86,292 individuals from the general population of Iceland. Creative individuals were defined as those belonging to the national artistic societies of actors, dancers, musicians, visual artists and writers.

Although creativity is difficult to define for scientific purposes, researchers consider a creative person to be someone who takes novel approaches requiring cognitive processes that are different from prevailing modes of thought or expression. Schizophrenia and bipolar disorder are disorders of thoughts and emotions, which means that those affected show alterations in cognitive and emotional processing.

Genes linked to creativity could increase the risk of developing schizophrenia and bipolar disorder, according to new research carried out by researchers at the Institute of Psychiatry, Psychology & Neuroscience (IoPPN) at King's College London.

Previous studies have identified a link between creativity and psychiatric disorders such as bipolar disorder, but it has remained unclear whether this association is due to common genes. Published in *Nature Neuroscience*, this new study lends support to the direct influence on creativity of genes found in people with schizophrenia and bipolar disorder.

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It has long been suggested that creativity and psychosis show certain similarities, with notable examples of artists such as Vincent Van Gogh who themselves suffered from psychiatric illnesses. Previous studies have shown that psychiatric disorders, particularly bipolar disorder, tend to be found in the same families where creative professions are common. However, until now it had not been possible to pinpoint whether this was simply due to shared environmental factors or socioeconomic status.

Genetic risk scores were examined in a sample of 86,292 individuals from the general population of Iceland, in collaboration with researchers from deCODE Genetics, who provided the data. Creative individuals were defined as those belonging to the national artistic societies of actors, dancers, musicians, visual artists and writers.

Researchers found that genetic risk scores for both schizophrenia and bipolar disorder were significantly higher in those defined as creative individuals, with scores approximately halfway between the general population and those with the disorders themselves.

These findings lend support to the direct influence of genetic factors on creativity, as opposed to the effect of sharing an environment with individuals who have schizophrenia or bipolar disorder.

Robert Power, first author from the MRC Social, Genetic and Developmental Psychiatry (SGDP) Centre at the IoPPN, said: 'For most psychiatric disorders little is known about the underlying biological pathways that lead to illness. An idea that has gained credibility is that these disorders reflect extremes of the normal spectrum of human behaviour, rather than a distinct psychiatric illness. By knowing which healthy behaviours, such as creativity, share their biology with psychiatric illnesses we gain a better understanding of the thought processes that lead a person to become ill and how the brain might be going wrong.'

'Our findings suggest that creative people may have a genetic predisposition towards thinking differently which, when combined with other harmful biological or environmental factors, could lead to mental illness.'

Story Source:

The above story is based on materials provided by King's College London. Note: Materials may be edited for content and length.

Journal Reference:

Robert A Power, Stacy Steinberg, Gyda Bjornsdottir, Cornelius A Rietveld, Abdel Abdellaoui, Michel M Nivard, Magnus Johannesson, Tessel E Galesloot, Jouke J Hottenga, Gonneke Willemsen, David Cesarini, Daniel J Benjamin, Patrik K E Magnusson, Fredrik Ullén, Henning Tiemeier, Albert Hofman, Frank J A van Rooij, G Bragi Walters, Engilbert Sigurdsson, Thorgeir E Thorgeirsson, Andres Ingason, Agnar Helgason, Augustine Kong, Lambertus A Kiemeneij, Philipp Koellinger, Dorret I Boomsma, Daniel Gudbjartsson, Hreinn Stefansson, Kari Stefansson. Polygenic risk scores for schizophrenia and bipolar disorder predict creativity. *Nature Neuroscience*, 2015; DOI: 10.1038/nn.4040