**Common genetic variations linked to both schizophrenia and bipolar risk**

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Common genetic variants contribute to the risk of schizophrenia and bipolar disorder, an international research consortium has discovered.   
  
Schizophrenia and bipolar disorder are common and often devastating brain disorders, affecting around one per cent of the world’s population.

A team including Cardiff University scientists has found new molecular evidence that 11 genetic regions have strong links with these diseases, including six regions not previously observed.

The researchers also found that many of these DNA variations contribute to both diseases.

The findings, reported by the Psychiatric Genome-Wide Association Study Consortium (PGC), represent significant advances in these severe and debilitating disorders.

Scientists believe they can start to link the genetic variations to the breakdown of specific brain functions which causes both diseases  
  
The findings, based on genetic data from tens of thousands of patients, have just been published online in two papers in the journal Nature Genetics. Professors Michael O’Donovan, Michael Owen and Nick Craddock from the MRC Centre for Neuropsychiatric Genetics and Genomics at Cardiff’s School of Medicine, Cardiff University, made a significant contribution of data, analysis and management to the study.   
  
Professor O’Donovan said: "The genetic variants we have identified are common in the population - everyone carries many of them, but people with the disorders carry more.   
  
"The success of this study demonstrates the need for international co-ordination in harnessing data from very large samples to exploit the power of genetics to reveal new insights.

Over the next two years we expect to have data from study samples that are three or four times larger than those we have now, and this can be expected to have the same impact for our research as ever more powerful particle accelerators have had in physics."  
  
Professor Owen added: "Many genes are clearly involved in these disorders and it will be a few years yet till we are able to see a large part of the picture.

However, for the first time, we are in a position to make tentative functional links between some of the genes identified.   
  
"One particularly exciting finding is the involvement of a type of molecule, known as a microRNA, which acts as a molecular switch to turn off other genes.

This microRNA is also known to regulate aspects of the development and maturation of nerve cells in the brain.

The findings suggest disruption of these development processes as likely factors in the origins of mental disorder."  
  
Both schizophrenia and bipolar disorder usually strike in late adolescence or early adulthood.

Some of the most prominent symptoms in schizophrenia are persistent delusions, hallucinations and cognitive problems.

Bipolar disorder (or manic-depressive illness) is characterized by episodes of severe mood problems including mania and depression.

Despite the availability of treatments, these illnesses are usually chronic, often leads to prolonged disability and personal suffering.

Family history is a strong risk factor for both disorders.

The new findings are further evidence for the general assumption that dozens of genes, along with environmental factors, contribute to disease risk.   
  
The Psychiatric Genome-Wide Association Study Consortium is the largest consortium ever in psychiatry.

More than 250 researchers from more than 20 countries have come together in an unparalleled spirit of cooperation to advance knowledge of the genetic causes of mental illness.

Crucial to the success of the project was the willingness of many groups to share genetic data from tens of thousands of patients collected over many years.   
Funds for coordination of the consortium was provided by the US National Institute of Mental Health.

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