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**Genetic disruption of voltage-gated calcium channels in psychiatric and neurological disorders**

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**Abstract**

This review summarises genetic studies in which calcium channel genes have been connected to the spectrum of neuropsychiatric syndromes, from bipolar disorder and schizophrenia to autism spectrum disorders and intellectual impairment. Among many other genes, striking numbers of the calcium channel gene superfamily have been implicated in the aetiology of these diseases by various DNA analysis techniques. We will discuss how these relate to the known monogenic disorders associated with point mutations in calcium channels. We will then examine the functional evidence for a causative link between these mutations or single nucleotide polymorphisms and the disease processes. A major challenge for the future will be to translate the expanding psychiatric genetic findings into altered physiological function, involvement in the wider pathology of the diseases, and what potential that provides for personalised and stratified treatment options for patients.

**Key words**

calcium channel

neuropsychiatric disorder

polygenic disorder

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