



SCHIZOPHRENIA

What is Schizophrenia?

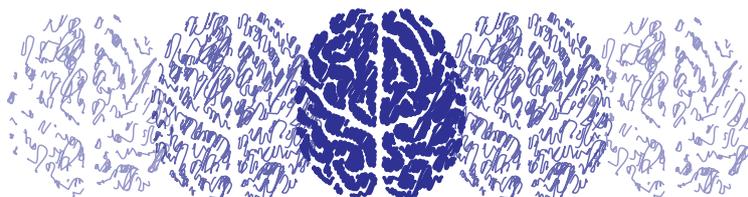
Schizophrenia is a psychotic disorder which affects people's perception of reality. Common symptoms of schizophrenia include hallucinations, in which people often hear voices that are not there, and delusions, which lead to fixed and incorrect beliefs about the world, such as the belief that others are controlling one's thoughts or actions.

Other non-psychotic symptoms include lack of motivation, lack of interest in normally pleasurable activities, and difficulties expressing emotions.

Schizophrenia normally emerges between the ages of 15 and 25. Some people may only experience a single or a few brief episodes, while others live with a prolonged, recurring condition.

No single definitive cause for schizophrenia has been identified, though there is a strong genetic predisposition for the condition and a large body of research has identified an important role for excess production of the brain chemical dopamine.

1 IN 100 PEOPLE
ARE AFFECTED BY SCHIZOPHRENIA



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Schizophrenia fundamentally alters the structure and function of the brain. People suffering from the condition tend to have smaller brains, with a significant reduction in grey matter, and enlarged fluid-filled spaces. These changes are not confined to any single area, but affect many different interconnected brain networks.

The symptoms of schizophrenia are typically divided into 'positive' and 'negative' symptoms. Positive symptoms do not mean 'good' in the traditional sense —they refer to thoughts, emotions or perceptions that occur in excess of normal experience, such as delusions or hallucinations. Negative symptoms refer to a reduction of normal experience, such as diminished motivation of emotional expression. Current drug treatments generally target only the positive symptoms, and work by reducing signalling of a brain chemical called dopamine.

Using advanced magnetic resonance imaging (MRI) techniques, researchers led by the University of Melbourne have marshalled evidence that brain changes may worsen as the illness progresses, highlighting the need for clinical interventions at early illness stages to try to reduce any further brain deterioration.

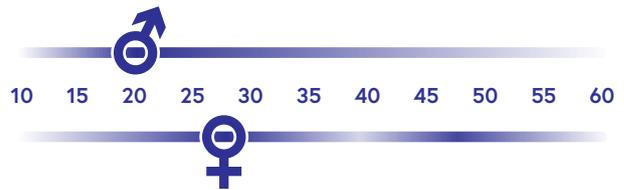
Neuroscientists at Monash University have found that a critical factor in risk for psychotic disorders like schizophrenia is disrupted activity within a specific brain circuit that links the prefrontal cortex to deeper areas of the brain located in a region called the striatum. Activity in this circuit is heavily regulated by dopamine. Pinpointing the specific brain circuits involved in disease risk can guide the development of more targeted therapies, such as those using different forms of brain stimulation.

For example, deep brain stimulation (DBS) is being explored as a potential option to treat some of the symptoms of schizophrenia, particularly for patients who do not respond to medications. Results from an early clinical trial conducted in Spain, in which patients underwent DBS of either the striatum or regions of frontal cortex involved in emotion regulation, showed very encouraging outcomes, with progressive improvement in social isolation and auditory hallucination symptoms in all patients in the trial.

The Australian Brain Initiative will nurture the basic brain research required to better understand how the brain functions and develop methods needed to effectively treat schizophrenia and other brain disorders.

The Initiative will also progress collaboration between research and industry to advance neurotechnology devices that have the potential to transform not only the capabilities of neuroscience research but also the lives of those living with conditions and disorders of the brain.

The onset of schizophrenia typically occurs earlier in men than in women.



Schizophrenia is more common in males than females.

