

# Reading ability severely impaired by schizophrenia

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Functional magnetic resonance imaging (fMRI) and other brain imaging technologies allow for the study of differences in brain activity in people diagnosed with schizophrenia. The image shows two levels of the brain, with areas that were more active in healthy controls than in schizophrenia patients shown in orange, during an fMRI study of working memory. Credit: Kim J, Matthews NL, Park S./PLoS One.

People with schizophrenia are likely to have severely impaired reading ability, a new study has shown.

A [systematic review](#) by researchers at Brunel University London's

Centre for Cognitive Neuroscience (CCN) found that those who have been diagnosed as having [schizophrenia](#) are likely to have difficulty recognizing, manipulating and pronouncing individual sounds, and understanding written text.

The findings indicate that there could be significant overlap between the underlying causes of schizophrenia and the underlying causes of dyslexia, although the researchers say there are multiple factors that need to be taken into consideration.

The study, "Reading skills deficits in people with [mental illness](#): A systematic review and meta-analysis," was published in the most recent edition of *European Psychiatry*.

"Some people with schizophrenia experience symptoms from a very young age and they often have disruption in their schooling," said Prof Veena Kumari, Professor of Psychology at Brunel and Director of CCN. "This can negatively influence some [reading skills](#), especially the ability to understand complex sentences and blocks of text.

"Some of the symptoms of schizophrenia, for example hallucinations or thought disorder, also seem to be associated with poorer reading skills, meaning people with more severe and frequent symptoms may be particularly poor at reading."

Recognized differences in the make-up of the brains of people with schizophrenia also appear to affect their ability to process sounds, certain [visual stimuli](#) and low contrast images, leading to them having poorer manipulation of sounds and making mistakes in understanding speech.

The researchers say their work also casts light on some interesting overlaps between schizophrenia and dyslexia, two conditions which have

previously been associated at a genetic level with similar gene groups.

"Existing research indicates that similarities exist between developmental dyslexia and schizophrenia in the way these people perceive and process different visual stimuli, including words," said Martina Vanova, a doctoral researcher at CCN who helped lead the study.

"Both conditions are linked with abnormalities in how visual stimuli are processed at the brain level and seem to share some genetic factors. Some people with schizophrenia also show similarities with acquired dyslexia, which is developed later in life and can be a result of brain trauma, stroke, or neurodegeneration."

The researchers say this could be due to irreversible gray matter loss in various parts of the brain associated with both good reading skills and psychotic episodes in people with chronic schizophrenia.

They will next turn their attentions to examining whether people in the general population that have reported a psychotic-like experience but not been diagnosed with schizophrenia also exhibit poor reading skills.

"In the same group of people, we are also assessing other mental health dimensions, for example depression, in relation to poor reading skills," said Ms Vanova.

"We are also examining how reading skills deficits relate to other cognitive impairments, for example, attention or memory deficits, in people with schizophrenia or psychopathy."

**More information:** Martina Vanova et al. Reading skills deficits in people with mental illness: A systematic review and meta-analysis, *European Psychiatry* (2020). [DOI: 10.1192/j.eurpsy.2020.98](https://doi.org/10.1192/j.eurpsy.2020.98)

Provided by Brunel University

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