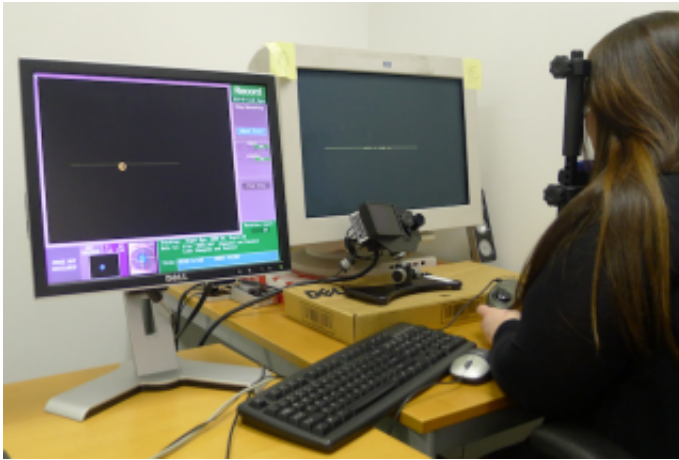


# Eye movements reveal impaired reading in schizophrenia

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Participants' eye movements were recorded as they read short sentences on a computer screen; head movements were minimized by padded chin- and head-rests. Credit: D. Titone

A study of eye movements in schizophrenia patients provides new evidence of impaired reading fluency in individuals with the mental illness.

The findings, by researchers at McGill University in Montreal, could open avenues to earlier detection and intervention for people with the illness.

While [schizophrenia patients](#) are known to have abnormalities in

language and in eye movements, until recently reading ability was believed to be unaffected. That is because most previous studies examined reading in schizophrenia using single-word reading tests, the McGill researchers conclude. Such tests aren't sensitive to problems in reading fluency, which is affected by the context in which words appear and by eye movements that shift attention from one word to the next.

The McGill study, led by Ph.D. candidate Veronica Whitford and psychology professors Debra Titone and Gillian A. O'Driscoll, monitored how people move their eyes as they read simple sentences. The results, which were first published online last year, appear in the February issue of the [Journal of Experimental Psychology: General](#).

Eye movement measures provide clear and objective indicators of how hard people are working as they read. For example, when struggling with a difficult sentence, people generally make smaller eye movements, spend more time looking at each word, and spend more time re-reading words. They also have more difficulty attending to upcoming words, so they plan their eye movements less efficiently.

The McGill study, which involved 20 schizophrenia outpatients and 16 non-psychiatric participants, showed that reading patterns in people with schizophrenia differed in several important ways from healthy participants matched for gender, age, and family social status. People with schizophrenia read more slowly, generated smaller eye movements, spent more time processing individual words, and spent more time re-reading. In addition, people with schizophrenia were less efficient at processing upcoming words to facilitate reading.

The researchers evaluated factors that could contribute to the problems in reading fluency among the schizophrenia outpatients – specifically, their ability to parse words into sound components and their ability to skillfully control eye movements in non-reading contexts. Both factors

were found to contribute to the reading deficits.

"Our findings suggest that measures of reading difficulty, combined with other information such as family history, may help detect people in the early stages of schizophrenia – and thereby enable earlier intervention," Whitford says.

Moreover, fluent reading is a crucial life skill, and in people with schizophrenia, there is a strong relationship between reading skill and the extent to which they can function independently, the researchers note. "Improving reading through intervention in people with [schizophrenia](#) may be important to improving their ability to function in society," Titone adds.

Provided by McGill University

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