The treatment of schizophrenia is a multi-faceted process which often involves using a variety of approaches to help patients best manage their condition. Cognitive remediation therapy (CRT) is one approach that has proven to be effective in treating cognitive deficits in schizophrenia. A recent study by a group of researchers in Quebec attempted to assess the effectiveness of CRT by comparing the changes in symptoms and cognitive complaints in patients who received two novel CRTs—one targeting mental state attribution and the other mental flexibility—compared to a control group.

Patients with schizophrenia exhibit a wide range of cognitive deficits related to memory, attention, and executive functions. Executive functions include brain processes responsible for activities such as planning, abstract thinking, initiating appropriate actions, and inhibiting inappropriate actions. Executive functions often come into play in situations where it is necessary to override an automatic response: The automatic response to eat delicious but fattening food, for example, may be overridden by the executive function when someone has decided that they need to lose weight.

Recent research suggests that CRT has a positive effect on cognitive performance and the activities necessary for daily living, but other studies have indicated that it has little impact on positive or negative symptoms. The goal of CRT is to improve brain functions that are weak, and also to teach strategies that can help people compensate for these weaknesses. In the case of this study, the effects of two novel forms of CRT—one targeting mental state attribution, and the other targeting mental flexibility—were compared to each other and to a control group.

Mental state attribution involves the ability to reflect upon our own and others’ beliefs, knowledge, and intentions. In the study, therapy that centered on improving these processes included exercises such as looking at pictures of cartoon characters in ambiguous social situations and determining their mental states. Therapy for mental flexibility focused on social situations and activities of daily living, and featured exercises such as choosing a behaviour appropriate to a particular social situation and then inhibiting this behaviour by choosing another one.

The study’s results indicate that patients who received either form of therapy experienced decreased symptoms, in contrast to those in the control group who did not. In addition, those in the mental flexibility group showed the most improvement. The researchers speculate that although mental state attribution therapy targets a range of cognitive processes, it may only come into play in a limited number of daily activities, while mental flexibility may be a more common process involved in all cognitive activities.

The full study can be found in the journal *Schizophrenia Research*, volume 111, issue 1, published in 2009 (pages 153-158).
mutation is a change in an individual’s genetic code that is not inherited from either parent. Scientists link genetic ‘typos’ to schizophrenia” published in American Journal of Human Genetics, volume 121, issue 1, published in 2010 (pages 227-233).

Direct measure of the de novo mutation rate in autism and schizophrenia cohorts

As researchers continue to investigate the wide variety of genetic and environmental factors that contribute to the risk of developing schizophrenia, a Canadian project staffed by an international research team is working to identify synaptic genes that cause or predispose individuals to neurodevelopmental disorders such as schizophrenia.

The Synapse 2 Disease project was initiated in 2006 and recently published a paper in the American Journal of Human Genetics on the team’s discovery that random mutations on the genes that help neurons connect to each other can play a role in the development of schizophrenia.

An estimated 4,000 genes are involved in communication between neurons—cells that process and transmit information in the brain through electrochemical signals called synapses. What project researchers found was a connection between the appearance of random de novo mutations on genes that help neurons signal each other, and a predisposition towards schizophrenia or autism. A de novo mutation is a change in an individual’s genetic code that is not inherited from either parent.

The study's hypothesis was that outcomes for schizophrenia patients would be better in India than in Canada, based on the findings of previous research. By collecting and comparing data on symptoms, cognition, quality of life, pathways to care, and the role of families from both the Montreal and Chennai clinics between 2004 and 2006, the researchers found that patients at the Indian site showed greater improvement in negative symptoms and functioning than did their Canadian counterparts. In addition, the treatment drop-out rate was considerably lower at the Indian site than at the Canadian site. At the end of one year, 5.4 percent of patients had dropped out of the Indian program, while the figure in Montreal was 18.95 percent. The study found that there was no difference in the rate of improvement of positive symptoms and general psychopathology between the two sites.

The Synapse 2 Disease project was initiated in 2006 and recently published a paper in the American Journal of Human Genetics, volume 121, issue 1, published in 2010 (pages 227-233).

The study's hypothesis was that outcomes for schizophrenia patients would be better in India than in Canada, based on the findings of previous research. By collecting and comparing data on symptoms, cognition, quality of life, pathways to care, and the role of families from both the Montreal and Chennai clinics between 2004 and 2006, the researchers found that patients at the Indian site showed greater improvement in negative symptoms and functioning than did their Canadian counterparts. In addition, the treatment drop-out rate was considerably lower at the Indian site than at the Canadian site. At the end of one year, 5.4 percent of patients had dropped out of the Indian program, while the figure in Montreal was 18.95 percent. The study found that there was no difference in the rate of improvement of positive symptoms and general psychopathology between the two sites.

The study's hypothesis was that outcomes for schizophrenia patients would be better in India than in Canada, based on the findings of previous research. By collecting and comparing data on symptoms, cognition, quality of life, pathways to care, and the role of families from both the Montreal and Chennai clinics between 2004 and 2006, the researchers found that patients at the Indian site showed greater improvement in negative symptoms and functioning than did their Canadian counterparts. In addition, the treatment drop-out rate was considerably lower at the Indian site than at the Canadian site. At the end of one year, 5.4 percent of patients had dropped out of the Indian program, while the figure in Montreal was 18.95 percent. The study found that there was no difference in the rate of improvement of positive symptoms and general psychopathology between the two sites.

The Synapse 2 Disease project was initiated in 2006 and recently published a paper in the American Journal of Human Genetics, volume 121, issue 1, published in 2010 (pages 227-233).

Research at SSO
SSO is proud to be able to support Schizophrenia Research in Ontario through our Research Program. Our organization is also a contributor to research on schizophrenia as demonstrated through some of our recent policy research initiatives. To find out more about our research program and SSO research initiatives please visit www.schizophrenia.on.ca.