

Does sex matter? It may when evaluating mental status

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Schizophrenia is a mental disorder that differs between the sexes in terms of age at onset, symptomatology, response to medication, and structural brain abnormalities. Now, a new study from the University of Montreal shows that there is gender difference between men and women's mental ability – with women performing better than men. These findings, published recently in, *Schizophrenia Research*, have implications for the more than 300 000 affected Canadians.

"We are the first to report sex differences in brain function of schizophrenics," says Université de Montréal professor, Adrianna Mendrek a researcher at the Centre de Recherche Fernand-Seguin. "We chose to study a task involving mental rotation of a three dimensional image because in healthy men and women, this consistently elicits differences in terms of reaction time and performance accuracy."

Results opposite for control versus schizophrenics

Mendrek and her colleagues compared the brain function of healthy volunteers with schizophrenic patients that were completing the image rotation task by using magnetic resonance imaging (fMRI). Their findings confirmed that healthy men performed better than healthy women in this task, but found that schizophrenic women performed better than schizophrenic men.

"Sex hormones such as testosterone and estrogen may explain these

results," says Mendrek. "Findings from our other studies have shown that the testosterone level was positively correlated with activity in healthy men but not in healthy women. And conversely schizophrenic women have been shown to have higher levels of this hormone."

Surprising result: gender differences in "resting" brains

The resting brains of healthy men and women are not the same, according to Mendrek. The area of the brain active while resting (the "default mode network") is more active for women than men. "We are the first group to report sex differences in this network using fMRI," says Mendrek. "The more active resting female brain may explain their reported ability to multi-task and be more introspective than men"

Previous studies have shown that the default network is perturbed in people suffering from depression, Alzheimer's or schizophrenia. In particular, reduced default network activity has been associated with autism, and over-activity is associated with [schizophrenia](#), more specifically with schizophrenia-positive symptoms such as hallucinations and delusions.

More information: *Schizophrenia Research:*
www.sciencedirect.com/science/journal/09209964

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