

Researchers Probe Schizophrenia's Pathways in the Brain

Sue Vorenberg, The Santa Fe New Mexican
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“When you compare the brain of one schizophrenic to that of one normal person, there really isn't much difference, said John Lauriello, a psychiatry professor at The University of New Mexico.

There is a small change, though, if you compare the brains of a few hundred schizophrenics with a few hundred brains of normal people. The schizophrenics have a slight reduction in gray matter and a slight increase in fluid, Lauriello said.

“It shows there's something medical that we can see,” Lauriello said. But other than that small hint, not a lot is known about the strange and disruptive disease that plagues the minds of about 1 percent of people all over the world.

UNM and the MIND Research Network, which operates out of UNM's main campus in Albuquerque, hope to learn a lot more about what's really medically happening to schizophrenics through a new five-year, \$11 million grant from the National Institutes of Health.

“Schizophrenia is a really complicated illness, and it's something we want to study and understand better,” Lauriello said. “Our goal is to build a roadmap of all the areas where people with schizophrenia have problems.”

The study will partner experts at the MIND, who are familiar with two high-tech brain imaging techniques called fMRI and Magneto encephalography, with psychiatry scientists at UNM.

In it, normal subjects and schizophrenic subjects will be scanned while going through a series of tasks, such as touching a pad or recognizing the affect on photos of people's faces.

Schizophrenics are known to have some difficulty doing such tasks, Lauriello said.

“Patients can do the same tasks, and do them as well as normal people, but at some point it looks like they can't do them as fast or do them when they reach a certain level of difficulty,” he said. “They may be using more of the brain to try to complete tasks than normal brains do.”

Rex Jung, a researcher at the MIND, said he's interested to learn how the disease decreases cognitive function and to compare that to some other studies he's done on intelligence and creativity in the brain.

“It seems the disease does cause a sort of broad intellectual decline, and we'd like to see how that interferes so that many schizophrenics end up not being able to work or live independently,” Jung said. “I think that gets to the crux of what's very important to patients and their families.”

Jung suspects that beyond the fluid difference there may be a problem in the frontal lobes of schizophrenic's brains that cause misconnections or miscommunication when the subcortexes try to talk to each other.

“Those areas are involved in language, reason and emotional functioning,” Jung said. “If those get out of synch through miswiring, for lack of a better term, their system isn't going to talk together as well as it could.”

Overall the goal of the study is to find better treatments for schizophrenia, Lauriello said.

New anti-psychotic drugs do have more bearable side effects than the sluggishness and drooling associated with older drugs, he said, but by truly understanding what's happening in the mind it might be possible to help schizophrenics return to much more functional lives.

“It robs people of their abilities to do what they're hoping to do,” Lauriello said. “I think we can get people better eventually, and we can get them back to work.”

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