

## Schizophrenia: Encouraging outlook emerges

Mental health workers have long viewed schizophrenia as a severe mental illness that usually gets worse over time. But new evidence gathered in three countries suggests that people diagnosed with schizophrenia tend to experience "progressive amelioration" over the two decades following their first admission to a psychiatric hospital.

"Amelioration" doesn't mean 'cure,' but the data challenge widespread pessimism about the course of schizophrenia," contends psychiatrist William W. Eaton of Johns Hopkins University in Baltimore, who directed the international research effort. "A major implication is that long-term treatment for schizophrenia, which is often not available, may be worth the effort."

The findings generally support a 30-year study of schizophrenic patients in Vermont, in which more than half eventually showed substantial improvement (SN: 6/1/85, p.340).

Schizophrenia involves a perplexing fragmentation of thought and emotion. Psychotic symptoms, such as bizarre delusions and hallucinations, overlie more pervasive "deficit" symptoms, including an inability to deal with others or hold down a job, deadened emotions, and incoherent thoughts. Psychiatrists divide the disorder into several types, based on the mix of symptoms.

An estimated 1 percent of the world's population develops schizophrenia. The disorder usually first appears in adolescence or young adulthood.

Eaton and his associates examined data collected at all psychiatric facilities in the Australian state of Victoria, England's Salford Metropolitan District, and Denmark. The researchers identified a total of 1,850 schizophrenics tracked for 16 to 20 years following an initial stay in a psychiatric hospital.

Return admissions to a hospital for psychiatric treatment clustered in the four or five years after a participant's first hospital stay, Eaton's team reports in the current SCHIZOPHRENIA BULLETIN (volume 18, number 2). A statistical analysis of the data indicates that each additional admission to a psychiatric hospital among this population of schizophrenics lowered the risk of a further hospitalization by about 10 percent.

Between 50 percent and 80 percent of the sample, depending on the country of origin, returned to the hospital at least once during the follow-up period.

Analysis of a larger group of schizophrenic patients from these three countries—combined with data from a seven-and-a-half-year study of 13,870 first-admission schizophrenics in Maryland—indicates that those who develop this mental illness in their teens stand the greatest chance of requiring multiple

hospital stays. Although clinicians often assign a particularly bleak outlook to single men with schizophrenia, neither gender nor marital status substantially affected the risk of rehospitalization when the researchers statistically controlled for the participants' age at first hospitalization.

Uncertainty still clouds long-term predictions concerning schizophrenia. For instance, another research group recently reported that patients with severe deficit symptoms, but not necessarily an early age of onset, fared most poorly over two decades (SN: 3/21/92, p.181).

And the Vermont study finds that among individuals followed for 30 years or more after a first admission for schizophrenia, early age of onset "washes out" as a risk factor, asserts psychologist Courtenay M. Harding of Yale University School of Medicine in New Haven, Conn., who directs that ongoing project.

## Brain receptor shapes voles' family values

The sexual and parental behavior of a species of wild rodents called mountain voles makes Murphy Brown look like a model mother.

Mountain, or "montane," voles live in isolated burrows and avoid other voles except to mate—which they do often and indiscriminately. Female montane voles usually abandon their pups soon after birth, and male montane voles never even see their offspring. Not that the pups themselves seem to mind: When a montane vole pup is plucked from its nest, it neither calls for its mother nor experiences a surge in stress-related hormones.

Two behavioral neuroscientists have now uncovered a clue that could explain this lack of family values. Thomas R. Insel and Lawrence E. Shapiro of the National Institute of Mental Health's facility in Poolesville, Md., have found that promiscuous montane voles have fewer receptors for the reproductive hormone oxytocin in key areas of their brains than do their monogamous, family-oriented cousins, the prairie voles.

The researchers say their finding—published in the July 1 PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES—could have implications for human sexual and parental behavior. They say it could also shed light on the causes of autism, a brain disorder characterized by the diminished ability to interact and form relationships with other people.

Insel and Shapiro began studying voles after discovering the importance of oxytocin to the reproductive behavior of mice and rats. They turned to voles to confirm that their earlier findings were real, not artifacts caused by several gen-

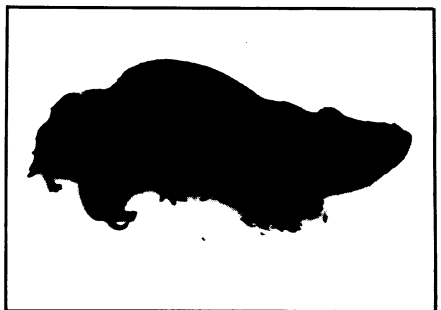
Harding also suspects that schizophrenia may proceed differently in men and women, despite the findings of Eaton's group. Preliminary evidence suggests that estrogen may partially block the transmission of dopamine, a chemical messenger in the brain widely thought to play a key role in schizophrenia, Harding says. This may explain why schizophrenia often appears later among women, she maintains.

As a result of estrogen's influence, women may need especially low doses of standard antipsychotic drugs, which also interfere with dopamine transmission, Harding argues.

Still, she welcomes the finding of "progressive amelioration" among schizophrenics in Eaton's international study. Harding's team now plans to pursue the theory that an as yet unknown brain mechanism gradually works toward recovery in many cases of schizophrenia.

"The notion of 'once a broken brain, always a broken brain' may not be true," Harding contends.

—B. Bower



A female prairie vole nursing her pups.

erations of life in a laboratory.

The researchers maintained newborn voles of both species until the age of 3 months. They found that the voles' captive behavior mimicked that in the wild: The montane voles fought off other voles, while the prairie voles usually sat side by side with a mate.

When Insel and Shapiro stained brain slices taken from both groups of voles with radioactively labeled oxytocin, they found that prairie voles had three times the amount of oxytocin receptors in their prelimbic cortex—and seven times the amount of such receptors in their nucleus accumbens—as found in montane voles. The researchers also discovered similar differences between the brains of two other vole species—monogamous pine voles and polygamous meadow voles.

Moreover, they found that the concentration of oxytocin receptors in the brains of montane voles surged during the brief period following birth when the females cared for and nursed their young. In contrast, concentrations of receptors for two other brain chemicals important in social behavior remained constant