

Schizophrenia

Making a Difference Today

Schizophrenia is a devastating brain disorder that torments sufferers with hallucinations, delusions, disordered thinking patterns, and memory deficits. It is especially tragic because it usually strikes during the late teens, 20s, or early 30s, right when individuals are establishing families and careers of their own. It costs society \$32.5 billion a year in lost productivity and treatment. In the past, many individuals with schizophrenia became permanently lost to the social withdrawal and other behavioral problems characteristic of this disease, which has its start in the biology of the brain.

Research Equals New Treatments

Fortunately, research has helped produce new therapies that can loosen the grip of schizophrenia and improve the lives of the 2 million Americans affected each year. Researchers developed the first drug for schizophrenia, chlorpromazine, in the 1950s. Since that time, scientists determined that the drug appears to rebalance a brain system that uses the chemical dopamine to function and have developed many similar compounds that target dopamine, as well as some other brain chemicals, to treat schizophrenia. Thanks to research funded by the National Institutes of Health (NIH) and others, a series of new and improved drugs became available starting in 1990. One popular drug—clozapine—is more effective than older drugs and treats the approximately 30 percent of patients who are not helped by conventional medications. Other new treatments, such as risperidone, quetiapine, olanzapine, and aripiprazole, produce fewer unwanted neurological side effects than older drugs, although some are associated with new types of side effects such as weight gain.

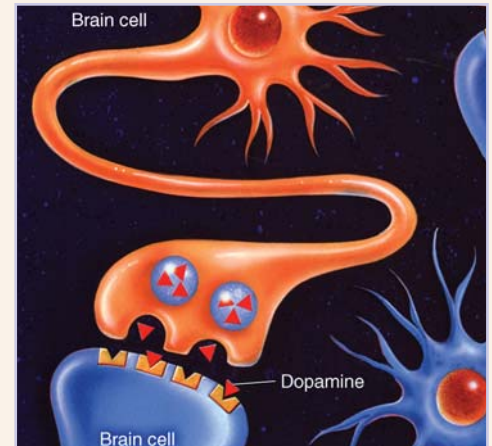
Clearer Minds

Today's available medications help quell the psychotic symptoms of schizophrenia, like hallucinations and delusions. Imaginary voices diminish or vanish. Irrational fears of death plots by neighbors lose intensity or disappear. As a result, patients function more effectively and appropriately in society and do not need to be institutionalized.

The medications also appear to cut the financial burden shouldered by the public and government. One study reports that clozapine decreases hospitalizations and treatment costs for those who continue in treatment for at least two years. Savings are in the thousands of dollars annually for each patient.

Better Lives

Current medications have greatly improved the outlook for many patients. The therapies, however, do not treat all symptoms. Many patients remain persistently plagued by impaired thinking, learning, attention, and other cognitive deficits that damage their ability to solve everyday problems and live productively. This may soon change, however, with continued NIH funding for research. Recent studies identified brain components that appear to underlie schizophrenia's cognitive symptoms. Already, small studies show that strategies based on these discoveries can aid cognition in patients with schizophrenia. With further research these techniques could greatly improve a patient's ability to hold a job, maintain a normal relationship, and live independently.



NIH-funded research has led to the development of a number of medications that treat the psychotic symptoms of schizophrenia. These therapies mostly attempt to normalize the activity of brain circuits that use dopamine, a chemical released by brain cells that affects the actions of other cells and brain activity. Newer strategies that target other brain components and brain activity show promise in reducing other symptoms of schizophrenia, such as cognitive deficits. Improved treatment regimens will help cut the costs of schizophrenia to individuals and society.

Continued funding for research could lead to:

- New treatment regimens that target a wider range of symptoms and allow more patients with schizophrenia to hold jobs, maintain relationships, and live independently.
- Strategies that identify those at risk for developing schizophrenia and methods that prevent its onset.
- Decreased financial burdens for the government and society.

For more information please email brss@sfn.org.

Schizophrenia

Making a Difference Tomorrow

Scientists have made substantial progress in treating schizophrenia over the past decade, but more advances are desperately needed. The available therapies do not help every patient. When successful, they primarily relieve the psychotic symptoms of schizophrenia, like hallucinations and delusions. Even then, one study showed that between 20 and 50 percent of those who took medication were rehospitalized within the first year. And symptoms like memory deficits and cognitive problems persist. Patients continue to withdraw from society and lose the ability to cope with life. Did you know that:

- Schizophrenia affects about 2 million Americans.
- On a given day these patients occupy up to 100,000 hospital beds.
- Schizophrenia is one of the top 10 causes of disability.
- Annual costs total about \$32.5 billion.

With continued NIH funding for basic and clinical research, scientists could develop new ways to prevent and treat schizophrenia that would decrease the devastation of the disorder.

Research Equals Hope for The Future

Investigations into the biology of schizophrenia will translate into major advances in treatment. The underlying cause of schizophrenia is still unclear. Available therapies mostly target the activity of the brain chemical dopamine, which builds a case for its involvement in the ailment. But because these treatments do not help everyone and aid only some of the symptoms of schizophrenia, scientists are intensely investigating other possible contributors.

Many are banking on the NMDA receptor. Recent animal, human, and genetic data indicate that methods that target this brain receptor may be helpful in aiding cognition. With the aid of NIH funding, researchers are testing new treatments developed on the basis of these findings. Already, small studies indicate that some NMDA-focused techniques improve cognition in patients with schizophrenia. Studies also have identified other promising brain targets, including serotonin and nicotinic receptors.

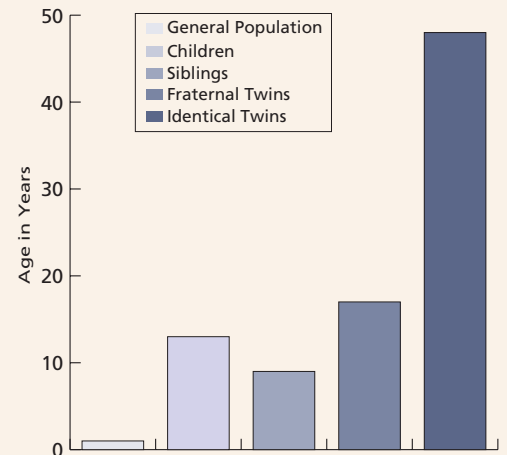
Prevention

With the help of NIH funding, scientists may also be able to devise ways to prevent schizophrenia. In one line of research, scientists are homing in on the specific genes that may make people more susceptible to developing schizophrenia. Once the genes responsible are confirmed, researchers can determine how other factors, such as environmental stress perhaps occurring during fetal development, may interact with the genetic vulnerability to set off the disorder. Scientists could then develop methods that identify those at risk and find ways to prevent the disorder.

Such developments would make an enormous impact. But without sufficient funding for research, patients with schizophrenia will continue to face extreme hardship. Families will continue to experience stress and heartbreak. The health-care system and the public will continue to confront huge financial strains.

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Lifetime Risk (%) of Developing Schizophrenia



Having a sibling with schizophrenia increases the risk that you will also be affected. This risk reaches almost 50 percent for identical twins who share the exact same genetic makeup. Observations like these indicate that schizophrenia is at least partly genetic. Scientists currently are homing in on the specific genes that may make people more susceptible to developing the disorder. Discoveries are already aiding development of treatments. Continued work could help researchers find ways to identify those at risk and prevent the disorder.

Already research has led to:

- Development of medications that treat the psychotic symptoms of schizophrenia, such as clozapine, risperidone, quetiapine, olanzapine, and aripiprazole.
- Insights into the biology of the disease, which are helping researchers devise better treatment regimens.
- Techniques that show promise in treating the cognitive symptoms of schizophrenia.



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