

# SCHIZOPHRENIA

## AN OVERVIEW

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### IMPORTANT

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### Introduction

Schizophrenia is a chronic, severe, and disabling brain disease, which is also called schizophrenic disorder and schizophrenic reaction, and is any one of a large group of mental disorders in which the individual loses touch with reality, and in which the individual is no longer able to think, talk, or act 'normally'. The cause of schizophrenia is not known, and it is often treated with anti-psychotic drugs, tranquilizers, and other drugs to ease symptoms and depression. Counseling and group therapy can also be helpful. Different kinds of schizophrenia include:

- *Acute schizophrenia*
- *Catatonic schizophrenia*
- *Childhood schizophrenia, disorganized schizophrenia*
- *Latent schizophrenia*
- *Paranoid schizophrenia*
- *Process schizophrenia*
- *Reactive schizophrenia*
- *Residual schizophrenia*
- *Undifferentiated schizophrenia*



(Picture above - Schizophrenia, an Artist's Impression)

Approximately 1 percent of the population develops schizophrenia during their lifetime. Although schizophrenia affects men and women with equal frequency, the disorder often appears earlier in

men, usually in their late teens or early twenties, than in women, who are generally affected in the twenties to early thirties. People with schizophrenia often suffer terrifying symptoms such as hearing internal voices not heard by others, or believing that other people are reading their minds, controlling their thoughts, or plotting to harm them. Further, schizophrenic's speech and behaviour may be so disorganized that they are incomprehensible or frightening to others. Available treatments can relieve many symptoms, but most people with schizophrenia continue to suffer some symptoms throughout their lives; it has been estimated that no more than one in five individuals recovers completely.

### **Schizophrenia as an Illness**

The severity of the symptoms and the long-lasting, chronic pattern of schizophrenia often cause a high degree of disability. The first signs of schizophrenia typically appear as confusing, or even shocking, changes in behaviour. The sudden onset of severe psychotic symptoms is referred to as an 'acute' phase of schizophrenia. 'Psychosis', a common condition in schizophrenia, is a state of mental impairment marked by hallucinations, which are disturbances of sensory perception, and/or delusions, which are false yet strongly held personal beliefs that result from an inability to separate real from unreal experiences. Less obvious symptoms, such as social isolation or withdrawal, or unusual speech, thinking, or behaviour, may precede, accompany, or follow the psychotic symptoms.

Some individuals have only one such psychotic episode; others have several episodes during their lifetime, but lead relatively normal lives during the interim periods. However, the individual with 'chronic' schizophrenia, or a continuous or recurring pattern of illness, often does not fully recover normal functioning and typically requires long-term treatment, generally including medication, to control the symptoms.

The schizophrenic world includes:

- Distorted Perceptions of Reality
- Hallucinations, Illusions, and Compulsions
- Delusions
- Disordered Thinking
- Blunted Emotional Expression
- Chronic Depression
- Behaviour ranges from Normal to Bizarre

### **Diagnosis**

It is important to rule out other illnesses, as individuals sometimes suffer severe mental symptoms or even psychosis because of undetected underlying medical conditions. In addition, since commonly abused drugs may cause symptoms resembling schizophrenia, blood or urine samples from the individual should be tested for the presence of these substances. Individuals whose symptoms cannot be clearly categorized are often diagnosed as having an 'undifferentiated schizoaffective disorder'.

### **Are People With Schizophrenia Likely To Be Violent?**

People with schizophrenia are not especially prone to violence. Most individuals with schizophrenia are withdrawn and prefer to be left alone.

(Picture right - Schizophrenia and violence)

However, substance abuse significantly raises the rate of violence in people with schizophrenia. Further, individuals with paranoid and psychotic symptoms may also be at higher risk for violent behaviour if



medications are discontinued.

### **Can Children Have Schizophrenia?**

Children over the age of five can develop schizophrenia; however, it is very rare before adolescence. Although some individuals who later develop schizophrenia may have seemed 'different' from other children at an early age, the psychotic symptoms of schizophrenia (hallucinations, delusions, etc) are extremely uncommon before adolescence.

### **What About Suicide?**

Suicide is a serious danger in people who have schizophrenia. People with schizophrenia have a higher rate of suicide than the general population. Approximately 10 percent of people with schizophrenia (especially younger adult males) commit suicide. Unfortunately, the prediction of suicide in people with schizophrenia can be especially difficult.

### **What Causes Schizophrenia?**

**This image is of 28-year-old identical twins, one with schizophrenia and the other well. It therefore clearly illustrates two points: (1) schizophrenia is a brain disease with measurable structural and functional abnormalities in the brain; and (2) it is not a purely genetic disease, and other biological factors play a role in its etiology.**

## **SCHIZOPHRENIA IN IDENTICAL TWINS**



*Photo courtesy of Drs. E. Fuller Torrey and Daniel Weinberger.*

**MRI scans of 28-year-old male identical twins showing the enlarged brain ventricles in the twin with schizophrenia (right) compared to his well brother (left).**

There is no known single cause of schizophrenia, and scientists do not yet understand all of the factors necessary to produce schizophrenia; however, all the tools of modern biomedical research are

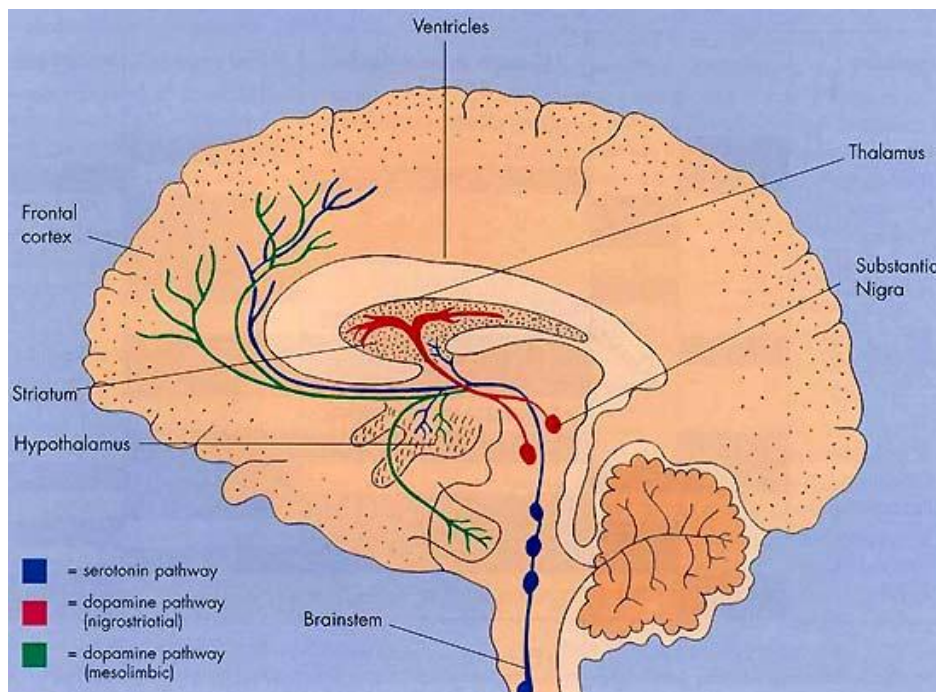
being used to search for genes, critical moments in brain development, and other factors that may lead to the illness.

### Is Schizophrenia Inherited?

It has long been known that schizophrenia runs in families. People who have a close relative with schizophrenia are more likely to develop the disorder than are people who have no relatives with the illness. It appears likely that multiple genes are involved in creating a predisposition to develop the disorder. In addition, factors such as prenatal difficulties like intrauterine starvation or viral infections, perinatal complications, and various non-specific stressors, seem to influence the development of schizophrenia.

### Is Schizophrenia Associated With A Chemical Defect In The Brain?

Neurotransmitters have long been thought to be involved in the development of schizophrenia. It is likely, although not yet certain, that the disorder is associated with some imbalance of the complex, interrelated chemical systems of the brain, perhaps involving the neurotransmitters dopamine, serotonin, and glutamate.



(Picture above - Dopamine & Serotonin pathways)

### Treating Schizophrenia

Since schizophrenia may not be a single condition and since its causes are not yet known, current treatment methods are based on both clinical research and experience. These approaches are chosen on the basis of their ability to reduce the symptoms of schizophrenia and to lessen the chances that symptoms will return.

Antipsychotic drugs have been available since the mid-1950s, and are used to reduce the psychotic symptoms of schizophrenia. However, antipsychotic drugs do not 'cure' schizophrenia or even ensure that there will be no further psychotic episodes. The dosage of medication is individualized for each patient to reduce symptoms without producing negative side effects. Regarding 'addiction', antipsychotic drugs do not produce a 'high' (euphoria) or addictive behaviour in the people who take them.

A misconception about antipsychotic drugs is that they act as a kind of mind control, or a 'chemical straitjacket.' Antipsychotic drugs used at the appropriate dosage do not 'knock out' people or take

away their free will. While these medications can be sedating, and while this effect can be useful when treatment is initiated, the utility of the drugs is not due to sedation but to their ability to diminish the hallucinations, agitation, confusion, and delusions of a psychotic episode. Thus, antipsychotic drugs can help an individual with schizophrenia to deal with the world more rationally.

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