



A Guide to Schizophrenia



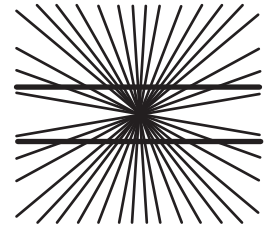
What Is Schizophrenia?

A chronic, potentially degenerative brain disorder that usually begins in late adolescence or young adulthood

- Affects up to **1%** of the world's population¹
- **24 million** people worldwide
- Slightly more common in **men** than women²
- Onset is earlier in men than women²
- One of the **top 20 causes** of disability worldwide³

"schizo" • "phrenos" literally means "splitting" of the "fibers of thought"

Schizophrenia makes it hard for people to tell what's real from what's not. Imagine if your brain couldn't tell that an optical illusion was just your mind playing tricks on itself.



Key Features

Positive Symptoms: "Overexpressions" of normal brain functions, such as:

- Delusions (false, fixed beliefs, such as paranoid ideas, feelings of persecution or being controlled by some outside force)
- Hallucinations (false perceptions: hearing voices, seeing things that aren't really there, strange bodily sensations)
- Disorganized speech and form of thinking (ideas may be disjointed, incoherent, or not make sense)
- Disorganized behavior (odd body postures, trouble with verbal communication)

Negative Symptoms: The absence (or diminished expression) of normal behaviors or psychological functions, such as:

- Not showing emotion
- Having few movements
- Speaking very little or not at all
- Expressing very few ideas
- Social withdrawal
- Unable to experience interest or pleasure in things

Cognitive Symptoms: Difficulties with thinking, remembering, and processing information, such as:

- Trouble with focus, attention, or filtering out distractions
- Difficulty with problem-solving
- Struggles with maintaining goals
- Diminished ability to memorize or remember things in specific order

Complications

Schizophrenia carries a high risk for:

- **Suicide** (about a 5%-10% rate)⁴
- Co-occurring episodes of **clinical depression**⁵
- Developing alcohol or substance use disorders⁶
- **Premature death** (by 15-20 years) from cardiovascular and cerebrovascular disease, pneumonia, infections, diabetes, and cancer⁷
- Progressive cognitive problems involving attention, memory, and organization of thinking⁸
- Chronic disability: full recovery occurs in only approximately **13.5%** of people⁹

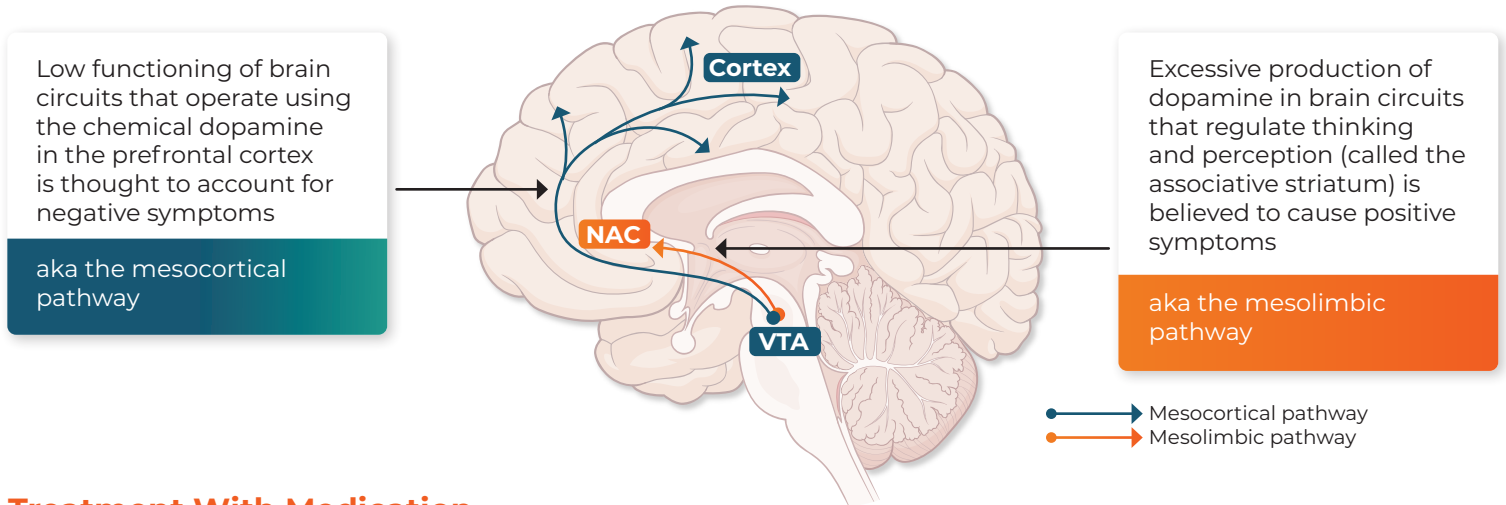
What Do Scientists Think Causes Schizophrenia?

A combination of genetic and environmental factors

Dysregulation of brain circuits involved in processing thinking, perception, and behavior



Disordered Brain Circuits in Schizophrenia



Treatment With Medication

Treatment involves medicines called antipsychotics that try to bring chemical signals back into balance by helping to:

- Compensate for too much dopamine transmission in the mesolimbic pathway by blocking or downregulating the effects of dopamine in those circuits
- Offset low dopamine transmission in the mesocortical pathway by enhancing dopamine flow in those circuits

Dysfunction also occurs in “higher up” circuits in the brain that communicate using other chemical messengers such as GABA (gamma-aminobutyric acid, which inhibits or blocks certain circuits) or glutamate (an excitatory neurotransmitter whose circuits stimulate other brain circuits)

A class of medicines called **atypical antipsychotics** also exerts effects on a particular type of serotonin receptor called the 5HT₂ receptor. Blocking 5HT₂ receptors can influence psychosis symptoms through interaction with mesocortical or mesolimbic dopamine pathways.

A newer class of medicines called **M1/M4 muscarinic agonists** works by affecting brain circuits that work on another chemical called acetylcholine, which in turn influence the overproduction or underproduction of the mesolimbic and mesocortical dopamine pathways, respectively.

Antipsychotic medications for schizophrenia need to be taken every day to control symptoms and prevent relapse. Long-acting injectable forms of some medications are also available that can be taken anywhere from every 1-6 months to control symptoms. Antipsychotic medicines have been shown to reduce symptoms, improve quality of life, and lower the risk of all-cause death in schizophrenia.⁷

Treatment Adherence

Many people with schizophrenia have trouble taking their medications on a regular basis because of a number of factors, including:

- Fear of side effects (such as weight gain, sexual side effects, or movement problems)
- Thinking they do not need medicine
- Forgetfulness
- Stigma

Psychosocial Treatments

Behavioral or psychosocially based treatments, in addition to medications, can help patients manage symptoms and improve functioning.¹⁰ These include:

- Cognitive remediation
- Metacognitive training
- Social skills training
- Psychoeducation
- Family interventions
- Cognitive behavioral therapy
- Physical exercise and lifestyle interventions
- Supported employment

Prognosis

The prognosis or outlook for schizophrenia depends on effective treatment, maintaining a healthy lifestyle, and avoiding complications such as alcohol or substance use that can worsen symptoms and make overall treatments less effective.

References:

1. Saha. PLoS Med. 2005;2:e141.
2. Li. Gen Psychiatry. 2022;3:e100823.
3. GBD 2017 Disease and Injury Incidence and Prevalence Collaborators. Lancet. 2018;392:1789.
4. Palmer. Arch Gen Psychiatry. 2005;62:247.
5. Upthegrove. Schizophr Bull. 2017;43:240.
6. Khokhar. Schizophr Res. 2018;194:78.
7. Correll. World Psychiatry. 2022;21:248.
8. Tripathi. Clin Psychopharmacol Neurosci. 2018;16:7.
9. Jääskeläinen. Schizophr Bull. 2012;39:1296.
10. Barlati. Curr Opin Psychiatry. 2024;37:131.