SCHIZOPHRENIA

OVERVIEW

Schizophrenia is a brain-based disorder that causes strange thinking and unusual behavior. It is primarily characterized by psychosis, a condition in which thoughts and emotions are so impaired that contact is lost with external reality. In schizophrenia, psychosis often presents as hallucinations, delusions, and/or disorganized speech and thinking. Although schizophrenia can be treated, it is considered to be a life-long disorder.

KEY POINTS

- **Characterized by psychosis, which can present as hallucinations, delusions, or disorganized thinking.**
- **Onset before age 18 is rare.**
- **Often episodic in nature, with periods of wellness between episodes.**
- **Associated with an increased risk of suicide.**
- **No evidence-based treatments at this time; a combination of pharmacological and psychosocial therapies has the best results.**

Onset of schizophrenia typically occurs between age 16 and 30; the rate of onset increases during adolescence, peaking at age 30. Onset before age 18 is categorized as early-onset schizophrenia (EOS). EOS is rare and occurs in only one percent of people with schizophrenia (or less than .01 percent of the population). Onset before age 13 is categorized as childhood-onset schizophrenia (COS). This very early onset is exceedingly rare and much more severe than EOS. For the purposes of this section of the *Collection,* the terms schizophrenia and EOS will be used interchangeably.

Schizophrenia in youth is hard to diagnose. Its symptoms can mimic a host of other disorders, which makes misdiagnosis common. Many medical conditions, such as delirium, seizure disorders, central nervous system lesions, neurodegenerative disorders, and developmental disorders can cause psychosis. Psychosis is a brain-based condition that is made better or worse by environmental factors like stress. Youth who experience psychosis often say "something is not quite right" or can't tell if something is real or not real.

Psychotic symptoms brought on by substance abuse should also be ruled out. Other conditions that should be ruled out prior to a diagnosis of schizophrenia include psychotic mood disorders, behavioral/emotional disorders, schizoaffective disorder, autism spectrum disorder, obsessive-compulsive disorder, and delusional disorders. Clinicians should also take care to differentiate true psychotic symptoms from overactive imaginations, idiosyncratic thinking, and perceptions caused by developmental delays and/or exposure to traumatic events.

The most common symptoms EOS are vivid hallucinations, disordered thinking, and flattened affect. Systematic delusions and catatonic symptoms are less common. Cognitive delays often co-occur with EOS, including memory, executive functioning, and attention deficits, as well as global impairments.

At onset of schizophrenia, children often show cognitive decline, social withdrawal, disruptive behavior disorders, difficulty in school, and speech and language problems. Signs of schizophrenia often present slowly over time, so parents often have difficulty recognizing psychotic symptoms in children with language delays and social withdrawal. Parents should look for unusual, suspicious, or paranoid thoughts, along with language and social decline.

Schizophrenia should be diagnosed by a child or adolescent psychiatrist with special training in evaluating and diagnosing children with schizophrenia. In order to receive a diagnosis of schizophrenia, there must be ongoing signs for six months. In addition, hallucinations, delusions, or disordered speech must be present for at least one month. Common symptoms of schizophrenia are described in Table 1.

Although schizophrenia is a life-long disorder, it is episodic (periods of relative wellness followed by periods of illness). During their lifetimes, people with schizophrenia may become actively ill only once or twice or may have many more episodes. Unfortunately, residual symptoms may increase and ability to function may decrease after each active phase. It is important to try to avoid relapses by following the prescribed treatment. Currently, it is difficult to predict at the onset how fully a person will recover.

Episodes of schizophrenia usually progress in phases. These phases are described in Table 2.

Youth suffering from EOS also have high rates of co-occurring disorders, including:

- Attention-deficit/hyperactivity disorder
- Depression
- Anxiety disorders
- Conduct disorder
- Oppositional defiant disorder

Because the presence of one or more co-occurring disorder can affect treatment, clinicians should perform a thorough assessment for other mental health disorders.

Between five and six percent of individuals with schizophrenia die of suicide, and approximately 20 percent attempt it. Even more of these individuals experience suicidal ideation (thoughts of suicide). According to the DSM-5, suicide risk is high throughout the life of both males and females. However, it may be highest in young males who also use or abuse drugs and similar substances. The likelihood of suicide is highest when a youth is in a depressive state or is experiencing depression-like symptoms, after a psychotic episode, or after being discharged from the hospital. Monitoring youth with EOS for suicide risk is extremely important. A review of suicide assessment tools is provided in the *Collection*'s "Youth Suicide" section. If you are experiencing emotional distress or a suicidal crisis, dial "988" for the Suicide & Crisis Lifeline.

Table 1
Common Symptoms of Schizophrenia

Symptom	Description
Hallucinations *Children are **more** likely than adults to experience hallucinations.*	Hallucinations are seeing or hearing things that are not real. People who have hallucinations cannot usually distinguish them from real sights and sounds because they seem to be experienced through the senses. These experiences can cause extreme distress. It is important to note that hallucinations can indicate another mental health or sensory processing disorder.
Delusions *Children are **less** likely than adults to experience delusions.*	Delusions are false beliefs that a person holds in spite of overwhelming evidence that the belief is false. Some common delusions are listed below. • Belief that a person or group will harm, harass, or otherwise bother the individual (most common type of delusion) • Belief that certain gestures, comments, and environmental cues are directed at the individual • Individual believes they have exceptional abilities, wealth, or fame • Individual falsely believes someone is in love with them • Belief that a major catastrophe will occur • Focus on preoccupations with health and organ function • Belief that one is a religious figure
Disorganized speech	Speech is incoherent or non-linear. Disorganized speech indicates disordered thinking.
Disorganized or abnormal motor behavior	• Catatonia: Lack of response to environment; motor immobility; mutism • Excessive or unconventional motor behavior; unconventional verbal behaviors • Imitation of movements of others
Negative symptoms *Symptoms that diminish a person's abilities.*	• Flattened affect: Reductions in facial expression, eye contact, hand movements, and speech intonation; diminished speech • Lack of motivation • Inability to experience pleasure; lack of interest in social interactions
Associated symptoms *These symptoms can also be present in a variety of psychological or biological disorders.*	• Bizarre thoughts and ideas; odd behavior and speech • Unable to discern television and dreams from reality • Paranoia • Cognitive defects, such as problems with learning or understanding information, with memory, with focus or attention, or with completing tasks or making decisions • Unable to infer the intentions of others, which can lead to explanatory delusions • Lack of insight into illness (typically a symptom rather than a coping strategy) • Withdrawn and increased isolation • Decline in personal hygiene • Insomnia; daytime sleeping and nighttime activity • Lack of interest in or refusal of food • Problems with self-control • Hostility or aggression • Inappropriate affect: for instance, laughing at inappropriate times • Symptoms of depressive or anxiety disorders; extreme moodiness

Table 2
Phases of Schizophrenia

Phase	Description
Prodromal Phase *The period of time when an adolescent experiences the early warning signs of psychosis*	Before a child displays very obvious symptoms, they may decline in any of the following ways: • Decreasing social function • Odd preoccupations • Unusual behaviors • Trouble in school • A lack of self-care
Active Phase	• Hallucinations • Delusions • Marked distortions in thinking • Disturbances in behavior and feelings
Residual Phase	• Listless • Trouble concentrating • Withdrawn • Other symptoms similar to Prodromal Phase

CAUSES AND RISK FACTORS

It is likely that genetic, behavioral, and environmental factors influence the development of EOS. Environmental factors associated with schizophrenia include maternal malnutrition, infections during critical periods of fetal development, fetal hypoxia (a lack of oxygen to the brain), and other birth and obstetric complications. The literature shows no evidence that psychosocial factors cause schizophrenia.

Studies have shown that schizophrenia is highly influenced by genetics. Compared to the general population, the risk of being diagnosed with schizophrenia is five times higher for second-degree relatives of persons who have schizophrenia, ten- to fifteen-fold higher for first-degree family members, and forty to fifty times higher for identical twins or when both parents have schizophrenia.

TREATMENTS

Schizophrenia is treated with a combination of pharmacological and psychosocial therapies. Antipsychotic medications are usually prescribed immediately following a diagnosis of schizophrenia. Typically, treatment is continuous throughout a child's or adolescent's life, as relapses are linked with the discontinuation of treatment. After each subsequent relapse, it becomes more difficult to return to normal health and functioning, and the likelihood of more relapses increases. This decline can have irreversible effects; therefore, vigilance is essential.

Currently, there are no pharmacological or psychosocial therapies with enough evidence in youth samples to meet the highest standard for evidence-based treatments. Thus, research on treatment of EOS is recent and sparse. Table 3 summarizes treatments for EOS.

Table 3
Summary of Treatments for Early-Onset Schizophrenia

What Works	
There are no evidence-based practices at this time.	
What Seems to Work	
Medication treatment with second-generation (atypical) antipsychotics	Risperidone Aripiprazole Quetiapine Paliperidone Olanzapine
Medication treatment with traditional neuroleptics/first generation antipsychotics	Molindone Haloperidol
Family psychoeducation and support	Helps to improve family functioning, problem solving, and communication skills, and decreases relapse rates.
Cognitive behavioral therapy (CBT)	Includes social skills training, problem-solving strategies, and self-help skills.
Cognitive remediation	Pointed tasks to help improve specific deficiencies in cognitive, emotional, or social aspects of a patient's life.
Not Adequately Tested	
Electroconvulsive therapy (ECT)	Small electric currents are passed through the brain, intentionally triggering a brief seizure to reverse symptoms of certain mental illnesses. Unproven as effective in youth. Should only be used as a last effort after all risks are weighted against possible benefits.
What Does Not Work	
Psychodynamic therapies	Talk therapies that focus on a client's self-awareness and understanding of the influence of the past on present behavior. These therapies are considered to be potentially harmful for youth with schizophrenia.

Pharmacological Treatments

Due to the limited number of controlled studies related to the efficacy and safety of psychopharmacological medications for youth with EOS that currently exist, pharmacological treatment of youth diagnosed with schizophrenia is modeled after treatment studies with adults. The most widely prescribed class of drugs for youth under 18 years of age are second-generation antipsychotics. The FDA has approved risperidone, aripiprazole, quetiapine, paliperidone, and olanzapine for the purposes of treating children over the age of 13, but these medications still do not meet the criteria for evidenced-based treatments.

Long-term monitoring of therapy compliance and side effects is essential for any treatment regimen requiring antipsychotic agents. Serious side effects of antipsychotics include seizures and neutropenia, a blood condition in which cells that defend the body against bacterial infections (neutrophils) are significantly reduced. Cognitive side effects, such as problems with word retrieval, working memory, and cognitive dulling, can also occur. Other side effects include weight gain, abnormal involuntary movements, and neuroleptic malignant syndrome.

Psychological Treatments

There are many different psychological treatment options for youth with schizophrenia. A proper psychological treatment paired with medication can be extremely effective in improving a patient's functioning (emotionally, socially, and cognitively).

The goal of therapy is both to help the youth return to a normal level of functioning and to promote the mastery of age-appropriate developmental tasks. Family involvement in treatment for EOS is especially important. Evidence suggests that family involvement can make treatment more effective and decrease the amount of time a youth spends in institutional care.

RESOURCES AND ORGANIZATIONS

American Academy of Child and Adolescent Psychiatry (AACAP)
Facts for Families: Schizophrenia in Children
http://www.aacap.org/AACAP/Families_and_Youth/Facts_for_Families/FFF-Guide/Schizophrenia-In-Children-049.aspx

American Psychiatric Association
Schizophrenia
https://www.psychiatry.org/patients-families/schizophrenia/what-is-schizophrenia

Association for Behavior and Cognitive Therapies (ABCT)
Schizophrenia
https://www.abct.org/fact-sheets/schizophrenia/

Brain & Behavior Research Foundation
https://www.bbrfoundation.org/

Mental Health America (MHA)
https://mhanational.org/

National Alliance on Mental Illness (NAMI)
https://www.nami.org/Learn-More/Mental-Health-Conditions/Schizophrenia

National Institute of Mental Health (NIMH)
https://www.nimh.nih.gov/health/topics/schizophrenia

Society of Clinical Child and Adolescent Psychology
https://sccap53.org/

Substance Abuse and Mental Health Services Administration (SAMHSA)
https://www.samhsa.gov/

The Collection of Evidenced-Based Practices for Children and Adolescents with Mental Health Treatment Needs, 10th Collection

Virginia Commission on Youth, 2025

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