PSYCHOTIC DISORDERS AND SCHIZOPHRENIA IN CHILDREN, ADOLESCENTS AND YOUNG ADULTS - ASSESSMENT AND TREATMENT

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Question: A 15 y.o. male is brought to the ER with prominent command hallucinations and beliefs that he is a character in movie popular with adolescents. You review his medical records from his psychiatric treatment over the last 18 months. You learn that he has been both depressed and experiencing hallucinations for most of this time. His parents report, however, that over the last month his depression has lifted but his psychotic symptoms may have worsened. His urine toxicology screen is negative and he is medically cleared. What is his most likely diagnosis?

- A. Brief psychotic disorder
- B. Major depressive episode with psychotic features
- C. Schizoaffective disorder
- D. Schizophrenia
- E. Schizophréniform disorder
Question: A 4 1/2 y.o. male is planning to dress up for Halloween as a character who can fly. He believes that when he puts on his costume, he also will be able to fly. When he is told he will not be able to fly, he became very angry. This is an example of which of the following?

- A. Manic episode
- B. Delusional thinking
- C. Magical thinking
- D. Conversion disorder
- E. Early-onset schizophrenia
Question: If a child presents for the first time with psychotic symptoms, which of the following features is associated with the greatest brain changes?

A. Male gender
B. Onset before age 13 years
C. Presence of negative symptoms and visual hallucinations
D. Presence of family discord and highly expressed emotions
E. Presence of auditory hallucinations
Question: A 16 y.o. female with no history of psychosis, broke up with her boyfriend two weeks ago. Since then, she stays out late and isolates herself in her room. When she presents with her parents to the ER, she is crying and displaying unusual aggressive and combative behavior. Five mg of haloperidol is given and she calms down. What will be your next step?

A. Administer physical restraints
B. Order urine toxicology screen
C. Give lorazepam 2 mg IM
D. Order brain CT scan
E. Ask parents about history of hallucinations and delusions
Question: An 10 y.o. boy with ODD and psychotic symptoms is placed in a safe home. He was removed from mother’s custody due to his psychotic illness and her inability to care for him. He is started on aripiprazole. When you see him two days later, he is unable to sit still, and has inner feeling of restlessness. He keeps abducting and adducting his legs. The most likely explanation is which of the following?

- A. Anxiety
- B. Dystonia
- C. Bipolar disorder
- D. Akathisia
- E. Restless leg syndrome
DEFINITIONS

- Early onset Schizophrenia (EOS) is defined as onset before 18 years of age.
- Onset before 13 years of age is described as Childhood onset Schizophrenia (COS)
- The diagnosis of EOS and COS is made using the same criteria as in adults following the criteria outlined by DSM-5 or ICD-10
REFERENCES AND READINGS (RECOMMENDED)

- Practice Parameters for Assessment and Treatment of Children and Adolescents with Schizophrenia (JAACAP Volume 52, Number 9, September 2013)

- Is Adolescent-Onset First-Episode Psychosis Different from Adult Onset? (JAACAP 44.8, 2005)
NATURAL HISTORY OF SCHIZOPHRENIA

- **CHILDHOOD- PREMORBID- MILD IMPAIRMENTS**
- **adolescence- prodromal- non-specific behavioral changes**
- **progression- onset- first episode psychosis- positive & negative sx (adolescence/early adulthood)**
- **ADULTHOOD- RESIDUAL SCHIZOPHRENIA**
DEFINITIONS

- DSM-5 requires that two or more characteristic symptoms be present for at least 1 month (shorter if successfully treated).
- Evidence of the disorder must be present for at least 6 months and must be associated with a significant decline in social or occupational functioning.
- In children and adolescents, decline in functioning may include the failure to achieve age-appropriate levels of inter-personal or academic development.
DEFINITIONS

- DSM-5 requires that two or more characteristic symptoms be present for at least 1 month (shorter if successfully treated).
- Hallucinations
- Delusions
- Disorganized Speech
- Disorganized or catatonic behavior
- Negative symptoms
- During the active phase, hallucinations, delusions, or disorganized speech must be present.
DEFINITIONS

- The ICD-10 diagnostic criteria are similar to DSM-5 except that the total duration of illness required is at least 1 month.

- Schizophrenia as defined by DSM-5 differs from the DSM-IV-TR by the following: delusions, hallucinations, or disorganized speech are required for diagnosis and **commenting and conversing hallucinations and bizarre delusions are no longer accorded special diagnostic status.**
DEFINITIONS

- Young adult onset Schizophrenia - age 19-30 years.
- Adolescent onset Schizophrenia - age 15-18 years.
BRIEF HISTORY

- Kraeplin- Manic-Depressive Illness and Dementia Praecox.
- Bleuler- Schizophrenia (splitting of the mind), due the observation that the illness was not associated with dementia, but rather with the loss of association of thought processes and the disruption of thought, emotions and behavior.
- Bender, Kanner and others- concept of COS broadened to include syndromes defined by developmental lags in the maturation of language, perception and motility (which also included infantile autism). Hallucinations and delusions were not required criteria (DSM II).
Seminal work by Kolvin and Rutter established the distinctiveness of the various childhood psychoses and the similarity between childhood and adult Schizophrenia.

Therefore, beginning with DSM-III, the diagnosis of Schizophrenia in youth has been made using the same criteria as for adults, regardless of age of onset.

Subsequent research has generally validated this decision.
The worldwide prevalence of Schizophrenia is generally held at 1%, with some variation noted across studies and populations.

The male-to-female ratio is approximately 1.4 to 1.

The prevalence of EOS has not been adequately studied.

Onset before the age of 13 appears quite rare.

The rate of onset then increases during adolescence, with the peak ages of onset for the disorder ranging from 15 to 30 years.

EOS occurs more in males. As age increases this ratio evens out.

The diagnostic validity of COS (<6) has not been established.
Psychosis is defined as the severe disruption of thought and behavior resulting in the loss of reality testing.

The diagnosis of psychosis is based on overt changes in person’s behavior and functioning, with evidence of disrupted thinking evident on MSE.

Although psychotic symptoms are characteristic of Schizophrenia, psychosis may present with other illnesses, including mood disorders, neurologic conditions and acute intoxication.
At-Risk Mental States (ARMS)

- **Prodromal symptoms**: 80%-90% of first episode psychosis preceded by prodrome of about 5 years. Most prodromal symptoms are nonspecific: disturbances in mood, anxiety, attention, sleep.

- **Clinical high risk (CHR) individuals**: Specific high risk symptoms: basic symptoms. 65%-79% of persons with basic symptoms transition to schizophrenia within 10 years. Assessments: Schizophrenia Proneness Instrument.

- **Ultra-high risk (UHR) individuals**: 40%-60% transition to schizophrenia within 1 year. Assessment: Criteria of Prodromal Syndromes.
Basic Symptoms OF PRODROME ARMS (CHR)

- Basic (information processing) symptoms
  - Thought interference, perseveration, pressure, blockage
  - Disturbance of receptive speech
  - Difficulty discriminating between ideas and perception, and fantasy and true memories
  - Unstable ideas of reference
  - Derealization
  - Visual and acoustic perception disturbances
Ultra-High Risk Symptoms

1. Ultra-high risk symptoms
   - Attenuated positive symptoms
   - OR brief limited intermittent psychotic symptoms

2. Positive family history
   - Genetic history increases risk by factor of up to 10
     - Ultra-high risk individuals defined as those with 1 and 2 above
## RISKS OF INHERITANCE

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<th>Rates of Schiz in Relatives</th>
<th>Risk of Inheritance</th>
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<tr>
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<tr>
<td>Monozygotic</td>
<td>47%</td>
<td>100%</td>
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</table>
Brain Development
Brain Regions and Functions

Frontal lobe
- self-control, judgment, emotional regulation; restructured in teen years
- reaches full maturity in 20’s

Corpus callosum
- Connects the right and left hemispheres of the brain

Parietal lobes
- integrate auditory, visual, and tactile signals; immature until age 16

Temporal lobes
- emotional maturity; still developing after age 16
Causes

Organic Factors

Psychological Factors

Mental Disorders

Organic Treatment

Psychological Treatment

Treatments
The diagnostic assessment of schizophrenia presents unique developmental concerns.

Misdiagnosis is common particularly at time of onset.

Conditions misdiagnosed as schizophrenia include bipolar disorder and other psychotic mood disorders, personality disorders, obsessive-compulsive disorder and developmental disorders.

Comprehensive diagnostic assessments, which reconcile mental status findings with the rigorous application of diagnostic criteria, help improve accuracy.
Most children who report hallucinations do not meet criteria for schizophrenia, and many do not have a psychotic illness.

Normative childhood experiences, including overactive imagination and vivid fantasies, can be misinterpreted as psychosis.

Distinguishing formal thought disorder from developmental disorders that impair speech and language function can be a challenge.

Expertise in childhood psychopathology and experience in assessing reports of psychotic symptoms in youth are important prerequisite skills for clinicians evaluating youth for possible psychosis.
**CLINICAL PRESENTATION**

- **Symptomatology**: Schizophrenia is characterized by positive and negative symptoms.
- Positive symptoms refer to hallucinations, delusions, and thought disorder.
- Negative symptoms are those of deficits, i.e., flat affect, anergy, and paucity of speech or thought.
- Disorganized behavior may represent an independent third domain, including disorganized speech (e.g., incoherence, looseness of associations), bizarre behavior, and poor attention.
Hallucinations, thought disorder and flattened affect have been consistently found in EOS, whereas systematic delusions and catatonic symptoms occur less frequently.

Developmental variation in language and cognition may affect the range and quality of symptom presentation.
CLINICAL PRESENTATION

- **COGNITIVE DELAYS** are common with EOS.
- Deficits in memory, executive functioning, attention, and global impairments are generally noted.
- Children who later develop schizophrenia often have premorbid problems with verbal reasoning, working memory, attention and processing speed.
- Cognitive decline typically occurs at the time of onset of illness.
- Once established, intellectual deficits appear to be stable over time without continued deterioration. These findings are consistent with those in adult literature.
CLINICAL PRESENTATION

- **PREMORBID FUNCTIONING** Premorbid abnormalities are evident in most youth who develop schizophrenia, especially those with COS.

- Common premorbid difficulties include social withdrawal and isolation, DBDs, academic difficulties, speech and language problems and cognitive delays.

- Because schizophrenia in youth often has an insidious onset, the gradual development of psychotic symptoms in a child with premorbid language delays and social withdrawal can be difficult to recognize.

- Predicting which youth with premorbid characteristics of schizophrenia will eventually develop the disorder remains a challenge.

- Factors in high-risk youth that predict progression into the illness include familial risk for schizophrenia plus a recent deterioration in functioning; unusual, suspicious, or paranoid thought content; greater social impairment; and/or a history of substance abuse.
ETIOLOGY

- Schizophrenia is a heterogeneous disorder with multiple etiologies.
- To date, no single set of causes has been identified.
- Current evidence suggests that a multifactorial neurodevelopmental model best explains the developments of schizophrenia, with multiple genetic and environmental exposures playing roles.
- Neurobiological research suggests that EOS and adult-onset schizophrenia share etiologic factors, although EOS may be a more severe form.
ETIOLOGY

- Genetic Factors
- Family, twin, and adoption studies support a strong genetic component for schizophrenia.
- Lifetime risk in first-degree relatives of affected probands is 5-20 times greater than in general population.
- The rate of concordance between monozygotic twins is approximately 40-60%.
- In dizygotic twins and other siblings are 5-15%.
ETIOLOGY

- Genetic Factors (continued): Genomewide association studies using large international cohorts, have published findings implicating different genomic loci and genes, including the major histocompatibility complex (MHC; 6p21.1), MIR137, and ZNF804a.

- For EOS, positive associations have been reported for several candidate genes, including those reported in the adult literature.

- Emerging evidence shows rare deletions and duplications are enriched in individuals with schizophrenia.

- Structural mutations arising at genomic hotspots, including 1q21.2, 15q13.3, and 22q11.2 may be responsible for 0.5-1.0% of cases.
ETIOLOGY

- Genetic factors (contd.,): EOS appears to be associated with a higher rate of large cytogenetic abnormalities and rare structural variants than reported in adults with the illness.

- These include 22q11.2 deletion syndrome (velocardiofacial syndrome), which is associated with substantial rates of behavioral, cognitive and psychiatric problems including psychosis.

- Most rare copy number errors detected in affected persons are found at different genetic loci, and many are unique to one individual or family.

- Thus, the emerging research suggests that most affected persons have a different genetic cause, which has important implications for intervention and translational research.
ETIOLOGY

- Environmental Exposures: Genetic and environmental factors interact to shape neurodevelopmental processes, affecting disease risk and progression.

- Environmental exposures may mediate disease risk by different mechanisms, including direct neurologic damage, gene-by-environment interactions, epigenetic effects, and/or de novo mutations.

- Numerous environmental factors have been hypothesized to contribute to the development of schizophrenia, including in utero exposure to maternal famine, paternal age, prenatal infections, obstetric complications, marijuana use and immigration.
Neuroanatomic Abnormalities: Structural brain aberrations most consistently reported in adults with schizophrenia include increased lateral ventricle volumes and decreases in hippocampus, thalamus and frontal lobe volumes.

EOS is associated with similar abnormalities with limbic structures appearing to play a particularly important role.

Youth with EOS exhibit significant decreases in gray matter volumes and decreased cortical folding.

Cortical abnormalities appear to be most profound in COS. F/U studies have shown that cortical thinning in COS may plateau in early adulthood when it becomes similar to the adult regional pattern.
ETIOLOGY

- Neuroanatomic abnormalities (contd.,): Structural brain findings found in EOS are theorized to stem from the disruption of neurodevelopmental processes emerging during adolescence.

- In the NIMH COS cohort, unaffected siblings of patients shared similar patterns of cortical deficits, suggesting these are familial traits with variable impact on disease risk.
ETIOLOGY

- Psychological and Social Factors: there is no evidence that psychological or social factors cause schizophrenia.
- Rather, environmental factors may potentially interact with biologic risk factors to mediate the timing of onset, course and severity of the disorder.
- Psychosocial factors, including Expressed Emotion within the family setting, influence the onset and/or exacerbation of acute episodes and relapse rates. These interactions are complex and bidirectional.
- Being raised in a healthy home environment may be protective to children with a familial risk.
- Alternatively, the presence of difficult family interactions may not be causal, but rather a reaction to the collection of difficulties the patient brings to the family setting.
The course of schizophrenia varies across individuals.

There are hallmark phases that are important to recognize when making diagnostic and therapeutic decisions.
**PRODROME**: Most patients experience some degree of functional deterioration before the onset of psychotic symptoms, including social withdrawal and isolation, idiosyncratic or bizarre preoccupations, unusual behaviors, academic failure, deteriorating self-care skills, and/or dysphoria.

These changes may be associated with depression, anxiety, aggressive behaviors, or other conduct problems, including substance abuse, which often confuse the diagnostic picture.

The prodromal phase may vary from an acute marked change in behavior to a chronic insidious deterioration.
COURSE AND OUTCOME

- **ACUTE PHASE:** The acute phase is marked by prominent positive symptoms (i.e., hallucinations, delusions, disorganized speech and behavior) and a significant deterioration in functioning.

- This phase may last several months depending in part on the response to treatment.
COURSE AND OUTCOME

- **RECUPERATIVE/RECOVERY PHASE:** After the acute phase, with the remission of the acute psychosis, there is generally a several-month period when the patient continues to experience a significant degree of impairment.

- Negative symptoms (flat affect, anergia, social withdrawal) predominate, although some positive symptoms may persist.

- In addition, some patients will develop a post-psychosis depression characterized by dysphoria.
**RESIDUAL PHASE:** Youth with EOS may have prolonged periods (several months or more) between acute phases when they do not experience significant positive symptoms.

However, most patients will continue to be at least somewhat impaired owing to negative symptoms.

Unfortunately, some affected individuals never progress to residual symptoms and remain chronically symptomatic despite adequate treatment.
OUTCOME: Follow-up studies of EOS, spanning periods up to several decades, have suggested moderate to severe impairment across the lifespan.

Poor long-term outcome is predicted by low premorbid functioning, insidious onset, higher rates of negative symptoms, childhood onset, and low intellectual functioning.

When followed into adulthood, youth with EOS have shown greater social deficits, lower levels of employment, and a lower likelihood to live independently compared with those with other childhood-onset psychotic disorders.
Suicidality is prevalent in youth with schizophrenia spectrum disorders.

In follow up studies, at least 5% of individuals with EOS died by completed suicide or by accidental death directly because of behaviors influenced by psychotic thinking.

As adults, individuals with schizophrenia are at higher risk of other morbidities, such as heart disease, obesity, HIV, hepatitis and DM.
The effective treatment of schizophrenia relies on an accurate diagnosis and a thorough assessment to identify any other contributing medical or psychiatric conditions and/or psychosocial stressors.

The proper assessment of psychosis in youth requires the gauging of potential symptom reports in the context of normal development.

The mere fact that a child responds affirmatively to questions regarding hallucinations or delusions does not ipso facto mean the child is psychotic.
Psychotic symptoms occur in the context of an illness, and psychotic illnesses are rare in youth, especially in children younger than 12 years.

The accurate diagnosis of schizophrenia and other psychotic illnesses should be based on the MSE.

Clinical features that help confirm a diagnosis include deteriorating function, thought disorder, and bizarre behavior.

There are several important diagnoses to rule out when assessing a youth for schizophrenia.
DIFFERENTIAL DIAGNOSIS

MEDICAL CONDITIONS: The list of medical conditions that can result in psychosis is exhaustive, including CNS infections, delirium, neoplasms, endocrine disorders, genetic syndromes (e.g., velocardiofacial [22q11], autoimmune disorders, and toxic exposures.

Drugs of abuse that can result in psychotic sx are dextromethorphan, LSD, hallucinogenic mushrooms, psilocybin, peyote, cannabis, stimulants, and inhalants.

Prescription drugs associated with psychosis, especially when used inappropriately, include corticosteroids, anesthetics, anticholinergics, antihistamines, and amphetamines.

Typically, acute psychosis secondary to intoxication resolves within days to weeks once the offending drug is discontinued.
DIFFERENTIAL DIAGNOSIS

- **MEDICAL CONDITIONS (CONTD.,)** Adolescents with EOS appear to be at substantial risk for comorbid substance abuse.
- Cannabis use in teenagers is associated with a higher risk of eventually developing psychosis.
- When drug abuse precedes the development of schizophrenia, it is difficult to gauge whether the psychosis represents independent drug effects or the unmasking of the underlying illness in an individual with other neurobiological vulnerabilities.
DIFFERENTIAL DIAGNOSIS

- **SCHIZOAFFECTIVE DISORDER**: The DSM-5 emphasizes the requirement of a full mood episode, which should be present for the majority of the total duration of the active and residual portions of the illness.

By definition, schizoaffective disorder requires the presence of psychotic symptoms plus prominent mood episodes (meeting full criteria for mania or depression) that are present for a substantial duration of illness.

These are important distinctions because mood sx, such as dysphoria, irritability, or grandiosity, are common in individuals with schizophrenia, and the reliability of the diagnosis of schizoaffective disorder in clinical settings has been poor.

Youth with schizoaffective disorder present with the same severity of psychotic symptoms and functional impairment as those with schizophrenia. The stability of early-onset schizoaffective disorder as a diagnosis appears to vary over time and can be difficult to distinguish from schizophrenia.
AFFECTIVE PSYCHOSIS: Psychotic mood disorders (especially bipolar disorder) can present with different affective and psychotic symptoms.

Full-blown mania in teenagers often presents with florid psychosis, including hallucinations, delusions, and thought disorder.

Psychotic depression may present with mood congruent or incongruent hallucinations and delusions.

Alternatively, symptoms of schizophrenia, such as negative sx, may be confused with a mood disorder. The overlap in sx increases the likelihood of a misdiagnosis. Longitudinal reassessment is needed.
**DIFFERENTIAL DIAGNOSIS**

- **ATYPICAL REPORTS OF PSYCHOTIC SYMPTOMS:** Many children and adolescents report sx suggestive of hallucinations and delusions, yet do not present with overt evidence of psychosis.

- In an epidemiologic survey, questions regarding possible psychotic symptoms had a high rate of false + results.

- Reports suggestive of psychosis in children may stem from overactive imaginations, cognitive limitations, or simply misunderstanding the question.

- Youth diagnosed with PTSD, conduct problems, and/or depression have been found to report more psychotic sx than controls.
DIFFERENTIAL DIAGNOSIS

- MALTREATED YOUTH: Dissociation/anxiety, Intrusive thoughts/worries, Derealization/Depersonalization.
- Childhood abuse - greater risk of being diagnosed with psychotic illness as adults.
- Pts with schizophrenia - hx of significant trauma in past/childhood.
- Presence of trauma neither establishes nor rules out psychotic dx.
- Differentiating trauma related sx from true psychosis-challenging; has important implications for rx and dx specificity.
DIFFERENTIAL DIAGNOSIS

- PDDs/AUTISM: differentiated from schizophrenia by absence of psychotic symptoms and by predominance of the characteristic deviant language patterns, aberrant social relatedness, or repetitive behaviors.
- Younger age of onset and the absence of a normal period of development are indicative.
- Premorbid abnormalities in EOS tend to be less pervasive and severe than those with autism.
- Youth with schizophrenia often have premorbid/comorbid problems with social oddities/alooftness, also present in ASDs.
- These sx are non-specific markers of disrupted brain development and may reflect shared etiologic mechanisms that are common.
- Once psychotic sx are apparent, the Dx of Schizophrenia takes precedence.
EVIDENCE BASE FOR PRACTICE
PARAMETERS

- CLINICAL STANDARD [CS]- RIGOROUS EMPIRICAL EVIDENCE (meta-analyses, systematic reviews, individual rct's overwhelming clinical consensus)

- CLINICAL GUIDELINE [CG]- STRONG EMPIRICAL EVIDENCE (nonrandomized clinical trials, cohort and case control studies, strong clinical consensus)

- CLINICAL OPTION [OP]- EMERGING EMPIRICAL EVIDENCE (ut’s, case series/reports) or clinical opinion, lack of strong empirical evidence

- NOT ENDORSED [NE]- KNOWN TO BE INEFFECTIVE OR CONTRAINDICATED
EVIDENCE BASE FOR PRACTICE

PARAMETERS

- RANDOMIZED CONTROL TRIAL (rct) - is applied to studies in which subjects are randomly assigned to two or more treatment conditions.
- CONTROLLED TRIAL (ct) - is applied to studies in which subjects are nonrandomly assigned to two or more treatment conditions.
- UNCONTROLLED TRIAL (ut) - is applied to studies in which subjects are assigned to one treatment condition.
- CASE SERIES/REPORT (cs) - is applied to a case series or a case report.
RECOMMENDATIONS

1) PSYCHIATRIC ASSESSMENTS FOR CHILDREN AND ADOLESCENTS SHOULD INCLUDE SCREENING QUESTIONS FOR PSYCHOSIS [CS].
RECOMMENDATIONS

2) THE DIAGNOSIS OF SCHIZOPHRENIA IN CHILDREN AND ADOLESCENTS SHOULD FOLLOW DSM-5 CRITERIA, USING THE SAME CRITERIA FOR ADULTS. [CS]
RECOMMENDATIONS

3) YOUTH WITH SUSPECTED SCHIZOPHRENIA SHOULD BE CAREFULLY EVALUATED FOR OTHER PERTINENT CLINICAL CONDITIONS AND/OR ASSOCIATED PROBLEMS, INCLUDING SUICIDALITY, COMORBID DISORDERS, SUBSTANCE ABUSE, DEVELOPMENTAL DISABILITIES, PSYCHOSOCIAL STRESSORS, AND MEDICAL PROBLEMS. [CS]
RECOMMENDATIONS

4) ANTIPSYCHOTIC MEDICATION IS A PRIMARY TREATMENT FOR SCHIZOPHRENIA SPECTRUM DISORDERS IN CHILDREN AND ADOLESCENTS. [CS]
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<td>Irritability in Autism- 6-17 (Risp 5-17)</td>
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Adverse Effects:
- Cataract and retinopathy
- Photosensitivity
- Blurred vision
- Weight gain
- Elevated liver enzymes
- Hyperlipidemia
- Hyperglycemia
- Increased serum prolactin
- Galactorrhea
- Menstrual irregularities
- Blood dyscrasias
- Hypersensitivity and rash
Weight Gain – Children on antipsychotics prone to weight gain

- Special concerns for pts with juvenile onset diabetes mellitus, Prader-Willi syndrome, and trisomy-21

- Assessments
  - Keep a weight chart with BMI
  - Monitor for metabolic syndrome

- Weight gain greater with some antipsychotics
  - Olanzapine, clozapine, quetiapine

- Possible less weight-inducing atypical antipsychotics
  - Aripiprazole and ziprasidone (but still have long-term weight gain)
CNS Effects

- Autonomic nervous system
  - Dry mouth
  - Urinary retention
  - Constipation
  - Orthostatic hypotension

CNS Effects cont’d

- Extrapyramidal effects
  - EPS, Parkinsonism
  - Acute dystonia

- Akathisia • Increases suicidal risk

- Withdrawal dystokinesia • More common than TD
- Tardive dyskinesia

- Neuroleptic malignant syndrome
5) ONGOING MEDICATION THERAPY SHOULD BE PROVIDED TO MOST YOUTH WITH SCHIZOPHRENIA TO IMPROVE FUNCTIONING AND PREVENT RELAPSE. [CS]
6) SOME YOUTH WITH SCHIZOPHRENIA SPECTRUM DISORDERS MAY BENEFIT FROM ADJUNCTIVE MEDICATION TREATMENTS TO ADDRESS SIDE-EFFECTS OF THE ANTIPSychOTIC AGENT OR TO ALLEVIATE ASSOCIATED SYMPTOMATOLOGY (e.g., agitation, mood instability, depression, explosive outbursts). [CG]
7) A TRIAL OF CLOZAPINE SHOULD BE CONSIDERED FOR YOUTH WITH TREATMENT RESISTANT SHIZOPHRENIA SPECTRUM DISORDERS. [CS]
RECOMMENDATIONS

- 8) BASELINE AND FOLLOW-UP MONITORING OF SYMPTOMS, SIDE-EFFECTS, AND LABORATORY TESTS SHOULD BE PERFORMED AS INDICATED. [CS]
RECOMMENDATIONS

- 9) PSYCHOTHERAPEUTIC INTERVENTIONS SHOULD BE PROVIDED IN COMBINATION WITH MEDICATION THERAPIES. [CG]
10) ELECTROCONVULSIVE THERAPY (ECT) MAY BE USED IN SEVERELY IMPAIRED ADOLESCENTS IF MEDICATIONS ARE NOT HELPFUL OR CANNOT BE TOLERATED.
Patients with adolescent onset of psychosis are more likely to present with clinical characteristics that portend a poorer outcome and may require a different approach to early identification and treatment.

First-episode psychosis (FEP) in adolescents (onset 15-18) versus adult (onset 19-30) studied (N=242).

Variables considered were demographic and illness characteristics; duration of untreated psychosis, diagnosis, length of prodromal period, premorbid adjustment, level of psychotic, negative, depressive, anxiety and EPS.
ADULT VERSUS ADOLESCENT ONSET PSYCHOSIS

- 82/242 (40.8%) had onset during adolescence, 119/242 (59.2%) had onset during early adulthood.
- The adolescent onset group experienced longer delays in treatment of psychosis (duration of untreated psychosis), showed modestly worse premorbid functioning during late adolescence and were more likely to present with bizarre behavior and primary negative symptoms.
Younger-onset patients have been reported to show less differentiated presentations, thus increasing difficulties associated with making a diagnosis.

It is likely that nonaffective psychosis presenting during adolescence is an earlier and, perhaps, a more severe presentation of the adult disorder, with some symptoms expressed across the spectrum of development and age.
ADULT VERSUS ADOLESCENT-ONSET PSYCHOSIS

**SIMILARITIES AND DIFFERENCES:**

1) Adolescent onset is associated with greater severity and worse outcome.
2) Important implications for designing and delivering treatment to adolescents.
3) More quantitative than qualitative: greater overlap with affective symptoms, higher frequency of behavior problems and dysphoria in the younger group accounting for diagnostic instability.
4) Duration of untreated psychosis (DUP) is known to be related to outcome.
ADULT VERSUS ADOLESCENT-ONSET PSYCHOSIS

- Adolescent-onset FEP shows
- Greater severity of psychopathology
- Poorer premorbid adjustment
- Higher prevalence of substance abuse