



Official reprint from UpToDate®

www.uptodate.com © 2023 UpToDate, Inc. and/or its affiliates. All Rights Reserved.

Wolters Kluwer

Pediatric bipolar disorder: Clinical manifestations and course of illness

AUTHOR: Boris Birmaher, MD**SECTION EDITOR:** David Brent, MD**DEPUTY EDITOR:** David Solomon, MD

All topics are updated as new evidence becomes available and our [peer review process](#) is complete.

Literature review current through: **Oct 2023**.

This topic last updated: **Jan 10, 2022**.

INTRODUCTION

Bipolar disorder in children and adolescents is characterized by mood elevated syndromes (eg, hypomania or mania), which are episodic, exceed what is expected for the child's developmental stage, and are not better explained by other psychiatric and general medical conditions [1-4]. In addition, youth with bipolar disorder usually have episodic depressive syndromes (eg, major depression); however, depressive syndromes are not required for making the diagnosis. Pediatric bipolar disorder greatly disrupts normal development and psychosocial functioning, and increases the risk for behavioral, academic, social, and legal problems, as well as psychosis, substance abuse, and suicide [3-5].

Multiple retrospective studies have reported that in up to 60 percent of adults with bipolar disorder, onset of mood symptoms occurred before age 20 [6-8]. However, pediatric bipolar disorder is often not recognized, and many youth with the disorder do not receive treatment or are treated for comorbid conditions rather than bipolar disorder [3,4,9]. A retrospective study of 88 youth with bipolar disorder found that the duration of untreated bipolar disorder, from onset of the first mood episode to first mental health contact, was nearly two years [10]. Longer times between onset of the disorder and appropriate treatment are associated with worse outcomes [3-5].

This topic describes the clinical features and course of illness in pediatric bipolar disorder. The epidemiology, pathogenesis, comorbidity, assessment, diagnosis, and treatment of bipolar

disorder in children and adolescents are discussed separately.

- (See ["Pediatric bipolar disorder: Epidemiology and pathogenesis"](#).)
- (See ["Pediatric bipolar disorder: Comorbidity"](#).)
- (See ["Pediatric bipolar disorder: Assessment and diagnosis"](#).)
- (See ["Pediatric bipolar disorder: Overview of choosing treatment"](#).)
- (See ["Pediatric bipolar major depression: Choosing treatment"](#).)
- (See ["Pediatric bipolar disorder and pharmacotherapy: General principles"](#).)
- (See ["Pediatric mania and second-generation antipsychotics: Efficacy, administration, and side effects"](#).)
- (See ["Pediatric bipolar disorder: Efficacy and core elements of adjunctive psychotherapy"](#).)

TERMINOLOGY

Bipolar disorder is characterized by episodic, mood elevated syndromes (eg, hypomania or mania) [2]. In addition, episodic depressive syndromes can occur, but are not required for making the diagnosis. According to the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), the subtypes of bipolar disorder include:

- **Bipolar I disorder** – Bipolar I disorder is diagnosed in patients with a history of at least one episode of mania ([table 1](#)). Nearly all patients suffer at least one episode of major depression, and hypomania ([table 2](#)) often occurs as well. (See ["Pediatric bipolar disorder: Assessment and diagnosis"](#), section on 'Bipolar I disorder'.)
- **Bipolar II disorder** – Bipolar II disorder is diagnosed in patients with a history of at least one hypomanic episode ([table 2](#)), at least one episode of major depression ([table 3](#)), and no history of manic episodes. (See ["Pediatric bipolar disorder: Assessment and diagnosis"](#), section on 'Bipolar II disorder'.)
- **Cyclothymic disorder** – Cyclothymic disorder is diagnosed in patients with periods of hypomanic symptoms that fall short of meeting criteria for a hypomanic episode, and periods of depressive symptoms that fall short of meeting criteria for a major depressive episode. Symptoms recur over a time interval lasting at least one year, during which patients are symptomatic at least half the time and are not symptom-free for more than two consecutive months. (See ["Pediatric bipolar disorder: Assessment and diagnosis"](#), section on 'Cyclothymic disorder'.)

Cyclothymic disorder is often as debilitating as bipolar I disorder and bipolar II disorder [11-13]. As an example, the level of irritability and sleep disturbance in pediatric cyclothymic disorder each appear to be comparable to that for pediatric bipolar I disorder. In addition, youth with cyclothymic disorder typically have psychiatric comorbidity (eg, anxiety disorders and attention deficit hyperactivity disorder), and the frequency of comorbidity is comparable to that for youth with bipolar I disorder. Most youths with cyclothymic disorder have at least one parent with bipolar disorder.

- **Other specified bipolar disorder** (previously called “bipolar disorder not otherwise specified”) – Bipolar symptoms that cause significant distress or impair psychosocial functioning, but do not meet the full criteria for bipolar I disorder, bipolar II disorder, or cyclothymic disorder, are diagnosed as other specified bipolar disorder [4,10]. This subtype of bipolar disorder may be difficult to differentiate from cyclothymic disorder [14]. (See "[Pediatric bipolar disorder: Assessment and diagnosis](#)", section on 'Other specified bipolar and related disorder'.)

Most youth with other specified bipolar disorder are phenomenologically similar to youth with bipolar I disorder or bipolar II disorder; most patients with other specified bipolar disorder do not meet the criteria for bipolar I or II disorder because they do not fulfill the duration criteria for mood episodes [3,4,10,15-18]. As an example, youth with other specified bipolar disorder and youth with bipolar I or II disorder are comparable with regard to the frequency of psychotic features, suicidal ideation and behavior, psychiatric comorbidity (eg, anxiety disorders and substance use disorders), psychosocial impairment, and family history of mania.

The term “bipolar spectrum disorders” that is used in some studies collectively refers to all subtypes of bipolar disorder.

The nosology of bipolar disorder in the World Health Organization's International Classification of Diseases-10th Revision (ICD-10) is comparable with the nosology in DSM-5. In ICD-10, the subtypes of bipolar disorder include bipolar affective disorder, bipolar II disorder, cyclothymia, and bipolar affective disorder unspecified [19].

CLINICAL PRESENTATION

Overview — Pediatric bipolar disorder is characterized by symptoms of:

- Mania ([table 1](#))
- Hypomania ([table 2](#))

- Major depression ([table 3](#))

Some mood episodes manifest with concurrent symptoms of mania/hypomania and major depression, which are referred to as “mixed features.” (See '[Mixed features](#)' below.)

Children and adolescents with bipolar disorder may also have psychotic features (eg, hallucinations and/or delusions), comorbid disorders (eg, anxiety disorders, attention deficit hyperactivity disorder [ADHD], disruptive behavior disorders, and/or substance use disorders), and suicide attempts [4]. In addition, youth with bipolar disorder are at high risk for hospitalization, unplanned pregnancies, physical or sexual abuse, general medical problems (eg, obesity), legal problems, interpersonal difficulties, and poor academic and occupational functioning [3-6,20-25].

Multiple studies indicate that the first lifetime mood episode in pediatric bipolar disorder is typically major depression [4,5,26-28]. This is consistent with studies of adult bipolar disorder. (See "[Bipolar disorder in adults: Clinical features](#)", section on '[Clinical presentation](#)'.)

However, there are developmental differences between youth and adults in the manifestation of manic, hypomanic, and major depressive symptoms [3,4]. Pediatric bipolar I disorder, compared with adult bipolar I disorder, is characterized by a greater number of mixed episodes (see '[Mixed features](#)' below), rapid mood changes, and comorbid disorders such as disruptive behavior disorder and ADHD [1]. In addition, it is more difficult to diagnose and treat youth with bipolar disorders than adults because youth have more difficulties expressing their symptoms.

Among youth with bipolar disorder, the clinical features can differ depending upon age of onset and the patient's current age. In a retrospective study that enrolled different subgroups of youth with bipolar disorder, interviews with the patients and parents found the following [26]:

- Children (age <12 years, n = 173)
 - Age of onset was earliest for this subgroup
 - Fewer typical and less severe manic symptoms than the two adolescent subgroups
 - More severe irritability in depressed children than depressed adolescents
 - More mood lability than adolescents with adolescent-onset bipolar disorder
- Adolescents with childhood-onset bipolar disorder (age ≥12 years and bipolar onset <12 years, n = 101)
 - Duration of illness was longest for this subgroup

- More mood lability than adolescents with adolescent-onset bipolar disorder
- More severe episodes of depression, including suicide attempts, than children
- Adolescents with adolescent-onset bipolar disorder (current age and age of onset ≥ 12 years, $n = 90$)
 - Duration of illness was shortest for this subgroup
 - More severe episodes of depression, including suicide attempts, than children
 - Increased prevalence of panic, conduct, and substance use disorders than early onset bipolar disorder
 - Decreased prevalence of ADHD than early onset bipolar disorder

The development, emergence, and progression of pediatric bipolar disorder can be staged along a continuum, according to clinical features such as prodromal mood and non-mood symptoms, mood elevated and depressive syndromes, course of illness, cognition, functioning, and comorbidities [29-31]. However, there is no evidence that clinical staging improves outcomes, and it is thus reserved for specialized treatment or research settings.

Youth with bipolar disorder often present to their pediatrician before they are seen by a psychiatrist or other mental health clinician, unless the patient is severely ill [32,33].

Prodrome — Onset of pediatric bipolar disorder is often preceded by a prodrome [31,34,35]. However, across different patients, the prodrome is heterogeneous [36]. In a meta-analysis of 11 studies ($n > 1000$), 39 different prodromal symptoms were reported [35]. The prevalence of the most common prodromal symptoms was as follows:

- Increased energy – 68 percent
- Difficulty thinking – 63 percent
- Indecisiveness – 62 percent
- Pressured speech – 60 percent
- Talkativeness – 60 percent
- Euphoria – 58 percent
- Impaired academic and occupational functioning – 56 percent
- Insomnia – 54 percent
- Depressed mood – 53 percent
- Increased goal-directed behavior – 50 percent

The initial prodromal period is typically long. The same meta-analysis described immediately above found that the prodrome preceding an initial mood episode lasted an average of 27 months (range 5 to 130 months) [35]. The length of the prodrome may be sufficient for clinicians to recognize it and intervene relatively early, which in turn may favorably alter the course of illness. Youth at relatively high risk of developing subsyndromal symptoms heralding onset of bipolar disorder include the offspring of parents with bipolar disorder. (See '[Offspring of bipolar parents](#)' below.)

Onset of bipolar disorder in children and adolescents is more likely to occur in youth with prodromal signs and symptoms. An eight-year, prospective study included a nationally representative sample of 11 year olds; at baseline, three groups of children were identified regarding the number of subthreshold manic symptoms: none (n = 916), relatively few (average of 6 symptoms, n = 843), and relatively more (average of 10 symptoms, n = 198) [37]. After adjusting for potential confounding factors (eg, family history of psychopathology and socioeconomic status), the analyses found that compared to youth with no prodrome, the risk of new-onset, syndromal bipolar disorder at age 19 years was greater in youth with either a few prodromal symptoms (hazard ratio 2.1, 95% CI 1.1-4.0) or more symptoms (hazard ratio 3.7, 95% CI 1.5-8.9).

Prodromal signs and symptoms of diagnosable bipolar disorder can also occur as part of other psychiatric disorders that usually predate the onset of bipolar disorder, such as anxiety disorders, ADHD, and oppositional defiant disorder [35,38].

Additional information about prodromal symptoms of pediatric bipolar disorder is discussed elsewhere in this topic. (See '[Offspring of bipolar parents](#)' below.)

Mania — Mania ([table 1](#)) typically manifests as a cluster of symptoms denoting an increase in emotional, cognitive, and behavioral activity. During episodes of mania, youth can present with elation (euphoria) and/or irritability, increased energy, grandiose ideation or delusions, rapid and disorganized thinking, rapid (pressured) speech, distractibility, decreased need for sleep (eg, either sleeping a few hours at night or awake all night, and awake the next day without fatigue), behavioral/interpersonal difficulties, and hypersexuality, as well as increased goal-directed activity, agitation, impulsivity, and risky behaviors [4,18,39,40].

Some investigators have argued that mania in children is mainly manifested with chronic symptoms of severe irritability, even if the irritability does not occur episodically. However, irritability alone may not be sufficient to diagnosis mania, as mania rarely occurs without elation, and chronic (nonepisodic) irritability is usually associated with other disorders (eg, oppositional defiant disorder and ADHD), rather than bipolar disorder [4]. However, a youth

with bipolar disorder plus comorbidity may have chronic irritability that increases during manic or depressive mood episodes.

A meta-analysis of 20 observational studies (total n >2000, average age 11 years) evaluated the frequency of manic symptoms in youth with bipolar I disorder and youth with other specified bipolar disorder [41] (see ['Terminology'](#) above). The frequency of each symptoms is listed in the table ([table 4](#)). Each of the most common symptoms occurred in approximately 75 percent of patients:

- Increased energy
- Irritability
- Mood lability
- Distractibility
- Goal-directed activity

The least frequent symptoms each occurred in approximately 25 to 30 percent of patients [41]:

- Hypersexuality
- Hallucinations
- Delusions

The most frequent symptoms that are specific for bipolar disorder were grandiosity (57 percent) and hypersexuality (32 percent) [41]. However, methodologic limitations in the meta-analysis (eg, studies varied in how they diagnosed bipolar disorder) led to substantial heterogeneity across studies in the rate of most symptoms.

Symptoms of mania in youth need to be distinguished from normal behavior, particularly symptoms of grandiosity, elation, and increased goal-directed activity; the line between normal behavior and psychopathology, particularly in young children, can be challenging. In general, the symptoms likely represent bipolar disorder if they are episodic, appear in clusters, affect the child's psychosocial functioning, are not primarily due to other psychiatric or medical disorders, and are more severe than what is expected for the child's developmental age and environment.

Manic symptoms can overlap with symptoms of other disorders, such as oppositional defiant disorder and ADHD [4]. These overlapping symptoms include increased activity, agitation, irritability, distractibility, and talkativeness. Manic symptoms may be distinguished from overlapping comorbid symptoms by clear worsening during the episode of mania. (See ["Pediatric bipolar disorder: Assessment and diagnosis"](#), section on ['ADHD, conduct disorder, oppositional defiant disorder, and DMDD'](#).)

If symptoms are episodic, typical, and pronounced, the diagnosis of mania is relatively easy; however, many cases require repeated assessments to determine whether the symptoms appear episodically and in clusters, and thus represent mania rather than other conditions. The assessment and diagnosis of pediatric mania ([table 1](#)), as well as the differential diagnosis, is discussed separately. (See "[Pediatric bipolar disorder: Assessment and diagnosis](#)", section on 'Mania'.)

Elation — Elation (euphoria) can be difficult to ascertain because children can normally be overly happy or silly, especially in situations such as a party or a visit to an amusement park [16]. If elation is episodic, inappropriate for the context, and beyond what is expected for the child's age, it may be a symptom of mania, particularly if other manic symptoms and impaired functioning are present.

Grandiosity — It is normal for children to overestimate or brag about their abilities and believe that they are the best at a particular sport, smarter than others, or will be very important. Some children, particularly those with oppositional defiant or conduct disorders, may also brag excessively or believe that they do not need to follow adult rules and requests. Manic grandiosity can be distinguished from these other presentations if it represents a change from the child's usual behavior. In addition, the belief that one has special abilities or is much better than others is fixed and unyielding, and the child acts upon these beliefs. As with other manic symptoms, grandiosity does not appear in isolation, but rather, occurs in conjunction with other symptoms of mania.

Examples that raise suspicion that the grandiosity is pathologic include:

- Persistent and exaggerated thoughts that one is by far the best in an activity (eg, sports), despite clear evidence to the contrary.
- Inappropriately and repeatedly commanding teachers, parents, and coaches how to do their job.
- Acting upon thoughts that one has superpowers, and doing things that most kids of the same age would not (eg, believing that one can fly and attempting to fly from a tall tree).

Grandiosity can manifest as either an overvalued idea (an unreasonable idea that the individual can acknowledge may not be true) or as a delusion (false, fixed belief that the individual insists is true despite obvious evidence to the contrary).

Increased goal-directed activity — To be counted as a symptom of mania in youth, increased goal-directed activity must be exaggerated, represent a change in functioning, and be

recognized by others as excessive given the developmental age of the child. Recognizing the symptom can be more difficult in children than in adolescents or adults, particularly if the child has comorbid disorders such as ADHD. Examples of potentially manic, goal-directed behavior include situations in which the youth:

- Manifests uncharacteristically extended periods of driven, creative activity such as drawing, painting, writing, or building things.
- Excessively takes on many tasks simultaneously (eg, schoolwork while also playing video games, watching television, and communicating with friends).
- Has an excessive and persistent drive to rearrange and redecorate one's room, or to spontaneously complete many household chores well beyond expectations, particularly if the youth typically does not engage in these activities, or performs the activities at unusual times such as late at night or very early morning (eg, 2:00 AM).

Increased sexual activity — To be counted as a manic symptom, increased sexual activity needs to be inappropriate for the age of the youth and not primarily accounted for by a history of sexual abuse or by exposure to others' sexual activity (eg, movies). For children, this can manifest as preoccupation with viewing or drawing naked people; provocative touching of the breasts, genital area, or buttocks of others; or sexually explicit dancing. The periodicity, frequency, intensity, and temporal association between these activities and elevated and/or irritable mood are key factors when assessing potential hypersexual behavior. Mild expressions of these behaviors may be normal if they are transient and do not impair functioning.

Decreased need for sleep — Due to increased energy, youth with mania or hypomania usually require less sleep (few hours or none) for the duration of the episode. Despite the relative lack of sleep at night, the youth feels rested the next day. If not accounted for by other causes (eg, use of substances), this symptom should raise the suspicion of bipolar disorder, especially if it occurs episodically in conjunction with other manic symptoms.

Hypomania — The symptoms of hypomania ([table 2](#)) are similar to the ones described for mania, but of lesser intensity and severity. As an example, the youth may become more talkative, sleep less, be more intrusive and outgoing, and be unable to still in class. In some instances, hypomania may improve functioning from baseline, such that the youth is more creative and "sharper," and finishes school assignments faster and more accurately. Symptoms of hypomania may be difficult to differentiate from normal adolescent mood and behaviors and require careful longitudinal evaluation.

The diagnosis of pediatric hypomania ([table 2](#)) is discussed separately. (See "[Pediatric bipolar disorder: Assessment and diagnosis](#)", section on 'Hypomania'.)

Major depression — Depressive symptoms ([table 3](#)) are prominent features in most phenomenological studies of pediatric bipolar disorder, and adults with bipolar disorder frequently recall having significant depressive symptoms in childhood or adolescence [42-44]. In contrast to mania, there is an overall decrease in emotion, cognition, and energy during an episode of major depression. Depression is manifested by persistent sadness and/or irritability, diminished ability to enjoy activities (anhedonia), lack of motivation, isolation, fatigue, low levels of activity, poor concentration, hopelessness, negative thoughts, and suicidal ideation or attempts [45,46].

The symptoms of major depression extend beyond what is expected for the youth's environment and developmental age. In addition, the symptoms cluster concurrently in episodes. If the youth has comorbid disorders with symptoms that overlap with major depression (eg, irritability due to oppositional defiant disorder and generalized anxiety disorder or poor concentration due to ADHD), these symptoms worsen during the episode of major depression [46].

Bipolar disorder in adolescents typically starts with a depressive syndrome [4,27,28,34,38]. However, most depressed youth seen at psychiatric clinics are experiencing their first episode of unipolar major depression [4]. Although some clinical features (eg, relatively severe depression) may suggest bipolar major depression rather than unipolar major depression [45], it is not possible to know at the time of first assessment who will go on to develop mania/hypomania. Thus, all patients who initially present with depressive syndromes should be assessed for a history of subsyndromal or syndromal manic or hypomanic symptoms.

Psychotic features, psychiatric comorbidity (eg, anxiety disorders and substance use disorders), pharmacologically induced mania/hypomania, or family history of bipolar disorder may indicate susceptibility to develop bipolar disorder [4,47]. (See '[Offspring of bipolar parents](#)' below.)

Children develop the cognitive maturity to describe emotions, thoughts, and behaviors as they age; thus, the younger the child, the more difficult it is to ascertain the symptoms of major depression (and manic/hypomanic symptoms) and differentiate major depression from other disorders. As an example, the intent to act on suicidal thoughts may not be recognized because children may choose methods that are not lethal, such as holding their breath or putting their head under water in the bathtub. Younger children may not report feeling depressed, but only irritable or bored [46].

The combination of depressive symptoms and difficulty expressing their mood may make children more susceptible to behavior problems, such as rebelling against parents and teachers (eg, not doing homework), low frustration tolerance, and frequent temper outbursts. These behaviors may be misinterpreted as oppositional defiant disorder or conduct disorder, and the symptoms of depression may be overlooked.

Children tend not to have as many “melancholic” symptoms (eg, anhedonia, lack of motivation, tiredness, lack of appetite, and insomnia) as depressed adolescents or adults. In addition, depressed children may still be active in sports and music, but not enjoy these activities as much, or continue to do well at school, but take longer to do their homework. Adolescents may tend to have more hypersomnia than insomnia, and increased appetite than lack of appetite. For all youth, anhedonia is usually not ubiquitous and may be specific to activities that require more mental effort [46].

Youth with subsyndromal depressive symptoms can have as much impairment as those with the full syndrome of major depression, and are at risk for psychosocial problems and suicidal ideation and behavior. In addition, youth with subsyndromal depressive symptoms are at high risk to develop major depressive episodes later in life [46].

The diagnosis of bipolar major depression ([table 3](#)) in children and adolescents is discussed separately. (See "[Pediatric bipolar disorder: Assessment and diagnosis](#)", section on 'Major depression'.)

Mixed features — Episodes of bipolar mania, hypomania, and major depression can be accompanied by symptoms of the opposite polarity, which in the DSM-5 are categorized as either mania with mixed features, hypomania with mixed features, or major depression with mixed features [2]. Other terms used in the literature include mixed episodes, mixed states, mixed mania/hypomania, and dysphoric mania/hypomania.

Manic or hypomanic episodes with mixed features are characterized by episodes that meet full criteria for mania ([table 1](#)) or hypomania ([table 2](#)), and at least three of the following symptoms during most days of the episode [2]:

- Depressed mood
- Diminished interest or pleasure in most activities
- Psychomotor retardation
- Low energy
- Excessive guilt or thoughts of worthlessness
- Recurrent thoughts about death or suicide, or suicide attempt

Major depressive episodes with mixed features are characterized by episodes that meet full criteria for major depression ([table 3](#)), and at least three of the following symptoms during most days of the episode [2]:

- Elevated or expansive mood
- Inflated self-esteem or grandiosity
- More talkative than usual or pressured speech
- Flight of ideas (abrupt changes from one topic to another that are based upon understandable associations) or racing thoughts
- Increased energy or goal-directed activity
- Excessive involvement in pleasurable activities that have a high potential for painful consequences (eg, buying sprees or sexual indiscretions)
- Decreased need for sleep

Mood episodes with mixed features may present de novo or evolve from episodes of pure mania, hypomania, or major depression.

Mixed features are common in youth with bipolar disorder:

- In three randomized treatment trials that each enrolled more than 200 patients with mania, mixed features were present at baseline in 42 to 98 percent of the patients [48-50].
- A prospective observational study that enrolled youth with current mania (n = 115) found that at baseline, mixed features were present in more than 50 percent [51].
- A prospective longitudinal study of youth with bipolar disorders (n = 413) who were followed for up to four years showed that youth spent nearly 25 percent of follow-up time in syndromal or subsyndromal mixed episodes [1,6]. A comparison of these youth with an adult study with similar methodology showed that bipolar youth had more mixed episodes than the adults.

The diagnosis of mixed features in children and adolescents is discussed separately. (See "[Pediatric bipolar disorder: Assessment and diagnosis](#)", section on 'Mood episode specifiers'.)

Psychotic features — Episodes of mania or depression may be accompanied by psychotic features such as delusions, which are false, fixed beliefs that are unyielding and are not explained by the youth's culture [26,52]. The youth acts upon these beliefs, even though they are not shared by friends and relatives. Other psychotic features that can occur include hallucinations (false sensory perceptions), and/or thought disorder (disorganized cognition and illogical thoughts). Examples include the following:

- During episodes of mania, youth may have paranoid delusions (eg, “When I walk in the mall, strangers are looking at and talking about me,” or “People in the street are out to get me”) or grandiose delusions (eg, believing one has special abilities despite clear evidence to the contrary). (See '[Grandiosity](#)' above.)
- Episodes of depression may be accompanied by delusions of guilt (unrealistic or exaggerated guilty feelings).
- Hallucinations are usually auditory [[4,40](#)]; youth may hear positive comments while manic or derogatory and negative comments while depressed.

Psychotic features are common in youth with bipolar disorder [[10](#)]. In a meta-analysis of 20 observational studies that included more than 2000 children and adolescents with bipolar disorder (average age 11 years), hallucinations occurred in 31 percent and delusions in 24 percent [[41](#)]. However, psychotic features were far more prevalent in bipolar I disorder; as an example, hallucinations were observed in 40 percent of youth with bipolar I disorder and only 11 percent of youth with other specified bipolar disorder.

Psychotic features in youth with bipolar disorder are associated with worse outcomes [[53](#)]. One study prospectively followed children and adolescents with bipolar disorder for a median of 12 years; the cohort included youth with no lifetime history of psychosis at the end of follow-up (n = 233), and youth with a positive lifetime history of psychotic features (n = 137) [[54](#)]. Psychotic features were associated with a worse course of illness, including:

- Higher rate and more severe:
 - Manic symptoms
 - Depressive symptoms
 - Comorbid anxiety disorders
- More hospitalizations
- Poorer occupational and interpersonal functioning
- Higher rate of physical or sexual abuse
- More suicide attempts

Risk factors for psychotic features in youth with bipolar disorder included the subtypes bipolar I and bipolar II disorder (rather than other specified bipolar disorder), mixed features, comorbid anxiety disorder, history of hospitalization, as well as living with one parent and low socioeconomic status [[54](#)].

General information about psychosis is discussed separately in the context of adults. (See "[Psychosis in adults: Epidemiology, clinical manifestations, and diagnostic evaluation](#)", section

on 'Clinical manifestations'.)

Rapid cycling — Rapid cycling is defined as four or more distinct mood episodes of mania, hypomania, or major depression during a 12-month period, with each episode demarcated by partial or full remission for at least two months, or by a change in polarity [2]. The phenomenon of rapid cycling differs from mood lability/mood swings, which consist of rapid fluctuations and changes in the polarity of relatively brief mood symptoms and can occur frequently (eg, dozens or hundreds of times) in the course of a year [55]. A mood episode may encompass multiple mood swings.

Rapid cycling is common in youth with bipolar disorder [4,6]. A prospective longitudinal study of youth with bipolar disorders (n = 413) found frequent changes in mood polarity and that youth spent more follow-up time in rapid cycling than bipolar adults [1].

Suicidality — Suicidal ideation and behavior are common in youth with bipolar disorder [56], and the risk of completed suicide is elevated in pediatric bipolar disorder [16,21].

- **Suicidal ideation** – A pooled analysis of 13 studies of children and adolescents with bipolar disorder, including clinical and community samples (total n >1500), found that the frequency of suicidal ideation at study intake was 50 percent [57].
- **Suicidal behavior** – The prevalence of suicide attempts in juvenile bipolar disorder is approximately 25 to 30 percent [57,58]. By contrast, the prevalence in the general population of youth is approximately 5 percent [58]. Studies of suicide attempts in juvenile bipolar disorder include the following:
 - A pooled analysis of 13 studies in children and adolescents with bipolar disorder, including clinical and community samples (total n >1500), found that the frequency of suicide attempts at study intake was 26 percent [57]. One of the studies, which was prospective and relatively large (n >400), noted that the lifetime rate of suicide attempts was approximately 50 percent, and that 8 percent of the patients made multiple attempts [21,59].
 - A subsequent pooled analysis of six studies (n = 470) found that the prevalence of suicide attempts was 32 percent [58]. A meta-analysis from the same study showed that the risk of suicide attempts was greater in youth with bipolar disorder than unipolar major depression (odds ratio 1.6, 95% CI 1.3-2.2).

Among children and adolescents with bipolar disorder, the risk of suicide attempts may be elevated in patients with bipolar I disorder or mixed episodes (see 'Terminology' above)

and in patients with comorbid ADHD [57].

Bipolar disorder is associated with an increased risk of dying by suicide. As an example, adolescents with bipolar mixed features (see '[Mixed features](#)' above) are nine times more likely to commit suicide than community controls [60].

COGNITIVE IMPAIRMENT

Although several cognitive deficits have been identified in children and adolescents with bipolar disorder, the studies frequently have methodologic limitations [4]. As an example, many studies did not control for potential confounding factors such as age at assessment, sex, age at onset of bipolar disorder, intelligence quotient (IQ), education, comorbid disorders, and medication exposure [61]. In addition, it is not clear whether the deficits are specific to bipolar disorder or the result of psychopathology in general [3,4,61-63].

Cognitive impairment appears to be a trait of juvenile bipolar disorder, based upon a meta-analysis of 24 studies that compared bipolar youths who were euthymic (n >500) with healthy controls (n >600) [64]. Several cognitive domains were impaired in pediatric bipolar disorder, and the clinical effects were moderate to large:

- Global cognition
- Verbal learning
- Verbal memory
- Working memory
- Visual learning
- Visual memory

However, heterogeneity across studies was moderate to large for most of the effects, which appeared to be due to different definitions of euthymia, as well as use of medications and comorbid anxiety disorders and attention deficit hyperactivity disorder (ADHD) [64]. Deficits were not observed for attention, reasoning and problem solving, and processing speed.

Cognitive impairment in youth with bipolar disorder may vary according to the subtype of the disorder (see '[Terminology](#)' above). Impairment appears to be greater in bipolar I disorder than bipolar II disorder [62], and greater in bipolar I or II disorder, compared with other specified bipolar disorder [65].

Other studies suggest that pediatric bipolar disorder is associated with impaired social cognition, often referred to as “theory of mind” [62,66]. Social cognition includes the ability to

infer the thoughts, intentions, or emotions of others based upon verbal and nonverbal communication such as facial expression, gestures, and body language.

IQ appears to be lower in children and adolescents with bipolar disorder than healthy peers and youth with other psychiatric disorders [67].

- In a meta-analysis of 10 studies that examined full scale IQs in pediatric patients with bipolar disorder (n = 352) and healthy controls (n = 439), scores were lower in patients and the clinical difference was small to moderate [61]. However, heterogeneity across studies was significant, and a qualitative review of the studies suggested that bipolar youth scored in the average range, albeit lower than healthy controls.
- A subsequent study in youth with bipolar disorder (n = 39) and healthy controls (n = 45) found that average full scale IQs were lower in patients than controls (107 versus 111) [66].
- In a nationally representative survey of adolescents in the United States that assessed general intelligence and controlled for potential confounding factors (eg, parental education and income), the mean IQ was lower among individuals with past-year bipolar disorder (n = 133) than individuals without bipolar disorder (n = 8831), and the clinical difference was small to moderate [68]. In addition, bipolar disorder was associated with the lowest IQ among all psychiatric disorders that were diagnosed, including conduct disorder, ADHD, substance use disorders, anxiety disorders, eating disorders, and posttraumatic stress disorder.

Cognitive deficits in bipolar disorder youths may arise prior to onset of mood syndromes and generally appear to persist [62]. In two prospective studies, lasting one year and three years, deficits in patients remained stable during follow-up [69,70]. In addition, cognitive impairment in youth with bipolar disorder resembles the impairment observed in adults with bipolar disorder [61,67,71]. Nevertheless, cognitive functioning may perhaps improve in patients who remit with pharmacotherapy and remain euthymic [72].

Neurocognitive impairment in adults is discussed separately. (See "[Bipolar disorder in adults: Clinical features](#)", section on 'Cognition'.)

COMORBIDITY

Pediatric bipolar disorder is associated with psychiatric and general medical comorbidity. (See "[Pediatric bipolar disorder: Comorbidity](#)".)

PSYCHOSOCIAL FUNCTIONING

Psychosocial functioning involves one's objective level of performance in areas such as work and social relationships. Pediatric bipolar disorder, especially in adolescents, is associated with impaired functioning [3,4,73,74]. Even when symptoms remit, functioning often remains impaired, in part due to comorbidity as well as family conflicts and other stressors [4,75,76]. However, the level of impairment across studies varies from mild to severe, which may be due to the different methods used to assess functioning [77]:

- A nationally representative survey of adolescents in the United States found that among those with bipolar disorder, severe functional impairment was present in 90 percent [78].
- In an observational study of children and adolescents with bipolar disorder (n = 446), assessments at intake found that the average level of prior and current functional impairment was mild to moderate [79]. In addition, functioning was impaired even during periods of partial remission and recovery. Impairment was less severe in children than adolescents, who face greater psychosocial demands. However, impairment was comparable across the subtypes of bipolar I disorder, bipolar II disorder, and other specified bipolar disorder.
- Within the same study, 367 youths were subsequently followed prospectively for a median of 12 years [74]. Those with more persistent mood symptoms showed worse psychosocial functioning and were more likely to receive disability, compared with youth who were persistently euthymic. However, 35 percent of the youths with persistent euthymia continued to experience psychosocial impairment.
- A retrospective study of adolescents with newly diagnosed bipolar disorder (n = 80) found that a history of legal charges (eg, illegal drug charges, larceny, and domestic violence) was present in more than 50 percent [80].

Factors associated with impaired functioning include early age of onset (eg, age seven years), low socioeconomic status, mood instability, and comorbid disorders (eg, attention deficit hyperactivity disorder or substance abuse) [74,81].

QUALITY OF LIFE

Pediatric bipolar disorder is associated with reductions in quality of life, which refers to subjective satisfaction with one's physical, psychological, and social functioning. A prospective

observational study found that quality of life was lower in children and adolescents with bipolar disorder, compared with youth with other psychiatric illnesses and general medical illnesses, as well as healthy controls [3-5,33].

COURSE OF ILLNESS

Mood episodes — The course of illness in youth with bipolar disorder is often heterogenous, with periods of recovery from and recurrence of mood episodes [16]. In prospective observational studies lasting one to eight years, the results included the following [1,6,82,83]:

- **Recovery** – Recovery (ie, no significant symptoms for two consecutive months) from the index mood episode occurred in 70 to 100 percent. The mean or median time to recovery in the larger studies ranged from 56 to 124 weeks.
- **Recurrence** – Among patients who recovered from a mood episode, one or more subsequent recurrences were observed in up to 80 percent. The mean or median time to recurrence in the larger studies ranged from 71 to 99 weeks.

In a subsequent prospective study that followed youths with bipolar disorder (n = 363) for a median of 12.5 years, at least one recurrent mood episode was observed in approximately 80 percent and at least two recurrences in 60 percent [84]. Among the recurrences, more than 70 percent were depressive episodes. Risk factors for recurrent mood episodes included earlier age of onset of bipolar disorder (eg, age 10 years), shorter length of past and current recovery time periods, and prior episodes of major depression with more severe symptoms.

Multiple studies suggest that a risk calculator, based upon the patient's clinical symptoms, may predict the five-year risk of recurrence in a specific patient [84,85].

Overall course — Although most youth with bipolar disorder recover from their mood episodes, periods of euthymia are relatively short and the disorder typically manifests with persistent, fluctuating subsyndromal and syndromal symptoms [6,82]. As an example, one prospective observational study followed patients (n = 413) for up to four years [1] and another study (n = 115) for up to eight years [83]. Both studies found that patients were symptomatically ill for approximately 60 percent of the time, particularly with depressive and mixed symptoms (concurrent symptoms of depression and mania/hypomania). In addition, changes in mood polarity occurred frequently.

Nevertheless, the overall course of illness in pediatric bipolar disorder varies across patients, and 25 to 30 percent of patients have extended periods without mood symptoms:

- A prospective observational study of 367 bipolar youth followed for a mean of eight years identified four different longitudinal mood trajectories ([figure 1](#)) [75]:
 - Predominantly euthymic – 24 percent of patients, who were euthymic on average 84 percent of the follow-up time
 - Moderately euthymic – 35 percent of patients, euthymic on average 47 percent of follow-up
 - Ill with improving course – 19 percent of patients, euthymic 43 percent of follow-up
 - Predominantly ill – 22 percent of patients, euthymic 12 percent of follow-up
- A randomized trial included 144 adolescents with bipolar disorder who were followed for up to two years; a predominantly euthymic course of illness was observed in 30 percent [86].

Factors associated with worse outcomes in pediatric bipolar disorder include early age of onset (eg, <13 years), long duration of illness, low socioeconomic status, mixed or rapid cycling episodes, psychosis (see '[Psychotic features](#)' above), subsyndromal symptoms, comorbid disorders (eg, anxiety disorders or attention deficit hyperactivity disorder), negative life events (eg, abuse), family psychopathology, poor adherence to pharmacotherapy, and lack of psychotherapy [1,6,82,83,87]. Course of illness is generally comparable for males and females [88].

Although other specified bipolar disorder is ostensibly a less severe subtype of bipolar disorder, course of illness may be worse in youth with other specified bipolar disorder, compared with other subtypes. A prospective study of patients with bipolar disorder (n = 413) found that recovery from the current or most recent mood syndrome was nearly 40 percent less likely in youth with other specified bipolar disorder, compared with youth with bipolar I or II disorder (hazard ratio 0.62, 95% CI 0.49-0.97) [1].

Bipolar disorder in youth is a leading cause of mortality. Among adolescents, bipolar disorder is the fourth leading cause of years of life lost because of premature mortality and years lost because of disability [89].

Diagnostic stability

- **Bipolar disorder** – Prospective observational studies indicate that among children and adolescents who are diagnosed with bipolar disorder, the diagnosis persists into young adulthood in approximately 33 to 45 percent [16]:
 - A cohort of 297 youth with bipolar disorder, age 7 to 17 years at study intake, were prospectively followed for a median of 12 years; persistent illness into young adulthood occurred in more than 33 percent [90].
 - Another prospective observational study followed youth with bipolar disorder and found that among those who were age 18 years or older at the eight-year follow-up assessment (n = 54, mean age 21 years), mania occurred in 44 percent [83].

The diagnosis of bipolar disorder in youth subsequently changes to a psychotic disorder in fewer than 5 percent:

- A national registry study identified youth with bipolar disorder (n = 144) who were followed for an unspecified amount of time, and found that the diagnosis remained bipolar disorder in approximately 80 percent [91]. By contrast, the diagnosis changed to a primary psychotic disorder (schizophrenia, schizotypal disorder, or delusional disorder) in approximately 3 percent.
- A prospective observational study followed 370 children and adolescents with bipolar disorder for a median of 12 years and found that the diagnosis changed to schizophrenia in 2 percent and schizoaffective disorder in 3 percent [54].
- **Bipolar disorder subtypes** – Among youth with other specified bipolar disorder, approximately 50 percent eventually progress to meet criteria for bipolar I or II disorder [15]. Diagnostic conversion is more likely in youth with a family history of bipolar disorder.

As an example, a prospective observational study included children and adolescents with other specified bipolar disorder (n = 140) who were followed for a median of 11.5 years [92]. The diagnosis changed to bipolar I or II disorder in 54 percent; the median time to conversion was less than three years. Factors associated with conversion from other specified bipolar disorder to bipolar I or II disorder included earlier age of onset of other specified bipolar disorder (eg, age nine years); increased symptoms of mania, depression, anxiety, and mood lability; and family history of hypomania or mania. The results also showed that a risk calculator, based upon the patient's clinical symptoms, may predict the five-year risk of conversion for a specific individual.

OFFSPRING OF BIPOLAR PARENTS

The offspring of parents with bipolar disorder are at high risk of developing the disorder [3,4,16], such that approximately 15 to 25 percent of the offspring eventually receive the diagnosis [31,34,38]. Children and adolescents who have a parent with bipolar disorder are approximately 10 to 20 times more likely to develop the disorder than the offspring of parents without bipolar disorder. The increased risk of bipolar disorder in the offspring of parents with bipolar disorder is due to genetic, environmental, and psychosocial factors [93]. (See "[Bipolar disorder in adults: Epidemiology and pathogenesis](#)", section on 'Pathogenesis'.)

Onset of bipolar disorder in the offspring of parents with bipolar disorder is often preceded by a prodrome that includes the following [31,34,35,38,94-97]:

- Subsyndromal (prodromal) symptoms of mania or depression
- Anxiety
- Mood lability
- Relatively poor psychosocial functioning

Prodromal symptoms of mania and depression, as well as anxiety and mood lability, are common to many psychiatric disorders and not necessarily associated with an increased risk specifically for bipolar disorder. Nevertheless, these symptoms in the offspring of parents with bipolar disorder increase the risk for onset of mania or hypomania (ie, a diagnosis of bipolar disorder). As an example, a prospective observational study included children and adolescents who did not have a history of mania or hypomania at baseline, but had at least one parent diagnosed with bipolar disorder:

- In one report, the offspring (n = 344) were followed for a mean of seven years [38]. Onset of manic or hypomanic episodes was eight times more likely in those who developed subthreshold manic or hypomanic symptoms, compared with offspring who did not experience subthreshold symptoms (hazard ratio 8, 95% CI 3-19).
- In a second report, the offspring (n = 299) were followed for a mean of eight years [34]. If onset of bipolar disorder in the parent was early (age ≤ 18 years), and the risk of bipolar disorder in youth with anxiety symptoms, depressive symptoms, subsyndromal symptoms of mania, and mood lability was nearly 50 percent.

A risk calculator, based upon the offspring's prodromal symptoms, may predict the five-year risk of new-onset bipolar disorder in a specific individual [97].

Additional information about prodromal symptoms in pediatric bipolar disorder is discussed separately. (See '[Prodrome](#)' above.)

SUMMARY

- **Terminology** – Bipolar disorder is characterized by mood elevated syndromes, some of which may qualify as episodes of mania ([table 1](#)) or hypomania ([table 2](#)). In addition, depressive syndromes can occur, some of which may qualify as episode of major depression ([table 3](#)). The subtypes of bipolar disorder include:

- Bipolar I disorder
- Bipolar II disorder
- Cyclothymic disorder
- Other specified bipolar disorder

(See '[Terminology](#)' above.)

- **Developmental differences** – Among children, adolescents, and adults, there are developmental differences in the clinical manifestation of bipolar disorder. Pediatric bipolar I disorder, compared with adult bipolar I disorder, is characterized by a greater number of mixed episodes, rapid mood changes, and comorbid disorders. (See '[Overview](#)' above.)
- **Prodrome** – Onset of pediatric bipolar disorder is often preceded by a prodrome. However, across different patients, the prodrome is heterogenous. Except for subsyndromal manic symptoms, the prodromal signs and symptoms that precede onset of bipolar disorder are not specific and can occur in other psychiatric disorders that frequently predate onset of bipolar disorder. (See '[Prodrome](#)' above.)
- **Mania** – Mania typically manifests as a cluster of symptoms denoting an increase in emotional, cognitive, and behavioral activity, including elation and/or irritability, distractibility, increased energy, decreased need for sleep, and increased goal-directed activity ([table 1](#)). (See '[Mania](#)' above.)
- **Major depression** – In contrast to mania, episodes of major depression manifest with an overall decrease in emotion, cognition, and activity ([table 3](#)). The symptoms of major depression extend beyond what is expected for the youth's environment and developmental age. (See '[Major depression](#)' above.)

- **Psychotic features** – Episodes of mania or major depression may be accompanied by psychotic features, including delusions, hallucinations, and/or thought disorder. (See ['Psychotic features'](#) above.)
- **Suicidality** – Among youth with bipolar disorder, suicide attempts occur in approximately 25 to 50 percent, and the risk of completed suicide is elevated. (See ['Suicidality'](#) above.)
- **Cognition** – Pediatric bipolar disorder typically includes impairment of cognitive functioning, including global cognition, verbal learning, verbal memory, working memory, visual learning, and visual memory. (See ['Cognitive impairment'](#) above.)
- **Psychosocial functioning** – Bipolar disorder in youth is associated with psychosocial impairment and increased risk for substance abuse, legal problems, and academic, familial, and social difficulties. (See ['Psychosocial functioning'](#) above.)
- **Course of illness** – The course of illness in youth with bipolar disorder is often heterogenous, with periods of recovery from mood episodes and recurrences. Although most patients recover from their mood episodes, periods of euthymia may be relatively short and the disorder typically manifests with persistent fluctuating syndromal and subsyndromal symptoms, particularly depressive symptoms and mixed features. However, a substantial proportion of patients may experience prolonged periods without mood symptoms. Risk factors for worse outcomes include early age of onset, low socioeconomic status, and comorbidity. (See ['Course of illness'](#) above.)
- **Offspring of bipolar parents** – Approximately 15 to 25 percent of the offspring of parents with bipolar disorder develop the disorder. However, if a child of a parent with bipolar disorder has ongoing mood lability, anxiety, depression, and subsyndromal manic symptoms, and the parent has early onset bipolar disorder (age ≤ 18 years), the risk of developing bipolar disorder is nearly 50 percent. (See ['Offspring of bipolar parents'](#) above.)

Use of UpToDate is subject to the [Terms of Use](#).

Topic 15924 Version 17.0

