Pediatric unipolar depression: Epidemiology, clinical features, assessment, and diagnosis

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INTRODUCTION

Depressive disorders are common in children and adolescents [1,2], impair psychosocial functioning, and are often accompanied by comorbid psychopathology [3,4]. Despite its detrimental effects, pediatric depression is often undertreated.

The epidemiology, clinical manifestations, assessment, and diagnosis of pediatric depression are reviewed here. Treatment of depression in youths is discussed separately. (See "Overview of prevention and treatment for pediatric depression" and "Pediatric unipolar depression and pharmacotherapy: General principles" and "Pediatric unipolar depression and pharmacotherapy: Choosing a medication" and "Pediatric unipolar depression: Psychotherapy".)

EPIDEMIOLOGY

Prevalence — The risk for depression increases during childhood [5]. As an example, a survey of more than 78,000 parents in the United States in 2007 found that among their children, the point prevalence of depression for different age groups was as follows [2]:

- 3 to 5 years – 0.5 percent
- 6 to 11 years – 1.4 percent
- 12 to 17 years – 3.5 percent

The one year and lifetime prevalence rates of depression are even higher. A survey of adolescents age 12 to 17 years in the United States (n >45,000) in 2010 and 2011 found that the one year prevalence of major depression was 8 percent [2]. Another study found that the lifetime prevalence in adolescents was 11 percent [6].

Sex ratio — The ratio of adolescent females to males who develop major depression is approximately two to one [6], which is similar to the ratio in adults [7]. This sex difference emerges during puberty; in adolescence, the risk for developing depression is greater in girls than boys [8]. In the United States, a study of adolescents age 12 to 17 years (n >45,000) found that the lifetime prevalence rates of major depression in females and in males were 18 and 8 percent [2].

However, in prepubertal children, depression appears to be more common in boys than girls. A meta-analysis of 12 community studies (n >15,000 children age ≤12 years) found that the estimated prevalence of unipolar major depression was 60 percent higher in boys than girls (odds ratio 1.6, 95% CI 1.1-2.4) [9].

Risk factors — Risk factors for onset of pediatric depression include [1,3,5,10-28]:

- Low birth weight
- Family history of depression and anxiety in first-degree relatives (including antenatal or postpartum maternal depression)
- Family dysfunction or caregiver-child conflict
- Exposure to early adversity (eg, abuse, neglect, or early loss)
- Psychosocial stressors (eg, peer problems and victimization [bullying], and academic difficulties)
- Gender dysphoria and homosexuality, especially if youth is bullied
- Negative style of interpreting events and coping with stress
- History of anxiety disorders, substance use disorder, learning disabilities, attention deficit hyperactivity disorder, and oppositional defiant disorder
- Traumatic brain injury
- Chronic illness, especially if symptom and/or treatment burden yields chronic life disruptions

CLINICAL FEATURES

The clinical manifestations of depression include symptoms, functional impairment, and comorbid psychopathology.

Symptoms — Symptoms of pediatric depressive disorders include [29]:

- **Depressed or irritable mood** – Depressed mood, such as feeling low, down, sad, or blue much of the time, is a cardinal symptom of depressive disorders. Patients may manifest a depressed mood by perceiving others as antagonistic or uncaring, brooding about real or potentially unpleasant circumstances, maintaining a gloomy or hopeless outlook, believing that everything is "unfair", or feeling helpless or that they disappoint others.

  However, pediatric patients may lack the emotional and cognitive ability to correctly identify and organize their emotional experiences, and depressive disorders may express themselves with an irritable mood [30]. Irritability can manifest as feeling "annoyed," “grouchy,” or "bothered" by everything and everyone. Rather than expressing sadness, patients with depressive disorders may be negative and argumentative, and pick fights as a means to convey their emotional distress. Patients may be unable to tolerate frustration and respond to minor provocations with angry outbursts.

  Depressed mood appears to be more common than irritable mood in pediatric depression. A prospective study of children and adolescents with depressive disorders (n >1400) found that depressed mood occurred in approximately 58 percent, depressed mood plus irritable mood in 36 percent, and irritable mood in only 6 percent [31]. Although irritability is a nonspecific symptom found in many child psychiatric disorders, longitudinal follow-up studies indicate that irritability is associated with adult depressive disorders [32].

  Mood reactivity (the capacity to be cheered up in response to positive events) occurs in depression with atypical features (eg, hyperphagia or hypersomnia), which may be more common in children. By contrast, depression with melancholic features may be more common in adolescents. (See 'Depressive episode specifiers' below.)

  Mood reactivity can cause adolescents to seek activities and experiences to temporarily lift their moods. Examples of these activities include affiliation with peers, thrill-seeking, promiscuity, and drug use [33]. The use of peer affiliation to alleviate depression is marked by an intense urgency and drive, in contrast to the normal adolescent need for peer

affiliation. Depressed adolescents, particularly girls, may often co-ruminate with another depressed peer, thereby reinforcing and increasing depressive severity [34].

- **Diminished interest or pleasure** – Loss of interest or pleasure (anhedonia) in formerly pleasurable activities is also a cardinal symptom of unipolar major depression. Patients experience events, hobbies, interests, and people as less interesting or fun than previously. Anhedonia may be expressed by describing experiences as "boring," "stupid," or "uninteresting." They may withdraw from or lose interest in friends. If they are sexually active, they may have decreased libido or interest in sex [35].

- **Change in appetite or weight** – Appetite and weight may decrease or increase in depression. Decreased appetite may manifest with failure to gain weight as expected, rather than weight loss. Alternatively, some patients with depressive disorders crave and eat more specific foods (eg, junk food and carbohydrates) and gain more weight than expected during their adolescent growth spurt.

  Preoccupation with weight and body image are signs of anorexia nervosa. (See "Eating disorders: Overview of epidemiology, clinical features, and diagnosis", section on 'Anorexia nervosa'.)

- **Sleep disturbance** – Sleep disturbance manifests as insomnia, hypersomnia, or significant shifts of sleep pattern over the diurnal cycle:

  - Initial insomnia (difficulty getting to sleep)
  - Middle insomnia (waking in the middle of the night, with difficulty returning to sleep)
  - Terminal insomnia (waking too early and being unable to return to sleep)
  - Hypersomnia (extended nighttime sleep or daytime sleeping)
  - Circadian reversal (daytime sleeping and nighttime arousal)

  Many depressed patients describe their sleep as nonrestorative and report difficulty getting out of bed in the morning.

- **Psychomotor agitation or retardation** – Psychomotor agitation refers to handwringing; the inability to sit still; pacing; or pulling or rubbing clothes, the skin, or other objects. Alternatively, depressed patients with psychomotor retardation talk or move more slowly than is typical for them; in addition, speech volume or inflection may be decreased, and the amount of speech may be diminished. Psychomotor agitation or retardation is

regarded as a depressive symptom only if it is noticeable to others, in contrast to subjective feelings of restlessness or feeling slowed down. Retardation and agitation may alternate within a single depressive episode.

- **Fatigue or loss of energy** – Lack of energy (anergia) manifests with feeling tired, exhausted, listless, and unmotivated. Patients may feel the need to rest during the day, experience heaviness in their limbs, or feel like it is hard to initiate activities. Parent-adolescent conflicts can result if parents attribute lack of energy and motivation to laziness, an oppositional attitude, or avoidance of responsibilities. Alternatively, parents may be concerned that the patient has a general medical illness and seek a medical explanation for the anergia.

- **Feelings of worthlessness or guilt** – The self-perceptions of depressed children and adolescents may be marked by feelings of inadequacy, inferiority, failure, worthlessness, and guilt. Evaluation of this symptom is challenging because many youth do not directly acknowledge such negative self-perceptions. In addition, guilt about struggling with depression and its associated functional impairment is not considered a symptom of depression unless the guilt is of delusional proportions.

  Feelings of worthlessness or guilt may manifest as:

  - Excessively self-critical assessment of accomplishments
  - Difficulty identifying positive self-attributes
  - Strong dissatisfaction with several aspects of themselves
  - Compulsive lying about success or skills to bolster self-esteem
  - Envy or preoccupation with the success of others, especially in comparison with self-evaluation
  - Marked self-reproach or guilt for events that are not their fault
  - Belief that they deserve to be punished for things that are not their fault
  - Reluctance to try to do things because patients fear they will fail, and decide “what’s the use?”

- **Impaired concentration and decision making** – Depressed youth can have problems with attention, concentration, and memory that were not present to the same degree before the depressive episode. Thinking and processing of information may be slowed. In

addition, patients are indecisive, which manifests as procrastination, helplessness, or paralysis in taking action. It can take longer to complete homework and class work than before the depressive episode; school performance may thus decline. Information from the school is helpful to evaluate this symptom.

- **Recurring thoughts of death or suicide** – Depressed patients can experience recurrent thoughts of death (not just fear of death) or suicide, or attempt suicide. Morbid thoughts are common in depressed teens and can manifest as preoccupation with music and literature that has morbid themes, or as passive suicidal ideation (eg, thoughts that life is not worth living or that others would be better off if the patient was dead). In addition, there may be active suicidal ideation of wanting to die or killing oneself, suicide plans, suicide pacts, and suicide attempts. Thoughts that contribute to suicidality include pervasive hopelessness (eg, negative expectations for the future) and a view of suicide as the only option to escape emotional pain. Risk factors, assessment, and management of suicidal behavior in children and adolescents is discussed separately. (See "Suicidal behavior in children and adolescents: Epidemiology and risk factors" and "Suicidal ideation and behavior in children and adolescents: Evaluation and management".)

- **Psychosis** – Major depression may include delusions and hallucinations (eg, command auditory hallucinations telling patients to commit suicide). (See "Unipolar major depression with psychotic features: Epidemiology, clinical features, assessment, and diagnosis", section on 'Psychotic features'.)

Functional impairment — Functional impairment in depressed children and adolescents includes disturbances in school functioning, relationships with parents and peers, and daily activities and responsibilities [4,29]. In addition, depressed adolescents are at increased risk for engaging in health risk behaviors such as promiscuity [36,37]. (See "Suicidal behavior in children and adolescents: Epidemiology and risk factors".)

The academic and social sequelae of depression during childhood and adolescence reinforce depression once an episode begins, and increase the risk for future depressive episodes [30]. Examples of sequelae that perpetuate or trigger new episodes of depression include [38,39]:

- Academic failure and school avoidance
- Interpersonal dysfunction with family, peers, and teachers
- Social withdrawal
- Negative attributions about the perceptions or intent of others
- Seeking reassurance excessively

These sequelae are most notable during adolescence, when most teens strive to define themselves and establish a social role outside the family.

Pediatric depression is associated with adverse psychosocial outcomes in adulthood. As an example, a systematic review identified 25 prospective studies that enrolled adolescents (total n >21,000) with and without depression; functioning during adulthood was assessed during an average follow-up of nine years [40]. Meta-analyses found that compared with controls, depressed adolescents were more likely to not complete secondary school (odds ratio 1.8, 95% CI 1.3-2.4) and to be unemployed (odds ratio 1.7, 95% CI 1.3-2.1).

Comorbidity

Psychiatric — Psychiatric comorbidity is the rule rather than the exception for pediatric depression. A nationally representative survey of adolescents in the United States found that among the individuals with major depression, at least one comorbid psychiatric disorder was present in more than 60 percent [6]; this is consistent with a review that found comorbidity was present in 40 to 90 percent of depressed children and adolescents, and two or more comorbid diagnoses were found in up to 50 percent [41]. The most common comorbidities include [3,6]:

- Anxiety disorders (see "Anxiety disorders in children and adolescents: Epidemiology, pathogenesis, clinical manifestations, and course")
- Attention deficit hyperactivity disorder (ADHD) (see "Attention deficit hyperactivity disorder in children and adolescents: Clinical features and diagnosis")
- Disruptive behavior disorders (eg, oppositional defiant disorder and conduct disorder)
- Substance use disorders

Depressed children may be more likely to suffer comorbid ADHD and separation anxiety disorder, whereas depressed adolescents appear to be more vulnerable to substance use disorders.

Patients struggling with depression are also at increased risk for eating disorders, learning disorders, and somatic symptom disorders, and have often suffered physical or sexual abuse, or other traumas. In addition, depressed patients are more likely to manifest health problems or somatic concerns [42,43].

Depression in children and adolescents usually emerges after the comorbid disorder [41]. Anxiety disorder and oppositional defiant disorder are particularly strong predictors of eventual

depression. Although substance abuse is more likely to precede depression than follow it, substance abuse can also emerge as a complication of depression.

Comorbidity adversely affects outcomes in depressed patients, and is associated with a longer duration of illness, poorer response to treatment, and increased recurrence of depressive episodes [44,45]. In addition, comorbidity is associated with social problems, academic difficulties, and global role impairment, and accounts for some of the longer term sequelae (eg, depression and suicidality during adulthood) associated with juvenile depression [46-48].

Comorbid cannabis use disorder is common among depressed youth and appears to be associated with increased self-harm and mortality. A retrospective study of an administrative claims database identified youths with a mean age of 17 years who had mood disorders and were followed for up to one year (n >200,000) [49]. The primary diagnosis was depressive disorder in nearly 75 percent and bipolar disorder or another mood disorder in the remaining youths; cannabis use disorder was present in 10 percent of the entire sample. After controlling for potential confounding demographic, clinical, and treatment factors, the analyses found an increased risk for each of the following outcomes in patients with comorbid cannabis use disorder:

- Nonfatal self-harm – Hazard ratio 3.3 (95% CI 2.6-4.2)
- All-cause death – Hazard ratio 1.6 (95% CI 1.1-2.2)
    - Death by unintentional overdose – Hazard ratio 2.4 (95% CI 1.4-4.2)
    - Death by homicide – Hazard ratio 3.2 (95% CI 1.2-8.6)

Among adolescents who are initially and correctly diagnosed with unipolar major depression, comorbid subsyndromal manic symptoms and disruptive behavior disorders are associated with an increased risk of eventually suffering a manic or hypomanic episode [50,51].

General medical — Major depression in adolescence may be associated with premature atherosclerosis and cardiovascular disease. The mechanism appears to involve multiple systemic processes, including inflammation, oxidative stress, and autonomic dysfunction [52]. Several traditional cardiovascular risk factors (eg, diabetes mellitus, obesity, sedentary lifestyle, and tobacco smoking) are more prevalent among adolescents with major depression compared with the general pediatric population. Based upon available data, the American Heart Association proposed in a 2015 statement that major depression be positioned alongside other pediatric diseases (chronic inflammatory disease, infection with the human immunodeficiency virus, Kawasaki disease, and nephrotic syndrome) that are considered moderate risk conditions

for early cardiovascular disease [52]. Additional information about diseases that are associated with pediatric atherosclerosis is discussed separately, as is the management of youth at risk for atherosclerosis (algorithm 1). (See "Overview of risk factors for development of atherosclerosis and early cardiovascular disease in childhood" and "Overview of the management of the child or adolescent at risk for atherosclerosis".)

Course of illness

Children — A review found that in children with major depression who are seen in clinical settings, the average duration of depressive episodes ranged from 8 to 13 months [53]. Among those who recovered from the episode, relapse or recurrence occurred in 30 to 70 percent. Children with major depression, particularly those with a family history of mood disorder, are more likely to suffer adolescent depression, compared with children who are not depressed.

Adolescents — In adolescents with major depression who were seen in clinical settings, studies have found that the average duration of depressive episodes ranged from four to nine months, and that 90 percent of the episodes remitted within two years [44,53]. Among those who recovered from the episode, at least one recurrence was observed in 20 to 70 percent. Adolescents with major depression are more likely to suffer depression in adulthood, compared with adolescents who are not depressed.

Recurrence — Risk factors for recurrence of pediatric major depression include [41,54]:

- History of prior depressive episodes
- Presence of residual depressive symptoms
- Presence of comorbid disorders
- Environmental stressors
- Limited social supports
- Family history of recurrent unipolar major depression or other psychopathology

SCREENING

Screening for depression is discussed separately. (See "Screening tests in children and adolescents", section on 'Depression and suicide risk screening'.)

ASSESSMENT

The initial clinical evaluation of children and adolescents with a possible diagnosis of a depressive disorder includes a psychiatric and general medical history, mental status and physical examination, and focused laboratory tests (eg, thyroid stimulating hormone, complete blood count, chemistries, and urine toxicology to screen for substances of abuse) [55-57].

Evaluation of depression can be difficult because of nonspecific symptoms, comorbidities, and the differential diagnosis. Depression in children and adolescents may be misunderstood by youths, parents, and professionals alike. The following points provide guidelines to consider when evaluating patients for depression:

- Diagnosis should be based upon a formal clinical interview with the child or adolescent that is supplemented by information from parents and teachers [3,41,58]. Standardized instruments are available as screening tools and to monitor outcomes, but they should not be used as the basis for diagnosis. Examples include the self-report Patient Health Questionnaire – Nine Item (PHQ-9): Modified for Teens (table 1), Mood and Feelings Questionnaire [59,60], Patient Reported Outcome Measurement Information System [61], Beck Depression Inventory [62], the Child Depression Inventory [63], or the Reynolds Adolescent Depression Scale [64].

  The Mood and Feelings Questionnaire has a separate form that is completed by the child or adolescent and the parent; the questionnaire is validated for both children and adolescents and is in the public domain. The Patient Reported Outcome Measurement Information System performed better than the Beck Depression Inventory over the full range of depressive symptoms. The Child Depression Inventory is designed for children 7 to 17 years of age and is available for purchase through Multi-Health Systems, Inc. The Reynolds Adolescent Depression Scale is designed for teens in grades 7 through 12 and is published by Psychological Assessment Resources, Inc.

- Questions should be phrased in a manner that is normalizing and not stigmatizing (eg, "Everyone I know gets sad sometimes; what kinds of things usually make you sad? Would you say you're usually happy, sad, or in-between?"). Particularly for guarded children and adolescents, more direct questions with empathic responses for their unique experience usually are best tolerated once the youth trusts that it is okay to discuss such topics. Likert scales are helpful for patients who have trouble describing their experiences (eg, "On a scale of 1 to 10, how annoyed have you been lately?").

- The evaluation should be sensitive to the patient's age as well as cultural, ethnic, and religious background.

- Clinicians must assess children and adolescents for suicidal and homicidal ideation and behavior, including risk and protective factors that may influence suicide risk, as well as psychotic symptoms [41].

- The initial assessment should look for comorbid conditions [3], and rule out other psychiatric and general medical disorders that may cause depressive syndromes (eg, substance use disorders and hypothyroidism). If a patient has a pre-existing comorbid condition, an overlapping symptom (eg, poor concentration in a child with pre-existing ADHD) should only be counted towards the diagnosis of depression if the symptom has worsened with the advent of other depressive symptoms.

- Pediatric depression should be evaluated in the context of precipitants, stressors, and academic, social, and family functioning [41]. Examples include family and contextual factors that may precipitate or prolong a depressive episode, such as parental depression, parent-child discord, history of abuse or assault, witnessing violence or peer victimization, recent loss, same sex attraction, and gender dysphoria. These factors will guide appropriate intervention, including a treatment plan that targets circumstances that maintain depression and put the adolescent at risk for future episodes.

- Children and adolescents in primary care who present with depressive syndromes that are not readily diagnosable can benefit from referral to psychiatrists or other mental health specialists for further assessment.

- Patients and/or parents may resist the diagnosis of depression and continue to seek a "medical" explanation for presenting symptoms. In these cases, it is often beneficial to join the child or adolescent or family members in their understanding of the presenting concern and extend their view with psychoeducation (eg, "You've been experiencing considerable fatigue that has been immobilizing; it is very common to feel discouraged, annoyed, or even depressed when faced with this kind of stress day in and day out.")

  Although children, adolescents, and their families may initially resist accepting a diagnosis of a depressive disorder, they often come to view the diagnosis of depression as reassuring. The explanation for the symptoms can provide a sense of control and is a significant step toward symptom relief.

DIAGNOSING DEPRESSIVE DISORDERS

In the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), the depressive disorders that can be diagnosed include [29]:

- Unipolar major depression (major depressive disorder)
- Persistent depressive disorder (dysthymia)
- Minor depression
- Disruptive mood dysregulation disorder
- Premenstrual dysphoric disorder
- Substance/medication induced depressive disorder
- Depressive disorder due to another medical condition

Each of the disorders is characterized by dysphoria (sad or irritable mood) [29].

Unipolar major depression — Unipolar major depression (major depressive disorder) is characterized by a history of one or more major depressive episodes (table 2) and no history of mania (table 3) or hypomania (table 4) [29]. To meet DSM-5 criteria for a major depressive episode, the child or adolescent must display at least five of the following depressive symptoms for at least two weeks; at least one of the symptoms is either dysphoria or anhedonia:

- Depressed or irritable mood (dysphoria)
- Diminished interest or pleasure in almost all activities (anhedonia)
- Change in appetite or weight
- Insomnia or hypersomnia
- Psychomotor agitation or retardation
- Fatigue or loss of energy
- Feelings of worthlessness or guilt
- Impaired thinking or concentration, indecisiveness
- Suicidal ideation or behavior

The symptoms must cause significant distress or psychosocial impairment, and are not the direct result of a substance or general medical condition. (See 'Substance/medication induced depressive disorder' below and 'Depressive disorder due to another medical condition' below.)

Bereavement does not exclude the diagnosis of a major depressive episode. (See "Bereavement and grief in adults: Clinical features", section on 'Unipolar major depression'.)

A prior history of mania or hypomania indicates the diagnosis of bipolar depression. (See 'Bipolar depression' below.)

Depressive episode specifiers — DSM-5 utilizes the following terms to increase the diagnostic specificity of major depressive episodes [29]. The specifier is added when recording the diagnosis; as an example, “unipolar major depression with psychotic features.”

- **Anxious distress** – Anxious distress is characterized by the presence of two or more of the following symptoms during most days of the depressive episode:
  - Tension
  - Restless
  - Impaired concentration due to worry
  - Fear that something awful may happen
  - Fear of losing self-control
- **Atypical features** – Atypical features are characterized by at least three of the following symptoms; at least one of the symptoms is mood reactivity to pleasurable stimuli:
  - Reactive to pleasurable stimuli (ie, feels better in response to positive events)
  - Increased appetite or weight gain
  - Hypersomnia (eg, sleeping at least 10 hours per day, or at least 2 hours more than usual when not depressed)
  - Heavy or leaden feelings in limbs
  - Longstanding pattern of interpersonal rejection sensitivity (ie, feeling deep anxiety, humiliation, or anger at the slightest rebuff from others), which is not limited to mood episodes and which causes social or occupational conflicts
- **Catatonia** – Catatonic features are characterized by prominent psychomotor disturbances (see "Catatonia in adults: Epidemiology, clinical features, assessment, and diagnosis")
- **Melancholic features** – Melancholic features are characterized by at least four of the following symptoms; at least one of the symptoms is either loss of pleasure or lack of reactivity to pleasurable stimuli:
  - Loss of pleasure in most activities
  - Unreactive to usually pleasurable stimuli (ie, does not feel better in response to positive events)
  - Depressed mood marked by despondency, despair, or remorse
  - Early morning awakening (eg, two hours before the usual hour of awakening)
  - Psychomotor retardation or agitation

- Anorexia or weight loss
- Excessive guilt

- **Mixed features** – Unipolar major depression and persistent depressive disorder (dysthymia) can be accompanied by subthreshold (not meeting full criteria) symptoms of hypomania or mania. Depressive episodes with mixed features are characterized by full criteria for the depressive episode and at least three of the following symptoms during most days of the episode:
  - 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

  If full criteria for hypomania (table 4) or mania (table 3) are met, the diagnosis is bipolar disorder, hypomania, or bipolar disorder, mania with mixed features, rather than unipolar depression with mixed features. (See 'Bipolar depression' below.)

- **Peripartum onset** – Peripartum onset refers to onset of mood episodes during pregnancy or within four weeks of childbirth. (See "Unipolar major depression during pregnancy: Epidemiology, clinical features, assessment, and diagnosis" and "Postpartum unipolar major depression: Epidemiology, clinical features, assessment, and diagnosis".)

- **Psychotic features** – Psychotic features include delusions (false, fixed beliefs) and hallucinations (false sensory perceptions). (See "Unipolar major depression with psychotic features: Epidemiology, clinical features, assessment, and diagnosis", section on 'Psychotic features'.)

- **Seasonal pattern** – Seasonal pattern refers to a regular temporal relationship between the onset of major depression and a particular time of year, (eg, fall or winter). Remission

also occurs at a specific time of year (eg, spring). In the last two years, two depressive episodes have occurred that demonstrate the temporal relationship and no nonseasonal episodes have occurred. In addition, the lifetime number of seasonal depressions substantially outnumbers the nonseasonal episodes. Seasonal pattern is not used as a specifier if depressive episodes occur in response to a seasonally related psychosocial stressor (eg, stress at school), or if episodes occur at other times of the year as well as seasonally.

Additional information about the seasonal pattern of major depression is discussed separately. (See "Seasonal affective disorder: Epidemiology, clinical features, assessment, and diagnosis".)

Persistent depressive disorder (dysthymia) — Persistent depressive disorder (dysthymia) is marked by depressed mood for at least one year (table 5) [29]. Depression is present for most of the day, for more days than not, and is accompanied by two or more of the following symptoms:

- Decreased or increased appetite
- Insomnia or hypersomnia
- Low energy
- Poor self esteem
- Poor concentration
- Hopelessness

Thus, symptoms are not as numerous as in major depression. Symptom-free periods during the course of persistent depressive disorder can occur, but may not exceed two months during the one year timeframe. A major depressive episode may be present during the one year (or longer) period of persistent depressive disorder.

The mood disturbance in persistent depressive disorder causes significant distress or psychosocial impairment.

Persistent depressive disorder is not diagnosed in patients with a prior history of mania (table 3), hypomania (table 4), or cyclothymic disorder, nor is it diagnosed if the mood disturbance is better explained by schizophrenia (table 6), schizoaffective disorder, or delusional disorder. (See "Pediatric bipolar disorder: Assessment and diagnosis", section on 'Bipolar disorders' and "Psychosis in adults: Epidemiology, clinical manifestations, and diagnostic evaluation", section on 'Mood disorders and suicidal ideation'.)

In addition, persistent depressive disorder is not diagnosed if the mood disturbance is due to the physiologic effects of a substance or medication, or a general medical disorder. (See 'Substance/medication induced depressive disorder' below and 'Depressive disorder due to another medical condition' below.)

Minor depression — The continuum of clinical depression increases in severity from symptoms to minor depression to major depression [5,65,66].

Diagnostic criteria for minor depression typically include two to four depressive symptoms (see 'Symptoms' above), at least one of which is dysphoria or anhedonia. In addition, the symptoms cause significant distress or psychosocial impairment. In DSM-5, minor depression is classified as ”other specified depressive disorder, depressive episode with insufficient symptoms” [29]. Additional information about the clinical features and diagnosis of minor depression is discussed separately. (See "Unipolar minor depression in adults: Epidemiology, clinical presentation, and diagnosis".)

A systematic review of 24 clinical or community studies found that the estimated lifetime prevalence of pediatric minor depression ranged from 5 to 12 percent, and that suicidal behavior occurred in approximately 10 percent of the individuals with minor depression [5]. In addition, many of the depressed youth had comorbid psychopathology (eg, anxiety disorders, conduct disorder, and oppositional defiant disorder), and functional impairment was generally comparable to that found in unipolar major depression. Compared with adolescents without minor depression, adolescents with minor depression were at increased risk for psychopathology as adults, including unipolar major depression, generalized anxiety disorder, and posttraumatic stress disorder. Hence, “minor” depression causes clinical impairment and should be taken seriously.

Disruptive mood dysregulation disorder — The diagnosis of disruptive mood dysregulation disorder requires each of the following criteria [29]:

- Severe, recurrent verbal (eg, screaming) or behavioral (eg, physical aggression) angry outbursts that are grossly out of proportion to the provocation.
- The outbursts are not appropriate for the patient’s developmental level.
- The outbursts occur, on average, at least three times per week.
- The outbursts occur in at least two settings from among home, school, or with peers.
- Persistently irritable or angry mood most of the day, nearly every day, between outbursts.

- Symptoms have occurred for at least 12 months. Symptom free periods can occur, but may not exceed three months during the one year timeframe.
- Age at onset <10 years. The diagnosis cannot be given for the first time before age 6 years or after age 18 years.
- The patient has never had a period lasting more than one day during which the full symptom criteria for mania or hypomania, except duration, have been met.
- Symptoms do not occur solely during unipolar major depressive episodes, and are not better explained by other mental disorders (eg, autism).
- The symptoms are not attributable to the physiologic effects of a substance or medication, or to another medical disorder. (See 'Substance/medication induced depressive disorder' below and 'Depressive disorder due to another medical condition' below.)

Disruptive mood dysregulation disorder may be comorbid with unipolar major depression, attention deficit hyperactivity disorder, conduct disorder, and substance use disorders [29]. However, the diagnosis of disruptive mood dysregulation disorder, according to DSM-5, cannot be given simultaneously with the diagnoses of bipolar disorder, intermittent explosive disorder, and oppositional defiant disorder.

Disruptive mood dysregulation and intermittent explosive disorder are both characterized by recurrent, severe, angry outbursts [29]. However, patients with disruptive mood dysregulation disorder are angry or irritable most of the day, nearly every day, in between the angry outbursts, whereas the diagnosis of intermittent explosive disorder does not require a mood disturbance between outbursts. In addition, angry outbursts in disruptive mood dysregulation disorder occur on average three times per week; in intermittent explosive disorder, verbal aggression occurs on average twice per week. Disruptive mood dysregulation disorder requires 12 months of active symptoms, in contrast to intermittent explosive disorder, which requires only 3 months of symptoms.

Premenstrual dysphoric disorder — Premenstrual dysphoric disorder is marked by emotional and behavioral symptoms, which occur repeatedly during the week before onset of menses and remit with onset of menses or a few days thereafter, and which interfere with some aspect of the adolescent's life. (See "Clinical manifestations and diagnosis of premenstrual syndrome and premenstrual dysphoric disorder".)

Substance/medication induced depressive disorder — Substance/medication induced depressive disorder consists of a mood disturbance that is characterized by a persistently

depressed or irritable mood, or diminished interest or pleasure in most activities [29]. The mood disturbance develops during or soon after using substances (eg, alcohol, cocaine, opiates, and amphetamines) or medications (eg, interferon, stimulants, or systemic corticosteroids) that are capable of producing the symptoms. In addition, the disturbance causes significant distress or impairs psychosocial functioning.

Substance/medication induced depressive disorder is not diagnosed in the following situations:

- The mood disturbance precedes onset of substance intoxication or withdrawal, or exposure to medications
- The disturbance persists for a long period of time (eg, one month) after cessation of acute intoxication or withdrawal
- There is a prior history of recurrent depressive episodes
- The disturbance occurs solely during an episode of delirium (see "Diagnosis of delirium and confusional states")

Depressive disorder due to another medical condition — Depressive disorder due to a general medical condition consists of a mood disturbance that is characterized by a persistently depressed or irritable mood, or diminished interest or pleasure in most activities [29]. Findings from the history, physical examination, or laboratory tests indicate that the disturbance is caused by another medical condition (eg, adrenal insufficiency, hypercortisolism, hypothyroidism, mononucleosis, multiple sclerosis, traumatic brain injury, systemic lupus erythematosus, or vitamin B12 insufficiency). In addition, the disturbance results in significant distress or impairs psychosocial functioning. Onset of the mood disturbance generally occurs during the first month of the onset of the other medical condition.

Depressive disorder due to another medical condition is not diagnosed if the mood disturbance precedes onset of the medical condition or occurs solely during an episode of delirium. (See "Diagnosis of delirium and confusional states".)

Depression can be diagnosed in the context of chronic illness if there is not a direct causal link between the illness and depression. As an example, the risk for depression is higher in patients with epilepsy, migraine, inflammatory bowel disease, and asthma, but the diagnosis of depression can be made in these conditions, taking care to differentiate somatic symptoms of depression from those of chronic illness (eg, anorexia, insomnia, fatigue, and psychomotor retardation). (See "Unipolar depression in adults: Assessment and diagnosis", section on 'General medical illness'.)

Other specified depressive disorder — Other specified depressive disorder applies to patients with depressive symptoms that cause significant distress or impair psychosocial functioning but do not meet the full criteria for a specific depressive disorder [29]. Clinicians record the diagnosis other specified depressive disorder, followed by the reason that the presentation does not meet full criteria for a specific depressive disorder. As an example, "other specified depressive disorder, recurrent brief depression." The syndrome of recurrent brief depression refers to patients who present with recurrent periods lasting for less than two weeks that are marked by depressed or irritable mood and at least four other depressive symptoms.

Unspecified depressive disorder — Unspecified depressive disorder applies to patients with depressive symptoms that cause significant distress or impair psychosocial functioning but do not meet the full criteria for a specific depressive disorder [29]. This diagnosis is used when clinicians decide to not specify the reason that the presenting syndrome does not meet the full criteria for a specific depressive disorder, and can include situations in which there is insufficient information to make a more specific diagnosis (eg, in the emergency department).

DIFFERENTIAL DIAGNOSIS

The differential diagnosis for pediatric unipolar depression includes adjustment disorder with depressed mood, bipolar depression, and sadness.

Adjustment disorder with depressed mood — Adjustment disorder with depressed mood is marked by depression that occurs in response to an identifiable psychosocial stressor (eg, parental divorce, academic failure, or peer problems) [29]. The stressor may be a single event or there may be multiple stressors, and a stressor may be recurrent or continuous. Adjustment disorder with depressed mood is not classified as a depressive disorder. Rather, adjustment disorder describes patients suffering significant symptoms that do not meet criteria for a more specific psychiatric disorder.

The criteria for adjustment disorder with depressed mood are as follows [29]:

- Low mood, tearfulness, or hopelessness that occurs in response to an identifiable stressor within three months of onset of the stressor
- Symptoms are clinically significant as evidenced by at least one of the following:
  - Significant distress that exceeds what would be expected given the nature of the stressor

    Impaired social or occupational functioning

- The syndrome does not meet criteria for another psychiatric disorder (eg, major depression)
- The syndrome does not represent an exacerbation of a preexisting psychiatric disorder
- The syndrome does not represent bereavement
- After the stressor and its consequences have ended, the syndrome resolves within six months

Major depression and persistent depressive disorder (dysthymia) often occur in the context of psychosocial stressors, and the diagnosis of adjustment disorder with depressed mood is superseded by a depressive disorder. Clinicians distinguish a depressive disorder from an adjustment disorder not by noting whether a stressor is present, but by determining whether the patient's symptoms are sufficient in number, severity, and duration to meet diagnostic criteria for a depressive disorder.

Adjustment disorder with depressed mood can persist beyond six months if the stressor is chronic (eg, ongoing parental conflict).

Bipolar depression — Episodes of major depression occur in both unipolar major depression (major depressive disorder) and bipolar disorder; however, patients with bipolar disorder have a prior history of manic/hypomanic episodes, whereas patients with unipolar major depression do not [29]. Nevertheless, bipolar disorder is frequently misidentified as unipolar major depression [67-72] because the mood episode at onset of bipolar disorder is often a depressive episode [73-75], multiple episodes of major depression may occur prior to the first lifetime episode of mania or hypomania [76], and depressive symptoms occur more frequently than mood elevated symptoms [77,78]. In addition, clinicians may not recognize mania/hypomania due to the presence of comorbid disorders [79,80].

Additional information about differentiating unipolar depression from bipolar depression is discussed separately. (See "Pediatric bipolar disorder: Assessment and diagnosis", section on 'Unipolar major depression' and "Bipolar disorder in adults: Assessment and diagnosis", section on 'Unipolar major depression'.)

Sadness — Periods of sadness and irritability (dysphoria) in the absence of other symptoms do not warrant a diagnosis of a depressive disorder. As an example, the diagnosis of unipolar major depression requires not only that the dysphoria occurs for most of the day for nearly every day for at least two weeks, but that the dysphoria is accompanied by at least four other depressive symptoms (see 'Symptoms' above) as well as significant distress or psychosocial

impairment (table 2). Sadness and irritability are a normal, adaptive part of the human condition, particularly in response to loss, disappointment, or perceived failure.

Patients with other conditions, such as anxiety disorders, attention deficit hyperactivity disorder (ADHD), disruptive behavior disorders, substance use disorders, and eating disorders can experience sadness and demoralization. The dysphoria of anxiety disorders is primarily limited to that experienced when an anxiogenic situation cannot be avoided. Youth with ADHD may be demoralized by rejection from parents, peers and teachers, but this should remit if the ADHD is properly treated. Substance abuse can induce depression, and depression increases the risk for substance abuse. Patients with eating disorders may be dysphoric or listless due to caloric restriction, or conversely, due to being forced to eat and achieve a normal weight.

INFORMATION FOR PATIENTS

UpToDate offers two types of patient education materials, "The Basics" and "Beyond the Basics." The Basics patient education pieces are written in plain language, at the 5th to 6th grade reading level, and they answer the four or five key questions a patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials. Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are written at the 10th to 12th grade reading level and are best for patients who want in-depth information and are comfortable with some medical jargon.

Here are the patient education articles that are relevant to this topic. We encourage you to print or e-mail these topics to your patients. (You can also locate patient education articles on a variety of subjects by searching on "patient info" and the keyword(s) of interest.)

- Basics topic (see "Patient education: Depression in children and teens (The Basics)")
- Beyond the Basics topic (see "Patient education: Depression in children and adolescents (Beyond the Basics)")

SUMMARY

- **Epidemiology**
  - **Prevalence** – The estimated lifetime prevalence of depression in children age 6 to 11 years is 2 percent, and in adolescents age 12 to 17 years is 7 percent. (See 'Prevalence'

above.)

- **Sex ratio** – The prevalence of depression in prepubertal children appears to be greater in boys than girls. In adolescents, depression occurs more often in girls than boys, in a ratio of approximately 2:1. (See 'Sex ratio' above.)

- **Clinical features**

  - **Symptoms** – Symptoms of depression include dysphoria, anhedonia, appetite or weight change, sleep disturbance, psychomotor agitation or retardation, anergia, thoughts of worthlessness or inappropriate guilt, impaired cognition, and recurrent thoughts of death or suicide or suicide attempt. (See 'Symptoms' above.)

  - **Functional impairment** – Functional impairment in pediatric depression includes disturbances in school functioning, relationships with parents and peers, and daily activities and responsibilities. (See 'Functional impairment' above.)

  - **Comorbidity** – Pediatric depression is often comorbid with substance use disorders, anxiety disorders, attention deficit hyperactivity disorder, oppositional defiant disorder, and conduct disorder, and predisposes youth to early cardiovascular disease. (See 'Comorbidity' above.)

- **Assessment** – The initial clinical evaluation of patients with a possible diagnosis of a depressive disorder includes a psychiatric and general medical history, mental status and physical examination, and focused laboratory tests. The history should be supplemented by information from parents and teachers, and should include assessment of suicidal and homicidal ideation and behavior, comorbid disorders, and psychosocial functioning. (See 'Assessment' above.)

- **Diagnosis**

  - **Unipolar major depression** – The diagnostic criteria for unipolar major depression are described in the table (table 2). (See 'Unipolar major depression' above.)

  - **Persistent depressive disorder (dysthymia)** – The diagnostic criteria for persistent depressive disorder (dysthymia) are described in the table (table 5). (See 'Persistent depressive disorder (dysthymia)' above.)

  - **Minor depression** – Diagnostic criteria for minor depression include two to four depressive symptoms, at least one of which is dysphoria or anhedonia. In addition, the

symptoms cause significant distress or psychosocial impairment. (See 'Symptoms' above and 'Minor depression' above.)

- **Differential diagnosis** – The differential diagnosis for pediatric depression includes adjustment disorder with depressed mood, bipolar major depression, and sadness. (See 'Differential diagnosis' above.)

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