Fear and worries are very common throughout childhood. Developmentally normal anxiety is short lived and nonimpairing and includes fears about the dark, monsters, or strangers for younger children and worries about friends, school, or decision making for older children and adolescents. Despite the common occurrence of transient fears and worries, a number of children experience persistent and impairing levels of anxiety that warrant a diagnosis of an anxiety disorder and clinical attention.

The three most common pediatric anxiety disorders—separation anxiety, generalized anxiety, and social anxiety—share the same underlying construct of anxiety, have significant symptom overlap, are highly comorbid with one another, and show similar familial relationships and continuity with adult anxiety and depressive disorders. For these reasons, the three disorders are often grouped together as they are in this section. The three anxiety disorders are described separately here; however, the reader should note that each etiology and treatment section is informative with regard to separation anxiety, generalized anxiety, and social anxiety.

Anxiety disorders comprise the most prevalent class of mental health problems among youth, affecting up to 1 in 5 individuals by the time they reach adulthood. Children with anxiety disorders have an early onset and a persistent or recurring course with high levels of short- and long-term impairment. In addition to being comorbid with one another, anxiety disorders are often comorbid with nonanxiety disorders. Fortunately, there are highly effective psychosocial and pharmacological treatments for these disorders. Current challenges include identification of treatment methods to optimize outcomes and address co-occurring emotional and behavioral problems, and dissemination and utilization of evidence-based treatment.

### Separation Anxiety Disorder

**Definition**

Separation anxiety disorder is characterized by excessive and developmentally inappropriate fear of being away from an attachment figure, avoidance of such separations, and irrational beliefs about the consequences of being apart from a caregiver. Attachment figures are usually parents, but may also be siblings, grandparents, or other caregivers or, for adults, children or spouses. Whereas developmentally appropriate separation anxiety typically presents around age 6 months and declines between ages 2 and 3 years, children with separation anxiety disorder have either persistent and worsening or new onset separation anxiety in
the school-age years (i.e., ages 6 to 12 years). This section differentiates between developmentally normal separation anxiety in infancy and toddlerhood and separation anxiety disorder in school-age children.

**Comparative Nosology**

Separation anxiety disorder appeared initially in the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III) and was classified as an anxiety disorder of childhood or adolescence. Although it was subsequently categorized in the DSM-IV as a “disorder usually first diagnosed in infancy, childhood, or adolescence,” separation anxiety is currently classified in the DSM-5 as an anxiety disorder. Since first introduced the diagnostic criteria for separation anxiety disorder have been modified in four ways, along with modified wording in DSM-5 to capture symptom presentation in adulthood. Unlike earlier versions, the DSM-5 does not require onset prior to age 18 and recognizes that some adults report onset after age 18 years. The minimum duration was increased from 2 weeks in DSM-III to 4 weeks in DSM-IV and subsequent versions, and DSM-5 specifies at least 6 months in adults to avoid overdiagnosis of transient fears. Also, evidence of serious distress or impairment was added for diagnosis starting in DSM-IV. Finally, recurrent excessive distress about (1) anticipated or (2) actual separation was collapsed into one symptom in DSM-IV, and thus the symptomatic threshold for separation anxiety disorder was reduced from three of nine symptoms in DSM-III-R to three of eight symptoms in DSM-IV and currently in DSM-5.

**Epidemiology**

Epidemiological studies show the lifetime prevalence rate of childhood and adolescent separation anxiety disorder is at least 4 percent, with peak onset between 7 and 9 years of age. Separation anxiety disorder is more common in childhood than in the preschool years or adolescence and is the most common anxiety disorder in children under the age of 12. Although the peak age of onset is in middle childhood, preschool children can be diagnosed with separation anxiety disorder (range from 0.5 to 10.5 percent) and can be distinguished from children with developmentally normal separation anxiety. Children with separation anxiety symptoms who do not meet diagnostic criteria are very common, with reported rates as high as 50 percent. Community studies suggest that girls are more likely than boys to meet criteria even in the preschool years, but clinical studies find the disorder to be equally common in girls and boys.

**Etiology**

Although the exact cause of separation anxiety is unknown, genetic, early temperamental, and family or environmental variables have all been associated with early-onset anxiety disorders. Although genetic factors likely play a significant role, early experiences, many of which are family-based, may play an important role in the onset of childhood anxiety disorders. Methods to sort the various contributions of genetics, temperamental, and biological vulnerabilities and family or environment are often confounded. However, it is likely that genetically based, temperamental, or biological vulnerabilities predispose affected children and their parents to interact in ways that either protect children from or predispose children to developing an anxiety disorder. For example, an 8-year-old child with separation anxiety born to a mother with an anxiety disorder may have a very different outcome if the mother was symptomatic or successfully treated during the child’s early years. Although in both situations the child and the mother share genetic and temperamental and biological vulnerabilities, the effect of the child’s anxiety on the affected (and treated) parent and the affected (and treated) parent’s impact on the child may account for significant difference in both short- and long-term outcomes.

Twin studies provide perhaps the greatest evidence for the role of biological and environmental factors (shared and nonshared) in the etiology of childhood anxiety disorders. Although historically both genetic and environmental factors have been implicated in the etiology of childhood anxiety disorders, a large well-designed study of 6-year-old twins suggests significant genetic influence for the separation anxiety phenotype. The heritability estimate for separation anxiety was high, 73 percent, with the remaining variance attributed to nonshared environment, suggesting genetic effects on separation anxiety are substantial and more significant than environmental effects. Another investigation of the role of genetic and shared environment effects in a sample of twins and siblings over time reported that
the influence of genetic effects increased and shared environmental effects decreased with age. Finally, newly emerging data suggest that the psychobiological trait of CO₂ hypersensitivity may increase risk for separation anxiety (and

supports a proposed genetic association between separation anxiety and later-onset panic disorder).

**Behavioral inhibition (BI) to the unfamiliar**, characterized by fear, withdrawal, and avoidance of unfamiliar situations or things, is considered a temperament vulnerability in infants and toddlers that predicts anxiety disorder outcomes in later childhood. BI is usually assessed using observational methods in laboratory settings for children aged 9 months through 6 years. Approximately 10 to 15 percent of children are thought to display BI and longitudinal outcomes, suggesting young children with BI are more likely than noninhibited children to exhibit clinical levels of multiple anxiety disorders including separation anxiety upon long-term follow-up. In cross-sectional studies, BI is associated with a range of anxiety symptoms and disorders in youth, and it has traditionally been considered a vulnerability that lacks specificity for any childhood anxiety disorder. However, longitudinal data found BI to predict social anxiety disorder in middle childhood, but not other anxiety disorders.

Parental psychopathology is also highly associated with childhood anxiety disorders. A variety of mechanisms are possible; parents and children can share the same genetic or temperamental vulnerability or parent-child interactive effects could further shape or elaborate both parental and child anxiety. Regardless of the mechanism, children of parents with an anxiety disorder are up to five times more likely to be diagnosed with an anxiety disorder. More specifically, parental panic disorder and major depression are associated with an increased risk for separation anxiety disorder in children.

Longitudinal studies examining the role of infant-mother attachment in the development of childhood anxiety often used the Ainsworth Strange Situation to assess attachment and then follow children overtime. In multiple studies children with an anxious or resistant attachment during infancy were more likely than securely attached infants to develop anxiety disorders, including separation anxiety and related behaviors (e.g., school avoidance). Although infant temperament or maternal psychopathology may affect attachment behavior, cross-sectional assessment of attachment status appears to be the more important factor in determining the presence of anxiety disorders at longer-term outcome.

Specific parenting behaviors such as high levels of parental intrusiveness, overprotection, and psychologically controlling behavior in the child's daily activities may also contribute to a child's risk for developing anxiety. Such anxiety-enhancing parenting approaches are thought to promote dependency and reduce the development of autonomy. Controlling and overprotective parenting may contribute to the development of anxiety by preventing the child from having a range of experiences that foster broad and complex coping skills. Furthermore, parental overprotection may communicate to the child that the world is a dangerous place, introducing a chronic and pervasive response bias. Parents may also support anxious behavior by encouraging anxious cognitions and avoidance in their children or children may mimic anxious cognitions and behaviors modeled by their parents.

**Diagnosis and Clinical Features**

The defining feature of separation anxiety is excessive and persistent worry about harm befalling an attachment figure (e.g., parent getting into car accident, spouse becoming ill or dying) or oneself (e.g., getting lost, being kidnapped, having an accident) upon separation. Symptoms may include avoidant behaviors such as refusal to go to school or work, sleep alone, or be without the attachment figure, in order to minimize separation and to reduce distress. Other common symptoms include nightmares with references to separation, and physical symptoms such as stomachaches or nausea in response to possible or actual separation. DSM-5 requires three of eight symptoms, a duration of 4 weeks in children and adolescents, and corresponding functional impairment. The diagnosis can be made in adults who are typically excessively concerned about their spouses or children and symptomatic for at least 6 months.

At home, children with separation anxiety display clingy behavior and shadow their caregiver. They often are reluctant to be in any room alone and may not want to sleep alone in their bedroom. These children often request a parent to fall asleep with them or find their way to their parent's bed at night. Also, they are uncomfortable staying with babysitters and may request to call parents frequently. In public, children with separation anxiety stay close to their caregiver and
prefer to sit on their lap or be in physical contact. They are reluctant or refuse to attend birthday parties, sleepovers, camps, and extracurricular activities if the attachment figure is not present. Somatic complaints especially gastrointestinal (e.g., stomachaches, nausea) and cardiovascular (e.g., pounding heartbeat, light-headedness) are commonly reported, particularly before other anxiety-provoking separations. Children may show their separation anxiety distress by tantruming or becoming panicky or oppositional when anticipating separation.

At school, the child may make repeated requests to call their parents to check in or visit the school nurse with physical complaints. When children experience anxiety at school they may become restless and fidgety and be so preoccupied that they are unable to attend to classroom work. Separation anxiety disorder is also a common cause of school refusal and may result in frequent tardiness or high numbers of school absences.

Younger children with separation anxiety disorder tend to report a greater number of symptoms and more nightmares with separation themes than adolescents. Some older children and adolescents with separation anxiety may not present obvious impairment or distress, as their parents and school find ways to accommodate the child's fears to decrease their distress.

As separation anxiety not only affects the child, disruption of family life or parent stress may result from accommodating and managing the child's anxious and avoidant behavior. It can be helpful in the assessment to attempt to quantify the amount of accommodation and to ascertain what the anxiety severity would be if the parents did not offer ongoing accommodation around the child's anxiety.

Anna is a 7-year-old referred for outpatient treatment by her pediatrician. She exhibited a pattern of clingy behavior with her mother and expressed worry about something bad happening to her mother. She expressed worry that her mother would die or that she would be kidnapped. Anna had a history of shyness and difficulty separating from her mother. There is a family history of maternal panic disorder and paternal depression.

Anna often becomes irritable on school mornings or complains of feeling like she needs to vomit. When it is time to leave, Anna hides in her closet or under her bed. She refuses to ride the school bus and insists that her mother drive her to school. Her mother escorts Anna into school, and many times Anna cries and begs her not to leave. Anna does well academically and gets along with peers; however, she occasionally asks to call home or visits with the nurse with stomach aches, hoping to be sent home.

At home Anna will not be in any room alone and requires that her mother is in sight or sound. Anna refuses to shower, brush her teeth, or fall asleep without her mother present. As a result, Anna routinely sleeps with her parents in their bed. She often complains of nightmares of being kidnapped or seeing the “boogie man” near her mom.

Anna will not participate in activities or social events without a parent present. She has attended birthday parties or dance class only when accompanied by her mother. When Anna's parents make arrangements to leave her with a sitter or relative, she cries in distress and begs them not to go. Her parents call home frequently to check in with her. In public, Anna stays close to her mom and frequently sits on her lap when at restaurants or appointments.

**Differential Diagnosis**

Separation anxiety disorder can be distinguished from developmentally normal separation anxiety based on its onset or increasing severity in the school-age years, the duration of symptoms, and the degree of impairment or distress or need for parental accommodation.

Separation anxiety also should be differentiated from other emotional and behavioral disorders. Children with separation anxiety, generalized anxiety, and obsessive-compulsive disorder (OCD) all have concerns about harm. Children with separation anxiety worry about events that lead to being apart from an attachment figure. Children with generalized anxiety are more fearful of the actual event such as a dog bite, lightning striking, or getting sick than the impact on separation. Children with OCD have repetitive intrusive and senseless thoughts of harm befalling them or their loved ones if they do not complete a ritual. For
example, a child with OCD might fear they will die if they do not ritualistically wash their hand four times. Similarly, children with separation anxiety may have social avoidance (e.g., parties or school) similar to children with social anxiety disorder, generalized anxiety disorder, OCD, or even posttraumatic stress disorder (PTSD), but the rationale for the avoidance will differ for each of the disorders. Children with separation anxiety may be described as panicking upon separation or anticipation of separation, but the panic is distinguished from spontaneous panic attacks that characterize panic disorder.

Finally, children with separation anxiety may exhibit defiance, irritable or labile mood, and explosive behavior when presented with a situation that involves separation. These behaviors or moods should be distinguished from oppositional defiant disorder, which involves more general patterns of argumentativeness and misbehavior, and from bipolar disorder, which has prominent elevation in mood, decreased need for sleep, grandiosity, and increased goal-directed activities.

**Course and Prognosis**

The course of separation anxiety is not consistent for all children. Some children with separation anxiety appear to spontaneously remit; some remain anxious but are no longer prominence avoidant of separation triggers, and some truly evolve from separation anxiety into other anxiety disorders or depression. Multiple well-done prospective studies document that the majority of children with separation anxiety appear to improve with time. Some indeed appear to spontaneously remit, while others as they get older make avoidant choices consistent with the separation anxiety and may not appear distressed or obviously avoidant. For others with separation anxiety their symptoms evolve into more adult patterns of anxiety or depression. Prospective, longitudinal studies including both community samples and children at familial risk found that those meeting DSM-IV criteria for separation anxiety disorder were at an increased risk of developing subsequent panic disorder with agoraphobia, specific phobia, generalized anxiety disorder, OCD, pain disorder, and alcohol dependence, even after controlling for the risk of parental psychopathology. On the contrary, a recent meta-analysis reported consistent evidence that separation anxiety disorder poses increased risk for all anxiety disorders, but evidence was weak regarding risk for depression and substance use.

**Treatment of Separation Anxiety Disorder and Other Anxiety Disorders**

Both cognitive-behavioral therapy (CBT) and antidepressant medications appear to be effective for the short- and longer-term management of youth with separation anxiety and other anxiety disorders (e.g., generalized anxiety disorder, social anxiety disorder). Immediately following treatment with CBT or a selective serotonin reuptake inhibitor (SSRI), over 60 percent of anxious youth show clinically significant improvement. In the longer-term (between 2 and 19 years posttreatment), at least half of treated youth maintain initial gains (ranging from 48 to 93 percent). Recent research advances, including completion of the largest double-blind, placebo-controlled trial for childhood anxiety disorders (the “Child/Adolescent Anxiety Multimodal Study [CAMS]”) have begun to address questions about the relative efficacy of CBT and SSRI treatment, predictors and moderators of treatment response, the utility of specific CBT components, and efficacy of CBT for very young children.

The CAMS compared the relative efficacy of CBT, sertraline, combination therapy (CBT plus sertraline), and placebo for youth with generalized anxiety disorder, separation anxiety disorder, and/or social anxiety disorder. All active treatments were superior to placebo, and combination therapy led to significantly higher response rates than did CBT or sertraline (81 percent vs. 60 percent vs. 55 percent, respectively), supporting additive benefits of these two treatment modalities. Remission rates (loss of principal diagnosis, loss of all anxiety diagnoses) were lower than response rates, ranging from 20 to 68 percent, and followed the same patterns as response rates based on treatment condition. Factors associated with higher response and remission rates in the CAMS included absence of comorbid internalizing disorders, absence of social anxiety disorder at baseline, lower baseline anxiety severity, lower caregiver strain, nonminority status, and younger age. Additional variables with a pattern of inconsistent findings related to outcome in prior (and perhaps less well-powered) studies, including parental psychopathology, youth gender, and socioeconomic status, were examined with the CAMS data and found not to predict remission status.

New research also has emerged on effective treatments for anxiety in very young children. Specifically, controlled trials using developmentally sensitive downward extensions of CBT treatments with preschoolers diagnosed with anxiety disorders suggest that anxiety disorders are treatable very early in life. CBT for preschool-age youth is differentiated from CBT for school-age youth and adolescents by its greater emphasis on parent anxiety management and modification of parenting
practices believed to maintain child anxiety. In addition to psychosocial approaches, an algorithm proposed by the Preschool Psychopharmacology Working Group suggests prescribing fluoxetine to preschool-age children (as low as 5 to 8 mg/day) if symptoms persist after CBT treatment.

**Psychotherapy**

Of the existing psychosocial treatments for youth anxiety, CBT has the greatest empirical support and is considered the treatment of choice. Manualized CBT programs for child anxiety such as Coping Cat, Coping Koala, SET-C, and FRIENDS, generally consist of 10 to 16 1-hour sessions delivered in child-focused individual, family, or group formats. CBT is based on principles of classical, operant, and social learning and generally include the following components: (1) psychoeducation: Corrective information about the nature of anxiety and feared stimuli; (2) somatic management techniques: Feelings identification, diaphragmatic breathing, and progressive muscle relaxation to target autonomic arousal and related physiological responses; (3) cognitive restructuring: Identification of maladaptive thoughts and teaching realistic, coping-focused thinking; (4) exposure techniques: Graduated, systematic, and controlled exposure to feared situations and stimuli; and (5) relapse prevention: Methods to consolidate and generalize treatment gains over time. Cognitive restructuring and exposure have been validated as essential components by empirical data showing accelerated improvement in symptom severity and overall functioning following their introduction in treatment.

Over 30 randomized trials have demonstrated the efficacy of CBT for youth with separation anxiety disorder, generalized anxiety disorder, and social anxiety disorder. Meta-analytic data show that CBT is equally effective for children and adolescents, when delivered in individual or group formats, and when compared to passive (no treatment control) or active control groups. CBT for anxiety yields a mean effect size of $d = 0.66$, and acute gains are sustained for follow-up periods of 2 years or longer. This moderate-to-large effect size finding and durability of treatment effects over time supports the conclusion that CBT is an effective treatment for anxiety disorders with children and adolescents.

Family involvement in CBT is always recommended, but studies of family-focused treatments have yielded equivocal results. Some studies suggest additional benefit and some report no additional benefit above and beyond that of individual CBT. One study comparing standard Coping Cat treatment to a separation anxiety-specific CBT protocol with a parent intervention component yielded no statistically significant differences in outcomes. However, family-focused treatment studies vary greatly and target different aspects of treatment (e.g., psychoeducation about anxiety, support for the child's participation in CBT, addressing parental anxiety directly, addressing “anxiety enhancing” parenting behaviors, or basic contingency management for child avoidance behavior), it is difficult to draw conclusions about the effectiveness of family treatment for child anxiety.

In recent years, a handful of research groups have successfully adapted and modified parent-child interaction therapy (PCIT), originally developed to treat externalizing problems in young children, to treat various early anxiety problems. These adapted PCIT protocols target child symptoms by reshaping parent-child interaction patterns associated with the maintenance of child anxiety symptoms. This goal is achieved through the use of live, unobtrusive parent coaching, delivered through a bug-in-the-ear receiver from a therapist situated behind a one-way mirror. Recently, the first randomized controlled trial (RCT) was conducted to test the efficacy of a 9-week, PCIT treatment for separation anxiety in children ages 4 through 8. At posttreatment, 73 percent of children assigned to PCIT no longer met criteria for a diagnosis of SAD, and results were largely maintained at a 3-month follow-up visit. Preliminary efficacy studies of another PCIT adaptation, the Coaching Approach behavior and Leading by Modeling (CALM) Program, designed to target the full range of anxiety disorders affecting young children (generalized anxiety disorder and social anxiety disorder, in addition to separation anxiety disorder) suggest the promise and feasibility of this approach.

Although evidence strongly supports CBT as an efficacious treatment for childhood anxiety disorders, disseminating this specialized form of psychotherapy is an ongoing challenge. Also, service utilization data show that far fewer treatment sessions are completed in practice as compared to protocol-based treatment trials for anxiety. Thus, recent years have spawned the development of computer-assisted treatments such as BRAVE-ONLINE and Camp-Cope-A-Lot, which combine computer-based sessions with online and phone contact with a CBT clinician. Preliminary trials of these programs, including one RCT, suggest that computer-
assisted and in-person CBT produce statistically similar clinical improvements. Given the initial promising findings, and the capacity of computer-based CBT to increase treatment accessibility, these programs merit continued investigation.

Another newly emerging computer-based treatment for child anxiety disorders is Attention Bias Modification (ABM; also called Cognitive Bias Modification). This approach draws from cognitive theories of anxiety, specifically relating to attentional biases. Evidence indicates that individuals who experience anxiety disorders attend more to threat-related stimuli, leading them to grow hyper-vigilant to perceived threats. Over time, experiencing this hypervigilance exacerbates anxiety levels, which in turn increases attention to threat and produces a maladaptive feedback loop. ABM aims to intercept this cycle by using a dot-probe paradigm to implicitly modify biases toward threat in anxious individuals. A recent meta-review of ABM trials for pediatric anxiety found that, in eight of ten existing efficacy trials (including three RCTs), participants experienced significant improvements in anxiety postintervention. While these findings are promising, further research is needed to clarify the optimal frequency and duration of ABM, the most effective intervention setting, and whether ABM is a useful adjunct to traditional CBT.

**Pharmacology**

SSRIs are considered first-line medications for this population due to the favorable treatment response (effect sizes greater than 0.8) and low side-effect profile identified in a number of single-site and multisite randomized, controlled trials. Agents that have demonstrated efficacy include fluvoxamine (Luvox), fluoxetine (Prozac), sertraline (Zoloft), paroxetine (Paxil), duloxetine (Cymbalta), and the tricyclic antidepressant imipramine (Tofranil). Despite demonstrated efficacy of SSRIs for anxiety in RCTs, no SSRIs are approved by the U.S. Food and Drug Administration (FDA) for use with children and adolescents. However, the serotonin-norepinephrine reuptake inhibitor duloxetine received an FDA indication for generalized anxiety disorder in children and adolescents ages 7 to 17 years.

Open-label follow-up studies of SSRIs suggest that youth who benefit acutely continue on a positive trajectory for up to 6 months. Further, since anxiety disorders tend to run a chronic course with associated impairment, longer treatment with medication may be justified to support consolidation of initial gains and prevent return of anxiety symptoms.

How long to treat children with medication to maximally reduce the chance for return of symptoms upon medication discontinuation is not known. Therefore, making the decision when to discontinue medication is often determined pragmatically. Treatment for 6 to 12 months after remission in symptoms may provide extended benefit without undue burden and may offer an opportunity to reduce the chance for a return of symptoms after medication discontinuation. However, longer-term treatment may be necessary if children experience a return of symptoms when medication doses are missed or during known trigger points such as the start of school in the fall or after the winter holidays (separation anxiety), grade reports or final examinations (generalized anxiety), or group activities at school or camp (social). Such tenuous symptom control suggests that continued treatment, dose increases, or more intensive psychosocial treatments be provided to stabilize the patient before considering medication discontinuation. In addition, the timing of the discontinuation trial is critical to prevent the child from being exposed to a return of symptoms at a time when anxiety triggers are present or when family or medical support are not available (i.e., start of school for separation anxiety or participation in performance activities for generalized or social anxiety).

Benzodiazepines have not been extensively studied for the acute or chronic management of anxiety in children, and while potentially useful, they may lead to both psychological and physical dependence and thus complicate treatment longer term. Given the efficacy of SSRIs and other antidepressants for childhood anxiety, benzodiazepines should not be considered as first-line treatment. If used at all, benzodiazepines may be considered for short-term augmentation of antidepressants early in the course of treatment for some highly anxious children.

There is little evidence supporting the use of other medications such as antihistamines, α-adrenergic agonists, or antipsychotics for the treatment of childhood anxiety disorders; however, it is not uncommon to see patients clinically who are treated with such agents to address problems with insomnia related to anxiety.
Combining other medications with SSRIs to address anxiety-related insomnia should only occur when antidepressants have been maximally adjusted upward and anxiety and insomnia persist. Then the use of sedating antidepressants is preferred to the use of antihistamines, α-adrenergic agonists, or antipsychotics.

**Generalized Anxiety Disorder**

**Definition**
In contrast to separation and social anxiety, which generally have one anxiety triggering experience (i.e., separation and social humiliation, respectively), generalized anxiety disorder is characterized by excessive and uncontrollable worry about a number of anxiety-provoking events. The most common symptoms among affected youth are poor concentration, restlessness, and irritability, but other symptoms include fatigue, sleep disturbance, or muscle tension. As with other anxiety disorders, generalized anxiety must cause marked distress, interfere with social, emotional, and educational functioning, and is not simply a reaction to recent stressors.

**Comparative Nosology**
Prior to DSM-IV, a diagnosis of generalized anxiety was reserved for individuals 18 years or older, and children with multiple fears and worries could be diagnosed with overanxious disorder. Overanxious disorder was characterized by excessive or unrealistic worry for a period of at least 6 months. Due to the poor reliability and validity of this diagnostic category and symptomatic overlap and continuity with adult generalized anxiety, overanxious disorder was incorporated into the DSM-IV generalized anxiety disorder diagnosis. Research comparing cases diagnosed by DSM-III-R and DSM-IV criteria found that the change in terminology did not affect the characteristics of cases. Criteria remained unchanged for DSM-5.

**Epidemiology**
Generalized anxiety disorder is a common diagnosis in children, with a reported lifetime prevalence of 9.0 percent. Community samples of preschool children report a prevalence range of 0.5 to 6.5 percent for overanxious disorder or generalized anxiety disorder. Based on data from two community epidemiology studies, the 3-month prevalence rate for generalized anxiety disorder among children aged 9 to 12 is 1.4 percent. The prevalence for adolescents aged 13 to 18 ranges between 2.3 and 5.0 percent. Whereas rates of separation anxiety decline with age, rates of generalized anxiety increase with age, with a mean age of onset of 8 to 9 years, and median age of onset of 12 years. Girls are twice as likely as boys to meet diagnostic criteria.

Pediatric generalized anxiety disorder is commonly associated with other anxiety disorders and mood disorders. Data from the NCS-A and GSMS found that up to 2/3 of affected youth met criteria for another anxiety disorder, and about ½ met criteria for a mood disorder. Preschoolers with generalized anxiety have the highest rates of comorbidity compared to preschoolers with other anxiety disorders. Few significant differences in rates and patterns of comorbidity across age and gender have been identified; younger children are more likely than adolescents to have separation anxiety as a comorbid diagnosis, and males are more likely than females to have an externalizing disorder as a co-occurring diagnosis.

**Etiology**
Similar to separation anxiety disorder, both genetic and environment factors contribute to the development of generalized anxiety disorder. However, heritability estimates are lower for generalized disorder (approximately 30 percent), suggesting that environmental factors, both shared (e.g., uterine environment in the case of twins, exposure to common parenting in the case of siblings) and nonshared (e.g., personal traumatic experience, peer relationships), may have a more prominent etiological role. Twin studies show that generalized anxiety may be better explained by additive genetic factors and nonshared environmental factors compared to shared environment factors. Low heritability estimates in twin studies and high familial rates of generalized anxiety suggest that increased rates in
families may be more related to environmental factors. For example, parental anxiety, parenting approaches, or exposure to stressful life events may negatively affect childhood anxiety outcomes. Similarly, childhood anxiety may also impact parental or sibling anxiety as the child's anxiety may change the larger home environment.

Anxiety sensitivity is a temperamental or trait-like factor under genetic influence that is considered a risk factor for anxiety in general. It is characterized by a tendency to interpret physiological symptoms as a sign that something harmful will result. Such factors, while not specific to anxiety, may predispose children in certain environments to become symptomatically more anxious and impaired. Similarly, an attentional bias toward threatening cues and a tendency to interpret ambiguous situations as threatening are associated with children with current anxiety disorder. Although such relationships cannot be considered causal, it is possible that such attentional biases coupled with environmental variables such as parenting influences (e.g., hearing information from a parent about the potential dangers of a situation) may ultimately shape anxiety-related beliefs and behaviors. Anxiety sensitivity has been related specifically to panic in adolescents and otherwise has been linked to anxiety in general.

**Diagnosis and Clinical Features**

The hallmark feature of generalized anxiety disorder is excessive worry that is difficult to control (Table 52.3-1). The threshold for diagnosis differs slightly for adults and children; adults are required to experience three of six associated symptoms, whereas children are required to have only one associated symptom. A diagnosis also requires the child to experience excessive worry more days than not for 6 months, the worry and associated symptoms must interfere with daily functioning, and the anxiety is not triggered by recent stressful events.

| A. Excessive anxiety and worry (apprehensive expectation), occurring more days than not for at least 6 months, about a number of events or activities (such as work or school performance). |
| B. The individual finds it difficult to control the worry. |
| C. The anxiety and worry are associated with three (or more) of the following six symptoms (with at least some symptoms having been present for more days than not for the past 6 months): |
| **Note:** Only one item is required in children. |
| 1. Restlessness or feeling keyed up or on edge |
| 2. Being easily fatigued |
| 3. Difficulty concentrating or mind going blank |
| 4. Irritability |
| 5. Muscle tension |
| 6. Sleep disturbance (difficulty falling or staying asleep, or restless, unsatisfying sleep) |
| D. The anxiety, worry, or physical symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning. |
| E. The disturbance is not attributable to the physiological effects of a substance (e.g., a drug of abuse, a medication) or another medical condition (e.g., hyperthyroidism). |
The disturbance is not better explained by another mental disorder (e.g., anxiety or worry about having panic attacks in panic disorder, negative evaluation in social anxiety disorder [social phobia], contamination or other obsessions in obsessive-compulsive disorder, separation from attachment figures in separation anxiety disorder, reminders of traumatic events in posttraumatic stress disorder, gaining weight in anorexia nervosa, physical complaints in somatic symptom disorder, perceived appearance flaws in body dysmorphic disorder, having a serious illness in illness anxiety disorder, or the content of delusional beliefs in schizophrenia or delusional disorder).

The vast majority of pediatric patients with generalized anxiety (75 to 80 percent) endorse physical symptoms. Common physical symptoms include headaches, tension, restlessness, gastrointestinal distress, and heart palpitations. Cognitive characteristics of generalized anxiety include negative thinking errors such as catastrophizing (i.e., expecting the worse possible outcome) or overestimation of the likelihood that something undesirable will occur. Generalized worries cover a range of everyday issues, such as being on time, upcoming activities, failure of loved ones or friends to meet basic expectations, or whether unexpected events (e.g., inclement weather) will change daily plans or schedules. Children and adolescents with generalized anxiety are often described as perfectionistic and overly sensitive. They are plagued by negative self-image, need for reassurance, and insecurities about competence, performance, and expectations about the future.

Andrew is a 13-year-old referred for outpatient treatment by his pediatrician for frequent headaches thought to be associated with anxiety. Andrew was born via cesarean section with no reported perinatal or postnatal complications. As an infant he was difficult to soothe. Medical history was unremarkable. Andrew was reported to be sociable and well-liked by his peers. Academically, he was an honor roll student enrolled in advanced classes. He had no psychiatric treatment history. Family history was significant for paternal social anxiety and maternal depression. Andrew's two siblings, one older and one younger, were reported to be high functioning with no psychiatric history. Clinical interview revealed no concerns regarding externalizing behavior. Worries were reported about a range of situations including school, the future, athletic performance, family matters, and health and safety.

During the interview, Andrew was engaged and cooperative. He described himself as “stressed out” because of school. He was an A student, but endorsed worries related to examinations, grades, and whether his upcoming high school courses would prepare him adequately for college. He also played point guard on the school basketball team and acknowledged worries about his speed and height compared to other players and questioned whether he was good enough to make the high school team. In addition, he expressed concern about family-related issues such as finances, parental conflict, and the potential for his parents to get divorced. Andrew acknowledged having headaches and stomach upset at least 4 days per week. Upon questioning, he reported that he cannot stop worrying and that worries keep him awake at night about 5 days per week. When given rating scales to complete, Andrew asked several questions about the directions and was concerned about completing the forms correctly.

Andrew's parents described him as a “worry wart,” saying he has always been anxious. They reported that he often has health concerns. Most recently, he stopped using an over-the-counter face wash containing salicylic acid and expressed concern about accidentally swallowing the product and being poisoned. Also, his recent trip to the pediatrician was prompted by Andrew's questioning about whether he needed a computed tomography (CT) scan due to his headaches. His parents report that he is frequently irritated and says that he is “stressed out” when questioned about school or basketball. He often seeks reassurance from his parents, but they find their attempts at doing so are unhelpful over the long term.

Differential Diagnosis
Worry associated with generalized anxiety has multiple targets that include worries regarding everyday life experience. Therefore, it may be more difficult to differentiate generalized anxiety from normative anxiety experienced by all individuals. However, the overall amount of anxiety, poor anxiety control, the lack of amelioration with appropriate reassurance and support and longer-term impairment associated with generalized anxiety differentiate it from normal worry.

Generalized anxiety can be differentiated from emotional disorders based on the greater number of anxiety triggers and the specific nature of the worries. Children with generalized anxiety are concerned with past and future experiences, physical health, weather, environmental changes, and unexpected events. They may appear to have similar concerns to children with separation and social anxiety but differ in important ways. For example, children with generalized anxiety may avoid going to school, not because of separation or social concerns but because of academic performance worries. That said, it is not uncommon for younger children with generalized anxiety disorder to also be diagnosed with co-occurring separation anxiety and older children with co-occurring social anxiety disorder. Individuals with generalized anxiety and perfectionism may superficially resemble those with OCD. For example, a child with generalized anxiety and concern about academic performance may routinely check over homework for accuracy or study material repeatedly for the purpose of improving the work product or getting it “perfect.” In contrast children with OCD know the work product is good or perfect, but experience doubt that their perception is accurate and then recheck for the purpose of rechecking. Also, individuals with generalized anxiety may have recurrent uncontrollable worries that could be mistaken for obsessions; however, worries of generalized anxiety disorder do not appear senseless, intrusive, or unwanted, rather they are described as powerful bona fide concerns and are usually tied to events or situations that would stimulate normal concerns. For example, normal children may worry about bad weather as it happens, generalized anxiety disorder children will worry that bad weather may happen on a cloudless day, and children with OCD may worry that if they do not count to three in sets of three then a loved one may die in a weather-related incident.

Ruminations (i.e., recurrent depressive cognitions) are characteristic of depression and tend to regard experiences negatively and hopelessly. For example, repetitive thoughts such as “No one will like me no matter what I do” can be readily distinguished from “I need to be perfect for my teachers and parents” by identifying the depressive (ruminative) quality of the former and the perfectionistic (generalized anxiety) quality of the latter.

Course and Prognosis
Prospective and cross-sectional studies of youth suggest that GAD is an episodic or recurrent disorder, and that prognosis is dependent on comorbidity and severity. Individuals with a comorbid diagnosis tend to have higher ratings of severity and functional impairment. Those with greater severity and psychosocial impairment at baseline are more likely to retain a diagnosis over time.

Like other anxiety disorders, generalized anxiety disorder is considered a risk factor for the development of additional psychiatric problems over time. Specifically, generalized anxiety may lead to the subsequent development of anxiety disorders, substance use, depression, or behavior problems. The New York Child Longitudinal Study investigated the associations between anxiety disorders and later psychiatric disorders in 9- to 18-year-old children and adolescents. DSM-III overanxious disorder was related to subsequent major depression, social anxiety disorder, and generalized anxiety. Whereas children with separation anxiety symptoms were less likely than other children to begin drinking alcohol were and did so later than others, those with generalized anxiety symptoms were more likely than other children to begin drinking were and did so earlier. Results from the GSMS found that DSM-IV generalized anxiety was associated only with later conduct disorder, but did not predict anxiety or other psychiatric problems.

Treatment of Generalized Anxiety Disorder and Other Anxiety Disorders
Similar to the previous section on separation anxiety, both CBT and SSRI treatment have demonstrated efficacy for pediatric generalized anxiety disorder. Preliminary trials also support PCIT adaptations as potentially effective treatments for very young children.
Psychotherapy

Although there are no randomized controlled CBT trials specifically for generalized anxiety, the basic concepts of CBT as introduced in the section on separation anxiety disorder apply to generalized anxiety disorder, but may require modifications to address the unique symptom presentation. For example, perfectionism is often a highly valued trait. Making perfectionism a negative symptom and using exposure exercises to tolerate the discomfort and distress associated with making mistakes may be more challenging than addressing more clearly impairing symptoms. It is also important to elicit physiological signs (i.e., heart pounding, sweating) in the controlled context of the exposure so that, in the process of achieving effective coping, the child learns there is a component of self-control in reducing somatic symptoms. In addition, the exposure must elicit relevant anxious cognitions (i.e., “If this isn’t done just right, then I won’t get the best grade.”) so that the child learns to effectively challenge and reframe thoughts about specific anxiety-provoking situations.

Children with generalized anxiety disorder often have specific worries that are difficult or unsafe to challenge in reality and require greater use of imaginal exposures. Unrealistic worries, for example, about health, safety, death, or dying, may be difficult or impossible to enact through an in vivo exposure. A child with excessive worries about contracting a disease, for example, would be treated via imaginal exposure whereby detailed events and feelings are identified first. Next, problem solving, relaxation exercises, and cognitive restructuring are used to help the child interrupt the cycle of worrying, learn to tolerate discomfort associated with the anxiety, and develop realistic thought patterns. Parental involvement in treatment is essential to modify ineffective reassurance statements (“Don’t worry. You won’t get sick.”) with realistic notions of uncertainty (“Chances are low that you will get sick, but there is no way to know for sure.”) and by encouraging children’s awareness of their self-coping (“What do you think would happen if you did get sick? But what else could happen?”) rather than offering reassuring solutions (“If you did get sick, we would get you medicine to make you better.”).

Pharmacology

Published trials specifically targeting generalized anxiety included one effectiveness trial with sertraline and two trials—one positive and one negative—with venlafaxine (Effexor), which were combined and published together. More recently duloxetine was found to be effective in a large, industry-sponsored, randomized, placebo-controlled trial of children and adolescents 7 to 17 years old with generalized anxiety disorder leading to the first FDA indication of any medication for a non-OC, non-PTSD anxiety disorder in children and adolescents.

Although adults with generalized anxiety disorder may be treated acutely with benzodiazepines, there are few data to support the efficacy of this class of medications for youth. For example, a small double-blind, placebo-controlled randomized trial of alprazolam (Xanax) for the treatment of pediatric overanxious and avoidant disorders, demonstrated no benefit of medication over placebo. As noted previously in the section on separation anxiety, the efficacy of antidepressant medication combined with the lack of efficacy for benzodiazepines and the risk for physical and psychological dependence make it difficult to consider benzodiazepines as an important treatment option for childhood anxiety disorders.

Buspirone (BuSpar), a nonbenzodiazepine, nonantidepressant anxiolytic, is effective in studies of adults with generalized anxiety disorder and was evaluated in a large, multisite, industry-sponsored, RCT. Although the trial was not published, a report of the negative outcome of the study is available on the FDA website.

Social Anxiety Disorder

**Definition**

Social anxiety disorder, also called social phobia, is characterized by excessive, persistent, and impairing anxiety about potential scrutiny or embarrassment in social or performance situations. The worry may be restricted to a specific performance situation such as fear of being negatively evaluated during an athletic or
musical performance. However, social anxiety disorder is more commonly generalized such that worry about being scrutinized or embarrassed occurs across a range of activities and situations.

**Comparative Nosology**

Social anxiety disorder (social phobia) first appeared in DSM-III, with minimal alterations in subsequent editions. One impactful change from DSM-III to DSM-IV was the removal of the diagnosis of avoidant disorder. Avoidant disorder was classified as an anxiety disorder of childhood or adolescence, and characterized by fear and avoidance of strangers resulting in significant impairment in peer relationships. Concern about the overlap between the two disorders and continuity between childhood avoidant disorder and adult social anxiety disorder resulted in the removal of avoidant disorder as a diagnostic category in DSM-IV. In DSM-5, there is no longer a requirement that individuals over age 18 must recognize their fear as excessive and unreasonable; instead, the anxiety must be out of proportion to the actual threat posed by the event after taking into account sociocultural factors. Whereas the 6-month duration was limited in DSM-IV to individuals under age 18, this criterion now applies to all ages. Finally, unlike DSM-IV, there is no longer a specifier of “generalized” but there is a specifier for “performance only” in DSM-5.

**Epidemiology**

Social anxiety is a common anxiety disorder, with a cumulative incidence of 11 percent. Prevalence rates have increased over time, likely because of the removal of the avoidant disorder diagnostic category from DSM-III to DSM-IV; that is, youth who were once characterized with avoidant disorder are now diagnosed with social anxiety disorder, resulting in increased prevalence rates. According to data from the National Comorbidity Survey Replication Adolescent Supplement and the Early Developmental Stages of Psychopathology Study (EDSP), the 12-month prevalence for adolescents is 5.2 to 8.2 percent. The lifetime prevalence of social anxiety is 9.5 percent for females and 4.9 percent for males. Like generalized anxiety, the prevalence of social anxiety disorder increases with age, possibly reflecting changes in cognitive and emotional development (i.e., the capacity for self-evaluation and self-consciousness).

Age of onset for social anxiety disorder is during adolescence. The average age of onset in epidemiological studies is between 10 and 16.6 years and varies depending on the sample studied and the strategy for determining retrospective reports for age of onset. According to the EDSP which involved a community sample of 3,021 individuals aged 14 to 24, the incidence of DSM-IV social anxiety was greatest among those aged 10 to 19 years.

**Etiology**

Similar to both separation anxiety disorder and generalized anxiety disorder, factors that contribute to the development of social anxiety disorder include genetics, temperament, and family variables. Twin studies are useful in distinguishing between environmental and genetic influences. There are many discrepancies in the literature regarding the contributions of genetic and environmental influences because of differences in measurement (i.e., rating scale vs. psychodiagnostic interviews), informants (i.e., self vs. parent reports), and criterion (i.e., symptoms vs. severity vs. clinical diagnosis). However, the literature is consistent in showing that anxiety disorders are heritable and that both shared and nonshared environmental factors also play a role. Concordance rates for anxiety disorders including social anxiety disorder are higher for monozygotic twin than dizygotic twins (34 vs. 17 percent). Familial transmission is also evident by studies showing a high concordance rate of social anxiety among first-degree relatives. Overall, studies investigating genetic transmission find evidence for an inherited propensity toward anxiety in general rather than for a specific type of anxiety.

As previously mentioned, BI is a temperamental construct characterized by increased physiological reactivity and avoidant behavior in the face of novel or challenging situations. Inhibited children have greater sympathetic activation than uninhibited children, evidenced by higher and more stable heart rates and greater heart-rate acceleration under stressful and novel conditions. Many studies support the existence of a specific link between BI and social anxiety. Both longitudinal and retrospective studies show that toddlers with BI assessed by observational or questionnaire methods are more likely than uninhibited children to
exhibit social anxiety as adolescents. In a recent prospective longitudinal study, 215 children assessed for BI were assessed for psychiatric outcomes in a 5-year follow-up at a mean age of 9.6 years. Structured diagnostic interviews revealed that BI present at age 4 or 6, but not at age 21 months, predicted social anxiety. BI was not associated with other specific anxiety, mood, or behavior disorders. In another study, adults from a clinical sample provided retrospective reports of childhood inhibition, and those with the highest levels of inhibition also had the highest levels of clinical social anxiety disorder. It is important to note that less than 50 percent of toddlers and young children characterized as behaviorally inhibited go on to develop social anxiety disorder. Similarly, children who are considered shy or have shy temperaments most likely do not develop social anxiety disorder. Thus, BI is considered a manifestation of a biological predisposition that serves as a risk factor for anxiety.

Environmental variables such as parent-infant attachment and parenting behaviors also are associated with the expression of social anxiety disorder. As stated in previous sections, retrospective and observational research shows links between insecure infant attachment and the development of anxiety disorders. One study examined 172 adolescents 16 years after participating in the Ainsworth Strange Situation test at age 12 months and confirmed that infants with insecure attachments were more likely to meet criteria for anxiety, including social anxiety disorder. Adult parents with social anxiety disorder may sponsor social isolation by discouraging opportunities for social engagement. They also provide information that has the potential to heighten anxious arousal.

**Diagnosis and Clinical Features**

The defining feature of social anxiety is excessive fear about being scrutinized in social or performance situations (Table 52.3-2). Although the same criteria apply to children and adults, some provisions are indicated for children. First, social anxiety cannot be limited to adult settings and must occur in peer contexts. Second, in children, the anxiety evoked by the social situation may involve crying, tantrums, freezing, or shrinking from social situations with unfamiliar people. Common fears related to social anxiety include public speaking, participating in class, initiating or participating in conversations, attending social events, and eating or writing in front of others. Fear of public speaking is considered the most commonly feared social situation; however, test anxiety is commonly feared among adolescents.

Some differences have been noted with respect to the presentation of social anxiety among different age groups. Adolescents endorse anxiety across a broader range of situations and more avoidance compared to children; however, both groups experience similar levels of distress. In addition, adolescents endorse more cognitive symptoms of social anxiety that likely reflect their greater cognitive maturity compared to children. Poor social skills, however, are evident across all youth with social anxiety disorder.

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<th>Table 52.3–2. DSM-5 Diagnostic Criteria for Social Anxiety Disorder (Social Phobia)</th>
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| **A.** Marked fear or anxiety about one or more social situations in which the individual is exposed to possible scrutiny by others. Examples include social interactions (e.g., having a conversation, meeting unfamiliar people), being observed (e.g., eating or drinking), and performing in front of others (e.g., giving a speech).

**Note:** In children, the anxiety must occur in peer settings and not just during interactions with adults.

**B.** The individual fears that he or she will act in a way or show anxiety symptoms that will be negatively evaluated (i.e., will be humiliating or embarrassing; will lead to rejection or offend others).

**C.** The social situations almost always provoke fear or anxiety.

**Note:** In children, the fear or anxiety may be expressed by crying, tantrums, freezing, clinging, shrinking, or failing to speak in social situations. |
D. The social situations are avoided or endured with intense fear or anxiety.
E. The fear or anxiety is out of proportion to the actual threat posed by the social situation and to the sociocultural context.
F. The fear, anxiety, or avoidance is persistent, typically lasting for 6 months or more.
G. The fear, anxiety, or avoidance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.
H. The fear, anxiety, or avoidance is not attributable to the physiological effects of a substance (e.g., a drug of abuse, a medication) or another medical condition.
I. The fear, anxiety, or avoidance is not better explained by the symptoms of another mental disorder, such as panic disorder, body dysmorphic disorder, or autism spectrum disorder.
J. If another medical condition (e.g., Parkinson disease, obesity, disfigurement from burns or injury) is present, the fear, anxiety, or avoidance is clearly unrelated or is excessive.

Specify if:

Performance only: If the fear is restricted to speaking or performing in public.

Infants and toddlers cannot meet DSM-5 anxiety diagnoses guidelines primarily due to developmental issues; however, many very young children exhibit higher than normal levels of social fear and associated distress. For example, some children have difficulties playing with new children, refuse to participate in playgroups and classes, play alone at parties or on the playground, and refuse to eat in restaurants or attend public events because of severe distress. Some pilot data reveal that children aged 18 months to 5 years can be diagnosed with a modified version of social anxiety disorder and are more likely than their nonanxious counterparts to display high levels of shyness, inhibition, and to have anxious parents. Many preschool-age children meet DSM-5 criteria for selective mutism which involves restricted speech in social situations due to high levels of fear and anxiety.

Jessica is an 11-year-old in the sixth grade at a public elementary school. She was referred for outpatient treatment by her school counselor for anxiety. Jessica was accompanied by her mother, who is a single parent.

During the assessment, Jessica was compliant but timid. She gave succinct responses to interviewer questions and frequently turned to her mother who often answered on Jessica's behalf. Her medication history was significant for irritable bowel syndrome. Psychiatric history was unremarkable. There is a history of maternal shyness and social anxiety, and Jessica's mother is presently prescribed an SSRI. Jessica was described as “painfully shy” as a very young child.

Jessica endorsed feelings of loneliness and reported having few friends. She reported that, in school, she does not answer questions or do other things that could draw attention to herself (e.g., leave class to use the bathroom). Recently, she refused to go to school on a day she was scheduled to give a presentation in one of her classes. In addition, she admitted to purposefully leaving her gym shoes at home on several occasions because she does not like to change in front of her peers in the locker room at school. Jessica is a Girl Scout but said she does not like the meetings or events and feels that the other girls do not like her. She also endorsed worries that other girls will make fun of her clothes. Jessica does not talk during the meetings and often asks her mother if she can skip. Jessica has
attended a couple of birthday parties but typically does not initiate conversations and has been reluctant to fully engage in some of the birthday activities (e.g., bowling, hitting a piñata).

According to her mother, Jessica is shy in public social situations. She rarely orders her own food in restaurants and does not respond when asked a question by a store clerk. At home, Jessica does not answer the phone unless she recognizes the incoming call number identifies a familiar relative.

**Differential Diagnosis**

Social anxiety disorder can be distinguished from other disorders based on the predominant feature that fears center around the potential for embarrassment or receiving negative criticism. Although social anxiety and separation anxiety may both involve avoidance of social situations, the fear with separation anxiety is associated with concern about being apart from a caregiver and is not associated with potential humiliation or embarrassment. The generalized type of social anxiety is differentiated from generalized anxiety disorder on the basis of the individual feeling humiliated or embarrassed in public rather than a more global worry. Also, children with generalized anxiety disorder may worry about a host of social issues (e.g., friendships, performance, how others view them), but worries are not limited to social or performance situations. Although individuals with social anxiety disorder may experience panic in the face of challenging situations, the fear and associated somatic and cognitive symptoms occur in response to specific situations and are not unexpected or uncued as they are in panic disorder.

Social anxiety is also distinguished from selective mutism, which is characterized explicitly by a failure to speak in situations where speech is expected and has a much younger age of onset relative to social anxiety disorder. Selective mutism is considered by some professionals to be a developmental variant of social anxiety.

Finally, it is important to distinguish social anxiety disorder from developmentally normal fears. For example, it is not uncommon for children to be anxious about speaking in front of the class. However, normative anxiety does not result in significant impairment in functioning or clinically significant distress as with social anxiety disorder.

**Course and Prognosis**

Social anxiety disorder that emerges by the early teen years is associated with progressive worsening or persistence of symptoms through early adulthood. Late adolescence is characterized by a waxing and waning course during which symptoms are exacerbated with social stressors. Factors associated with persistence of symptoms include early onset, more anxiety cognitions, severe avoidance and impairment, co-occurring panic, parental social anxiety and depression, BI, and harm avoidance.

Few individuals experience spontaneous remission; data from the prospective-longitudinal Early Developmental Stages of Psychopathology study suggest a natural remission rate of 15.1 percent. Individuals with social anxiety disorder withdraw from or avoid situations, limiting opportunities for optimal social, academic, and emotional development. Research shows that children with social anxiety disorder are less socially skilled than nondisordered counterparts, limiting their capacity to form intimate relationships with friends, family members, or partners. Symptoms and impairment at school may result in academic underachievement, including failure to graduate high school or pursue college. Disabilities in educational and social functioning may lead to demoralization and other emotional problems. Longitudinal studies show, for example, that social anxiety disorder is consistently linked with increased risk for subsequent depression. Further, individuals with comorbid social anxiety and depression are at increased risk for suicidal ideation and suicide attempts.

Several longitudinal studies find that social anxiety disorder is associated with the development of substance use problems. For example, one prospective study based on a subsample of 816 individuals from the Oregon Adolescent Depression Project found that social anxiety disorder is a unique risk factor for the subsequent onset of alcohol and cannabis dependence. Specifically, a lifetime history of social anxiety disorder at age 17 was associated with 4.5 times greater odds of alcohol
dependence and 6.5 times greater odds of cannabis dependence by age 30. Also, results from a different prospective study showed that youth with social anxiety disorder were significantly more likely 4 years later to smoke cigarettes and have a higher rate of nicotine dependence than a control group.

**Treatment of Social Anxiety Disorder**

As noted in previous sections on separation anxiety disorder and generalized anxiety disorder, effective treatments for social anxiety disorder include CBT and SSRIs. There is one comparative treatment trial specifically focused on youth with primary social anxiety disorder. Children and adolescents aged 7 to 17 were randomly assigned to Social Effectiveness Therapy for Children (SET-C, a behavioral approach), fluoxetine, or placebo and results revealed both active treatments to be superior to placebo in reducing social distress and behavioral avoidance and increasing general functioning. SET-C, however, was superior to fluoxetine on these outcomes and was the only treatment superior to placebo in terms of improving social skills, decreasing anxiety in specific social interactions, and enhancing ratings of social competence. Although both treatments are considered effective, SET-C provided added benefit by enhancing social skills.

Across psychosocial and medication trials for separation anxiety, generalized anxiety, and social anxiety, one-third to one-half of children continue to have clinically significant anxiety problems. Although most studies have not been adequately powered to detect factors that influence treatment outcomes, results of the CAMS suggested that a principal diagnosis of social anxiety disorder was associated with less favorable outcomes. Whereas Coping Cat CBT + sertraline yielded superior outcomes across all diagnoses and treatment conditions, stand-alone sertraline produced slightly better outcomes for individuals with social anxiety compared to stand-alone CBT. These findings paired with investigations of SET-C suggest that cognitive-behavioral treatments for social anxiety may need to include social skills training and exposure tasks with age-matched peers in order to produce optimal gains.

**Psychotherapy**

In addition to the SET-C comparative trial, several wait-list controlled trials of individual CBT with or without family therapy and group-based CBT have been conducted with youths with primary social phobia and show favorable results. Treatment is based on skill development, such as increasing coping self-talk, adopting relaxation exercises, and using problem-solving approaches. In vivo exposures for social phobia focus on increasing comfort in situations involving unfamiliar people and peers.

Technological advances are also being used to develop innovative, more accessible treatment modalities for social anxiety disorder. One such modality uses virtual reality technology to facilitate graded, in vivo exposures. Within this approach, youth are immersed in virtual environments where they interact with clinician-operated avatars to practice socially challenging tasks (e.g., greeting peers, answering questions, assertiveness skills). The preliminary acceptability and feasibility of this approach has been demonstrated, and further research will assess its efficacy as a stand-alone treatment and adjunct to traditional CBT.

**Pharmacology**

There have been three studies that have assessed the efficacy of antidepressants in social anxiety disorder—two industry sponsored trials and one federally funded study. Venlafaxine extended-release preparation was found to be more effective than placebo in a large sample of children and adolescents (n = 293) ages 8 to 17 years old. Paroxetine was found to be more effective than placebo in a large sample (n = 322) of children and adolescents ages 8 to 17. Finally the only federally funded study that assessed an SSRI, fluoxetine, and found it to be more effective than placebo was the SET-C study described above.

Overall, the best evidence supports the use of SSRIs in the treatment of childhood anxiety disorders. The value of the SSRIs probably extends across the class so that medication choice can be based on a number of factors including evidence of efficacy in high-quality clinical trials, half-life, risk for drug-drug interactions, any subtle differences in side-effect profiles, and patient, family, and provider preference. The recent FDA indication for duloxetine may soon make it the medication of choice for generalized anxiety and given the high comorbidity of generalized anxiety with separation and social anxiety disorders it may become the first-line treatment for the triad of pediatric anxiety disorders. The TCAs, which can be effective, have not been consistently able to separate from placebo in
larger clinical trials, so should be considered only as an alternative for those who have not responded to SSRIs or NSRIs. The value of TCAs in ADHD may make them a second-line choice for children with anxiety disorders and ADHD.

**Safety**

The SSRIs as a class share a number of important side effects that include physical symptoms such as stomachache and headache, and can also be associated with changes in behavior such as activation/disinhibition, insomnia, apathy, manic reactions and the potential for suicidal behavior. Activation/disinhibition (and similar or related symptoms such as akathisia) are quite common in the pediatric population with 10 to 15 percent difference between SSRI and placebo groups. Activation often occurs early in the course of treatment—days after the initial dose or first meaningful dose increase (e.g., sertraline 25 or 50 mg; fluoxetine 10 or 20 mg), and goes away with medication discontinuation. It appears to be more common in younger children and those whose anxiety co-occurs with symptoms of ADHD, autism spectrum disorders or other early developmental psychopathology. The SSRIs impact sleep in two ways: (1) activation can make it more difficult to fall asleep and (2) SSRIs disrupt sleep architecture, hence users may recover from anxiety, may experience restful sleep, but may sleep more lightly and experience middle of the night awakenings. At higher doses of the SSRIs apathy may occur, leaving patients relatively free of anxiety but unmotivated or feeling disconnected from living.

Perhaps of greatest concern to prescribers of SSRIs in anxious children is the induction of a manic reaction that may herald a new and more severe course of illness. The concern regarding a manic switch is probably greatest when the anxiety disorder is complicated by problems with impulse control or aggressive behavior suggestive of bipolar disorder. Thankfully, manic reactions in the acute phase, large scale, randomized, controlled trials of the SSRIs are exceedingly rare (<1 percent). And even in longer-term follow-up studies the rates are low. Differentiating a manic reaction from the activation side effect can be challenging but an important distinction. Misdiagnosing an activation side effect as a manic reaction may shift the prescriber away from the antidepressants to the use of antipsychotics and mood stabilizer, neither of which are particularly effective for the anxiety disorders. Manic reactions can be differentiated by their presentation, time course of onset, and response to medication discontinuation. Manic symptoms include elevated and expansive mood, grandiosity, decreased need for sleep, and increased goal-directed activities, and symptoms are distinct from the irritability and impulsivity that is commonly seen with activation. Activation occurs early in the course of treatment; manic reactions occur later. With medication discontinuation activation symptoms decrease in relationship to blood level whereas manic symptoms may persist and require medication treatment to reduce symptoms.

Finally, the risk for suicidal behavior emerging or worsening during antidepressant treatment is probably the public’s greatest concern. Recent meta-analysis suggests that the suicidal behavior risk difference between the antidepressant and placebo in high-quality clinical trial is <1 percent with numbers needed to harm of >100 and the number needed to treat in high-quality RCTs in depression (NNT = 3-4 in NIMH funded trials), OCD (NNT = 5) and the triad of anxiety disorders (NNT = 3). These data, the observed reduction in antidepressant use with the advent of a black box warning, and the subsequent spike in youth suicide gave rise to concerns that the black box warning may have had unintended negative consequences. While the black box warning on antidepressant has not been changed, prescribers, but perhaps not the general public, are regaining comfort in the use of the antidepressants.

The side-effect profile of the NSRIs are similar to the SSRIs but now include symptoms consistent with norepinephrine reuptake including nausea, and the potential for initial worsening of anxiety (not activation per se), and for heart rate and blood pressure increases. The side-effect profile of the tricyclic antidepressants are well known and include prominent anticholinergic effects, dry mouth, constipation and urinary retention, and noradrenergic effects on cardiac function, elevated heart rate and orthostatic blood pressure changes, and the potential for prolongation of important cardiac intervals including the QTc.

**Future Directions**

Issues that warrant further clarification pertaining to treatment of youth with separation anxiety, generalized anxiety, or social anxiety include identification of moderators of treatment outcome, identification of critical elements of psychotherapy that contribute to outcome, questions of treatment sequencing and
whether youth who fail to respond to either medication or CBT as their first treatment will respond to the other treatment, strategies for enhancing outcomes and addressing treatment resistance, and elucidating long-term outcomes particularly following medication treatment. A follow-up study of the CAMS sample, now underway, should provide information about long-term diagnostic and functional outcomes following receipt of evidence-based treatment, as well as patterns of posttreatment service utilization.

References


