

## 4

# Child Psychiatric Disorders and Psychotropic Medications

The most common child psychiatric disorders are disruptive behavior disorders, anxiety disorders, mood disorders, tic disorders, developmental disabilities, psychotic disorders, and disorders of eating and elimination. Each category has specific diagnostic criteria from the latest edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV-TR; American Psychiatric Association, 2000). Each category has different symptoms, although there is also overlap of some symptoms among diagnoses. Some are easiest thought of as a spectrum that runs from no symptoms to the worst possible symptoms.

As you read through the following descriptions, you may recognize problems displayed by your students. Many children have symptoms of one or more disorders, but most do not meet the full criteria for diagnosis. Having symptoms but not meeting diagnostic criteria is a state referred to as subclinical. Being subclinical in terms of symptoms does not mean the child is not suffering or does not need some type of intervention.

Only a psychologist or physician can make the final determination about a child's diagnosis. However, observations and information provided by adults who work with the child are invaluable in making an accurate diagnosis. Symptoms that may not be obvious in a physician's or psychologist's office may be very problematic in other settings.

Many children who have significant behavioral or emotional problems may be accurately placed in more than one category of disorder. It is common for children to have two or more diagnoses at the same time. This is known as comorbidity. When a child has multiple diagnoses, the treatment team must decide whether to treat only one problem or multiple problems. This decision is usually based on the severity of each problem and on the nature of the comorbidity. There are three primary types of comorbidity:

1. Some disorders tend to occur simultaneously in certain children. For example, many children with Tourette's disorder also have significant symptoms of ADHD. On the other hand, most children with ADHD do not have Tourette's disorder. Having Tourette's

disorder puts a child at risk for having ADHD. In these cases, physicians often treat both disorders simultaneously. The child might receive one or more medications to treat symptoms of hyperactivity, inattention, and tics.

2. Sometimes, having one disorder can lead to the development of a second disorder. For example, some children with Asperger syndrome develop symptoms of depression. In some cases, depression may be related to the child's recognition of differentness from same-age peers and to feelings of social rejection. In these cases, the child's physician often chooses to treat the problem that is believed to be primary (the one that came first). In another example, if a child has obsessive-compulsive disorder (OCD) and depression, the doctor may choose to treat the obsessive-compulsive symptoms first with the hope that symptoms of depression will resolve when the child's other symptoms improve.

3. Some children have two or more disorders that are unrelated. Having one disorder does not protect the child from developing a second, unrelated problem. A child who has ADHD might develop separation anxiety or posttraumatic stress disorder (PTSD) that is unrelated to ADHD. In these cases, the child is usually treated for both disorders because treatment for one is not likely to heal the other.

## ATTENTION PROBLEMS AND DISRUPTIVE BEHAVIOR DISORDERS

Attention problems and disruptive behavior disorders are grouped together because they frequently co-occur. Of course, not all children with ADHD suffer from behavior problems, often referred to as oppositional defiant disorder (ODD), and not all children with behavior problems have ADHD. However, approximately 50% of children with ADHD also have ODD. Some children with ODD later develop conduct disorder (CD), a very serious behavior disorder.

### Attention-Deficit/Hyperactivity Disorder

There are three primary categories of ADHD. (See Table 4.1 for a summary.) The inattentive type of ADHD involves poor regulation of attention and includes symptoms like failing to pay close attention to assignments, making careless errors, being poorly organized, and being easily distracted. In the past, this disorder was called ADD because children with this disorder are not always hyperactive. In fact, they are sometimes slow or sluggish. This disorder is now called ADHD, predominantly inattentive type. ADHD, hyperactive-impulsive type, involves symptoms of both hyperactivity (i.e., being restless and fidgety) and impulsivity (i.e., interrupting and having difficulty waiting). The third type is ADHD, combined type, and involves symptoms of both the other two. This is the type most commonly encountered in classrooms.

Symptoms of ADHD tend to change and evolve as the child ages. Preschool children are more likely to be overly active and impulsive. In elementary school, children with ADHD tend to have symptoms like distractibility, low frustration tolerance, fidgeting, and

TABLE 4.1. Types of ADHD<sup>1</sup>

Predominantly inattentive	Predominantly hyperactive–impulsive	Combined
Makes careless errors.	Fidgety.	Symptoms from both columns.
Doesn't pay attention to detail.	Can't stay seated.	
Can't sustain attention, doesn't seem to listen.	Runs around.	
Doesn't finish work.	Always on the go.	
Can't organize.	Plays loudly.	
Avoids hard tasks.	Talks too much.	
Loses things.	Blurts out answers without raising hand.	
Easily distracted.	Can't wait for turn.	
Forgetful.	Interrupts others.	

<sup>1</sup>Other diagnostic criteria for ADHD include symptoms prior to the age of 7 years for a duration of at least 6 months, documentation indicating that the symptoms occur in at least 2 places (e.g., school, home), and evidence of functional impairment (e.g., academic failure, poor peer relationships).

difficulty with sustained attention. These symptoms typically are apparent at home, at school, and in peer interactions. Although symptoms of hyperactivity and inattention decrease over time, children with ADHD are likely to struggle with the disorder in adolescence and adulthood. As adults, they may be disorganized, forget to pay bills, make impulsive decisions, or have difficulty completing work assignments.

Although many children with ADHD do not have other behavioral or emotional problems, some children have other difficulties that may also need treatment. About half of all children with ADHD also have ODD and about 1 in 10 have CD. Learning problems are also common.

Table 4.2 is a summary of some of the medications commonly prescribed for children with ADHD. Stimulants are the most widely researched and prescribed medications in child psychiatry and are often used in the treatment of ADHD. Stimulants work because they stimulate the areas of the brain that control attention and regulate behavior. These medications have an excellent safety record and reliable results.

The beneficial effects of stimulants for the treatment of symptoms of ADHD are well documented. Stimulants are often used as a first option for children with ADHD for several reasons.

1. One benefit of using stimulant medications is that doses can be missed without significant harm. Parents may be able to give the child stimulants only on school days and avoid use of the medication during the summer or on weekends.
2. Unlike other medications that may take several weeks to start working, stimulants usually start working as soon as they enter the child's system. Therefore, if the medication is going to work, the child should quickly show decreased activity levels, better concentration, and better control of behavior. If these effects are not noticeable within an hour after taking the medication, the child may not be receiv-

ing the correct dose or the medication may not be working. This allows physicians to make adjustments quickly when medications are not effective.

3. As with any medication, stimulants can have negative side effects. These medications work quickly and leave the body quickly. If a negative side effect is observed, the child can simply stop taking the medication and the negative side effects will wear off within 3 to 8 hours.
4. Some of the older stimulants such as Ritalin have been used for more than 30 years and are considered to be extremely safe.

A child who is prescribed a stimulant medication may initially take a small dose of the medication, and then the dose is increased over a period of several weeks until the optimal dose is achieved. In some cases, children may not respond well to one stimulant medication and a different one will be prescribed. Examples of poor response to medication include negative side effects and symptoms not improving. In the past, one concern with stimulants was that children usually needed to take one dose in the morning before school and one dose at school during lunch. There are now sustained-release stimulant medications that are taken once per day.

**TABLE 4.2. Medications for ADHD**

Generic (trade) name	Class	Notes
Amphetamine (Adderall)	Stimulant	Can cause appetite suppression, insomnia, dizziness, gastrointestinal problems and irritability; watch for tics.
Dextroamphetamine (Dexedrine)	Stimulant	Can cause appetite suppression, insomnia, dizziness, gastrointestinal problems and irritability; watch for tics
Methylphenidate (Concerta, Metadate, Ritalin)	Stimulant	Can cause appetite suppression, insomnia, dizziness, gastrointestinal problems and irritability; watch for tics.
Atomoxetine HCL (Strattera)	—	Can cause nausea, appetite suppression, dizziness, fatigue, mood swings.
Bupropion (Wellbutrin)	Atypical antidepressant	Insomnia, dizziness, constipation, irritability, decreased appetite; watch for tics.
Desipramine (Norpramin)	TCA	Can cause cardiac complications leading to death; not often recommended by physicians.
Nortriptyline (Aventyl, Pamelor)	TCA	Can cause dry mouth, constipation, nausea, blurred vision, sedation, stomach upset, nightmares; overdose risk.
Imipramine (Tofranil)	TCA	Can cause dry mouth, constipation, nausea, blurred vision, sedation, stomach upset, nightmares; overdose risk.
Clonidine (Catapres)	Antihypertensive	Can cause sedation, hypotension, irritability, and depression.
Guanfacine (Tenex)	Antihypertensive	Can cause dry mouth, drowsiness, dizziness, constipation, headache, upset stomach.

The use of stimulant medications has dramatically increased in the past two decades. It has been argued that this rise reflects both an overreliance on medication management of ADHD and overdiagnosis of the disorder in general. Others have argued that stimulant medication is actually underused in the management of children with ADHD and that the increase in use is related to better recognition of the disorder.

When stimulants are ineffective or negative side effects from treatment are unacceptable, antidepressant medications are sometimes used to treat ADHD (Reiff & Tippins, 2004). In contrast to stimulants, the effects of antidepressant medications often take at least 4 weeks to evaluate. One benefit of antidepressants is that the effects are consistent across the day. Stimulants wear off by homework or dinner time, but antidepressants remain at stable levels as long as the child continues to take the medications daily. Additionally, because the timing of the dose is less precise, these medications can usually be given at home and not at school. Because antidepressants are not controlled substances, refills can be phoned in by the child's physician, giving parents more leeway. In contrast to stimulants, it is not appropriate to skip a dose of antidepressant medications.

Traditional antidepressant medications that are used to treat ADHD include tricyclic antidepressants such as desipramine, imipramine, and nortriptyline (Reiff & Tippins, 2004). Wellbutrin, an atypical antidepressant, is also effective in treating ADHD. Another medication in this class now used to treat ADHD is atomoxetine HCL. While this medication was previously developed as an antidepressant, it is now used to treat ADHD. Its effects in the brain are similar to these of an antidepressant. It is a selective norepinephrine reuptake inhibitor originally designed specifically to treat depression in adults.

Some children with ADHD benefit from treatment with the antihypertensive medications such as clonidine and guanfacine. These medications may be particularly useful for children with ADHD who are agitated or aggressive. The following is an example.

Jason is 16 years old and is just beginning his junior year in high school. He was diagnosed with ADHD in the second grade and took medication for the management of ADHD through the seventh grade. Although he is no longer overly active, his parents and teachers continue to have concerns about his academic performance. He seems to have special difficulty planning in advance for semester-long projects and comprehensive final exams. Although he is bright and does well on exams, he often receives mediocre semester grades because of missing homework assignments. He takes poor notes during class because he is easily distracted. In addition to these concerns, Jason has received a speeding ticket and has been involved in two fender benders since receiving his license only 4 months ago. His mother is starting to have serious concerns about her son's ability to complete college without her assistance.

There is no medication that will teach Jason time-management skills. These skills need to be specifically taught, and Jason will probably always require assistance in planning long-term projects. It is important that his parents help him access services for students with disabilities when he gets to college. However, now that Jason is driving, his impulsivity is a serious concern. He has already demonstrated poor decision-making while driving. It may make sense for Jason to resume the stimulant medication that worked for

him when he was a child. This may have the added benefit of helping him to be less distractible during class lectures. One concern about the use of stimulant medications with teenagers is the possibility that the medication can be sold for improper use. If this is a concern, nonstimulant medication treatment can be prescribed or his parents can control administration of the medication.

### **Oppositional Defiant Disorder**

ODD is a pattern of defiant behavior that persists over time and settings. Children with ODD frequently argue with adults, lose their tempers, and defy rules. They may be irritable and easily annoyed. ODD is often diagnosed during early elementary school, around age 6. However, in most cases, behavior problems like tantrums, stubbornness, and defiance can be traced back to as early as age 3. In most cases, the treatment of choice for ODD is behavior therapy. However, when ODD occurs with ADHD, treatment of ADHD symptoms can sometimes improve symptoms of ODD. Additionally, it is important to determine whether the child truly has ODD or whether irritable, negative behaviors are masking an underlying depression that may require both behavior therapy and medication.

### **Conduct Disorder**

CD involves very serious behavior problems that violate the rights of others. Behaviors may include aggression, property destruction, cruelty to people or animals, fire setting, stealing, running away, or truancy. These behaviors typically occur in multiple settings. There is no medication to treat CD; individual and family behavior therapy are usually recommended. However, many children in this group are also diagnosed with other disorders like ADHD or mood disorders. In these cases, medication may be prescribed to manage symptoms of the second disorder, but medication management must be approached very carefully. Adolescents with CD are at high risk for illegal diversion of medications.

## **ANXIETY DISORDERS**

Almost everyone has times when they feel anxious or nervous. Symptoms of anxiety are often observed in children who do not have psychiatric problems. For example, most infants between 6 and 18 months of age become distressed when separated from their primary caregiver. Starting at about 10 months of age, most babies also begin to be fearful of strangers. Preschool children are often afraid of the dark. School-aged children may worry about doing well in school. Many adolescents have anxiety related to social performance and social evaluation. These somewhat common symptoms of anxiety may become abnormal when they last for a long time or interfere with the child's quality of life. Anxiety problems can be distressing for the child and the child's social circle. Anxious children may have chronic stomachaches, headaches, and other physical problems. Their school perfor-

mance may suffer if they resist attending school, fail to ask for clarification or assistance, or refuse to perform required academic activities (e.g., giving a class presentation). Some anxious children also perform poorly on tests even when they have studied for the exam and know the information.

Experts believe that most anxiety disorders are the result of both environmental and genetic factors. Some babies just seem to be born with very shy temperaments and tend to be very cautious in exploring their surroundings. These babies are more likely to develop problems with anxiety that rise to a clinical level later in childhood or adulthood. Additionally, many anxious children have anxious parents. The parents pass on their genetic predisposition toward anxiety and may also model and reinforce anxious behavior in their children.

In this section, we discuss seven disorders that are related to anxiety. These include separation anxiety disorder, generalized anxiety disorder (GAD), panic disorder, selective mutism, phobias, OCD, and PTSD. (See Table 4.3 for a summary.)

New research suggests that childhood anxiety disorders are more prevalent than previously believed and that these disorders persist over time. Childhood anxiety disorders can often be treated with behavioral, cognitive-behavioral, and psychosocial interventions. Very few double-blind studies (experiments where neither the experimenter nor the participants know if the participant is taking actual medication or a placebo) have been conducted to explore the efficacy of medications for childhood anxiety problems. Unfortunately, it is becoming increasingly common for children with these disorders to be treated with medication alone.

It is usually recommended that medication be used only with children who have not responded to other therapies for anxiety or that medication be used only in conjunction with other therapies. In addition, medication for anxiety is usually used only for a short time and is discontinued once symptoms improve. Anxious children are often given medication for vague problems (e.g., school refusal, irritability, headaches and stomachaches) that would be treated more effectively with other therapies. Improvement is difficult to assess in gauging treatment effectiveness. As a result, symptom reduction is not always used as a guideline for decision making.

**TABLE 4.3. Types of Anxiety Disorders**

Disorder	Major symptoms
Separation anxiety disorder	Anxiety related to separation from the parent or the home
Generalized anxiety disorder (GAD)	Excessive worry about typical life events and activities
Panic disorder	Recurrent and unexpected bouts of sudden and intense fear
Selective mutism	Failure to speak in specific social situations (e.g., failure to speak at school)
Phobias	Excessive fear of a specific object or situation
Obsessive-compulsive disorder (OCD)	Intrusive, distressing thoughts or repetitive behaviors
Posttraumatic stress disorder (PTSD)	Symptoms of intense distress or emotional numbing following exposure to a life-threatening event



Table 4.4 provides an overview of medications used in treating children with anxiety disorders. One type of medication that is used to treat anxiety disorders is benzodiazepines, which includes diazepam and clonazepam. Separation anxiety disorder, GAD, and panic disorder can be treated with clonazepam, which can decrease the frequency of panic attacks and decrease symptoms of anxiety. Side effects can include drowsiness, clumsiness (poor coordination or ataxia), and dizziness. Conversely, some people experience a paradoxical (opposite) reaction when taking benzodiazepines and become very nervous and agitated. A paradoxical reaction is not dangerous but can be very distressing to the child. The symptoms will disappear when the medication leaves the child's system, usually within a few hours.

Certain antidepressants can also be effective in treating anxiety disorders. Clomipramine is a TCA that has been documented in double-blind studies to decrease symptoms of

**TABLE 4.4. Medications for the Management of Anxiety Disorders in Children**

Generic (trade) name	Class	Notes and side effects
Clonidine (Catapres)	Antihypertensive	Effective in treating PTSD; can cause sedation, hypotension, irritability, and depression.
Propranolol (Inderal)	Antihypertensive	Effective in treating PTSD; can cause reduced blood pressure, drowsiness, and insomnia.
Buspirone (Buspar)	Atypical antianxiety	Effective in treating GAD, social phobia, panic disorder, separation anxiety disorder; can cause dizziness, confusion, disinhibition and drowsiness.
Clonazepam (Klonopin)	Benzodiazepine	Effective in treating GAD, panic disorder, separation anxiety; can cause drowsiness, ataxia, dizziness; watch for agitation or disinhibition (paradoxical reaction).
Lorazepam (Ativan)	Benzodiazepine	Can cause drowsiness, ataxia, dizziness; watch for agitation or disinhibition (paradoxical reaction).
Fluoxetine (Prozac)	SSRI	Effective in treating OCD, panic, separation anxiety; can cause restlessness, nausea, insomnia, fatigue, decreased appetite, tremors, disinhibition, agitation, stomach upset, headaches.
Sertraline (Zoloft)	SSRI	Effective in treating OCD, panic, separation anxiety; can cause restlessness, nausea, insomnia, fatigue, decreased appetite, tremors, disinhibition, agitation, stomach upset, headaches.
Fluvoxamine (Luvox)	SSRI	Effective in treating OCD, panic, separation anxiety; can cause restlessness, nausea, insomnia, fatigue, decreased appetite, tremors, disinhibition, agitation, stomach upset, headaches.
Paroxetine (Paxil)	SSRI	Effective in treating OCD, panic, separation anxiety; can cause restlessness, nausea, insomnia, fatigue, decreased appetite, tremors, disinhibition, agitation, stomach upset, headaches.
Clomipramine (Anafranil)	TCA	Effective in treating OCD; watch for seizures with prolonged use and high doses; can cause dry mouth, constipation, nausea, blurred vision, sedation, stomach upset, nightmares, fatigue; overdose risk.



OCD in children. Children being treated with clomipramine require monitoring of heart and liver functioning. There is a risk of seizure if children are treated with the medication for more than 1 year. Other common side effects include drowsiness, dizziness, tremors, headaches, and dry mouth. Although both desipramine and imipramine have been shown to be somewhat effective in treating anxious children, the risk of death due to cardiac complications makes these medications more risky choices.

More recently, SSRI antidepressants have gained popularity for use with anxious children. Fluoxetine has been used successfully to treat OCD, separation anxiety disorder, and social phobia. Sertraline, paroxetine, and fluvoxamine treat OCD. SSRI antidepressants may be used when a child with PTSD also suffers from depression. Again, these are off-label uses that must be monitored carefully. Side effects can include tiredness, insomnia, restlessness, and nausea.

Buspirone, a medication used to manage anxiety in adults, is also effective in the treatment of GAD in children. Antihypertensives have been used to treat anxiety disorders, particularly PTSD, in children. Clonidine and propranolol have been used to treat PTSD symptoms of overarousal.

## Separation Anxiety Disorder

Separation anxiety disorder is one of the most common childhood problems. Age-appropriate separation anxiety starts as early as 6 months and may last as long as 2 years. Infants and toddlers may become very upset when they are left with grandparents or babysitters, even when these caregivers are well known to the child. However, when these same symptoms persist into early school age, the child may be suffering from separation anxiety disorder. Children with this disorder are very anxious about being away from home or being separated from their primary caretaker. They may worry frequently about the safety of their caretaker. They may also refuse to go to school, go to sleep, or stay home without their primary caregiver. Children with separation anxiety may also have problems like nightmares, headaches, and stomachaches that become worse when separation is anticipated.

## Generalized Anxiety Disorder

Children with GAD worry excessively about normal, everyday life events. Unlike children with OCD, who may worry about a bizarre or unlikely outcome (such as being severely contaminated through contact with a toilet seat), children with GAD worry excessively about such everyday concerns as performing well on a test, pleasing their parents, or being able to complete responsibilities. Of course, it is not unusual for children (and adults) to worry about routine life events. However, the child with GAD may be unable to complete homework or to concentrate in school because of the inability to stop worrying. The child may also have difficulty initiating or completing assignments because of anxiety. Children with GAD may have physical symptoms like headaches or stomachaches and may habitually stay home sick on the day of a big test.

## Panic Disorder

Panic disorder often develops during adolescence, with the peak age of onset occurring between 15 and 19 years of age. Children and adolescents with panic disorder experience recurrent panic symptoms that are severe enough to warrant the word “attack” to describe them. These symptoms typically develop without warning and include very intense feelings of fear and symptoms like sweating, shaking, shortness of breath, nausea, dizziness, a racing heart, and chest pain. The child or adolescent may have fears of going crazy or dying. Panic attacks are extremely distressing to the individual, but for many people, the fear of panic attacks can be more debilitating than the actual attacks themselves. People with panic disorder typically live with a persistent fear of experiencing another attack. In some cases, this fear may be so marked that the child may refuse to leave the house (agoraphobia). In these cases, the child may be particularly resistant to going places where it may be difficult to leave during a panic attack (e.g., a bus, a concert, a crowded mall). There is a great deal of evidence to suggest that panic disorder is genetic.

## Selective Mutism

Selective mutism is not necessarily an anxiety-related disorder, although it is often grouped with the anxiety disorders. Children with selective mutism fail to use language in certain situations, usually at school or in public. Many children with selective mutism speak freely at home. Unlike children with mental retardation or children with speech delays, children with selective mutism are capable of talking and usually talk freely in one or more situations. Some children may talk only to immediate family members. Selective mutism is usually not diagnosed when the child refuses to speak because of a speech impediment and is embarrassed or afraid that the listener will not understand. Selectively mute children are usually shy, nervous, and fearful.

Six-year-old Maggie is a first grader in Ms. Page’s class. She usually responds to questions with a brief yes-or-no nod. On rare occasions she will whisper answers that are so quiet, Ms. Page can barely hear her. When asked a direct question requiring more than a nod, Maggie usually sucks on her fingers and stares blankly at Ms. Page. During the first parent conference, Ms. Page was shocked to hear Maggie’s mother describe her behavior at home as loud, boisterous, and even bossy with her younger siblings.

It is very important that Maggie’s selective mutism be treated as quickly as possible. There are excellent behavior therapy approaches to the treatment of this problem. Maggie might also be helped by an SSRI or an anxiolytic medication while she works through the initial phases of psychological intervention.

## Phobias

A phobia occurs when a child has an excessive fear of something like heights, small spaces, or spiders. A specific phobia is diagnosed when the child has a fear of a specific object or situation. Common phobias are fear of the dark, fear of spiders, and fear of needles. A

social phobia is diagnosed when the child is afraid of being embarrassed in a social situation. Class presentations can be so difficult for children with social phobia that they may refuse to go to school or to participate when presentations are scheduled. Likewise, even seemingly easy responsibilities such as saying hello to a new classmate or asking for help in class can be almost impossible for a child with social phobia.

It can be difficult to differentiate between normal childhood fears and a true phobia. Many young children are fearful of strangers, animals, or monsters. Although these childhood fears can be very distressing to the child and family, their duration is usually short. A phobia is diagnosed when the fear persists over time and interferes with the child's daily life. For example, an 8-year-old who refuses to go outside or to watch TV because a snake might appear may have a phobia. On the other hand, a 3-year-old who avoids going to bed at night because she is afraid of the dark probably does not have a phobia.

Some phobias develop after the child has been exposed to a frightening event, such as watching a sibling get bitten by a bee. Family members may inadvertently reinforce other phobias. An example of this is a child who receives special time with mom at bedtime because of a fear of monsters. Humans in general seem to be biologically predisposed to develop phobias to certain dangers like snakes and spiders. Some scientists believe that these fears kept our ancestors safe by keeping them from having contact with things that could hurt them.

## Obsessive–Compulsive Disorder

OCD often involves intrusive thoughts or images (obsessions) or impulses (compulsions). For example, a child may have obsessive fears of contamination or of death. The child may engage in repetitive behaviors or mental acts in an attempt to reduce the stress felt from the thoughts. Compulsive acts may include repetitive hand washing (often related to contamination obsessions), ritualistic touching of objects, or counting. Some children with OCD have intrusive thoughts that are upsetting to them, often with violent or sexual images. Some children may feel anxious when items are not arranged in a symmetrical manner or when a pencil is not perfectly sharp. OCD often develops during childhood or adolescence. Although no single gene for the disorder has been identified, research suggests that children with this disorder are born with biological risk factors that are exacerbated by stress. There are excellent psychotherapeutic treatments for OCD. The behavioral approach of exposure plus response prevention is an effective treatment. In this therapy, the child is placed in a situation where the stimulus occurs and then any response to that stimulus (such as counting, for instance) is prevented. Medications may be prescribed in conjunction with behavioral psychotherapy

Allie is an 11-year-old who is in the sixth grade. At the beginning of the school year, Allie was doing well in school. She completed her work carefully and on time and usually received A's on tests. For the last few months, Allie's performance has fallen off dramatically. She seems to have trouble finishing her work. It can take her 2 hours to complete a short quiz that takes the other students less than half an hour. She reviews her answers over and over and often erases words that aren't written perfectly. Most of

her papers are returned with holes in them because she has erased the answers so many times. She is constantly arranging and rearranging her materials on her desk so that they are “just so.” Her mother has complained that she is receiving 6 hours per night of homework. Her teacher has reported that 1 hour of homework has been assigned.

Allie’s behaviors may be consistent with a diagnosis of OCD. Children with OCD may doubt that they have completed an assignment correctly, so they may check it over and over. Of course, no matter how many times Allie checks it, she will continue to have doubting feelings. She may have a difficult time getting started on work because things must be arranged in a certain way (her pencils must be sharpened in a certain manner and books must be aligned) or certain mental rituals must be accomplished (counting in a specific way or waiting for a sign) before work can begin. Many children with compulsive behaviors will admit to having intrusive and unwanted thoughts as well. It is important that Allie receive a full evaluation. If she does have OCD, the best treatment is the behavioral treatment of exposure plus response prevention. Allie may also benefit from treatment with an antidepressant.

### **Posttraumatic Stress Disorder**

PTSD is characterized by the development of significant psychological problems following exposure to a life-threatening event such as a car accident, an assault, or a natural disaster. Some children experience PTSD after hearing about a loved one being exposed to a life-threatening event. Following the traumatic incident, the child may feel as if the event is happening all over again (reexperiencing symptoms), have bad dreams about the incident, suddenly replay the event (flashbacks), or have distressing thoughts that the trauma will intrude unexpectedly. The child might also experience distress when exposed to reminders of the trauma. For example, a child who has been in a very serious car accident may become upset when riding in a car. Children with PTSD may also become emotionally numb and try to avoid thinking or talking about the trauma. They may seem to be detached from family and friends. They might show signs of increased stress, sleeping difficulties, irritability, or difficulty concentrating.

There are excellent psychotherapies to help children who have suffered a traumatic event, but no medication specifically treats PTSD. However, in addition to psychotherapy, medication is sometimes prescribed to help with problematic symptoms that interfere with or slow the child’s progress in therapy. Sleep medications, for example, may be prescribed for a child who is too anxious or frightened to sleep.

## **MOOD DISORDERS**

We all have times when we are blue or sad. However, when a child loses interest in activities that used to be enjoyable and is gloomy and down for days or weeks at a time, a mood disorder such as depression may be present. Mood disorders also include symptoms oppo-

site from depression, like extreme laughter and happiness, excessive irritability, and hyperwakefulness. These are symptoms of mania and are sometimes associated with bipolar disorder. Bipolar simply means moods that are at the two extremes of a continuum (or pole) of mood. The two major types of mood disorders are depressive disorders (including dysthymia) and bipolar disorders.

## Depressive Disorders

Depression in children can be more difficult to recognize than depression in adults. Adults with depression are likely to report feelings of sadness; children with depression are more likely to show symptoms like chronic irritability, poor energy, disturbed sleep patterns, and changes in appetite. Physical complaints such as vague aches and pains, stomachaches, and headaches are common. They may describe themselves as bored. Children with depression may also begin to perform poorly in school. Symptoms like temper tantrums, behavior problems, and difficulty with peers can also signal depression in children.

Some children may experience a major depressive episode, which lasts at least 2 weeks and is marked by symptoms of sadness, irritability, or loss of interest in things the child used to enjoy. A child with major depression may have difficulty concentrating in school or making decisions. There may be weight loss or gain for no apparent reason. Some children with depression have difficulty falling asleep or staying asleep while others seem to sleep all the time. Some depressed children can become agitated and restless. Others have poor energy and move slowly and sluggishly. The child may think or talk about death or suicide.

Another depressive disorder sometimes observed in children is called dysthymic disorder, and it is somewhat of a low-grade depression. Children with dysthymia have a chronically depressed or irritable mood that lasts for more than a year. Like children with depression, they may have problems with their appetite, sleep schedule, and energy level. They may also report that they feel worthless or may show signs of poor self-esteem. They may have difficulty concentrating in class or making decisions.

It can be difficult to distinguish between day-to-day mood variations and a true problem with depression. Some children and adolescents become extremely upset over small mishaps or minor incidents. These children may simply have a temperament that is especially sensitive or reactive. Similarly, it is normal for a child or adolescent to feel sad following the death of a loved one. On the other hand, if a child stays upset for a prolonged period following an upsetting incident, this may be a sign of depression.

Table 4.5 provides an overview of medications used to treat mood disorders in children. Although many antidepressant medications (particularly SSRIs and TCAs) have excellent outcomes with adults, their effectiveness with children is still being researched and is not yet fully understood. At this point, medications are often reserved for use when other treatments have not been effective or when the child's depression is very severe. Further, there have been some reports of suicidality in children taking SSRI medications. At this writing, this relationship is being researched, and the FDA is requiring black box warnings regarding suicide to be placed on the package information of all SSRI antidepressants except Prozac. Regardless of the type of treatment a child is receiving, suicidality

TABLE 4.5. Medications for the Management of Mood Disorders in Children

Generic (trade) name	Class	Indicated use	Side effects
Carbamezepine (Tegretol)	Antiepileptic	Mania	Dizziness, drowsiness, nausea, blurred vision; watch for rash; need to monitor white blood cell count.
Valproic acid (Depakote)	Antiepileptic	Mania	Nausea, vomiting, indigestion, sedation, dizziness, weight gain, appetite suppression; requires blood level monitoring; watch for pancreatic swelling.
Clozapine (Clozaril)	Atypical antipsychotic	Bipolar symptoms	Cognitive sedation, extrapyramidal effects.
Risperidone (Risperdal)	Atypical antipsychotic	Mania	Cognitive sedation, extrapyramidal effects.
Lithium (Eskalith, Lithane, Lithobid, Lithonate)	Mood stabilizer	Mania	Can cause diarrhea, nausea, tremor, drowsiness, memory impairment; requires blood level monitoring; monitor for toxicity.
Fluoxetine (Prozac)	SSRI	Depression	Can cause restlessness, nausea, insomnia, fatigue, decreased appetite, tremors, disinhibition, agitation, stomach upset, headaches.
Fluvoxamine (Luvox)	SSRI	Depression	Can cause restlessness, nausea, insomnia, fatigue, decreased appetite, tremors, disinhibition, agitation, stomach upset, headaches.
Paroxetine (Paxil)	SSRI	Depression	Can cause restlessness, nausea, insomnia, fatigue, decreased appetite, tremors, disinhibition, agitation, stomach upset, headaches.
Sertraline (Zoloft)	SSRI	Depression	Can cause restlessness, nausea, insomnia, fatigue, decreased appetite, tremors, disinhibition, agitation, stomach upset, headaches.
Citalopram (Celexa)	SSRI	Depression	Can cause restlessness, nausea, insomnia, fatigue, decreased appetite, tremors, disinhibition, agitation, stomach upset, headaches.
Clomipramine (Anafranil)	TCA	Depression	Risk of seizure onset with prolonged use and high dosage; can cause dry mouth, constipation, nausea, blurred vision, sedation, stomach upset, nightmares; overdose risk.

is always a concern when children are depressed. For this reason, careful monitoring of depressed children is always necessary.

## Bipolar Disorder

Physicians used to believe that bipolar disorder occurred only in adolescents and adults. Recently, however, there has been increased understanding of bipolar disorder in children. Bipolar disorder is characterized by periods of mania (manic episodes) or mild mania (hypomanic episodes) generally alternating with depression. Manic episodes involve at least a weeklong period where the child has an abnormally elevated or irritable mood. This mood represents a marked change from the child's normal behavior. The child may act indestructible and may engage in dangerous behaviors. A child may seem rested after having little or no sleep or might talk excessively or report thoughts that are racing. Behavior may be agitated, restless, or very active. It may be extremely difficult to get the child's



attention. Children who have one or more manic episodes are diagnosed with bipolar I disorder. These children may also be at risk for the development of depression. However, not all children with bipolar I disorder have depressive episodes.

A hypomanic episode is similar to a manic episode but lasts for a shorter period and has less severe symptoms. Children who have one or more hypomanic episodes plus one or more depressive episodes are diagnosed with bipolar II disorder.

There is also evidence that some children with bipolar disorder do not have the discrete mood episodes (mania and depression) discussed above. Instead, they may rapidly cycle from depression to mania in a period of hours or days. Some children may also experience symptoms of mania and depression at the same time.

Unlike children with depression, who are often successfully treated with psychotherapy, children with bipolar disorder almost always require treatment with medication. The medications used for bipolar disorder include lithium and mood stabilizers (antiepileptic medications). Lithium carbonate is the classic treatment for bipolar disorder. This medication accumulates in the child's bloodstream, so frequent monitoring of blood levels is necessary to ensure the child is receiving the optimal dose and to avoid side effects and toxic reactions. The side effects of lithium can make this medication difficult for some children to tolerate even when it is effective in managing symptoms. Side effects can include nausea, fatigue, tremors, and cognitive problems. Many children taking lithium will be extremely thirsty. They may need to keep a water bottle by their desk or they may need permission to make unlimited trips to the drinking fountain. Some children will also experience significant weight gain and exacerbation of acne. Dangerous toxic reactions can be signaled by symptoms such as vomiting, diarrhea, tremors, or convulsions. Pregnant teenagers should not take lithium because this medication can damage the developing baby.

Antiepileptic medications are often used as mood stabilizers for children with bipolar disorder. For example, carbamazepine and valproic acid may be used to treat children with bipolar disorder even when seizures are not present. Like lithium, blood level monitoring is necessary with these medications. Side effects can include fatigue, nausea, dizziness, weight gain, appetite loss, and blurry vision. Children taking carbamazepine should also be monitored for the development of a rash that affects the hands and mouth. Other antiepileptic medications used to manage mood symptoms include gabapentin, lamotrigine, oxcarbazepine, tiagabine, and topiramate.

Bipolar disorder is usually complicated. Children with bipolar disorder may also suffer from ADHD, anxiety, or psychosis. Children with ADHD and bipolar disorder will likely require treatment for both disorders (i.e., a stimulant and a mood stabilizer). Similarly, when the child also has psychotic symptoms such as hallucinations or bizarre thoughts, an antipsychotic may also be needed. In some complex cases, children with bipolar disorder may require more than two medications to manage symptoms effectively.

Greg is a 10-year-old boy who is in the fourth grade. His teacher knows that he has ADHD and is on medication for this problem. She has made a number of accommodations to help him focus and stay organized. However, his behavior continues to be very problematic. He is extremely irritable and tends to overreact to even small conflicts in the classroom. A couple of weeks ago, Greg's behavior improved and, although he was



still irritable, he was quiet and sedate. More recently, he has become increasingly agitated, loud, and disruptive in class. A day rarely passes that Greg doesn't cry or end up in a yelling match with another child. It seems as though the smallest event can send him from perfectly calm to near hysteria. His teacher is starting to wonder if his problems extend beyond ADHD.

Greg's behavior problems are not typical of a child with simple ADHD and may reflect an underlying mood disorder. It would be helpful for Greg's teacher to document her observations for several weeks so that Greg's parents and doctors can get a better idea of the types of problems he is having. Irritability is a common symptom of childhood depression. On the other hand, Greg's mood swings may suggest pediatric bipolar disorder. It will be important to find out whether Greg's variations in mood have anything to do with other events in his life.

## TIC DISORDERS

A tic is a recurrent movement or vocalization. Motor tics can be simple (e.g., eye blinking, grimacing, and coughing) or complex (e.g., jumping, touching, and smelling). Simple motor tics are relatively common in young children and most children are unaware that they are even occurring. Complex motor tics last longer and may be more purposeful (e.g., smelling an object). Some children may also have self-injurious tics like slapping, hitting, or biting themselves. Vocal tics, which are similar to motor tics, can also be simple (e.g., grunting, barking) or complex (e.g., repeating words and phrases).

Most tic disorders begin before age 10. They tend to emerge first between ages 6 and 7, and many disappear or become markedly less severe by age 18. Motor tics such as eye blinking usually emerge first. Vocal tics usually emerge several years later. Tic disorders are often worst during preadolescence, between 8 and 12 years of age.

Somewhere between 10 and 20% of children will experience a transient tic at some time during childhood. However, a tic disorder is diagnosed when the tic persists over time. There are several categories of tic disorders, with the most severe being Tourette's disorder (TD). Children with TD have chronic motor and vocal tics. Children with TD are at risk for ADHD and OCD.

Psychopharmacological interventions are the most common treatments for patients with TD, and tics can generally be controlled with proper medication in about 80% of cases. Table 4.6 provides an overview of medications used to treat tic disorders in children. Medications previously used to control hypertension are often the first line of treatment for TD. The side effects of these medications are generally mild, and they also may improve symptoms of ADHD that are often comorbid with TD. These medications include guanfacine and clonidine. A failed trial of an antihypertensive is often followed by a low dose of a neuroleptic medication such as risperidone or haloperidol. The atypical antipsychotics (e.g., risperidone, olanzapine, ziprasidone, and quetiapine) are usually used before the traditional antipsychotics (e.g., haloperidol, pimozide) because they have fewer

TABLE 4.6. Medications for the Management of Tic Disorders in Children

Generic (trade) name	Class	Side effects
Clonidine (Catapres)	Antihypertensive	Can cause sedation, hypotension, irritability, and depression; can reduce symptoms of ADHD as well as tics.
Guanfacine (Tenex)	Antihypertensive	Can cause hypotension and sedation; reduces symptoms of ADHD as well as tics.
Haloperidol (Haldol)	Antipsychotic	Can cause sedation, weight gain, cognitive blunting, decreased seizure threshold; must monitor for movement disorders.
Pimozide (Orap)	Antipsychotic	Can cause sedation, weight gain, cognitive blunting, decreased seizure threshold; must monitor for movement disorders.
Risperidone (Risperdal)	Atypical antipsychotic	Can cause sedation, weight gain, cognitive blunting, decreased seizure threshold; must monitor for movement disorders.
Olanzapine (Zyprexa)	Atypical antipsychotic	Can cause sedation, weight gain, cognitive blunting, decreased seizure threshold; must monitor for movement disorders.

and less severe side effects. Other treatments are used when these agents are not successful or when adverse side effects are intolerable.

Because some children with TD also suffer from significant ADHD, the stimulant medications used to treat ADHD are sometimes used in children with TD. Although they are usually effective in managing ADHD symptoms in this group, use of stimulants may result in an increase in tic symptoms. Symptoms of OCD can also be treated with medications such as the SSRIs.

Isaiah is an 8-year-old boy in the third grade. He first developed tics when he was 5 years old. At first, his tics included eye blinking, head jerks, facial grimaces, and squinting. Now, he also has several vocal tics including throat clearing and snorting. Like many children with TD, Isaiah also has ADHD and is in constant trouble at school. He gets sent out of class at least once a week and has been suspended five times in the last 6 months. Infractions include disruptive classroom behavior such as making animal sounds in class and disrespectful behavior such as making pelvic thrusting movements toward the teacher. His teacher reports that Isaiah is constantly out of his seat sharpening his pencil or straightening books in the classroom.

Isaiah's problem behaviors are likely part of his disorder. The animal sounds and pelvic thrusts are actually common tics displayed by children his age. It sounds as though Isaiah is also developing symptoms of OCD. He may be unable to stop himself from leaving his seat to engage in compulsions such as pencil sharpening or straightening. It is very important that Isaiah's parents, teachers, and classmates understand that people with TD are often unable to control their tics, even when they are highly motivated to do so. Punishing him by removing him from class or suspending him will not change his behavior and may actually be making his symptoms worse by adding stress. Children with TD tend to have good periods and bad periods, so it may look as though Isaiah has more control over his tics than he actually does. It may help to give Isaiah freedom to leave the room regu-

larly to express tics. A child like Isaiah who has TD along with symptoms of OCD and ADHD will likely require a combination of medications. Further, because TD follows a waxing and waning course, medications may have to be adjusted more frequently than with other disorders.

## DEVELOPMENTAL DISABILITIES

### Mental Retardation

Children with mental retardation have deficits in intellectual ability and adaptive behaviors. By definition, a child diagnosed with mental retardation must have an IQ below 70 and must have deficits in adaptive functioning in two of the following areas: communication, self-care, home living, social or interpersonal skills, use of community resources, self-direction, functional academic skills, work, leisure, health, and safety. In addition, these problems must begin before the child is 18 years old. People with mental retardation fall into one of four categories: mild (IQ between 50–55 and approximately 70), moderate (IQ between 35–40 and 50–55), severe (IQ between 20–25 and 35–40), and profound (IQ below 20–25).

Eve is a nonverbal 13-year-old girl with moderate mental retardation. Her behavior at school has become increasingly difficult to manage. She is constantly on the go and has a difficult time sitting in her chair for any length of time. She has been having multiple aggressive outbursts every day and has severely scratched the arms of several teacher's assistants. Her teacher is working with her on a picture exchange system to increase her communication skills, but her aggressive outbursts are limiting the amount of time that can be devoted to educational programming.

Eve needs a functional behavioral assessment to identify the cause of her aggressive outbursts. Eve's teacher should then focus on teaching her an alternative response to scratching in order to meet her needs. It sounds as though her teacher is off to a good start with the picture exchange system. At the same time it may also help to prescribe some medication to decrease hyperactivity and to reduce aggression. An antihypertensive medication such as guanfacine or clonidine might be considered. The addition of medication may allow Eve to benefit more fully from the educational plan her teacher has written so that her communication and coping skills can be improved.

### Autism Spectrum Disorders

Autism disorders are also called the pervasive developmental disorders. They include autism, Asperger syndrome, and pervasive developmental disorder not otherwise specified. Autism disorders are characterized by deficits in social interaction skills. Children with autism have three primary characteristics: impairments in social interaction, impairments in communication, and stereotyped behaviors or interests. Social impairments may include a failure to make friends, to show interest in the activities of others, or to seek

social companionship. Children with autism often communicate poorly because they fail to use eye contact and facial expressions. They have difficulty understanding social rules and expectations. In the area of communications, some children with autism may fail to develop functional language. Others may use language but may have difficulty with conversational skills and the social use of language. Finally, some children may use language in atypical ways like echoing words or phrases they have heard in the past or using pronouns incorrectly. Stereotyped behaviors range from unusual motor movements (e.g., hand flapping) to perseverative behaviors (e.g., looking at things from odd angles) to obsessive interests (e.g., vacuums, bottle caps, sea creatures). Over 75% of children with autism have cognitive impairments. Others do not have cognitive impairments, and some are even considered to be gifted. Therefore, a diagnosis of autism does not mean that the child also has mental retardation.

Children with Asperger syndrome have social deficits similar to those of children with autism. They may fail to understand social interactions and may have a difficult time making and maintaining friends. They also display similar stereotyped behaviors including obsessive interests, rigid adherence to routine, and unusual motor movements. However, children with Asperger syndrome do not have delays in communication or self-help skills. By definition their cognitive abilities do not fall in the impaired range.

Pervasive developmental disorder not otherwise specified (PDDNOS) is diagnosed when a child has some of the features of Asperger syndrome and autism but does not meet strict diagnostic criteria for these disorders.

J. J. is a 12-year-old boy with Asperger syndrome who is in a mainstream seventh-grade program. Although J. J. has always suffered from obsessive interests, his current obsession with earthquakes is significantly interfering with his academic performance. He often insists on moving his desk away from windows and into the classroom doorway in case there is an earthquake. He talks so much about earthquakes that he is not completing his work and everyone in the school is tired of hearing earthquake facts and statistics. He has recently taken to wearing a helmet to school to avoid being hurt in an earthquake, which has made him the target of significant peer teasing. Some students in the school have also discovered that they can upset J. J. by quietly shaking their desks with their knees. Although he is a good student, his teachers feel he may have to move to a self-contained class if these problems continue.

Obsessive interests are common among children with Asperger syndrome. In this case, J. J.'s interests are interfering with his academic and social functioning. In addition, he seems to be living with high levels of anxiety. A trial of a medication used for obsessive-compulsive disorder, such as an SSRI antidepressant, may be helpful.

Children with developmental disabilities are more likely to have behavioral and mood problems than other children. Problems can include aggression, self-injurious behavior, tantrums, and stereotyped behavior. Disruptive behavior may be caused by medical or environmental factors or a combination of the two. In many cases, behavioral problems result when children are unable to communicate their needs to others. Many professionals dismiss emotional and behavioral problems as being part of the child's developmental dis-

ability. However, psychiatric problems can limit the child's adaptive functioning as much as the developmental disability itself.

There are no medications that treat the core features of autism disorders or mental retardation. However, medications are frequently used to manage symptoms that interfere with the child's functioning and ability to profit from education. Once a problem has been identified, the same principles that apply to treatment of children without mental retardation are used. However, modifications are often made to match the child's developmental level and communicative ability. Table 4.7 provides an overview of the types of medications used to manage symptoms sometimes seen in children with developmental disabilities.

The success of behavioral treatment programs for individuals with mental retardation and autism spectrum disorders has caused some people to question the use of medications with this population. There has been some concern that medications are used as a first treatment option before other less intrusive methods have been attempted. The best treatment plans often involve a combination of medical, habilitative, and educational interventions.

As with other disorders, the medications used for children are often ones that have been tested primarily with adults. Parents, teachers, and physicians must be especially vigilant in the assessment and monitoring of adverse effects because these children often lack the communication skills needed to alert adults to problems. Extrapyrarnidal symptoms, tardive dyskinesia, and akathisia can signal serious problems and must be addressed quickly.

Mood problems like depression may occur frequently in children with developmental disabilities but may be difficult to recognize due to communication impairments. The frustrations of trying to get by in the world can lead to sadness and hopelessness. There is some evidence that SSRIs are effective in treating mood problems and impulse control in children and adolescents with developmental disabilities. Similarly, the atypical antidepressants and the atypical antianxiety medications may be effective in treating mood problems, anxiety, and irritability. For children and adolescents with mood swings or cyclic

**TABLE 4.7. Medications for Children with Developmental Disabilities, Including Autism Spectrum Disorders and Mental Retardation**

Symptom	Medication treatment options
Hyperactivity, impulsivity, inattention	Stimulants, antihypertensives
Obsessive-compulsive behaviors	SSRIs, antidepressants
Aggression	Antihypertensives, beta blockers, benzodiazepines, antipsychotics
Self-injury	Antihypertensives, beta blockers, benzodiazepines, antipsychotics, naltrexone
Depression	SSRI antidepressants, tricyclic antidepressants
Anxiety	SSRI antidepressants
Stereotyped or repetitive behaviors	SSRI antidepressants
Mood swings	Lithium, antiepileptics

mood disorders such as bipolar disorder, lithium and antiepileptic medications may be helpful in treating symptoms like mood cycling, irritability, and aggression.

ADHD is a common problem for children and adolescents with developmental disabilities. Symptoms such as impulsivity, inattention, and hyperactivity can significantly affect the child's ability to benefit from educational programming. ADHD medications can exert similar effects on children with and without developmental disabilities. However, there is some evidence that children with developmental disabilities may have more adverse effects and that lower-functioning children may benefit less from medication than higher-functioning children.

Disruptive behaviors like aggression and self-injury are among the most troubling problems seen in children and adolescents with developmental disabilities. Successful treatment of disruptive behavior often determine whether the child should be cared for at home or can attend a neighborhood school. Behavioral treatments are considered to be the best first intervention in treating disruptive behaviors in children with developmental disabilities. The first part of a behavioral treatment is conducting a functional behavior assessment. The treatment designed is based on the assessment. Treatment plans usually involve teaching new adaptive skills to replace disruptive behaviors.

When behavioral treatment plans are ineffective or when the behavior is physically damaging (e.g., head banging), medications are often prescribed. However, medication should not be prescribed in the absence of a companion behavior management program. Medications, however, are very effective in treating severe disruptive behavior in children with developmental disabilities. Atypical antipsychotics such as risperidone and olanzapine have been successfully used to treat aggression and self-injurious behavior and are usually preferable to older antipsychotics because they pose less risk of long-term side effects. Side effects of these medications can include weight gain and sedation. Tardive dyskinesia and neuroleptic malignant syndrome are unlikely but possible. In some cases of significant self-injurious behaviors, opiate blockers such as naltrexone can be helpful. In addition, there is some evidence that naltrexone may reduce hyperactivity and aggression and improve communication and prosocial behavior. Antiepileptic medications can be helpful in stabilizing mood and preventing rage episodes. Side effects can include drowsiness, tearfulness, and possibly increased aggression.

Perseverative, obsessive-compulsive, and stereotyped behaviors are often treated with SSRIs. Antihypertensive medications have also been useful in reducing stereotyped motor movements, self-stimulatory behavior, and hyperactivity. However, sedation and fatigue can result.

## PSYCHOTIC DISORDERS

Psychotic symptoms include hallucinations (seeing things that are not there) and delusions (false beliefs). Hallucinations can be auditory (e.g., hearing voices), visual (e.g., seeing ghosts or shadows), tactile (e.g., feeling crawling sensations on the skin), or olfactory (e.g., smelling rancid garbage). Examples of delusions include believing that someone is follow-



ing the family, believing that there is a child trapped in the walls of the house, or believing that the child's parents have been replaced by robots. Children experiencing psychotic symptoms may not always report these symptoms to parents and teachers. Some children with psychosis may have disorganized behavior and may have intense outbursts. They may use disorganized speech that doesn't make sense or language that seems to go off on tangents and is difficult to follow. Other children may become withdrawn and show little emotion (i.e., flat affect). These children may avoid eye contact and may be unresponsive. Unlike the symptoms seen in autism spectrum disorders, which are usually apparent by 18 months of age and improve over time, the symptoms seen in psychotic disorders tend to begin later in childhood or adolescence and tend to become worse over time.

Psychotic symptoms can occur during the course of a medical condition or in reaction to substance use. When symptoms occur for 6 months or more and no other cause can be identified, schizophrenia may be present. Psychotic disorders are typically not diagnosed in children younger than 7. Symptoms usually begin in the late teens, although signs of psychiatric problems may be identifiable at an earlier age. It is very rare for a child under the age of 10 to be diagnosed with a psychotic disorder. Childhood onset of psychotic symptoms tends to predict a more severe form of the disorder and a worse prognosis than later onset.

Psychotherapy is generally not an effective treatment for psychosis. Family therapy is often used to decrease stress in the home, which can help control the symptoms. Table 4.8 provides an overview of the medications used to treat psychotic disorders in children. Atypical antipsychotics are usually the first medications prescribed for a child with psychosis. These include risperidone, olanzapine, and quetiapine. These medications may have

**TABLE 4.8. Medications for the Management of Psychotic Disorders in Children**

Generic (trade) name	Class	Side effects
Haloperidol (Haldol)	Antipsychotic	Can cause sedation, weight gain, cognitive blunting, decreased seizure threshold; must monitor for movement disorders.
Loxapine (Loxitane)	Antipsychotic	Can cause sedation, weight gain, cognitive blunting, decreased seizure threshold; must monitor for movement disorders.
Thioridazine (Mellaril)	Antipsychotic	Can cause sedation, weight gain, cognitive blunting, decreased seizure threshold; must monitor for movement disorders.
Thiothixene (Navane)	Antipsychotic	Can cause sedation, weight gain, cognitive blunting, decreased seizure threshold; must monitor for movement disorders.
Clozapine (Clozaril)	Atypical antipsychotic	Can cause sedation, weight gain, cognitive blunting, decreased seizure threshold; must monitor for movement disorders; can result in fatal drops in bone marrow and white blood cell count.
Olanzapine (Zyprexa)	Atypical antipsychotic	Can cause sedation, weight gain, cognitive blunting, decreased seizure threshold; must monitor for movement disorders.
Risperidone (Risperdal)	Atypical antipsychotic	Can cause sedation, weight gain, cognitive blunting, decreased seizure threshold; must monitor for movement disorders.
Quetiapine (Seroquel)	Atypical antipsychotic	Can cause sedation, weight gain, cognitive blunting, decreased seizure threshold; must monitor for movement disorders.



fewer side effects (and less dangerous side effects) than the traditional antipsychotics. They may also treat negative symptoms of schizophrenia, such as flat facial expressions, lack of speech, and poor engagement in activities. These medications can result in sedation, anticholinergic effects (constipation, blurred vision, dry eyes, dry mouth), or extrapyramidal side effects (tremors, spasms, balance problems). These side effects are usually much milder than those encountered with traditional antipsychotics.

The traditional antipsychotics (e.g., haloperidol) are often used when the newer atypical medications are not effective. Children taking these medications must be monitored carefully because there is a risk of developing extrapyramidal symptoms, such as involuntary movements, tremors, muscle spasms, and balance problems.

In addition to prescribing an antipsychotic medication to treat psychotic symptoms in children, the physician may add a second or third medication to help treat symptoms of mood instability, aggression, or anxiety.

Marcus is a 17-year-old male in his senior year of high school. He has always been a quiet, shy student who has received B's and C's in his classes. However, over the past few months, Marcus has become increasingly withdrawn and has been observed sitting by himself at lunch. He has been coming to school looking disheveled and he seems to be wearing the same T-shirt to school every day. Although he has never been a stellar student, his performance has decreased dramatically. He has been turning in homework that is half finished with answers that do not make sense. His English teacher finally decided to call his parents when he turned in a 22-page poem that was written in tiny handwriting and seemed to be about the president and the seven deadly sins.

Marcus's behavior may be consistent with the early stages of schizophrenia (the prodromal phase). During this phase, the adolescent may become socially isolated and start to show unusual behaviors. His performance in school may decline, and he may start to neglect self-care. Marcus's poem may reflect the beginning of what is called the active phase of a psychotic disorder, where the individual starts to hear voices, see things that are not there, or form irrational or bizarre beliefs. Marcus's teacher did the right thing by calling his mother. His mother should take him to his primary care physician immediately for evaluation. With proper diagnosis and treatment, Marcus's symptoms will likely improve.

## EATING AND ELIMINATION DISORDERS

### Eating Disorders

The two major types of eating disorders are anorexia nervosa and bulimia nervosa. People with anorexia are afraid of gaining weight. They maintain a weight that is below normal for their height. While teenagers and adults with anorexia usually lose a lot of weight, some children with anorexia will fail to gain weight at the expected rate. Most people with anorexia continue to believe they are overweight even when they are very thin. Girls with anorexia usually stop having their menstrual periods or fail to have periods in the first

place. People with anorexia may limit their food intake, exercise excessively, or vomit after eating in order to maintain a low body weight.

Individuals with bulimia nervosa engage in disordered episodes of binge eating. A binge involves eating a very large amount of food in a short period of time (less than 2 hours). Individuals with bulimia then attempt to prevent weight gain from the binge episode by vomiting, using laxatives, fasting, or exercising excessively. Children and adolescents with bulimia can be more difficult to identify than those with anorexia because they do not necessarily maintain an extremely low body weight.

Both anorexia and bulimia are very serious and dangerous disorders that need to be addressed quickly. In addition to the risk of death, these eating disorders are associated with long-term and irreversible damage to the body. Family and individual psychotherapy are typically used to treat eating disorders. Antidepressant medications can also be effective as an adjunct to psychological treatment. SSRIs are often prescribed for individuals with eating disorders. When children and adolescents with eating disorders have co-occurring problems like depression, anxiety, or excessive mood instability, these problems may also be treated with medications.

Amanda is a 13-year-old girl who is in the eighth grade. She has always been an excellent student who usually receives top grades and excels in sports. Her gym teacher has noticed that she is much quieter and less social this year than she was in the seventh grade. Although she usually wears baggy clothes and changes in a bathroom stall when she has gym class, her teacher is becoming increasingly aware that Amanda's weight is abnormally low. When she asks Amanda's friends, they report that she usually goes to club meetings or extra band practices during lunchtime, so they are not sure whether she is eating.

It is not unusual for people with anorexia to hide weight loss by wearing baggy clothes and avoiding changing in public places. Similarly, Amanda may be arranging her schedule so that she does not have to face her friends during lunchtime. It is very important that Amanda's gym teacher share her concerns with Amanda's parents. Depending on her current weight and the seriousness of her physical condition, Amanda may need immediate medical attention, including possible stabilization in a hospital. If she is diagnosed with anorexia nervosa, she will likely require intensive treatment, including family therapy and individual therapy. The school can help by giving Amanda ways to make up work she misses during her treatment that are attainable and fair. If she misses a significant amount of school, extra tutoring or home instruction may be needed. It also sounds as though Amanda may be suffering from depression. She might benefit from treatment with a medication that treats these symptoms.

## Elimination Disorders

Most young children have occasional daytime or nighttime toileting accidents. However, children who continue to have regular urine accidents after the age of 5 may have enuresis. Enuresis is typically diagnosed when the child has at least two accidents per week for 3 or more months.

Enuresis can occur during sleep (nocturnal enuresis) or during the day (diurnal enuresis). Daytime accidents are less common and may be a sign of a physical problem. Children with daytime accidents may have urinary tract infections that require antibiotics. They may also benefit from antispasmodic medications to reduce bladder contractions.

Bedwetting (nocturnal enuresis) is a more common problem and affects about 1 in 10 school-age children. Although no physical cause for the problem can be identified in most cases, scientists believe bedwetting may be related to antidiuretic hormones, poor muscle control, delays in nervous system development, or emotional problems. There is evidence of a strong genetic component to bedwetting.

Enuresis can be treated behaviorally or medically. The TCA imipramine was once frequently used to treat bedwetting. However, because of the risk of serious cardiac problems related to this medication, it is no longer commonly used. Desmopressin (DDAVP) is a synthetic hormone that can be taken as either a nasal spray or a tablet and is effective in treating enuresis. Unfortunately, many children return to bedwetting once they discontinue DDAVP.

Behavioral treatments for bedwetting usually include a urine alarm system that trains the child to wake up before full urination by sounding an alarm when the first few drops appear (this treatment works through avoidance conditioning). More than 75% of children with bedwetting can be successfully treated using a urine alarm. The urine alarm system is often combined with other behavioral treatments, such as cleanliness training (having the child change underwear and sheets following an accident) and retention control (teaching the child to postpone urination to build urinary muscles). To prevent relapse once the urine alarm system is discontinued, physicians recommend that the child practice urinating at night by drinking liquids shortly before bedtime (overlearning).

Some children have accidents involving bowel movements. When this occurs at least once per month for 3 months past the age of 4, this disorder is called encopresis. In many cases, encopresis is related to constipation. In these cases, the child's colon becomes impacted and feces leak around the impaction and into the child's underpants. When severe constipation has persisted for a long time, the child's colon may lose muscle tone, making it even more difficult for the child to prevent accidents. These accidents are not under the child's control and it is important to remember the child is not willfully soiling pants or not cleaning after toileting. When constipation is involved, it is important to treat this aspect of the problem first through the use of laxatives, enemas, dietary changes, and stool softeners. Medications alone are usually not sufficient to treat encopresis. A behavioral program is recommended to reward the child for sitting on the toilet, defecating in the toilet, and having clean underpants. Skills training to teach body cues associated with defecation and to teach discrimination of the correct place to defecate is also helpful. Punishment or overcorrection procedures may also be helpful.

April is a 9-year-old girl with PDDNOS who is in a mainstream third-grade class. Her teacher has noticed that someone in the class has been smearing feces on the walls of the bathroom stall in the girls' restroom. After watching the class and checking the bathroom frequently, she is fairly sure that April is the child.

April's teacher needs to share this information with her parents and suggest that they take her to her pediatrician. Feces-smearing can occur when a child is unable to control her bowels due to severe constipation. This can result in stains in the child's underwear as well as leakage of actual fecal matter. April may be trying to clean off her underpants (and then her hands) during trips to the bathroom. Because she has PDDNOS, she may have difficulty communicating her symptoms to her parents and teacher. If April does have encopresis, she will likely require medical treatment for constipation. Some children who have been chronically constipated may be fearful of having bowel movements because they have been painful in the past. April's teacher may be asked to send her to the bathroom to sit on the toilet for specific periods during the day. Parents may also be asked to include high-fiber foods for April's lunch and to reward her for drinking lots of water.

## SUMMARY

There are numerous psychotropic medications that are frequently used for many psychiatric disorders, including problems associated with attention, disruptive behavior disorders, anxiety disorders, mood disorders, tic disorders, developmental disabilities, psychotic disorders, and disorders of eating and elimination. Frequently, these disorders may occur together as do anxiety and mood disorders. Teachers and parents can be valuable informants of specific symptoms that may facilitate the diagnosis of one or more of these disorders. There are a number of treatments available that typically include either psychosocial treatments used alone or a combination of medication and psychosocial treatments.

## REFERENCES

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