

Treating ADHD in Children and Adolescents

WHAT EVERY CLINICIAN NEEDS TO KNOW



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What Every Clinician Needs to Know

Russell A. Barkley



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About the Author

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Preface

There are plenty of professional textbooks available now on attention-deficit/hyperactivity disorder (ADHD), not to mention countless trade books on this topic. Why do we need another one? One reason is that this one is specifically written for clinicians working across a wide variety of disciplines, including primary care, social work, and education, in addition to those in psychology and psychiatry, who are most often the audience for such books. Another is that those clinicians need to be kept updated as much as possible on the extensive body of research-based information that is accumulating at a rapid pace in this field: more than 30 articles per week, amounting to 1,500 research papers per year, or 15,000 or more every decade. As of December 2021, Google Scholar, the tool for searching scientific journals and books, showed more than 1,000,000 research citations related to ADHD alone, not to mention its precursor labels. There is no way the busy clinician in any of these disciplines can stay abreast of so vast and rapidly burgeoning a literature unless it is periodically updated by clinical scholars like me. And unlike many researcher-writers who are busy and absorbed in their own

scientific programs, I make the time to review *all* of the research published on ADHD weekly, compile their abstracts into a single file to share with like-minded colleagues, and use all of that new information to inform and update the following: my clinical newsletter, *The ADHD Report*; my presentations to professionals and parents about ADHD; and my research articles and books, such as this one. My 50-year career studying ADHD also paralleled this awakening of and growing body of knowledge about ADHD, making it far, far easier for someone like me to keep regularly abreast of that research.¹ Woe to the new student now seeking to become expert in all the literature, given its considerable size and scope. With this book, I set out to create a guide for clinicians working with children and teens having ADHD that would be miserly in its content yet laser focused on the very latest advice on the assessment, diagnosis, and management of the disorder that could be wrung from the evidence base, advice grounded in the latest scientific findings available at the time of this writing. Unlike other works that seek to summarize research studies, I aim here to distill from them precisely what they meant for clinical practice, shorn of traditional and wordy scholarship. There is no way my conscience would let me gradually progress into retirement without writing a book like this first, given all that I have learned on this incredible journey—with the expert assistance of so many of my colleagues. You, dear reader, are the beneficiary of all that knowledge and, hopefully, wisdom. As the sage Tryon Edwards (1809–1894) once admonished, “If you would thoroughly know anything, teach it to others!”

But just as compelling a motivation to prepare this book arose from the striking absence of theoretically informed and guided clinical advice. We know from other fields of science and medicine that many times the leap forward in clinical diagnosis and management of a disorder comes from the development of scientific theories about the nature of that condition. Otherwise, advances are trial and error, hit or miss, and due as much to luck and happenstance as to anything else. That may be fine, but it is no way to continue to operate when enough knowledge exists to begin formulating credible theories about disorders. Theories do not simply say why something

is the way we find it; they are tools that can show us the best way forward to manage and even cure it. That is the reason that, as a body of knowledge about a disorder reaches a critical stage, theories of it can be developed, debated, and refined and, most important to my purposes here, can guide the clinician in how best to identify and manage it.

We crossed that Rubicon decades ago in the accumulation of research findings, resulting in testable theories of ADHD being formulated, debated, abandoned, or refined to get us to where we are now. And one of the leading theories of ADHD at this time, and the one that has the most to tell us about the nature, diagnosis, assessment, and management of ADHD, comes from my more than 20 years of efforts to formulate and promulgate the theory of executive functioning (EF) and self-regulation (SR) as applied to ADHD. By understanding the nature of executive functioning, and the self-regulation it provides to people, the EF-SR theory informs us that ADHD is actually “EFDD” or “SRDD”—executive functioning or self-regulation deficit disorder. I have used this theory in every chapter of this book, so the advice here on nature, diagnosis, and management is as theoretically informed as I can make it. I know of no other book for clinicians on the topic of ADHD that is so informed. And what a world of difference that can make to proffering the most sensible and useful guidance for clinical care of those with the disorder. I hope you find this to be the case as you come to know the contents of this volume.

Along the way, you will find references to forms, fact sheets, rating scales, and useful handouts to employ in your clinical practice; these can be found in [Appendix A](#). Please note that any references to individual cases are amalgamations that disguise the identity of the individual. I am grateful to the publisher for allowing me to grant you the right to photocopy these materials for use in your clinical practice (see the [box](#) at the end of Contents for information). Some have been carried forward from my earlier ADHD clinical workbooks that are out of print. Others are newly created just for this clinicians’ guide. I hope you find them to be as useful as I have in working with families of children and teens with ADHD.

As is the case for any author, there are many others to thank for their assistance with this project, the most important of whom is my frequent coauthor and editor for this volume, Christine Benton, who for nearly 25 years has made my trade books on ADHD and oppositional defiant disorder both eminently readable and maximally informative. My daily e-mails attest to the numerous people, far ranging across the globe, whose lives you have improved by helping to give my work so much impact in its format and content. Thank you, Chris. Along with her, I must also thank Kitty Moore, Senior Editor at The Guilford Press, for befriending, supporting, advising, critiquing, and cajoling me for more than 30 years across nearly all of my books with “the Guilford family,” as we think of it. No better editor or publishing house exists, in my humble opinion. And in the background, over more than 40 years of publishing with Guilford, stand discoverers and friends Seymour Weingarten and Robert Matloff, who, upon starting their own publishing company focused on psychology, saw some obscure promise in an aspiring young scientist and author and gave me my first opportunity to publish my very first book—of course on ADHD (then *Hyperactive Children*). There is no way to thank such fine people for opening the door to what has become a long career of our work together. And my sincere gratitude must also be extended to Editorial Project Manager Anna Brackett and the many freelance copy editors engaged by Guilford, for going through my manuscripts with a fine-toothed editing comb to untangle my often run-on, convoluted, and grammatically imprecise sentences—making me appear a far better writer than I am in fact. Thank you all.

¹ My career started with my undergraduate honors thesis in psychology at the University of North Carolina at Chapel Hill under the incomparable mentorship of Donald K. Routh, PhD, a pioneer in this field and previous editor of the *Journal of Abnormal Child Psychology*, and continued in graduate school under Dr. Routh’s former graduate student, the late Douglas G. Ullman, PhD. For their guidance in my formative professional years, I shall remain eternally grateful.

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1

ADHD Is Self-Regulation Deficit Disorder

The Importance of Executive Functioning—Self-Regulation Theory in ADHD

“There is nothing so practical as a good theory.” So said the 20th-century psychologist Kurt Lewin, believing that the science of psychology lacked good theories but benefited substantially when they arose. This book rests on that fulcrum. Theories are tools for explanation and especially prediction of events or processes outside of themselves. But if, as applied to understanding psychological disorders, they are to turn understanding into practical, clinical wisdom, they must also be tools for helping to guide diagnosis, risk prediction, and treatment.

The clinical guidance provided in this book is based largely on my theory of attention-deficit/hyperactivity disorder (ADHD). It states that ADHD involves a far wider array of neurocognitive deficits than are typically represented in clinical diagnostic criteria, in which circumscribed problems with attention, inhibition, and control of activity level are portrayed as the disorder’s sine qua non. There is now abundant evidence to conclude that

ADHD instead comprises serious deficits in the development and use of executive functions (EF), especially how they are employed in daily life activities. Those cognitive deficits lead to substantial problems with time management, self-restraint, working memory and self-organization, planning and problem solving toward goals, self-motivation, and the self-regulation of emotion in major domains of life activities. The reason is that these executive functions are necessary for effective self-regulation (SR) over time toward goals specifically and one's future welfare more generally.

My theory, therefore, is here called the *executive functioning–self-regulation* (EF-SR) *theory*. It suggests that ADHD should be renamed *executive functioning deficit disorder* (EFDD)—or, better yet, *self-regulation deficit disorder* (SRDD). ADHD by its very nature seems to affect virtually all executive functions to varying degrees, so it makes sense that these are the deficits that should be guiding our efforts at differential diagnosis and management. Because these executive function deficits disrupt, account for, and predict the numerous impairments experienced by those with the disorder across their life course, they should also guide treatment planning and provision of the clinical, educational, occupational, health, and related services that those with ADHD need to function optimally throughout life.

The rest of this book explicates the central role of executive functions and self-regulation in these clinical activities and the exceptional value that can be found in taking that approach. In the following chapters, I provide information and clinical advice through the lens of my EF-SR theory and from the vast research accumulated over several decades. This chapter provides a brief summary of the EF-SR theory. It illuminates the relationship between executive function and self-regulation, what the component executive functions are (specific types of), and shows how the EF-SR phenotype produces effects at ever greater distances and increasingly higher levels of social and community activities. Along the way, I highlight a few critical differences between diagnosis and treatment based on the current diagnostic criteria and those based on my theory and give an overview of some clinical implications to keep in mind in practice and while reading the

more detailed explanations provided later in this book.

The Nature of Executive Functions and Self-Regulation: Their Role in ADHD, Diagnosis, and Treatment

The diagnostic criteria for ADHD are based on the disorder's most obvious behavioral symptoms. Viewed through that narrow lens, ADHD is surely a disorder comprising inattention, impulsivity, and hyperactivity. But calling ADHD an attention disorder is like referring to autism spectrum disorder as "hand flapping, stereotyped movement, or odd behavior disorder." If we look at ADHD through a much broader lens, we find it is far more than a set of obvious behaviors. Underneath those surface symptoms, ADHD is actually a disorder of self-regulation, making it more accurately *self-regulation deficit disorder* (SRDD). I am not the first to make this claim. The highly esteemed Canadian psychologist Virginia Douglas asserted 40 years ago (1980, 1988) that ADHD was a disorder of self-control, although she did not clearly define operationally what that term meant and what mental functions people employ for self-control that were deficient in people with ADHD. Now we recognize that self-regulation relies on executive function and its underlying brain networks. Therefore, ADHD could also be called *EFDD*. The reason I prefer the term *SRDD* is that it is the obvious and repeated failure to demonstrate self-regulation that is so apparent to those with ADHD, their families, and clinicians who are trying to evaluate and manage it. The deficits in executive function create that phenotype, but they are not so visible in the patient with ADHD, being largely private or mental activities, especially by adulthood. For instance, patients with ADHD may repeatedly forget to take their house keys when leaving and thus lock themselves out of their own homes, may forget why they went into a room to get something, or forget that they agreed to meet someone for a meeting over lunch. These are obvious problems, yet the underlying deficit in verbal and nonverbal working memory and the governance of action plans by the sense of time that give rise to them remain unseen to others. The label *SRDD* is a useful reminder for

clinicians that what you are seeing in those with ADHD is a heterogeneous set of wide-ranging, impairing problems with the executive functions and the self-regulation they provide.

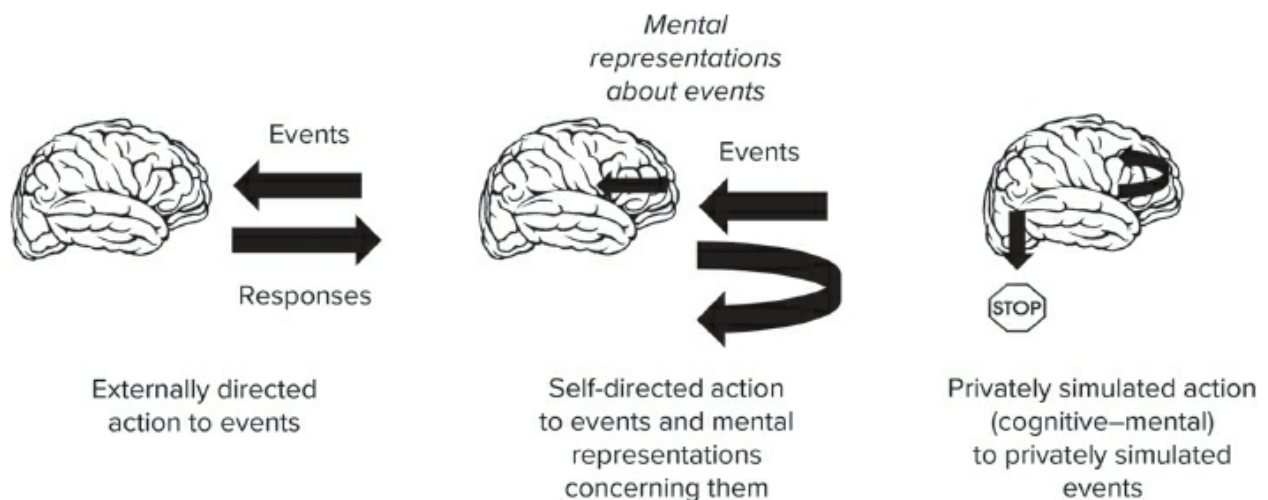
Even though most or all investigators today recognize that executive functions involve mental abilities necessary for goal-directed action, there is still plenty of disagreement on the exact definition of executive function (20–30 definitions and counting), on what makes a mental function executive in nature, and on just how many functions fall under this umbrella (between 3 and 33 at last count!). The widespread idea that executive functions involve those cognitive abilities needed for goal-directed action, thus enabling an intentional stance toward the future, remains too vague for an operational definition. I address that critical problem shortly. What is important here to understand, if one is to accurately diagnose and effectively treat those with ADHD, is what abilities qualify as executive functions and how they operate in disrupting daily adaptive functioning.

Self-Regulation and the Development of Executive Functions

There is a missing link between the neuroanatomical malformations and the cognitive and behavioral symptoms associated with ADHD. That link is provided by viewing ADHD symptoms as executive function deficits. But to understand what executive function is, we first have to come up with an operational definition of just what constitutes an executive function and then show how the seven major executive functions meet that definition. That solution comes from our understanding that executive function involves self-regulation.

B. F. Skinner and others have defined self-regulation as *the self-direction of actions that is intended to modify subsequent behavior in order to alter the likelihood of a delayed (future) consequence*. In my theory, an *executive function* is defined as *a specific type or form of self-directed action*. Here, then, is our operational definition. Cognitive or behavioral actions directed at oneself in order to change a subsequent behavior in an attempt to alter the future are, by definition, executive in nature. Cognitive and behavioral actions that are not self-directed for such purposes are not executive functions. We can usefully define the seven major executive functions as seven major types of actions-to-the-self that serve to modify subsequent behavior and thereby strive to change future events for that individual. I have further proposed that each executive function is a human behavior or cognitive action initially directed toward the external world early in human development. It will eventually become self-directed and then progressively internalized (privatized) to form a largely mental self-directed activity—something done in the conscious mind. The specific case of private self-speech illustrates this more general process. In it, children start by directing speech out loud to the external environment generally and others specifically. They then enter a phase in which they direct their speech at themselves, even

when no one is in that context with them—yet it is still external speech; it is observable. Then gradually children internalize such self-directed speech. Privatize is more accurate, which is to say that this process involves the brain inhibiting peripheral neural activity and muscle movements while still activating the speech centers of the brain. Eventually, this gradual process of privatization reaches a point at which the self-speech cannot be observed publicly at all. Children now have a mind’s voice that only they can hear. I have argued that this illustrates the more general process by which all seven executive functions develop. Following is the developmental process in brief; it is also illustrated in [Figure 1.1](#).



[Follow for extended description](#)

FIGURE 1.1. Executive functions shown as arising from a three-step process during development.

1. *At first, children’s actions are directed at the world around them.* Infants have not yet developed executive functions, so, for instance, when they learn to speak, they talk out loud to and about their surroundings, especially to other people in their environment.
2. *Next, they direct their actions back at themselves, most of which may be*

observable. For instance, children talk to themselves even when no one else is present.

3. *Subsequently, they internalize these self-directed actions through a process of inhibition of the associated peripheral movements while activating relevant brain regions and networks.* For instance, self-speech gradually becomes quieter, involving barely audible whispers, then just facial movement, then subvocal actions, and finally suppression of the oral musculature. This progression is what we see in second and third graders who talk to themselves while doing math worksheets: Their mouths are moving, as if whispering to themselves, but they're making no audible sound, perhaps also while touching their fingers to aid their counting.
4. *Finally, children can engage in these actions to themselves without visible peripheral motor and vocal movements.* In the case of self-speech, the movements of the face, larynx, and diaphragm are being largely inhibited while the central speech centers of the brain are activated. Both speech and gesture in the example of the second grader doing math will eventually be peripherally inhibited while remaining centrally activated in the brain and thus will become a cognitive form of executive function—a mind tool for self-regulation. The self-directed actions are now occurring within the brain, but the associated nerve signals are not emitted into the spinal cord. Now these actions are internal and private. In our example, children can now talk to themselves in their minds without anyone seeing or hearing the speech. Children of this age often announce to their parents the discovery that there is a voice in their head. An entirely mental or cognitive form of behavior and self-regulation has now emerged. Thinking, in this case self-speech, then serves to govern motor actions, such as behavior toward goals.
5. *Even later in development, people may create external cues to further assist the self-governing activities they are doing in their minds.* For instance, as written language is acquired, people learn to write notes to themselves

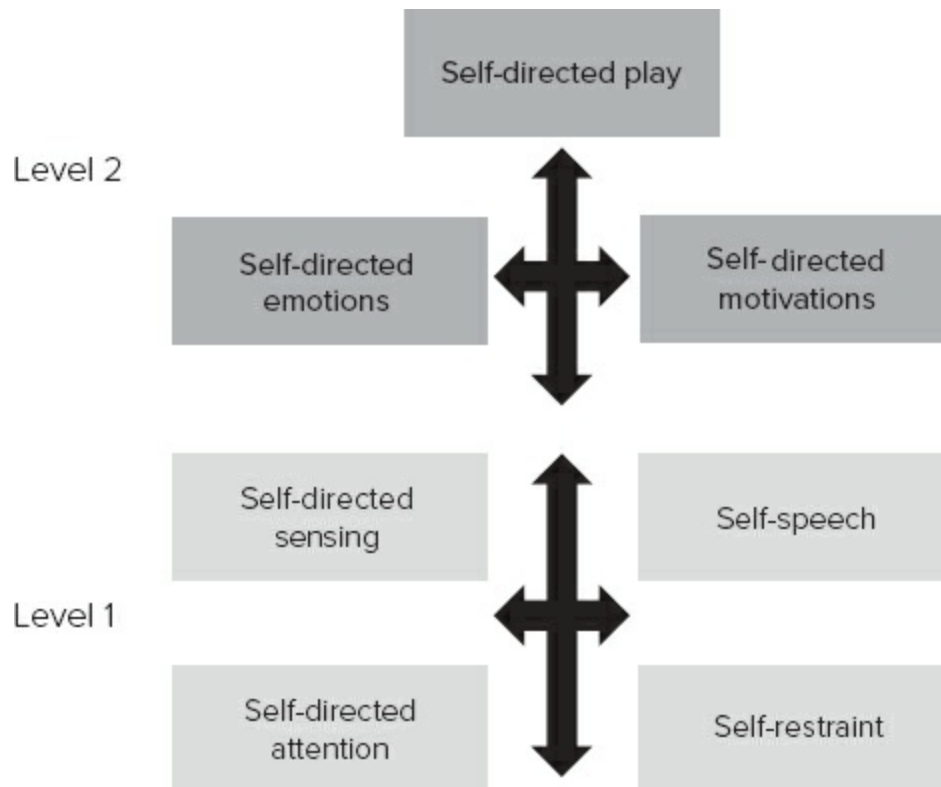
(“to-do” lists) as yet another method of self-regulation using self-speech. Or they may place nonverbal cues, such as objects or pictures, in useful locations in their visual or sensory fields to further aid the stimulus control of their private forms of self-regulation.

6. *This newly emerging private self can now mentally test out various ideas without engaging in their external or public performances and thereby avoid experiencing the real-world consequences that would have occurred with those publicly executed counterparts.* Private or mental simulation of possible action plans is now possible, allowing for the natural selection of the most optimal among them while the mistaken ones die in their place, as Karl Popper once noted. In the case of self-speech, this means older children or teens can rehearse mentally what they want to say later publicly to improve their eventual public verbal performances. This can also be done for various motor activities using private visual–motor rehearsals.

A plurality of researchers identified at least seven executive functions. These are *self-awareness, inhibition, nonverbal and verbal working memory, emotional self-regulation, self-motivation, and planning/problem solving (or manipulation of mental representations)*. My theory argues that all of these are forms of self-directed actions and all emerge via the same general developmental process noted earlier. Therefore, each executive function can be redefined by the action to the self that is involved in it (see [Figure 1.2](#)):

- Self-directed attention (self-awareness)
- Self-restraint (volitional inhibition)
- Self-directed sensory–motor actions (visual imagery or nonverbal working memory)
- Self-directed speech (verbal working memory)
- The self-direction of emotions (emotional self-regulation)

- Self-motivation
- Self-directed play (usually mental manipulations for planning and problem solving)



[Follow for extended description](#)

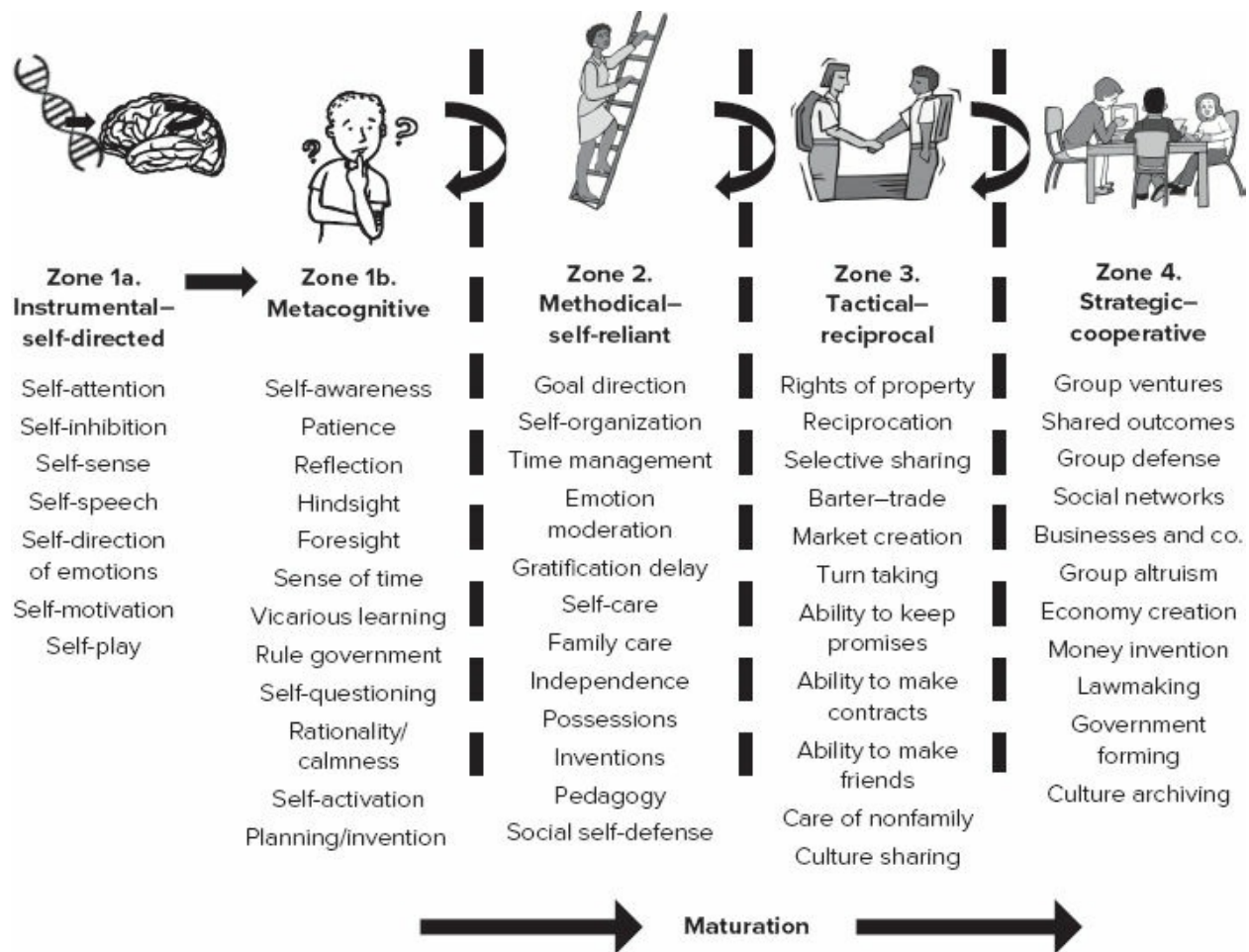
FIGURE 1.2. The seven major executive (self-directed) functions and the possible hierarchical arrangement based on their stage of development.

Over development, the maturation of these executive functions allows children greater degrees of freedom from being controlled purely by external events and others in the moment to becoming fully independent and self-controlling entities. This happens because what is controlling their behavior is changing from early childhood to adulthood, as represented in these four transitions from external to self- (internal) control:

- From control by external events to self-control via mental representations (self-speech, visual imagery, etc.)
- From control by others to control by the self (using mental self-directed executive functions)
- From the present or now to the mentally conjectured future
- From small, immediate rewards (gratification) to delayed, larger rewards

In ADHD, the delayed and disrupted development of all seven executive functions greatly interferes with these extremely important transitions in the sources that are regulating one's behavior—the immediate and external world or the self and mental foresight.

Much research has shown that the seven executive functions do not mature simultaneously. [Figure 1.3](#) shows a hierarchical arrangement that I believe represents the typical developmental sequence. The Level 1 executive functions seem to develop relatively early, I believe. The Level 2 executive functions develop next, relying on the Level 1 executive functions for their own effective functioning. Evidence suggests that each executive function may take a decade or longer to reach full maturation and internalization. In total, the seven executive functions may require up to three decades to complete their maturation and integration. When all this proceeds well, by adulthood these seven self-directed actions form a suite of mind tools that are interactive and will be deployed for self-regulation across time to contemplate, plan, pursue, and hopefully achieve desired goals or accomplish assigned tasks.



[Follow for extended description](#)

FIGURE 1.3. The extended phenotype of executive functioning (EF) and self-regulation (SR) and the outwardly radiating zones of influence, or effects at a distance, from the brain and its genes.

Clinically, I’ve found it useful to explain the executive functions and their hierarchical development by referring to them—especially for children—simply as the mind’s mirror, brakes, eye, voice, heart, fuel tank, and playground, respectively. All this is where the child or teen with ADHD is delayed in development. That leads to an equally useful principle to explain to parents and others. Children with ADHD have an executive age (EA) that is significantly below their chronological age (CA), and thus one cannot expect or demand that they will self-regulate the way that typical peers are able to do.

$EFDD = CA - EA$. The corollary of that idea is to reduce our expectations to match the child's EA and make necessary accommodations in the environment that support the child's behavior and performance, thus making the child less impaired, if not less possessed of ADHD. The extent of this lag in EA will vary across children with ADHD, perhaps ranging from 20 to 45% below their CA. But that is not so important as realizing that the lag exists, is substantial, is not going away anytime soon, and requires accommodations. Of course, there are much greater clinical implications of the EF-SR theory to consider, which I do throughout this book. Yet even this one idea about delayed EA is incredibly valuable to parents and teachers in understanding children and teens with ADHD and making accommodations for them.

The self-directed actions comprising the executive functions are essential for the contemplation of a hypothetical future—essentially a goal. That hypothetical future is then juxtaposed against the present, which can lead to both the formation of an intention or goal and the plan to attain it. Thus, as many other experts have said, executive function is future directed. But lacking in such statements is the key point—that the executive functions are self-directed actions for behavioral self-modification so as to improve one's future.

How Do We Know ADHD Is a Disorder of Executive Function?

As the great neuroscientist Joaquin Fuster so eloquently argued in his 1997 book on the prefrontal lobes, the quintessential function of that brain region is *the formation of goals and the cross-temporal construction, organization, and maintenance of behavior needed to attain that desired goal, or what constitutes a hypothetical future* (Fuster, 1997). In other words, the role of executive functioning is to allow us to behave in ways that serve the future we want. So, if what we see in ADHD at a much deeper level than inattention, hyperactivity, and impulsivity is a deficit in self-regulation, it must be rooted in problems with these executive functions. And, in fact, neuroanatomy tells us that this is so; see the box on [page 8](#) for a brief explanation.

You may be wondering where hyperactivity fits into the executive function neuroanatomy picture of ADHD. In part, it certainly arises from defective functioning of the inhibitory network. But in addition to the subnetworks listed in the box is the motor activity regulation network. Disturbances in this network are thought to also give rise to the hyperactive symptoms of the disorder.

If what you are seeing in a patient includes problems with goal-directed attention and volitional inhibition, resistance to distraction, working memory (forgetfulness in daily activities), sense of time and timing, time management, planning and problem solving, self-organization, emotional self-regulation, self-motivation, and self-awareness—essentially the major executive functions—and not just the traditional DSM-5 ADHD symptoms, then a patient may well qualify for a diagnosis of ADHD and certainly has executive function deficits underlying them. When you see this in patient after patient with ADHD, it is easy to come to see that, logically, ADHD *must be EFDD* at its root.

What does this mean clinically? It means the following things:

The Neuroanatomy of ADHD

The areas of the brain most reliably associated with ADHD (see [Appendix C](#)) are the prefrontal cortex, the anterior cingulate, the basal ganglia (especially the striatum), the cerebellum (especially the central vermis), and the amygdala (not always reliably implicated). Research demonstrates that these regions are functionally interconnected to form one of the seven major brain networks—the executive system. In my view, that system underlies the human capacity for self-regulation and, as Fuster (1997) concluded, for the cross-temporal organization of behavior toward goals (future-oriented action). There are at least four or five subnetworks in the executive network, each of them associated with different parts of the brain, that can help us understand how executive functions help us self-regulate—or, in the case of ADHD, make it difficult to do so. Four are described in the following list.

- *The inhibitory executive network.* Think of this subnetwork as allowing us to resist responding to goal-irrelevant events, or distraction. It is responsible for the voluntary inhibition of ongoing behavior and emotions, as well as the suppression of competing responses to goal-irrelevant events, both internal and external.
- *The “what” or cold executive network.* Essentially, this network allows what we think about (mainly imagery and self-talk) to guide what we do. It also permits the higher level function of the manipulation of goal-related mental representations (analysis and synthesis, or mental play) so as to support planning and problem solving.
- *The “when” (timing) executive network.* When we choose to act can be as or more critical to the success of a plan than *what* we had planned to do, and it is this subnetwork that gives us a subjective sense of time and the temporal sequencing of thought and action, as well as the timeliness in executing such actions.
- *The hot (emotional) or “why” executive network.* This is probably the subnetwork that makes the final decisions about goal choices and the selection of planned actions to attain them. But it also permits the top-down regulation of emotion in the service of those goals and our longer term welfare, probably through the use of self-imagery and self-talk, or the working memory network mentioned above.

- ADHD comprises a far broader array of cognitive and behavioral deficiencies than is reflected in the current clinical view as set forth in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-5; American Psychiatric Association, 2013). To call this merely an attention

disorder is both to trivialize the condition and to be clinically unproductive.

- You need to listen for the deficits in the various executive functions as you interview patients about these executive function domains, going beyond a mere exploration of just the DSM-5 ADHD symptoms.
- It is this broader array of executive function deficits that accounts for the range of impairments that people with ADHD experience across most domains of major life activities.
- These executive function deficits are the things that will require accommodations and other treatments well beyond what might be suggested from the traditional ADHD symptom dimensions.
- Because the executive function subnetworks functionally interconnect—that is, they interact in varying ways from patient to patient—ADHD will be heterogeneous across cases. Don't expect symptomatic presentations to be identical or even highly similar. When you know that some networks may be more (or less) adversely affected by the various etiologies of ADHD than others, you know that close scrutiny will be required by the astute diagnostician to appreciate the diversity of clinical symptoms patients may demonstrate.

The Impact of ADHD on Daily Functioning and Achievement

In 1982 Richard Dawkins wrote a book introducing an incredibly valuable evolutionary concept called the *extended phenotype*. That phenotype includes the various effects that adaptations can have at an increasing distance from the genes of an organism that contribute to its phenotype. Think of it as a series of expanding concentric rings of effects that radiate outward from the organism, like the expanding rings in a pool of water when a pebble is dropped into it. For instance, Dawkins cites the effects that a pheromone excreted by a male mouse can have when he is near a pregnant female: They can cause her to abort her fetuses that were fathered by a different male, thereby making her available for his own mating and impregnation. Another example he gives is that of a beaver, whose activity in felling trees to make a lodge and dam on a stream can thereby alter the surrounding body of water and its flora to the future advantage of the beaver and its offspring. An effect of the organism and its activities, no matter how far away from the organism those effects may occur in space (or time), can be considered part of the phenotype of that organism if such effects feed back to alter in any way the survival, reproductive success (fitness), and hence longer term welfare of the organism (and its genes). Dawkins (1982) argued that such extended effects are the norm and could well explain the evolution of a trait or adaptation that would be otherwise poorly understood when only examined at the most proximal aspects or effects of that phenotype, such as the physical features of the organism or just its immediately obvious behaviors and consequences.

To simplify the construct greatly as I have applied it to executive function, I created [Figure 1.3](#), which depicts the levels of the extended human executive function phenotype. These effects go from those of the private actions in the mind to daily adaptive behavior and then into interactions with and later cooperative ventures involving others and finally into the culture at large.

Activities by the individual at each level bring new benefits (and potential risks) to the person from those occurring at lower levels. The figure illustrates the initial simple self-directed actions; eventually, the mental abilities they become, such as self-awareness, hindsight, foresight, rule-governed behavior, planning, and so forth (metacognition), can produce effects that extend into the next higher level of thoughts and related actions. As they develop, those self-directed executive functions create short-chain behaviors that accomplish near-term goals and consequently produce effects having to do with immediate survival, self-care, independence from others, and social self-defenses (a highly underappreciated benefit of executive function and the critical thinking it can spawn). From there, further development of executive functions permits success in the formation of human friendships, reciprocating and trading with others, specialization of one's work through division of labor, and more. Next, self-regulating people can come together to accomplish joint goals that none could do alone and then share in the outcomes of those joint activities (strategic cooperation).

In the case of ADHD, we can use this remarkable insight about phenotypes to understand the effects that mental adaptations, such as the executive functions, can have at remarkable distances from the genes that create them. It can show how a neurodevelopmental deficit in the parts of the brain that govern the executive functions, such as those underlying ADHD, can not only lead to the traditional symptoms assigned to it but also have enormous and lifelong ramifications for the individual in every major domain of life activity, including its risks for mortality and reduced life expectancy. This allows not only a richer understanding of how ADHD can produce serious and pervasive adverse consequences across so many domains of life but also a more nuanced assessment of patients' symptoms, both of which can better guide specific treatments aimed at the problems that patients are struggling with in the various life domains far beyond what a comparatively simplistic DSM-5 conceptualization of a case might provide.

The extended phenotypic view of executive function permits predictions to be made as to what may happen to the individual in domains of life that are

increasingly distant from the self-directed actions in the brain that form the executive functions. Although it is not the only factor involved, typical levels of executive function enable people not only to develop self-care routines and independence from caregivers but also to avail themselves of the benefits that culture and cooperative activities with others provide for their own goal-directed activities and social, educational, and occupational ventures, thus seeing to their own support, success, and longer term welfare. Disrupted executive functioning, as in ADHD, can and does hamper not only people's immediate opportunities to adapt and succeed but also their long-term welfare and lifelong success in the wider world. No wonder ADHD diagnosed in a child or teen can shorten life expectancy by more than a decade in many instances when it is not properly identified and treated, as is discussed later in this book.

What does all this look like in patients? The mildest executive function deficits might prevent an adult with ADHD from regularly succeeding in the highest level of that extended executive function phenotype shown in Zone 4 in [Figure 1.3](#), such as routinely succeeding in large cooperative ventures with others, managing personal finances and investments, or completing post-high school degrees, especially in a timely manner. An adult with more severe ADHD might have trouble fulfilling contracts or other promises to others, routinely paying bills on time, or restraining impulse buying, especially on credit cards. Children with ADHD might have trouble forming and maintaining friendships at school or in their community, as they have not yet attained the higher levels of the executive function phenotype expected in adults. With increasing severity, these adults might not be able to take care of their own health and hygiene, routinely support themselves, remain employed, live independently of their parents, or keep a driver's license due to repeated infractions. In children, you might see an inability to manage time to do schoolwork or home chores successfully; to restrain impulses to accept the dares to do dangerous things suggested by their peers; or to be trusted to follow rules in the community as others of their age are able to do, manifesting in carelessness at road crossings, while cycling in their

neighborhoods, or even when playing unsupervised in parks or playgrounds. Individuals with the worst cases of ADHD might lack hindsight and foresight and thus fail to benefit from previous mistakes, may be unable to self-reflect and thus have little appreciation for their serious impairments, or have a very profound inability to use self-speech or to think about the consequences of potential actions for themselves. The classic “worst” case of an executive function disorder in neuropsychology was Phineas Gage in the mid-1800s, who suffered a severe frontal lobe injury and thus experienced a massive contraction in these zones of social and adaptive functioning (see Harlow, 1848, 1868). So deficient was his executive function and self-regulation that he eventually had to live with his sister for his few remaining years of life, not just because of his seizures but even more due to his seriously deficient self-regulation in occupational and social contexts.

Viewing ADHD through the lens of executive functioning and its extended phenotype should, at the very least, underscore the urgency of diagnosing ADHD and treating it promptly. A child who is bouncing off the walls all day is at risk not just of frequent discipline in preschool settings or poor academic performance later in formal schooling but also of frequent and serious accidental injury and even early mortality. One who impulsively cannot wait for things or take turns or who cannot pay attention long enough to clean their room is not just going to have trouble keeping friends or finding a backpack amid the mess; they are going to fail to attend to heightened risks during his routine activities. In everything from cell phone-distracted cycling (and, later, driving) to daring physical feats and excessive Internet gaming, the child will engage in impulsive risk taking both in and away from home. As a result, children with ADHD suffer frequent closed-head trauma, risk substance experimentation and addiction, and pursue more appealing activities to the exclusion of fulfilling home and school responsibilities, among other harms. This child is at risk of missing out on succeeding in the full panoply of human experiences and achievements throughout the lifespan if undiagnosed and untreated.

How will this perspective affect the way you diagnose and treat a child’s or

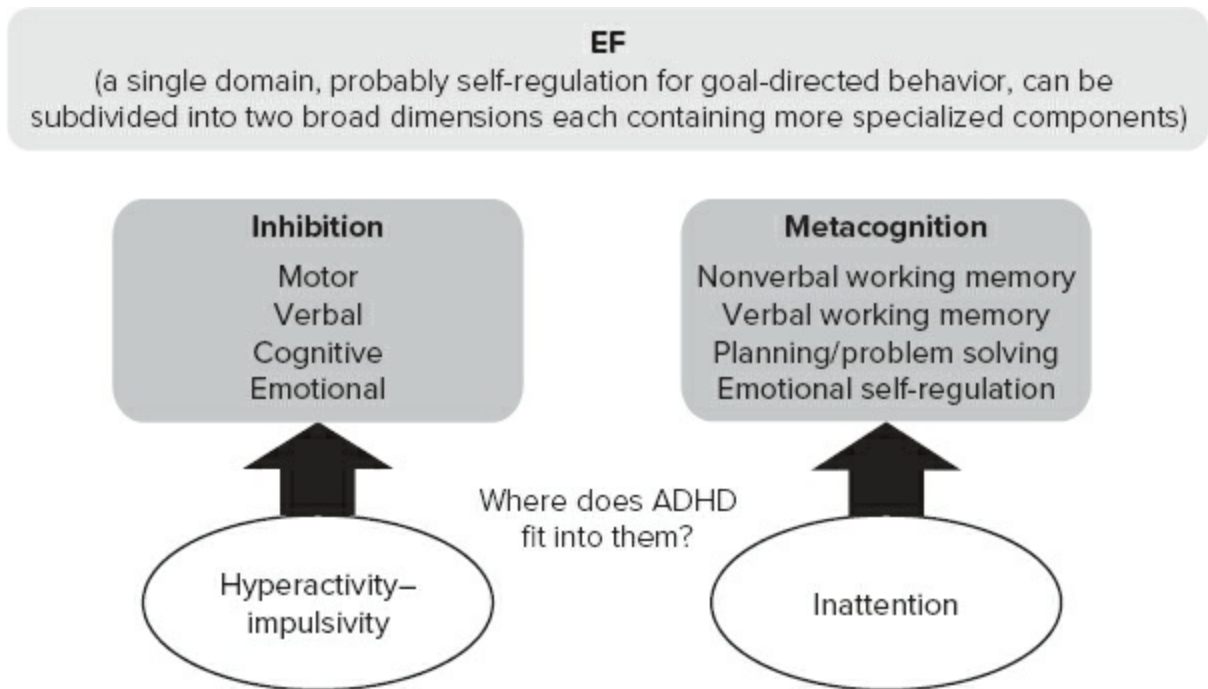
teenager's ADHD? The rest of this book provides clinical guidance in detail, little of which would be evident if we did not see ADHD through the lens of EF-SR theory.

Broad Clinical Implications of the EF-SR Theory of ADHD

My EF-SR theory provides a more complex neuropsychological picture of where ADHD originates and how deeply into their lives it can affect those who have the disorder than that depicted by simple inattention, hyperactivity, and impulsivity. Yet that simpler view is what the clinicians have available to work with initially in diagnosing their patients, because it is what the DSM presents. Using my EF-SR theory, we can begin to see how the DSM criteria alone are insufficient for clinicians to rely on, except as a starting point. I offer numerous recommendations in [Chapter 2](#) concerning the implications of this theory for assessment and diagnosis. But here I can address the question of how we can map the DSM ADHD symptoms onto the EF-SR theory.

The DSM Criteria within the EF-SR Theory

[Figure 1.4](#) shows that executive function comprises one primary construct. All research on executive function measures reveals such a single major construct, which I view as self-regulation. That broad domain of executive function can be divided into two dimensions, inhibition and metacognition, which, as shown in the figure, can be further dissected into smaller dimensions of executive functions that are partially coupled to each other. The lower half of the figure shows that the two traditional symptom dimensions of ADHD (inattention and hyperactive–impulsive behavior) are simply subsets of the two main dimensions of executive function. This means executive function is both one thing (self-regulation) and many things (it can be subdivided into narrow-band executive functions related to broader bands of inhibition and metacognition).



[Follow for extended description](#)

FIGURE 1.4. The relationship of traditional symptoms of ADHD as described in clinical diagnostic manuals to the domain of executive functioning (EF), its two broadband dimensions (inhibition and metacognition), and their more specialized components.

Inattentive to What?

The EF-SR theory can further enlighten us as to the nature of the inattention occurring in ADHD; this is incredibly illuminating for clinically understanding ADHD but also for its differential diagnosis from other mental disorders that adversely affect attention but in entirely different ways.

Consider that attention represents a relationship between a stimulus and the perceptual–motor response of the individual who orients to it, explores it, and then may stay engaged with it. Attention, therefore, represents a form of stimulus control. But just what kinds of stimuli or events are failing to control or elicit such engagement from people with ADHD compared with other types of such stimuli or events? Those with ADHD have little trouble paying attention to the *now*—the momentary present and external environment; in

fact, that is the problem. What is going on immediately in front of them in that moment has a much stronger pull on engagement of their responses than do the private, mental representations about the tasks they have been asked to do or the future they plan for themselves and the behavioral sequences or schemas needed to make that future happen. Those mental representations are held in the two working memory systems—visual and verbal. Thus what people with ADHD are inattentive to are those mental representations—about tasks, goals, time, and delayed consequences and the future in general—which are thus far less able to capture or control the actions of the individual with ADHD. Such representations are simply not compelling enough to govern their immediate behavior relative to the events playing out around them.

Reframing the inattention of those with ADHD in this way can vastly improve differential diagnosis, helping us distinguish between the inattention seen in ADHD and that seen in many other psychiatric and neurodevelopmental disorders. Disorders such as depression, anxiety, or even autism spectrum disorder can also result in a type of inattention. But people with these disorders are inattentive to events or stimuli in the *now*—just the opposite of ADHD. Instead, mental representations (thoughts) about their problems, worries, fears, or just their daydreams or mind wandering (as in autism) are all too powerful in capturing and sustaining the engagement of the individual, decoupling the attention of the person from the external world and shifting it to a focus on mental events. People with these other disorders are mentally preoccupied instead of engaged with the ongoing flow of the now and the things on which they should be working. You can see this in the mental rumination of depression; in memory reexperiencing as in anxiety or posttraumatic stress disorder (PTSD); in self-absorption over possible adverse consequences that might happen to them, as in anxiety disorders, improbable as they are likely to be; and certainly in the obsessions of someone with obsessive-compulsive disorder (OCD). Likewise, people suffering from the new attention disorder of sluggish cognitive tempo may be preoccupied simply with mental daydreaming or mind wandering to the point that it is

maladaptive or pathological. In sum, whereas people with ADHD are decoupled from being governed by thoughts and plans related to tasks and goals (the future) and are thus overly attentive to the external now, those having other disorders are decoupled from events in the external world and overly attentive to mental events or thoughts.

Emotional Dysregulation as a Core Component

The EF-SR theory, in contrast to the DSM-5 formulation of ADHD, also shows us the important role of poor emotional self-regulation as a central feature of ADHD. The current clinical conceptualization of and criteria for diagnosing ADHD make no mention of this problem as being an inherent part of the disorder. But overwhelming evidence shows that poor restraint of emotional expression and deficient emotional self-regulation are major problems for people with the disorder. And during the first 170 years of its medical history, ADHD and its precursor disorders by other names were believed to involve deficits in emotional inhibition and self-regulation along with the core problems with attention and hyperactive–impulsive behavior. So the idea of ADHD involving problems self-regulating emotion is not a new one.

But beginning in the 1960s, especially with the second edition of DSM, the symptoms of emotional impulsiveness (which likely overlaps with emotional lability) and deficient emotional self-regulation were divorced from the core deficits of ADHD. Why is unknown, but it was a major mistake, in my opinion. To me, two related constructs comprise the larger one of *emotional dysregulation*—the impulsive expression of triggered emotions and the deficit in subsequently modifying, moderating, and otherwise effectively coping with them in support of one’s long-term welfare. If noted at all in descriptions of ADHD after 1968, these problems were treated as merely associated ones that may arise in some cases, perhaps as a consequence of a comorbid disorder. But now compelling evidence exists to argue for the return of emotional dysregulation to the status of a core

component of ADHD in its conceptualization and DSM diagnostic criteria.

- Emotional dysregulation has a long history as a central feature of ADHD in its clinical conceptualization.
- Current neuropsychological theories of ADHD and executive functioning consider emotional dysregulation a central component.
- The neuroanatomical findings associated with ADHD would likely give rise to commensurate symptoms of emotional dysregulation given that the “hot” or emotional executive circuit provides for the “top down” regulation of the amygdala and, consequently, the limbic system (emotional brain).
- Reviews of this issue reveal various forms of emotional dysregulation (low frustration tolerance, impatience, quickness to anger, and being easily excited to emotional reactions generally) in 21–72% of cases of ADHD in children (and 32–78% of cases in adults).

The clinical benefits of including emotional dysregulation are substantial:

- *Understanding comorbidity:* Returning emotional dysregulation to a central place in ADHD would put clinicians on the lookout for comorbidities with oppositional defiant disorder (ODD), conduct disorder (CD), and anxiety and depression in adolescence. Half of the eight symptoms of ODD are emotional responses involving temper, anger, hostility, and being easily annoyed, and ADHD is highly comorbid with ODD (65–85%). Children with ADHD are halfway toward meeting the criteria for ODD by virtue of their impulsive emotions, particularly those involving impatience, frustration, anger, quickness to react, and being excessively excitable or easy to arouse. The social conflict component of childhood ODD, which comprises the other four of the eight ODD symptoms, arises mainly from social learning within families and accounts for association of ODD with later CD by adolescence. More on the role of executive function and

emotional self-regulation in the genesis of ODD is set forth in [Chapter 4](#).

- *Understanding impairments:* Emotional dysregulation is a strong predictor of social impairments in several domains of major life activities (peer relationships, work, driving, marriage/cohabiting, and parenting) seen in ADHD even after controlling for any contributions of the traditional ADHD symptom dimensions.
- *Differential diagnosis:* Including emotional dysregulation as a core component of ADHD would reduce the misdiagnosis of mood disorders in ADHD as a means of accounting for the emotional difficulties evident in it. Those difficulties do not entirely arise from comorbidity, contrary to the DSM-5. Clinicians can differentiate the emotional symptoms of ADHD from those of mood disorders by focusing on several parameters: Emotions are of short duration, usually situation-specific, often provoked, and as such are reactive to a triggering event, and rational or understandable—the emotion makes sense to typical people given the provocation, but the reaction is too impulsive and strong and not moderated by efforts at self-regulation. In contrast, symptoms of a mood disorder show the opposite pattern—the emotion is of a long duration (hence, a mood), it is cross-situational, it is usually unprovoked and irrational (we find it difficult to understand why the person feels as they do for so long), and it is capricious, labile, and/or extreme.
- *Effective treatments:* ADHD medications appear to reduce the emotional dysregulation component of ADHD as much as they do traditional ADHD symptom dimensions, yet each medication category may do so through different neural mechanisms and networks. The evidence base is not yet sufficient to make a definitive conclusion. Also, the effects of medications on emotion regulation may be more evident in adults with ADHD than in children with the condition. But what does exist points to ADHD medications likely having some positive impact on reducing emotional dysregulation in ADHD. The bottom line is, I believe, that emotional

dysregulation should not be ignored when a diagnosis of ADHD is being made or a treatment plan is being devised. Psychosocial interventions for ADHD should also include programs targeted at helping patients with their emotional dysregulation specifically rather than just reducing traditional ADHD symptom dimensions. Cognitive-behavioral therapy programs targeting this aspect of executive function deficits (and maybe mindfulness-based practices) seem capable of doing so in adults with ADHD, especially if they take medication while undergoing training.

Testing, Testing

Some of my scientific colleagues argue that ADHD is not a disorder of executive functioning, citing the fact that only a minority of people with ADHD fail their executive function tests and test batteries. Unfortunately, this argument does not explain the serious and pervasive deficits in executive function, self-regulation, and the cross-temporal organization of behavior so evident in daily life in those with ADHD, as shown by self- and other-ratings and in clinical interviews. Telling here is the substantial body of evidence showing that ratings and observations of executive functioning in daily life are *not* significantly correlated with the results from those executive function test batteries. So clearly, whatever executive function tests may be measuring, it is not executive functioning in daily life. Critics of the EF-SR theory of ADHD see this as just more evidence against rating scales; they see the tests as being the gold standard for assessing executive function. Some also assert the false criticism that such ratings are subjective and so limited in what they can tell us about executive functioning. I and others see this lack of a correlation between tests and ratings as evidence against the ecological validity of the tests—they are not the gold standard for measuring executive function. Moreover, these tests are poor at predicting impairment in major life activities known to be rife with executive function and self-regulation. Multiple studies using rating scales of executive functioning in daily life clearly attest to the fact that a vast majority of patients with ADHD are

impaired in the major executive function domains: time management, self-organization and problem solving, self-restraint, self-motivation, and the self-regulation of emotions.

A further criticism of the use of psychometric and other tests for evaluating ADHD is that they have given rise to theories about the nature of ADHD that predict nothing of clinically useful consequence outside of their own test results or those of tests with highly similar formats. So the wise clinician is likely to respond to such theories as delay aversion, a limited cognitive energy pool, and so on, with “So what?” What exactly does it mean in real life to display, for example, delay aversion on a lab task of that construct other than intolerance of delays on tests? What does it predict about the individuals’ lives outside the lab and how they are functioning in various important domains? What does it tell us about other risks they are likely to experience given that testing deficit? Does it inform us as to the occupations they should consider or avoid, or the accommodations in work or educational settings they should request? In sum, what does it say about how to help those patients in relevant and important natural settings where impairments exist? And does it inform us about what other treatments may need to be done to address this core problem, such as with aversion to delay? The answer to them all is a resounding “no.” In other words, you cannot take such deficient test performances to the “clinical bank” because they have no practical cash value, so to speak, for guiding us in helping clients. *The lab tasks are bereft of clinical meaning for providing assistance with differential diagnosis or patient care.*

This is a key point in this book. The strength and utility of the EF-SR theory of ADHD are not only that it is neuroanatomically and neuropsychologically sound but also that it leads to astute diagnosis and helpful treatments for each individual patient—treatment recommendations that would not arise from other theories of ADHD or of executive function. This point is carried through every chapter of the rest of this book.

The EF-SR Theory Leads to Treatments That Help in Real Life

If the maxim “There is nothing so practical as a good theory” is true, then the EF-SR theory is a good one. It is, above all else, practical in its clinical implications.

Treatments That Help Patients Do What They Know When They Need to Use That Knowledge

Executive functions allow people to show what they know in their functioning in daily life activities to improve their long-term welfare. But ADHD interferes with the connectivity of the knowledge brain (posterior hemispheres) with the performance brain (frontal executive systems). Therefore, ADHD should be seen not as a problem with knowing what to do but as a *problem with doing what one knows* and doing so consistently at critical points of performance at which such knowledge is most effectively deployed.

The ramifications of this idea are profound. If ADHD is based in EF-SR deficits, then it should not be treated largely with approaches that emphasize knowledge acquisition, such as skills training. Yet most psychosocial treatments try to do just that (e.g., social skills training for children, executive function cognitive rehabilitation apps for adults, behavior modification for skill acquisition). These are doomed to fail, as they do not address the real problem—the use of one’s knowledge where and when it would have been beneficial to do so, known as the *point of performance*. The point of performance is that place and time in the natural setting where that knowledge is useful to employ to improve the consequences for oneself (and often others). It is the application of knowledge in daily life that is the problem here, not ignorance of knowledge or stupidity. To improve a performance disorder, one alters points of performance to prompt

individuals to show (utilize) what they know and reinforce the repeated use of the knowledge there. In other words, to be effective, psychosocial treatment for ADHD and executive function disorders must involve altering key elements of the environment to prompt people to recall and then use what they know for better adaptive functioning in that setting and context.

Treatments That Rearrange the Environment to Compensate for Executive Function Deficits

Treatments and remedies that help patients reduce the impact of executive function deficits by modifying the environment are discussed in more depth later in this book. Following are some examples:

- *Deficient working memory is an obstacle to success in school, at work, and in all social settings, so critical information must be offloaded and externalized to other storage devices in order to guide task performance.* Think sticky notes, reminders, journals, to-do lists, and calendars.
- *ADHD creates time blindness, so shorter tasks require external time reminders, and longer tasks call for timers plus breaking tasks down into smaller units or quotas.*
- *ADHD creates motivation deficit disorder, so to keep them working toward goals, those with the disorder need more external rewards more often and more frequent accountability to others.*
- *Mental problem solving is very difficult in ADHD, so elements of the problem need to be made manual and tangible.* For children, think marbles to count, a number line, or an abacus to use in support of mental arithmetic. For adults, think about software that can represent components of a task, such as those used in interior decoration and architectural design, accounting spreadsheets, word processing, musical composition, and so forth. Think about the trades, in which the task is already manual, the components are physical, the goal is more immediate, and supervision by and

accountability to peers and forepersons are more immediate and frequent.

- *ADHD drains the executive function resource (effort) pool quickly*, so patients need smaller work quotas, frequent breaks from work, periodic movement before and during work, and other accommodations and supports ranging from encouraging self-talk to using external pictures of goals, self-pep talks, medication, and maybe even periodic sips of sweetened beverages to get to replenish the effort pool.

Treatment with Medication for EF-SR Deficits

ADHD medications are known to act on the EF-SR brain substrates and networks and thus improve the executive functions. Those altered or malformed substrates and networks come into being during development and function as they do based on suites of atypical genes that create problems in the regional formation, integration, and ongoing functional connectivity interacting with or resulting from other etiologies that can likewise damage them. Using such neurogenetic medications will reduce the EF-SR deficits, albeit mostly temporarily, and thus reduce the likelihood of impairments in these various major domains of daily life. More specific recommendations to address the various EF-SR deficits posed by ADHD in the natural ecology are discussed later in this book.

The rest of this book is dedicated to describing how you can use my EF-SR theory and the wealth of ADHD research data available today to make thorough, accurate diagnoses of children and adolescents and to design and manage the best possible treatment plan for your patients. Clinical implications of my theory of ADHD appear throughout this chapter; in later chapters, you will find clinical tips highlighted for easy reference.

Principles for Diagnosing ADHD

For all the reasons laid out in [Chapter 1](#), ADHD must be diagnosed thoughtfully, based on multiple intertwined factors, with executive function and self-regulation deficits understood as the roots of the disorder, and with promoting patients' healthy functioning throughout life as the primary goal. The following are the principles I have found most useful in guiding the diagnostic process, along with their informational underpinnings from theory and research. [Chapter 3](#) details methods and instruments used to perform an assessment, with special emphasis on using my EF-SR theory to guide the evaluation.

Principle 1: Start the Diagnostic Process with the DSM-5 Criteria, But Don't Stop There

The diagnostic criteria used to recognize ADHD, as in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-5; American Psychiatric Association, 2013), are the most scientifically validated to date relative to earlier editions and are based on hundreds of studies, as well as expert consensus opinion. Practitioners question patients (including adults, although the criteria were developed for use with children) about the 18 symptoms listed in [Table 2.1](#). Nine of the symptoms refer to problems with inattention, and nine to problems with being hyperactive or impulsive. They can be summarized as follows:

- Patient manifests six or more of nine symptoms of either inattention or hyperactive–impulsive behavior (five symptoms for adults).
- Symptoms are developmentally inappropriate.
- Symptoms have existed for at least 6 months.
- Symptoms occur across settings (two or more).
- Symptoms result in impairment in major life activities.
- Symptoms developed by age 12 years.
- Symptoms are not best explained by another disorder.
- Symptoms can appear as three “presentations” (not subtypes): inattentive, hyperactive, or combined.

TABLE 2.1. Official Diagnostic Criteria for ADHD

- A. A persistent pattern of inattention and/or hyperactivity–impulsivity that interferes with functioning or development, as characterized by (1) and/or (2):
1. **Inattention:** Six (or more) of the following symptoms have persisted for at least 6 months to a degree that is inconsistent with developmental level and that negatively impacts directly on social and academic/occupational activities:

Note: The symptoms are not solely a manifestation of oppositional behavior, defiance, hostility, or failure to understand tasks or instructions. For older adolescents and adults (age 17 and older), at least five symptoms are required.

- a. Often fails to give close attention to details or makes careless mistakes in schoolwork, at work, or during other activities (e.g., overlooks or misses details, work is inaccurate).
 - b. Often has difficulty sustaining attention in tasks or play activities (e.g., has difficulty remaining focused during lectures, conversations, or lengthy reading).
 - c. Often does not seem to listen when spoken to directly (e.g., mind seems elsewhere, even in the absence of any obvious distraction).
 - d. Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (e.g., starts tasks but quickly loses focus and is easily sidetracked).
 - e. Often has difficulty organizing tasks and activities (e.g., difficulty managing sequential tasks; difficulty keeping materials and belongings in order; messy, disorganized work; has poor time management; fails to meet deadlines).
 - f. Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (e.g., schoolwork or homework; for older adolescents and adults, preparing reports, completing forms, reviewing lengthy papers).
 - g. Often loses things necessary for tasks or activities (e.g., school materials, pencils, books, tools, wallets, keys, paperwork, eyeglasses, mobile telephones).
 - h. Is often easily distracted by extraneous stimuli (for older adolescents and adults, may include unrelated thoughts).
 - i. Is often forgetful in daily activities (e.g., doing chores, running errands; for older adolescents and adults, returning calls, paying bills, keeping appointments).
2. **Hyperactivity and impulsivity:** Six (or more) of the following symptoms have persisted for at least 6 months to a degree that is inconsistent with developmental level and that negatively impacts directly on social and academic/occupational activities:

Note: The symptoms are not solely a manifestation of oppositional behavior, defiance, hostility, or a failure to understand tasks or instructions. For older adolescents and adults (age 17 and older), at least five symptoms are required.

- a. Often fidgets with or taps hands or feet or squirms in seat.
- b. Often leaves seat in situations when remaining seated is expected (e.g., leaves their place in the classroom, in the office or other workplace, or in other situations that require remaining in place).
- c. Often runs about or climbs in situations where it is inappropriate. (**Note:** In adolescents or adults, may be limited to feeling restless).
- d. Often unable to play or engage in leisure activities quietly.
- e. Is often “on the go,” acting as if “driven by a motor” (e.g., is unable to be or uncomfortable being still for extended time, as in restaurants, meetings; may be experienced by others as being restless or difficult to keep up with).

- f. Often talks excessively.
 - g. Often blurts out an answer before a question has been completed (e.g., completes people's sentences; cannot wait for turn in conversation).
 - h. Often has difficulty waiting their turn (e.g., while waiting in line).
 - i. Often interrupts or intrudes on others (e.g., butts into conversations, games, or activities; may start using other people's things without asking or receiving permission; for adolescents and adults, may intrude into or take over what others are doing).
- B. Several inattentive or hyperactive-impulsive symptoms were present prior to age 12 years.
 - C. Several inattentive or hyperactive-impulsive symptoms are present in two or more settings (e.g., at home, school, or work; with friends or relatives; in other activities).
 - D. There is clear evidence that the symptoms interfere with, or reduce the quality of, social, academic, or occupational functioning.
 - E. The symptoms do not occur exclusively during the course of schizophrenia or another psychotic disorder and are not better explained by another mental disorder (e.g., mood disorder, anxiety disorder, dissociative disorder, personality disorder, substance intoxication or withdrawal).

Specify whether:

314.01 (F90.2) Combined presentation: If both Criterion A1 (inattention) and Criterion A2 (hyperactivity-impulsivity) are met for the past 6 months.

314.00 (F90.0) Predominantly inattentive presentation: If Criterion A1 (inattention) is met but Criterion A2 (hyperactivity-impulsivity) is not met for the past 6 months.

314.01 (F90.1) Predominantly hyperactive/impulsive presentation: If Criterion A2 (hyperactivity-impulsivity) is met and Criterion A1 (inattention) is not met for the past 6 months.

Specify if:

In partial remission: When full criteria were previously met, fewer than the full criteria have been met for the past 6 months, and the symptoms still result in impairment in social, academic, or occupational functioning.

Specify current severity:

Mild: Few, if any, symptoms in excess of those required to make the diagnosis are present, and symptoms result in no more than minor impairments in social or occupational functioning.

Moderate: Symptoms or functional impairment between "mild" and "severe" are present.

Severe: Many symptoms in excess of those required to make the diagnosis, or several symptoms that are particularly severe, are present, or the symptoms result in marked impairment in social or occupational functioning.

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What You Need to Know about the Changes in DSM-5

Advances in developing diagnostic criteria over the prior editions of DSM have certainly resulted in more precise specification of symptoms, along with two symptom lists, an emphasis on childhood or early adolescent onset of the disorder in most cases, and a requirement for both cross-setting pervasiveness of symptoms and evidence of impairment in one or more major life activities. Even so, numerous evidence-based recommendations were made to the committee revising the ADHD criteria for improving their rigor and diagnostic accuracy, as well as better representing what was known about the core problems inherent in the disorder. Sadly, many of them were rejected by committees higher up in this organization, apparently partly out of fear of increasing the prevalence of the disorder significantly. Though the few revisions that were finally accepted were commendable improvements, they were half measures. Moreover, these criteria can be further improved and adjusted when viewed through the lens of the EF-SR theory. By incorporating more of the recommended revisions to the old DSM criteria and improving the sampling of EF-SR deficits in the symptom lists, you can use even more rigorous and representative criteria than does the DSM-5.

Not EF-SR Theory–Based

The official criteria now emphasize the *neurodevelopmental* origins of ADHD, based on the roles played by genetics (and possibly epigenetics), as well as nongenetic neurological factors, in its etiology. But they do not go so far as to use this understanding to conceptualize ADHD as a disorder of executive functioning and self-regulation. This limitation narrows the concept of ADHD, trivializes its nature to merely an attention deficit, and detracts from the focus that diagnosing clinicians must maintain on the wide-ranging deficits in executive function and self-regulation inherent in ADHD and the impairments caused by them. It restricts diagnosis and ultimately treatment for many patients.

Presentations, Not Subtypes

DSM-5 no longer conceptualizes ADHD as comprising three separate subtypes, as if there were qualitatively distinct categories. This change makes sense, as there is little if any evidence of meaningful differences among the earlier subtypes. Instead, ADHD is now seen as a single disorder representing the extreme end of a continuum that can vary in the population in each of its two highly interrelated symptom dimensions. This is merely a way for clinicians to note the relative severity of symptom dimensions at that moment and not a signal of qualitatively distinct and lasting types, and it creates two problems:

- EF-SR theory argues that those ADHD symptom dimensions reflect larger ones involved in executive functioning (executive inhibition and metacognition).
- A subset of cases fitting into the primarily inattentive presentation may not involve ADHD at all but may represent a second attention disorder, known as *sluggish cognitive tempo* (SCT), or what a recent work group of experts (Becker et al., 2021) has renamed more accurately and less offensively *cognitive disengagement hypoactivity syndrome* (CDHS). This presentation could be viewed as a disorder that is distinct from yet partially overlaps with ADHD. It is important to identify because of its unique explanatory power in predicting correlates, comorbidities, outcomes, and even treatment response. (See [Chapter 4](#) for details.) Placing CDHS cases into the inattentive presentation is fine as far as documenting a diagnosis for the sake of insurance reimbursement or institutional data collection goes, as there is nowhere else to designate it officially, but understand that it misrepresents (misdiagnoses) CDHS as if it were ADHD (or what some clinicians are calling ADD), when the evidence to date shows it certainly is not.

Diagnosis in the Presence of Autism Spectrum Disorder

This is a welcome change, because it is now known that the comorbidity of ADHD with autism spectrum disorder (ASD) is substantial and not just a secondary consequence of having ASD (see [Chapter 4](#)).

Added Qualifier Symptoms

Although the symptom lists for ADHD in DSM-5 remain the same, qualifier symptoms have been added in parentheses to the end of each symptom in [Table 2.1](#) to assist clinicians with understanding the expression of that symptom at older ages beyond childhood. There are at least three problems with these clarifiers:

- A study that Laura Knouse and I conducted (Knouse & Barkley, 2020) suggested that those clarifications may actually represent newly invented and separate symptoms of the disorder, yet none of these clarifications arose out of prior research that tested them for their affiliation with ADHD, for their relationship to the root symptom they are supposed to clarify, for their accuracy in detecting ADHD, or for their relationship to impairment in major life activities—all essential for inserting new symptoms into such widely used clinical diagnostic criteria for a disorder.
- Adding such new and untested symptoms could broaden eligibility for the disorder by up to 6% in older teens and adults, but without resetting the threshold for determining presence of disorder (six symptoms for children, five for adults).
- Some clarifications (e.g., being internally distracted) are as highly correlated or more so with anxiety as with the root symptom, which could lead to cross-contamination of the ADHD criteria with those of another disorder.

These clarifications also were not informed by any theory of ADHD, such as EF-SR theory detailed in [Chapter 1](#). So, until the status of the parenthetical clarifiers is better researched, *clinicians should likely ignore them* in making a

diagnosis of ADHD in a teen (or an adult) if the goal is consistency in identifying comparable cases between the new DSM-5 and the earlier DSM it replaced.

Surmounting Other Shortcomings of the DSM Criteria

Various limitations have been evident in the DSM criteria across the many editions of the manual. It is important to be aware of those that persist and how to deal with them to produce the most accurate diagnoses for your patients.

1. *Particularly when assessing adolescents (or adults), do not place so much emphasis on the hyperactive symptoms.* Six symptoms out of nine on the DSM list reflect excessive activity, even though for at least the last 40 years impulsivity has been viewed as just as much if not more involved in ADHD as hyperactivity. Hyperactivity is at best reflective of early childhood disinhibition of motor movement and declines so steeply over development that such symptoms are of little diagnostic value by late adolescence and certainly by adulthood. This is one reason clinicians before the 1980s thought the disorder was outgrown by adolescence. Today the symptom list is losing its sensitivity to detecting true disorder over development.
2. *Look for additional symptoms of impulsivity.* Poor inhibition should be reflected not just in speech (currently the DSM criteria include only three verbal symptoms) but in other domains such as motor behavior, cognition, motivation, and emotion. Ask parents whether their children do the following:
 - Act without thinking; often fail to consider the consequences of their actions
 - Get distracted by more rewarding but irrelevant activities; have trouble motivating themselves to do their work

- Opt for small, immediate rewards; have trouble deferring gratification or waiting for larger, later rewards
- Can't persist; lack willpower, self-discipline, drive, determination, and "stick-to-itiveness"
- Manifest impulsive emotions; seem unusually impatient, easily emotionally aroused, easily frustrated, and quick to anger

None of these aspects of disinhibition or poor self-regulation are included in the DSM-5 (or earlier) criteria, yet abundant research shows they are as common in people with ADHD as are the traditional DSM symptoms and, with age, more so than those of hyperactivity. Be sure to ask about them anyway.

3. *Use rating scales of ADHD symptoms that have their norms broken down by sex and not just age.* The DSM-5 criteria fail to recognize that females may be as impaired as males but at lower symptom thresholds, because (1) females become impaired in certain domains of functioning at lower levels of symptoms than do males, and (2) males were overrepresented in field trials for earlier versions of DSM, thus making the symptom threshold male-biased. Research suggests that females in the general population, at least in childhood and adolescence, do not show as many of the symptoms as their male peers, making it harder for a female to meet the DSM criteria, even though she may be just as impaired as a male. See [Chapter 3](#) for scales I recommend.
4. *Think of inattention as metacognitive and other executive function deficits in daily life, particularly those reflecting self-awareness, working memory, poor self-organization, poor emotional self-regulation, and deficient time management.* That way, you will know to go beyond focusing merely on DSM symptoms in your assessment of your clients in your interviews and selection of rating scales, among other assessment methods. You will also know in your open-ended initial interview to listen for these types of

complaints in order to better help you identify whether ADHD is present or not. You also can better understand the pervasive impact of patients' symptoms on their daily functioning in major life activities as they explain to you all of the domains in which they are ineffectively functioning. Furthermore, you can better explain the nature of their disorder to them in the feedback conference when your evaluation is completed, allowing them to better understand why their condition is so serious, impairing, and pervasive across major domains of life. It will also help you to appreciate why teens (and young adults) may seem to be outgrowing ADHD, based on DSM criteria, when they are far less likely to be outgrowing their EF-SR deficits and may even be demonstrating increased impairment with age.

5. *Don't adhere too rigidly to thresholds for meeting diagnostic criteria when there are clear signs of significant impairment.* You are not making a dichotomous decision—disorder or no disorder—or dealing with symptoms whose presence or absence creates a sharp distinction between the two. Keep in mind that ADHD (and EF-SR) is not a category but a dimension. Empirical research asserts that ADHD falls along a continuum in the general population. It is a developmental disorder distinguished from others more by a quantitative difference from normative behavior than as a qualitatively distinct category. So you will see clients who do not meet all of the DSM criteria but who are experiencing impairment and seek out your assistance with alleviating or at least compensating for it. *As practitioners, we are valued by society not so much because we can make diagnoses but because we relieve suffering; the rendering of a diagnosis is a means to that end and not the end itself.* This means you should diagnose ADHD in the following cases:

- Your clients or their caregivers state that the child or teen has a high number of ADHD (and executive functioning) symptoms (placing above the 80th–84th percentiles or so in severity) *and* there is

evidence of impairment in major life activities (harm), even if the client fails to meet all DSM-5 criteria.

- Symptoms developed sometime during development, usually before ages 21–24 or so, and meet all other criteria for the disorder. DSM-5 has raised the age of onset for ADHD from age 7 to age 12, but research repeatedly shows that neither patients nor those who know them well are reliable or accurate in recalling the age of onset of the symptoms and, hence, the disorder. It is a mistake, therefore, to consider age of onset in diagnosing ADHD, all else hitting the stated thresholds.

Impairment is key to diagnosing ADHD (see [Principle 2](#) below). Also see [Handouts 3–14](#) in [Appendix A](#) for parent fact sheets on specific topics and issues related to ADHD, which will help you explain the nature of ADHD as a spectrum or dimensional disorder to parents or teachers of children with ADHD.

6. *Always consider the source of information when assessing a child or teen for ADHD.* DSM has a requirement for cross-setting occurrence of some symptoms in the diagnostic criteria, but some care must be taken not to confuse that with differences in the reports of others being called on to provide information about the individual. At the individual level of analysis, there can be substantial differences in the number and severity of symptoms reported by different observers across the different contexts they supervise. For example, it is well known that parent and teacher agreement on any dimension of psychopathology in children or teens is notoriously low, with correlations averaging just .25–.30. To avoid conflating such natural reporter disagreement with cross-setting occurrence, it should be understood that DSM requires that only one or more symptoms need to be present in any given situation as reported by one source, whereas more symptoms producing impairment may be reported in other settings by other sources. It is the total number of

different symptoms endorsed across such reporters that needs to rise to the required symptom threshold (six for children, five for adults). *You do not need six (or five) from both sources.*

The same caution about conflicting observer reports applies to comparing self-reports by children and teens with ADHD and their parents' or others' reports of their ADHD symptoms. Up until the client is in their twenties, the correlation between self- and other-reports is only modest, reflecting low degrees of agreement. The EF-SR theory of ADHD explains this phenomenon: The development of executive functions that create self-awareness lag behind in those with ADHD. Therefore, you should adhere to the newly inserted criterion in DSM-5 to corroborate what patients are reporting through another source. If no parent, sibling, or long-term caregiver is available, then archival records may have to suffice, such as earlier medical/psychiatric records, educational transcripts, report cards, driving records, work history, and so forth, as available.

7. *Think of—and explain—ADHD as EF-SRDD, and thus being the diabetes of mental health.* DSM-5 specifies that impairment may exist in home, educational, peer, or occupational settings, but, because it still focuses on ADHD as deficits in attention or activity regulation, it does not convey how far beyond these domains ADHD has an adverse impact. When you view ADHD as founded in deficits in executive functions and self-regulation, which are requirements for functioning well in most domains of life, you can not only better understand why your clients are struggling to function effectively in so many domains of life and health but also better explain to them and their loved ones why that is the case and why it is imperative that the disorder be treated on an ongoing basis, as if it were the diabetes of psychiatry. I return to this point in later chapters that deal with impairment and with adopting the treatment framework provided by the EF-SR theory.

8. *Don't assume that ADHD disappears in adolescence.* DSM criteria are progressively less developmentally sensitive with increasing age. They lose their capacity to detect true disorder to some extent by adulthood. But if we apply developmentally relative criteria for a diagnosis, such as exceeding the 93rd (+1.5 standard deviations [SD]) or 98th (+2 SD) percentile relative to same-age peers and requiring evidence of impairment, up to 56 and 49% of childhood cases, respectively, continued to be symptomatic, even if not fully diagnosable by DSM criteria. And if we had employed more symptoms of EF-SR deficits beyond the traditional ADHD symptoms, even more cases would be classified as developmentally deviant. Notice that using a developmental approach to diagnosis identifies twice as many cases as being persistent in their disorder as do the DSM criteria. *If the presence of impairment was the only criterion employed, then 80–85% or more were still impaired in one or more daily life activities by adult follow-up.* During my research collecting population representative norms for my executive function rating scales (Barkley, 2011, 2012a), I observed that, despite the well-known decline in ADHD symptoms in the general population with age from childhood into adulthood (and onward; as seen on ADHD rating scales), there was little or no obvious decline in the various executive function components on those ratings across childhood (ages 6–18), such as for self-organization, time management, self-motivation, self-restraint, and planning/problem solving. What this likely means is that the ADHD symptom lists are not capturing the far wider range of executive function deficits associated with this disorder that are not declining with development as much as are the more childhood-focused traditional DSM symptoms.

Principle 2: Understand the Importance of Impairments versus Symptoms

What qualifies ADHD as a “real” or valid disorder, in my opinion, is that it meets the well-reasoned criteria for a harmful dysfunction as set forth by Jerome Wakefield (1999). Wakefield defined mental disorders the following way:

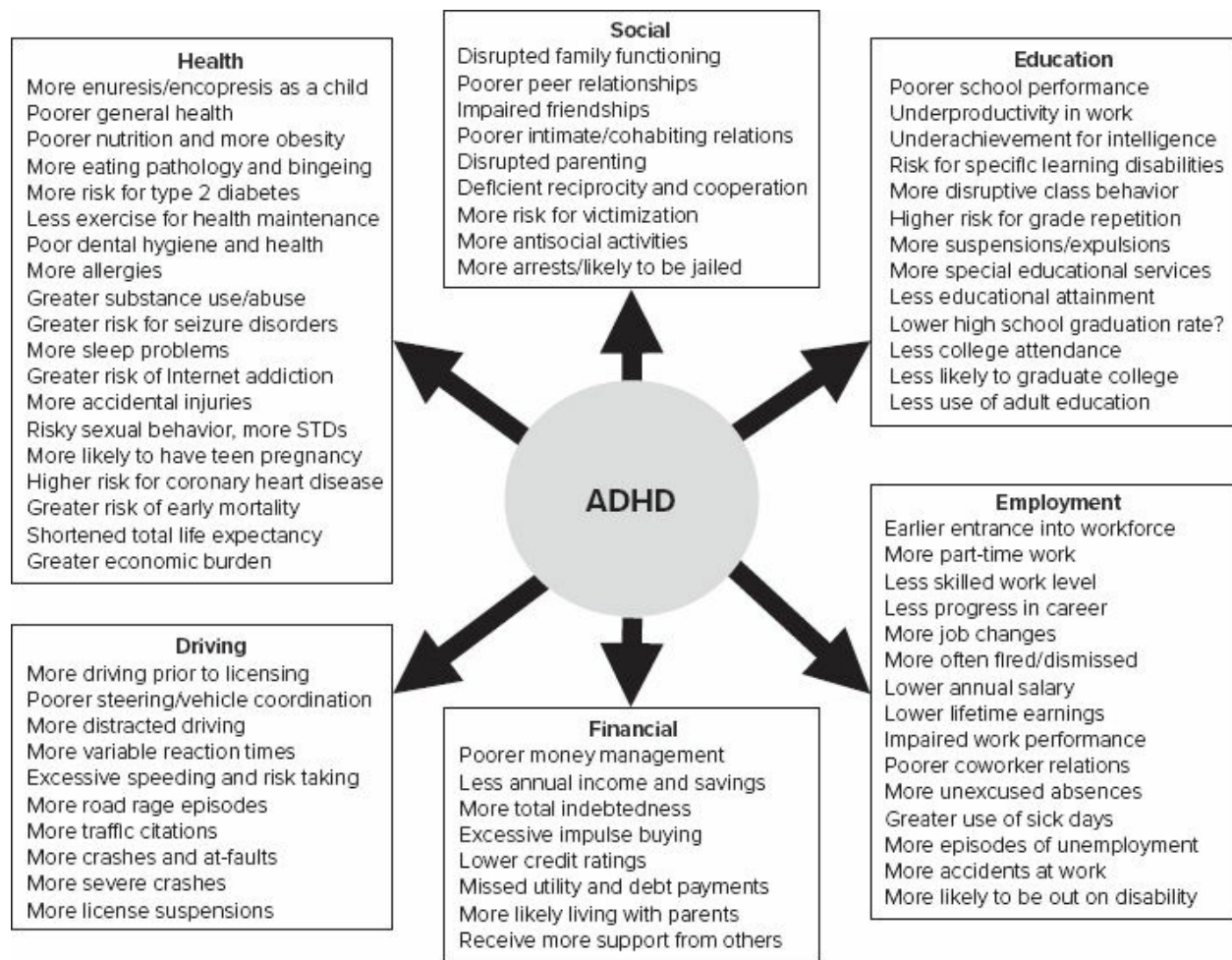
- *Dysfunction(s)* in one or more evolved psychological adaptations (abilities) that are universal to the species (part of the human design)
- That lead to *harm* to the individual, including increased mortality, morbidity, and impairment (ineffective functioning in major life activities)

Abundant evidence shows that ADHD easily meets both criteria, so it is clearly a valid disorder.

But if the dysfunction is on a continuum, as is ADHD, and not categorical, at what point does it become a disorder? It is a disorder *when symptom severity reaches the point at which it causes harm*—adverse consequences or impairment—for the individual (the environment kicks back). This explains why I encourage clinicians to use impairment as an important factor in diagnosing ADHD, even when symptom criteria are below the DSM thresholds.

Impairments are far more wide ranging and multifarious than the DSM criteria indicate—in large part because DSM still views ADHD as a disorder of inattention and hyperactivity rather than more broadly as a disorder of self-regulation. To render an accurate diagnosis, it is important to look at how ADHD can affect children and teenagers in every domain of life and to assess whether some clients are exhibiting such harms. [Chapter 3](#) lists some of the instruments you can use to measure impairments. [Figure 2.1](#) offers an

overview of the domains of impairment for both children and adults.



[Follow for extended description](#)

FIGURE 2.1. Domains of impairment in major life activities and health that are likely to occur in conjunction with ADHD in children and adults.

[Chapter 5](#) gives details on the various domains of impairment and future risk that you can share with parents so that they know what to expect if their child is diagnosed with ADHD. For assessment purposes, the following are some of the impairments most likely to affect children that you evaluate.

Family Relationship Impairments

It is essential that you evaluate the family while assessing a child or teenager for ADHD, not merely to ascertain whether the child has ADHD but to uncover all the factors that will likely affect treatment. A large amount of research has shown that a child's ADHD can have a negative impact on the child's relationship with parents and with siblings. If the parents or siblings also have ADHD or other psychiatric diagnoses, the problems are often compounded and bidirectional. Learning what types of problems exist in the family during the diagnostic process can help you develop a comprehensive treatment plan that stands the greatest possible chance of helping the child with ADHD and, in turn, the whole family. [Principle 3](#) below will help you apply a neurogenetic framework to your approach to evaluating a child or teen for ADHD, including the importance of considering whether biological relatives also have ADHD or other relevant mental health problems. [Chapter 3](#) includes more on methods and instruments for evaluating the family.

Educational Impairments

Education is one of the most well-documented domains of impairment for all age groups of people with ADHD. When ADHD is viewed through the lens of the EF-SR theory, the reason for this is obvious. Few domains apart from occupational performance in adults are as demanding of self-regulation and delayed gratification as schooling. An overview of the research evidence follows.

- The vast majority of people with ADHD experience impairment in the educational setting, probably well over 90%; and the extent of impairment is more severe in this domain than in most, if not all, others.
- People with ADHD manifest lower preschool academic readiness skills, lower academic achievement skills after entering formal school settings, greater skills deficits, widespread performance deficits in core academic

subjects, and poorer academic enabling behaviors, such as self-organization, time management, and problem solving, that make one available for learning. These are present in addition to their ADHD symptoms, executive function deficits, peer relationship problems, comorbid psychiatric disorders, and health problems, as identified here and in later chapters in this book.

- In academic skills, people with ADHD show significant deficits in reading, math, spelling, and handwriting competencies, as well as a higher probability of qualifying for specific learning disabilities (33–45%), as discussed in [Chapter 4](#).
- Performance deficits include high rates of off-task behavior, variable on-task behavior, less efficient approaches to work performance, careless work behavior, inability to sustain motivation to work as long as typical children, and reduced self-monitoring and self-correction of work. Moreover, their emotional self-regulation deficits and impulsive emotional displays result in significant behavioral management issues for teachers and are the single best predictor of peer rejection in school.
- Deficits in academic performance are more a function of the degree of executive function symptoms than of the hyperactive–impulsive symptom dimension, which contributes more to disruptive behavioral management issues in school and difficulties in less supervised settings (lunchroom, hallway, bus, playground) and outside-of-school risks.
- Significant transitions in academic settings over development—such as the shift from elementary to middle school, from the latter to high school, or, for the minority who try it, from high school to college—may be associated with a worsening of symptoms and further impairments. That is due in part to a reduction in external structure, assistance, and supervision and to an increased emphasis on self-regulation and independence associated with such transitions.

- Follow-up studies also show higher than typical rates of adverse academic outcomes, such as grade retention, suspensions, and expulsions, and possibly failure to complete compulsory education. Fortunately, the latter risk has declined lately, probably due to the inclusion of ADHD in the special education laws that provide these more recent generations with more assistance in completing school or a modified avenue through which to graduate than was available to earlier generations. Even so, young people with ADHD are less likely than those in control groups to enter college or, if they enter, to graduate from college, although the most intelligent may do so.

Assessing the educational problems associated with ADHD is complex and should include tests of basic achievement skills. For professionals working in school settings, the evaluation might also include rating scales of academic performance and school performance–enabling characteristics of the student such as study skills, motivation, or social skills, which are known to contribute to academic success, along with curriculum-based assessment and direct observations of in-school functioning, among other, more ethological approaches to documenting difficulties (see DuPaul & Stoner, 2014).

Interventions for the educational impairments of children and teens with ADHD need to target not only the modification of ADHD symptoms and related problematic behaviors but also academic skills, performance-related behavior, and academic enabling abilities if improvements in more than just behavior are to be achieved. Additional interventions may be needed to target directly the increased risk for dropping out of school.

In view of the foregoing considerations, you need to be very familiar with special education laws and services so that you can better advise parents of services for which their children may be eligible and how to access them. Some clinics have gone so far as to hire education specialists with a background in special education to work as liaisons between their clinics and

the school systems so as to further assist clients with their educational needs. Also, you should be very familiar with the types of psychoeducational and behavioral management methods that have some evidence base, so that you can optimally counsel families and even specific teachers about classroom management strategies and curriculum adjustments. Whether advising children or teens, you may find it helpful to review the text by DuPaul and Stoner (2014) on assessing and managing ADHD in school, as well as that by Lewandowski and Lovett (2015) on classroom and testing accommodations for students with disabilities (see also [Chapter 8](#) of this book).

Health Impairments

Research evidence is mounting that ADHD increases mortality, risk of injury, and a panoply of adverse health outcomes. Obviously, a child being evaluated for ADHD should have a physical checkup to rule out non-ADHD causes of ADHD symptoms and related impairments. But, in general, a diagnosing clinician should be looking for indications of accidental injuries and poisonings, poor dental hygiene and trauma, motor and language delays, disrupted sleep, seizures, and migraines in children that could be connected to ADHD. As children mature, the health risks multiply, largely due to risky behaviors caused by deficits in self-regulation. Thus, by adolescence, clinicians must be attuned to additional health adversities related to risky sex, sexually transmitted disease, risk for pregnancy, obesity, impulsive eating pathology (in females), adverse driving outcomes (citations, crashes, revocations), alcohol, tobacco, marijuana, and other drug experimentation or abuse, and Internet addiction, among other things.

This area is an example of how illuminating it can be to look at ADHD as more than a simple disorder of attention. Imagine that a teacher reports that a student you are evaluating gets easily distracted and behaves very impulsively in class. If asked, the physical education teacher could report that this child has minor but frequent injuries in gym class despite safety warnings. The physical education teacher just thinks the student is overly enthusiastic, and

no one at the school has made the connection between this risk-taking sports behavior and the child's impulsivity in the classroom. But you can make the connection—and, in the process, see the EF-SR deficits that underlie the child's experiences in all domains of life, including health, and help the family see the importance of treatment to prevent further impairments in the future.

Just as ADHD is linked to increased adverse consequences in nearly every major domain of life activity studied to date, so, too, does it adversely affect lifestyle, diet, health, and other aspects of wellness. Throughout the ordinary day, people must make countless choices about eating, exercise, avoidance of hazardous substances, use of alcohol, tobacco, and other legal substances, use of over-the-counter as well as prescription medications, personal hygiene, dental health, sexual behavior, driving, and risk taking in general. Although these decisions are usually more the domain of adolescence than childhood, teenagers are involved in such choices at earlier and earlier ages, so it is important for clinicians to talk to parents about these risks even if their child isn't facing them right now. Involving, as it does, disinhibition, a preference for small, immediate over larger, delayed consequences, and poor self-regulation generally, ADHD leads to a variety of unhealthy choices across all of these choice points that, cumulatively, will have a negative impact on their health and risk for medical illness, as well as for earlier mortality and a shortened life expectancy. Impulsivity is also the single best predictor of suicide attempts and successful suicide in high school for teens with ADHD.

For instance, ADHD in children, and more recently in adults, has been repeatedly linked to an increased risk (2–5 times) for accidental injuries of all types (trauma, burns, poisonings, penetrating eye injuries, etc.), for more severe injuries, as well as for repeated injuries. The comorbidity of oppositional defiant disorder/aggression with ADHD in children further exacerbates these risks. Likewise, children admitted to hospitals due to accidental injuries are 3 times more likely to have ADHD (approximately 30%) than are children admitted for other reasons. The adverse driving outcomes noted earlier, including more vehicular crashes, pose additional opportunities for early morbidity and mortality. And then there is the fact

that SRDD further increases the risk for suicidal ideation (along with comorbid depression), attempts (associated with impulsivity), and completions—as noted earlier, and as I discuss in [Chapter 4](#). The involvement of teens and adults with ADHD in various antisocial activities and intimate partner violence further elevates their risk for greater injury and death.

[Appendix B](#) summarizes numerous studies on the health impact of ADHD. Clinicians should be alert for health problems that are already a part of a child’s history, as they may support a diagnosis of ADHD. Parents should also be informed of the health risks to their children when they have been diagnosed, so that efforts to offset the increased health risks can be incorporated into a treatment plan in which parents can participate (see [Chapter 5](#)).

Principle 3: Always Consider the Neurogenetic Origins of ADHD

ADHD is classified as a “neurodevelopmental” disorder because the evidence for the involvement of neurological, genetic, and epigenetic factors, neurotoxins, and other biologically related factors in its occurrence and development is beyond dispute. Where there is any role for the environment in etiology, it is through its interaction with primarily genetic and other neurological factors (toxins, infections, trauma) and not through main effects, particularly for social influences. Even then, the environmental factor, such as alcohol consumption in pregnancy or social deprivation or malnutrition, must be sufficient to adversely affect brain functioning and result in ADHD as a consequence (as found in adoptees from orphanages in poverty-stricken or war-torn countries). Indeed, it is safe to proclaim, given the hundreds of studies attesting to these assertions, that *there is no currently available credible scientific theory of ADHD that can account for its existence by purely social means.*

To be clear, social environments *are* influential in their impact on ADHD—primarily on the risks for subsequent impairments in major life activities and for comorbid disorders and on access to diagnostic, treatment, and educational resources. All of this may have an impact on current and perhaps eventual adult outcomes of the disorder. But the prevailing evidence makes clear that those social factors alone do not create ADHD *de novo* in an otherwise normal or typical child or teen.

This incontrovertible fact is important in diagnosing ADHD, in treating it, and in helping parents accommodate to the news that their child has this chronic condition, not unlike diabetes, that comes with lifelong health risks and other challenges *but through no fault of theirs concerning how the child is being raised.*

A brief summation of what we know about the neurogenetic etiology of

ADHD is provided in [Appendix C](#). Suffice it here to say that what we know about the neurogenetic nature of ADHD makes it plain that a professional evaluation must always include evaluating biological relatives of the child undergoing the assessment, as noted under Principle 2.

Principle 4: Keep in Mind That the Goal Is Not Just Diagnosis of ADHD but Differential Diagnosis from Other Disorders

ADHD can be, and often is, confused with other diagnoses involving deficits in attention and impulsivity. As discussed in [Chapter 3](#), one early goal involved in assessment is to rule out these other disorders as the source of the symptoms and impairments a child brings to your office. Yet ADHD also often co-occurs with other disorders, and it will be your job to identify any of those that the client you are evaluating may have in addition to ADHD.

[Chapter 4](#) provides the salient information on comorbidities.

Principle 5: Be Prepared to Confront Myths and Resistance from Parents and Clients (Particularly Teens)

Despite the vast quantity of reliable research evidence accumulated over several decades, misinformation about ADHD still abounds. Being prepared to counter common myths and misconceptions can help you transform skeptical parents into knowledgeable collaborators in a child or teen's treatment.

“ADHD isn't real.”

Contrary to reports from various sources, the disorder has not increased wildly in prevalence in recent decades—and is not, therefore, merely a fabricated “affliction du jour.” And it surely has not increased due to the widespread adoption of screen-based technologies on which people spend increasing amounts of their time, or of a diet high in sugar, or any number of other once-claimed environmental causes that, when removed, would resolve ADHD. ADHD is among the most widely and deeply studied psychiatric conditions known, and prevalence rates are consistent across the world, ranging between 5 and 8%. ADHD appears in all ethnicities, nationalities, and socioeconomic groups (although there is some variation largely related to the latter factor). You can assure parents that these figures may even be slightly high as they include cases that represent CDHS, the other attention disorder noted earlier. What matters is that ADHD as currently defined is found throughout the world's populace. Interestingly, however, observations of impairments through development show that children can outgrow the classically defined ADHD diagnosis but continue to have a disorder of EF-SR. You can explain this to parents according to the facts and approach provided in [Chapter 5](#). Understanding the wide-ranging impairments of ADHD viewed through EF-SR theory can help dispel parents' arguments that their child doesn't seem at all like others they have known who have been diagnosed

with ADHD.

Be cognizant of the fact that many parents, when a clinician delivers a diagnosis of ADHD, are either in denial or, if not, are very susceptible to experiencing a significant amount of grief. No one likes to hear that their child has a debilitating chronic health condition. Be sure to focus on the fact that the purpose of diagnosis is to allow effective treatment—and that most children offered such interventions will be able to reduce or compensate for their symptoms and reduce potential impairments over a long and fruitful lifetime. You can even suggest that they Google “ADHD success stories” to see the wide range of athletes, celebrities, musicians, chefs, actors, comedians, entrepreneurs, and others who have done well despite the disorder because they were diagnosed and treated for it.

“My child couldn’t have ADHD, because it’s caused by bad parenting, and I know I’ve been a good parent.”

Parents who carry this myth around are often wracked with guilt over whether they have inadvertently caused their child harm. They may have heard others blame ADHD on parents, or they themselves may have been blamed for their child’s atypical behavior by those close to them. No wonder they prefer to reject the entire diagnosis. You can, however, encourage them to accept the diagnosis without taking on the blame. The fact sheets on ADHD ([Handouts 3–14](#) in [Appendix A](#)) explain the neurogenetic basis for ADHD and other information on it in terms accessible to parents.

“Are you sure my child has ADHD? I’ve heard it’s vastly overdiagnosed.”

As noted earlier, ADHD may seem slightly overdiagnosed simply by virtue of including cases of the Inattentive type, or of CDHS. It has also resulted from mainstream media accounts of ADHD that focused on some government reports, especially that of the Centers for Disease Control, that determined

rates of ADHD in the United States using just a single vague survey question and thus was highly prone to greatly overidentify possible cases of the disorder. On the other hand, the fact that a much higher proportion of boys than girls are diagnosed with ADHD in childhood and that this gap narrows with age may indicate that we have been missing cases of ADHD in girls until they mature enough to suffer and report impairments on their own and thus seek evaluation. Also, there is a second age range of onset for girls, associated with the onset of their menses in adolescence, that may have further contributed to this underrecognition of ADHD in girls. (Other explanations could, however, account for this phenomenon, and more research is needed.) ADHD may even be underrecognized in teenage boys and men because so often diagnosis has relied on the existence of hyperactivity, which does decline with age—whereas evidence of executive function and self-regulation deficits does not. When we view ADHD as a disorder of EF-SR, we may in fact discover that we have been underdiagnosing ADHD and certainly underestimating its persistence.

“Girls don’t get ADHD, so how can you tell me my daughter has it?”

Thanks to increasing research that includes girls and women (females at birth), we now know that ADHD most assuredly occurs in females and probably in many cases in girls just as young at onset as it does in boys. The problem lies in the fact that the same EF-SR deficits that exist in boys often manifest themselves differently in girls. Where boys may be hyperactive in terms of movement, girls may show this symptom as verbal hyperactivity or increased socializing. And, as noted earlier, girls can have a second age of onset of their condition in adolescence, such that by the late teens and early adulthood, ADHD is nearly as common in females as in males.

“Even if my child does have ADHD, why should he be treated for something that is actually a gift?”

I have been debunking this persistent myth for years, and yet you'll find that some parents still adhere to it. This may be another response to denial and grief or a by-product of the relatively new "neurodiversity" social movement—it is easier to view ADHD as a "difference" than as a disorder, and it is more palatable to view ADHD in terms of any benefits that the syndrome may confer. Always point out to parents that their child does *have* many gifts—strengths that can be capitalized on to help the child overcome ADHD's impairments. But ADHD has been included in the DSM for good reason: Without treatment, it can severely derail (and even shorten) a child's life. This claim of ADHD as a gift not only misrepresents the scientific findings on this disorder, but it can minimize the seriousness of the disorder and also foster false hope in people. After all, if ADHD is really a disorder of EF-SR, then it is undermining one of the most important suites of mental adaptations that humans use to survive and to prosper.

Remind parents that they have come to you for help with problems affecting their child that they have not been able to solve. They have determined that they need professional help. Your diagnosis can lead directly to that help—from special accommodations and services in the educational system to behavior management skill building to medication to reduce the negative impact of ADHD's main symptoms. If ADHD were a gift, these forms of support and assistance would never have become available.

By all means, please do encourage parents to celebrate those who have coped successfully with ADHD and even succeeded in some occupations well beyond what typical people might have done. Yet neither that coping nor that success can be attributed to their ADHD. Instead, it is due to some of the many hundreds of other traits the person possesses in which they may have some talent. People are not good artists, actresses, comedians, musicians, chefs, athletes, TV personalities, and entrepreneurs because of their ADHD. They are so *in spite of* it. They just happened to be blessed with exceptional talents unrelated to their ADHD that allowed them to excel *even with* their ADHD.

People with ADHD are certainly less inhibited. And it is well known that

one's creativity can be enhanced somewhat by being less inhibited than others. Such mildly lower levels of inhibition promote thinking about or even trying far-fetched ideas that others would ignore because they are unusual, impractical, or seemingly irrelevant. This finding among the general population does not mean that people with ADHD who have far more severe disinhibition are even more creative as a result. But it might lead to specific instances in which some already highly gifted, talented, or creative people who happen to have ADHD are somewhat more inventive in their ideas or more likely to take risks in their businesses or specialties. Some of those far-fetched ideas just might pay off handsomely. But that is a very small segment of the total population with ADHD.

Likewise, ADHD conveys to people a high level of energy and typically unfocused activity. This can be directed for good or bad. But if someone with ADHD is also blessed with high athletic abilities or an entrepreneurial talent and is surrounded by loved ones who can channel that excess energy and utilize exceptional area resources to further develop it (e.g., Michael Phelps, Simone Biles, Adam Levine), then good things may come of it. It is this interaction of talent with excess activity coupled with direction by loved ones and their recruiting of resources that can promote that talent and may well help that person to succeed where others with ADHD might not do so.

Viewing ADHD as a disorder of executive functioning and self-regulation, as the EF-SR theory in [Chapter 1](#) makes evident, makes us appreciate just how serious a condition it is and why it is linked to so many domains of adverse outcomes.

“If I accept that my child has ADHD, you’re going to want to prescribe medication, and I don’t want my child to take pills that may not be safe.”

That medications for ADHD (or for any other psychiatric disorder) may not be safe and may also be unnecessary is naturally a major concern for many parents. It should not be belittled, as no parent should give a prescription

psychoactive drug to a child unquestioningly. Your initial response to this fear can be to assure the parents and the child or teen that all proven interventions will be considered as part of any treatment regimen you or another clinician who follows up on your diagnosis will propose. Nothing will be forced on them. You can also provide basic statistics on the safety of the medications commonly prescribed for ADHD and get into more detail as treatments are reviewed. The best way to confront misinformation is with more information, so refer parents to other sources for more details and share the data in [Chapters 9](#) and [10](#) as seems appropriate.

Principle 6: Be Prepared to Follow Up Diagnosis with Appropriate Treatment

This may seem so obvious as to go without saying. But it is sometimes easy to forget, especially in the rigidly structured health insurance system in which we operate, that diagnosis is not an end in and of itself. Depending on your professional circumstances, some clients will transfer to other clinicians for treatment. But even in those cases, you have much to offer in the way of insights to pass on about how your diagnosis informs treatment options.

So, always remember that the helping professions do not exist to make diagnoses but to relieve suffering and harm (including impairment). Making a diagnosis is but one means to that end. Throughout the assessment process, you will obviously be taking notes for the client's file about what recommendations certain findings indicate may be needed to address impairments in various domains of the child's or teen's life. In addition, you should be equipped with the following:

- A solid foundation of knowledge of all the evidence-based treatment options available today (also knowledge of what is unproven or has been found to be harmful). See [Chapters 6–10](#) and [Appendix D](#).
- Openness to consulting with specialists as needed (see [Chapter 6](#)), especially educational consultants (for both diagnosis and treatment).
- Familiarity with the services available in your community. Being able to refer clients to needed specialists nearby will be a large part of the benefit you can offer, and having alternatives in mind when local services are in short supply will always be welcome. You are the expert, and parents will greatly appreciate the fact that you are not leaving them with a diagnosis and no way to treat it.

3

Assessment

The Executive Functioning–Self-Regulation Theory and Clinical Common Sense

In [Chapter 2](#), I made the case that the DSM criteria provide a good starting point for evaluating a child or teenager for ADHD but do not allow us to put together a complete picture of the patient’s condition—one that will enable us to come up with the best possible treatment plan for that individual. In this chapter, I explain how to augment and modify the DSM-5 criteria to perform a thorough assessment, highlighting major issues that should be addressed in the clinical evaluation of children and adolescents and discussing several methods I find important to the process. Then I explain the assessment process step by step in brief. For more detailed information on such evaluations, see my chapter on this topic (Barkley, 2015) and those on assessment in the recent books by Stephen Becker (2020) and Tobias Banaschewski and colleagues (Banaschewski, Coghill, & Zuddas, 2018).

Determining Whether DSM-5 Criteria Have Been Met

As noted in [Chapter 1](#), the DSM-5 diagnostic criteria fall somewhat short because they focus on two symptom lists and ignore the underlying executive function deficits and the broad implications of those deficits. This does not, however, eliminate the need to evaluate whether you can establish an official DSM-5 diagnosis of ADHD (see the diagnostic criteria in [Table 2.1](#)), which involves the following, facilitated by using some additional assessment tools I recommend:

- The reasons for the referral, especially at this time
- The cognitive and behavioral symptoms (ADHD being the initial focus here)
- The frequency of those symptoms (the word *often* appears in the DSM-5 criteria for a reason—only about 5–10% of patients, and frequently less, endorse it for any given symptom)
 - Supplement the interview with a DSM-5-based ADHD rating scale (such as the ADHD-5 scale developed by DuPaul, Power, Anastopoulos, & Reid, 2016)
- The persistence of the symptoms (6 months or more)
- The degree of developmental deviance of those symptoms (six on either symptom list for children, five for 18 years and older, but should be four by age 30)
 - The DSM-5 ADHD rating scale mentioned above can assist here
- The age of onset (anytime during development up to 18 or so years; age 12, as with setting any age at all, is arbitrary, unreliably recalled, and overly exclusive, especially for adults)
- The pervasiveness of symptoms (two or more settings)

- The presence of impairment (ineffective functioning in major life activities)
 - Supplementing the interview with a normed rating scale of impairment, such as the Barkley Functional Impairment Scale—Children and Adolescents (Barkley, 2012a)
- The extent of comorbidity (both psychiatric and health/medical; see [Chapter 4](#))
 - Broadband rating scales of the major dimensions of child or adolescent psychopathology are useful for screening purposes here, such as the Child Behavior Checklist (Achenbach, 2014) or the Behavioral Assessment System for Children–3 (Reynolds & Kamphaus, 2015)
- The exclusion of other disorders that may better explain the symptoms

Adjusting DSM-5 Criteria to Improve Diagnosis

As noted in [Chapter 2](#), when covering the DSM-5 criteria for ADHD, it is important to be aware of their foibles and how to correct for them. The following are based on abundant research evidence and informed by my executive functioning–self-regulation (EF-SR) theory of ADHD.

1. *Ignore the parenthetical clarifications for some symptoms as applied to adolescents.* These are not empirically based and do not seem to relate well to the root symptom they are meant to clarify; more likely they constitute entirely new symptoms of ADHD that can inflate the rate of diagnosis or conflate the symptoms with comorbid anxiety (see Knouse & Barkley, 2020). Stick with the original root symptoms from DSM-IV, whose merits are well established. (See the box on the facing page for additional detail.)
2. *Consider the age-of-onset criterion to be met so long as onset of some symptoms has occurred in two or more settings anytime during development.* Experience and research have shown that parent and teen reports of onset are not sufficiently reliable to be valid.
3. *For girls, rely on the rating scale of ADHD to be more accurate in determining deviance relative to other girls (93rd percentile or so) rather than on just the DSM-5 symptom threshold of six.* The DSM-5 symptom threshold is based more on males than females. A girl who is atypical relative to other girls on the rating scale but comes up one or two symptoms short of the threshold of six is likely to qualify for the diagnosis.
4. *In fact, above all, remember that ADHD is a dimensional disorder, not categorical.* Cases that come close to meeting criteria but fall short of doing so may still be diagnosed and require treatment if there is evidence

of impairment or harm.

For example, consider the case of a 16-year-old girl who comes to your practice and is found to have five symptoms of inattention and four of hyperactivity/impulsivity in the DSM criteria. Her parents seem to recall that her problems came into being at about 13 years of age, coincidental with the onset of menses. Yet she is now at risk of being retained in grade at school, has been referred for an Individuals with Disabilities Education Act evaluation, has few if any close friends, has already racked up five speeding tickets and two fender benders while driving, smokes tobacco like a chimney, has a binge-eating pattern contributing to mild obesity, and has been treated once for a venereal disease. Her scores on an ADHD rating scale place her at the 93rd percentile for her sex and age. Clearly, this girl should be diagnosed and treated accordingly even though she fails to meet the DSM criteria for symptom counts and age of onset.

5. *Do not seek parent and teacher agreement on the threshold of six.* Given that parent and teacher reports of behavior correlate, on average, just .25 to .30, they will often disagree more than they agree. Having some symptoms in two or more settings is sufficient—not complete agreement on number of symptoms. Ensure that six symptoms are present (when counting across *both* settings) by adding the number of symptoms given by one source to the number of new or different symptoms endorsed by the other source.
6. *Do not weight the hyperactive symptoms so much in decision making about diagnosis for teenagers.* Hyperactivity typically declines by adolescence. In contrast, executive deficits are becoming increasingly prominent and impairing and are thus more indicative of the presence of the disorder.

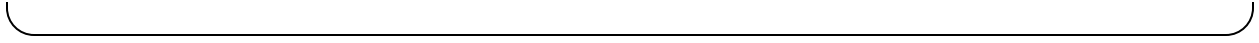
For instance, consider a girl who clearly had the combined presentation in childhood and thus some obvious hyperactive symptoms, but later was only mildly restless as a teen and then only when bored, and

was no longer tearing about the home or classroom with wild abandon, thus meeting criteria for the inattentive presentation as a teen. While still being quite talkative and otherwise impulsive and reporting an internal sense of needing to be busy, she now was showing massive problems with time management, meeting deadlines for her school assignments, speeding while driving, and being quite dramatic with impulsive emotional reactions to social slights and provocations at home and school. None of these new manifestations of her ADHD are in the DSM-5 criteria, yet they would be typical self-regulation (SR) deficiencies evident in an adolescent with ADHD.

What's Wrong with the DSM-5 Item Clarifications?

In the exploratory study that Laura Knouse and I did recently, we investigated how well the clarifications that were inserted in parentheses in DSM-5 were related to the original root items they were adjacent to that were taken verbatim from DSM-IV. There were 23 such inserted clarifications or examples, 5 of which dealt specifically with clarifying the symptom for teens or adults. For example, item j in the Inattention symptom list has clarifications in parentheses for "Is often forgetful in daily activities": "for older adolescents and adults, returning calls, paying bills, keeping appointments." Neither these nor any of the other clarifications had ever been tested before placement in the DSM-5. Our initial pilot study, which we plan to enlarge and replicate, found the following:

- Not only was there low correlation with the original root item, but the majority of those clarifications shared less than 10% of their variance with the original root item. These findings suggest that the clarification is not well related to the item it is supposed to clarify *and* that the clarification is like an entirely new symptom item being added to the original list from the DSM-IV.
- A few item clarifications pertaining to inattention and hyperactivity were as highly or more highly related to self-rated anxiety than to the ADHD symptom they were intended to clarify, which makes those with anxiety as or more likely to endorse that clarification, thus confounding the ADHD diagnosis with anxiety issues.
- By adding so many new clarifications that behave more like new symptoms than simply a minor clarification, the DSM-5 essentially expanded the item set for diagnosing ADHD from 18 to 23 to 41 items. Yet the DSM committee failed to adjust the symptom count threshold on either list, which leads to more people qualifying for the diagnosis of ADHD. That is precisely what we found: Prevalence increased another 5% or more if the clarifications were being used than if the original 18 DSM-IV items were used by themselves.



Determining the Extent to Which Executive Deficits Are Present

If you broaden your evaluation to include the major components of executive function in the EF-SR theory as applied to ADHD, your evaluation will not only produce a more accurate diagnosis but will also provide you with an understanding of the wider array of deficits in any given case and assist with treatment planning for them.

- Obtain the short form of the Barkley Deficits in Executive Functioning Scale—Children and Adolescents (BDEFS-CA; Barkley, 2012b) or a comparable executive function rating scale.
- Alternatively, use the EF Interview Short Form (Barkley, 2012b), covering problems with time management, self-organization, self-restraint, self-regulation of emotion, and self-motivation, with a parent.
- Use neuropsychological testing to determine a diagnosis of ADHD *only* where required by government agencies, testing companies, licensing boards, or universities to obtain accommodations or special education services through public schools. Such testing will not be especially accurate (see [Chapter 1](#)) and thus is a poor indicator of the presence or absence of ADHD.

Evaluating Children in Mental Health versus Primary Care Settings

The depth and breadth of your assessment will depend, of practical necessity, on whether you are performing the evaluation in a mental health setting or a primary care setting.

The Goals of Assessments in Mental Health Settings

In a mental health setting, these are your major goals:

1. *To determine the presence or absence of psychiatric disorders—such as ADHD, oppositional defiant disorder, or conduct disorder—and the differential diagnosis of ADHD from other psychiatric disorders, many of which also adversely affect attention, inhibition, and emotional regulation.* For example, both ADHD and depression involve inattention, and thus problems with attention may not be helpful in differentiating them. What will be helpful here is identifying the kind of inattention, as explained in [Chapter 1](#).

This requires extensive clinical knowledge of these other psychiatric disorders. In evaluating cases for ADHD, it may be necessary to draw on measures that are normed for the individual's country of residence or for a specific ethnic group in the United States (e.g., Hispanic/Latinx) that either have a representative sampling of the various ethnic backgrounds that exist in that general population, if such instruments are available, or have translations of the scale appropriate for that special population. This is done to preclude the overdiagnosis of minorities when diagnostic criteria developed from U.S. populations are extrapolated to them. Even in bilingual families in which English may be spoken as the second language, clinicians need to ask whether the parent views the child's or

teen's behavior as being inappropriate (deviant) *for the family's ethnic group*.

2. *To begin delineating the types of interventions that will be needed to address the psychiatric disorders and psychological deficits and academic, adaptive, occupational, and social impairments identified in the course of assessment.* As noted later in the book, these interventions may include individual counseling, parent training in behavior management, family therapy, classroom behavior modification, psychiatric medications, and formal special education services for children and teens, to name just a few (see [Chapters 6–10](#)).
3. *To identify comorbid conditions* (see [Chapter 4](#)). These may affect prognosis or treatment decision making, as in these examples:
 - A behavioral parent training program may not be a good treatment choice, at least for the time being, for a child who engages in high levels of physical assault, because new limits on noncompliance with parental commands are likely to increase child violence toward parents.
 - A history of oppositional defiant disorder (ODD) coupled with child abuse by parents or the potential for abuse may mean focusing behavioral parent training on all-positive methods of approval, praise, privileges, tokens, and so forth without teaching time-out or other limit-setting strategies, or even a shift to collaborative problem solving as a parenting strategy.
 - High levels of anxiety specifically and internalizing symptoms more generally may predict a poorer or a more partial response to stimulant medication in a minority of children than may be seen in children with ADHD but without anxiety.
 - High levels of symptoms of cognitive disengagement hypoactivity syndrome (CDHS; formerly referred to as sluggish cognitive tempo)

may also signal a much less positive response to stimulant medication.

- High levels of irritable mood, severely hostile and defiant behavior, and periodic episodes of serious physical aggression and destructive behavior may be early markers for later disruptive mood dysregulation disorder (DMDD) or, if accompanied with mood swings toward mania, even bipolar disorder (BPD). Symptoms of ADHD are almost universal in juvenile-onset BPD and affect a significant minority of those having adult-onset BPD. Such a disorder will likely require the use of psychiatric medications other than those for ADHD in conjunction with a parent-training program focusing on the management of the ADHD symptoms and especially the high levels of aggressive behavior that may exist in the case of children with DMDD or BPD.

4. *To identify the pattern of the child's or adolescent's psychological strengths and weaknesses and to consider how these may affect treatment planning.* For instance, asking parents about aptitudes and special abilities a child may have—such as athletics, technology or computer programming, musical talent such as singing or playing an instrument, or a special interest in drama and acting—could encourage parents to identify additional community resources that can be used to further develop these strengths or special aptitudes. This formal emphasis on getting additional training can also serve to counteract any negative consequences that might be occurring in school or issues related to low self-esteem due to less than stellar school performance.

This survey of strengths, aptitudes, and weaknesses may also include gaining an impression of the parents' own abilities to carry out the treatment program, as well as the social and economic circumstances and the treatment resources that may (or may not) be available within the family's community and cultural group. Some determination will also

need to be made as to the child's eligibility for special education services within the school district if eligible disorders, such as intellectual disability, motor developmental delay, learning disabilities, or other eligible conditions, are present.

The Goals of Assessment in Primary Care

Clinicians working in primary medical care, such as pediatrics, family medicine, or general practice, are going to find their evaluations more like screenings or brief evaluations for ADHD than complete or comprehensive evaluations. Time constraints, limitations in training concerning differential diagnosis of child psychopathology, as well as limited training in the mental health interventions such children and youth require, will make it difficult to conduct the evaluation following the preceding guidelines for mental health professionals. Therefore, practitioners in primary care settings called upon to evaluate children and youth for ADHD should do the following:

1. *Conduct a medical examination of the child or youth to rule in or out other medical problems warranting attention, especially those known to have a higher occurrence with ADHD (hearing and visual impairments, dietary deficiencies, growth delays, thyroid abnormalities, cardiovascular issues, seizure disorders, allergies, sleep disorders, congenital or genetic syndromes, etc.).*
2. *Obtain a screening scale for ADHD, such as the ADHD-5 scale mentioned above or something similar for children.*
3. *Obtain a short form evaluating executive function deficits, such as the BDEFS-CA or a similar rating scale.*
4. *Focus the interview specifically on the presence of ADHD symptoms, approximate age of onset, existence of impairment, and other criteria in DSM-5 (see [Table 2.1](#) for criteria). If you did not obtain a rating scale of executive function deficits, supplement this by utilizing the EF Interview Short Form (Barkley, 2012b).*

5. *Note that no laboratory, psychological, neurological, or other objective tests currently available are accurate enough for clinical diagnosis of ADHD, so none need be ordered for such purposes.*
6. *Determine eligibility for ADHD medication management (rule out contraindications).*
7. *Consider prescribing such medication (but see [Chapter 10](#) on the various issues to consider in selecting the type of medication to use).*
8. *Screen for the numerous health risks that are linked to ADHD (see [Chapter 5](#)) and decide what medically related interventions might be needed to address them.*
9. *Review for various potential adversities associated with ADHD. These include sleep problems; obesity, eating disorders, and poor diet; limited exercise; a propensity for nicotine, alcohol, cannabis, and other substance experimentation and abuse by adolescents; migraine headaches; risky sexual activity and high-risk driving in adolescents; type 2 diabetes; asthma; allergies; poor dental hygiene; and high risk for accidental injury, among other health risks. All fall to varying degrees within the purview of the primary-care physician. Any that arise should be addressed as needed.*

Clinical Tips

- ✓ I do not recommend that all medical patients at primary care clinics be screened for ADHD, but it would be prudent to do so when patients manifest adverse health practices or conditions known to be linked to ADHD or when a child or teenager has trouble following recommendations you make for lifestyle changes.
- ✓ Whether you are a primary care physician or a mental health professional, broaden the lens of your evaluations for those diagnosed with ADHD to include health-related behaviors and physical status beyond just a focus on ADHD diagnosis, comorbidity, and typical impairments in major life activities, such as education and work. Ignoring these issues because they might seem to have no relationship to the patient's ADHD status can make it too easy to overlook even obvious unhealthy behavior or medical status.

Keep in mind that the provision of care for children (and adults) with

ADHD is a multidisciplinary enterprise that simply cannot be handled adequately in primary care settings alone. Therefore, be prepared to refer the family to appropriate mental health, speech and language, and physical and occupational therapy services in the region for more careful evaluation of ADHD, more comprehensive assessment of possible comorbidity (see the [list](#) below, [Figure 4.1](#), and [Handout 14](#) in [Appendix A](#)), and possible implementation of parent and family training, school consultation, psychological testing for intellectual disability and speech–language disabilities, speech and language therapy, physical therapy, and any other relevant mental health and educational services.

The most common comorbidities in children and teens with ADHD are shown in [Figure 4.1](#) in the [next chapter](#). For children, they are the following:

- Oppositional defiant disorder (45–84%)
- Specific learning disabilities (35–50%)
- Developmental coordination disorder (40–50%)
- Communication disorders (20–30%)
- Conduct disorder (5–56%)
- Substance use disorders in adolescence (15–25%)
- Anxiety (25–50%)
- Depression (up to 30%)
- Disruptive mood dysregulation disorder (20–25%)
- Autism spectrum disorder (15–25%)

Comorbid conditions with lesser rates include BPD (0–10%), intellectual disability (ID; 5–10%), PTSD (5–6%), tic disorders (TD; 10–20%), and obsessive–compulsive behavior or OCD (2–5%). Each is discussed further in [Chapter 4](#). The new attention condition, CDHS, shows a 40–58% overlap with ADHD in both children and adults.

Also keep in mind that ADHD is a self-regulation disorder and that

adequate self-regulation will be needed to implement some self-improvement programs for managing health problems. Evidence is accruing that medically managing ADHD first can help children and teenagers comply and succeed with changes you may recommend in lifestyle, diet, nutrition, and exercise for improving the health of adults with ADHD.

Assessing Children and Adolescents

To evaluate children and teenagers for ADHD, you will need to use multiple assessment methods that rely on various sources for information about the nature of the children's difficulties (and strengths!) across multiple situations:

- Demographic and medical history forms (obtained prior to the appointment)
- Parent and teacher rating scales of child behavior (obtained prior to the appointment)
- Rating scales of child impairment (obtained prior to the appointment)
- Parent and child interviews
- Teacher interview (obtained by phone) or at least teacher reports via rating scales
- Parent self-report measures of relevant psychiatric conditions
- Information on parent and family functioning
- Brief screening of child IQ and academic achievement skills (by psychologists)

A note on testing: As noted in [Chapter 1](#), neuropsychological tests, especially of executive function and ADHD symptoms, are not sufficiently accurate to be used for diagnostic, prognostic, or prescriptive (treatment planning) purposes because they lack ecological validity, reliability, and sufficient discriminatory accuracy. But brief tests of IQ and specific academic achievement skills, such as reading, spelling, and math, should be undertaken if the patient's history indicates that such problems exist or if they may be suspected by the parents or school. Even then, clinicians should start with the short or brief versions of these tests, and, if deficiencies are found, bring the child back for a second, more thorough evaluation of these domains or refer

the child to someone else more competent to do so.

Assessment Methods

Prior to the Evaluation

When parents call a clinic for an evaluation, the receptionist typically completes a form that gathers important demographic information about the child and parents, the reason for the referral, and insurance information that will be cross-checked with the insurance company, when necessary. This form is then reviewed by the billing agent for the clinic and the clinician who will receive this case. Depending on the clinician's area of specialization, some types of referrals may be inappropriate for the clinician's practice and can be screened out at this time for referral to more appropriate services.

After the parents' call to the clinic, the next step is to send out a packet of questionnaires to parents and teachers before scheduling the appointment. This packet of information for the parents can include a form cover letter from the clinician asking them to complete the packet of information and informing them that the appointment date will be given when this packet is returned. Also, if the child has had an evaluation at school for consideration for special education services or one done previously by another professional focusing on mental health concerns, the parents should be asked to have a copy sent to the clinician's office. The packet also contains [Handout 1](#), General Instructions for Completing the Questionnaires; [Form 1](#), Child and Family Information; and [Form 2](#), Developmental and Medical History, all of which can be found in [Appendix A](#).

Clinical Tips

- ✓ Informing the parents that they will not be given an appointment date until these packets are completed and returned to the clinic ensures that the information will be supplied reasonably promptly and will be available for your review prior to meeting with the family. In my experience, this measure greatly improves the efficiency of the evaluation process.

- ✓ Be sure the packet includes a reasonably comprehensive “broadband” child behavior rating scale that covers the major dimensions of child psychopathology, such as the Child Behavior Checklist (CBCL) that is part of the Achenbach System of Empirically Based Assessment (Achenbach, 2014) or the Behavioral Assessment System for Children–3 (BASC-3; Reynolds & Kamphaus, 2015).
- ✓ To further evaluate ADHD and impairment, in this packet should be a copy of the ADHD Rating Scale–5 (DuPaul et al., 2016), the Barkley Sluggish Cognitive Tempo Scale—Children and Adolescents (Barkley, 2018), and the Barkley Functional Impairment Scale—Children and Adolescents (Barkley, 2012a). This last scale is used to evaluate the degree of psychosocial impairment of the child across the 15 domains sampled by this scale.
- ✓ For evaluating executive functioning (and self-regulation), use the Barkley Deficits in Executive Functioning Scale—Children and Adolescents (2012b), the Comprehensive Executive Functioning Rating Scale (Goldstein & Naglieri, 2016), or the Behavior Rating Inventory of Executive Functioning (BRIEF–2; Gioia, Isquith, Guy, & Kenworthy, 2015).
- ✓ To give you a quick appreciation for the pervasiveness and severity of the child’s disruptive behavior across a variety of home and public situations, include in the packet the Home Situations Questionnaire (HSQ; [Form 4](#) in [Appendix A](#)). The information from this questionnaire will also enable you to focus discussion on those problematic situations during the evaluation and subsequent parent training program, if undertaken.

A similar packet of information is sent to two of the child’s teachers of core academic subjects (not gym, art, music, etc.)—with parental written permission obtained beforehand, of course—or have the parent take these to the school for delivery and completion. This packet does not contain the Developmental and Medical History Form, but it would contain the teacher version of the CBCL or BASC-3, the School Situations Questionnaire (SSQ; [Form 5](#) in [Appendix A](#)) and the teacher version of the ADHD Rating Scale–5. If possible, get the scale from two of the child’s core academic teachers (language arts, math, etc.) and then consider contacting those two by phone for a brief interview prior to or shortly after meeting with the family.

Once the parent and teacher packets have been returned, the family should be contacted by telephone and given their appointment, confirmed with a follow-up letter.

Clinical Tip

- ✓ Along with the letter confirming the appointment, send a detailed instruction sheet

titled “[How to Prepare for Your Child’s Evaluation](#)” (Handout 2 in [Appendix A](#)). This gives the family some guidance about what information to bring to the appointment and what to expect on the day of the evaluation. I have found that it can set them at ease if they are unfamiliar with such evaluations.

At the Appointment

The preceding preparation leaves the following to be done on the day of the appointment:

1. Parent and child interviews
2. Completion of self-report rating scales by the parents about their own adjustment
3. Any brief psychological testing that may be indicated by the nature of the referral (intelligence and achievement testing, etc.)

Clinical Tip

- ✓ One of the first things to cover in the appointment is any restrictions on confidentiality. Review with the parents any legal constraints on the confidentiality of information obtained during the interview, such as your legal duty (as required by state law) to report to state authorities any instances of suspected child abuse, threats that the child (or parents) may make to cause physical harm to other specific individuals (the duty to inform), and threats that the child (or parents) may make to harm themselves (e.g., suicide threats). It can be awfully uncomfortable if not outright embarrassing to have parents divulge such events and find that, ex post facto, you must now admonish them that such information cannot be kept in confidence.

Parent Interview

Complete details about what needs to be collected in any mental health evaluation of any child or teen can be found in Barkley (2015) or any other such relevant source. Here it is important to note that the following topics must be addressed:

- *Current concerns.* A form for collecting such information can be found on

[Form 3](#) in [Appendix A](#).

- *Review of major developmental domains*—motor, language, intellectual, integrity of thinking, academic, emotional, and social functioning.
- *School, family, and treatment histories*. Discuss possible psychiatric difficulties of the parents and siblings, marital difficulties, and any family problems centered around chronic medical conditions, employment problems, or other potential stress events that could well be having some influence on the presenting concerns.
- *Review of ADHD symptoms and other childhood mental disorders*. To expedite this process, simply ask a general question concerning the presence of the most essential nature of each disorder. Only if acknowledged to be present is it necessary to go into the full criteria for that disorder in the DSM-5. There is no need to cover all criteria if there is no indication that the core nature of the disorder is likely present. [Form 3](#) in [Appendix A](#) contains this type of questioning about the essence of each childhood disorder. If parents acknowledge its presence, you can then open the DSM-5 to the relevant criteria and review those in more detail. Otherwise, skip to the next disorder in that interview.

Clinical Tip

- ✓ To me, the DSM criteria represent guidelines for diagnosis, not rules of law or religious dogma to be slavishly obeyed. The helping professions do not exist just to make diagnoses but to relieve suffering and harm (including impairment). Making a diagnosis is but one means to that end and not the end itself. I say this because sometimes, as noted earlier, children may not meet all criteria for a disorder, being but a symptom or two below the thresholds for diagnosis or with an age of onset a year or two beyond that included in the criteria. Yet the diagnosis should be made anyway and treatment provided as usual where there is clear evidence of harm or impairment. Some clinical judgment is always going to be needed in the flexible application of such guidelines to individual cases in clinical practice, especially considering the dimensional nature of ADHD and its linkage with the normal distribution of EF-SR in the human population.

Review of major domains of executive functioning in daily life. Although I

have recommended that the clinician obtain a rating scale of executive functioning in daily life to provide a more comprehensive picture of the difficulties a child or adult with ADHD is likely to be experiencing, if that was not done, then those domains can be quickly covered by asking four questions from each of those major components of executive functioning, such as time management, self-organization and planning/problem solving, self-restraint, self-motivation, and the self-regulation of emotion. These can be seen in [Table 3.1](#) and are also found in [Form 3](#), Clinical Interview for Children—Parent Report, the reproducible interview in [Appendix A](#). These items are the four highest loading items from each dimension assessed by this scale. The number of symptoms on this interview that would place a child at or above the +1.5 *SD* cutoff (93rd percentile) and thus be clinically meaningful (or deviant) as derived from the scale manual are: Males ages 6–11 = score of 12; Males ages 12–17 = 14; Females ages 6–11 = 9; Females ages 12–17 = 10.

TABLE 3.1. The 20 Best Executive Functioning Items from the Short Form Interview

An item becomes a symptom when it is endorsed as occurring often or very often.

Time Management

Procrastinates or puts off doing things until the last minute
Has a poor sense of time
Wastes or doesn't manage their time well
Has trouble planning ahead or preparing for upcoming events

Self-Organization

Has trouble explaining their ideas as well or as quickly as others
Has difficulty explaining things in their proper order or sequence
Can't seem to get to the point of their explanations
Doesn't seem to process information quickly or accurately

Self-Restraint (Inhibition)

Makes impulsive comments
Likely to do things without considering the consequences for doing them
Acts without thinking things over

Doesn't stop and talk things over with themselves before deciding to do something

Self-Motivation

Takes short cuts in their chores, schoolwork, or other assignments and not do all that they are supposed to do

Does not put much effort into their chores, schoolwork, or other assignments

Seems lazy or unmotivated

Inconsistent in the quality or quantity of their work performance

Emotional Self-Regulation

Has trouble calming themselves down once they are emotionally upset

Not able to be reasonable once they are emotional

Cannot seem to distract themselves away from whatever is upsetting them emotionally to help calm down; can't refocus their mind to a more positive framework

Not able to rechannel or redirect their emotions into more positive ways or outlets when they get upset

From *Barkley Deficits in Executive Functioning Scale—Children and Adolescents* (Barkley, 2012b).

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- *Review of parent management methods (if needed)*. Discuss parents' approaches to management, any differences between them, and any marital problems this may have spawned. Also, briefly ask about the nature of parental and family social activities to determine how isolated or insulated the parents are from the usual social support networks in which many parents are involved. If you are a mental health professional, and you believe that behavioral parent training or family counseling may be in order, I recommend that you schedule a later appointment to pursue more details about the nature of the parent–child interactions surrounding the following of rules by the child. If you do so, ask questions about the child's ability to fulfill requests or commands in a satisfactory manner in various settings, to adhere to rules of conduct governing behavior in various situations, and to demonstrate self-control (rule following) appropriate to the child's age in the absence of adult supervision. To accomplish this, I have found it useful to follow the format set forth in [Table 3.2](#), in which parents are questioned about their interactions with their children in a

variety of home and public situations. Where problems are said to occur, the examiner follows up with the list of questions in that table. If the parents have completed the HSQ as part of this evaluation ([Form 4](#), [Appendix A](#)), then the situations on that questionnaire noted to be problematic can be used as the starting point for this “functional analysis” interview.

- *Child’s preferences and positive attributes.* These preferences will come in handy in planning subsequent reward programs to be used for behavior management. Any positive attributes can also help parents to bolster the child’s exceptional aptitudes by using relevant community resources. Promoting success through pursuit of unusual aptitudes can often provide a countermeasure to the limited success most children and youth with ADHD will have in the school system.

TABLE 3.2. Parental Interview Format for Assessing Child Behavior Problems at Home and in Public

Situation to be discussed	If a problem, follow-up questions to ask
Overall parent–child interactions	1. Is this a problem area? If so, then proceed with questions 2–9.
Playing alone	2. What does the child do in this situation that bothers you?
Playing with other children	3. What is your response likely to be?
Mealtimes	4. What will the child do in response to you?
Getting dressed/undressed	5. If the problem continues, what will you do next?
Washing and bathing	6. What is usually the outcome of this situation?
When parent is on telephone	7. How often do these problems occur in this situation?
When child is watching television	8. How do you feel about these problems?
When visitors are in your home	9. On a scale of 1 (“no problem”) to 9 (“severe”), how severe is this problem for you?
When you are visiting someone else’s home	
In public places (stores, restaurants, church, etc.)	
When father is in the home	
When child is asked to do chores	
When child is asked to do school homework	

At bedtime

When child is riding in the car

When child is left with a babysitter

Any other problem situations

Note. From *Hyperactive Children: A Handbook for Diagnosis and Treatment* (Barkley, 1981).
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Child Interview

Time should always be spent directly interacting with the child being evaluated. The length of this interview depends on the age, intellectual level, and language abilities of the children.

- For preschool children, the interview is brief and may serve merely as a time to become acquainted with the child, noting their appearance, behavior, developmental characteristics, and general demeanor.
- For older children and adolescents, inquire about the children's views of the reasons for the evaluation, how they see the family functioning, any additional problems they feel they may have, how well they are performing at school, their degree of acceptance by peers and classmates, and what changes in the family they believe might make life at home happier for them. As with the parents, the children can be queried as to potential rewards they find desirable, which will prove useful in later contingency management programs.

Clinical Tips

- ✓ Never base a diagnosis of ADHD on the reports of the child or teen. Children and teens with ADHD are not especially reliable in their reports of their own disruptive behavior. The problem is compounded by the frequently diminished self-awareness and impulse control typical of children with ADHD (see [Chapter 1](#)). Such children often show little reflection about the examiner's questions and may even lie or distort information in a more socially pleasing direction. In contrast, children's reports of their internalizing symptoms, such as anxiety and depression, may be more reliable and so should play some role in the diagnosis of those disorders (see [Chapter 4](#)).

- ✓ Do not rely heavily on how well the child behaves during the interview. It has been known for over 40 years that many children with ADHD do not misbehave in clinicians' offices (Sleator & Ullmann, 1981). Hence, a heavy reliance on such observations would clearly lead to false negatives in the diagnosis. In some instances, the behavior of the children with their parents in the waiting area prior to the appointment may be a better indication of the children's management problems at home than is the children's behavior toward the clinician in a one-to-one interaction.
- ✓ Do not use absence of attention and other behavioral problems at school that are revealed during the psychological testing as evidence against the diagnosis in view of the one-to-one format of such testing.
- ✓ Be aware that ADHD symptoms and their severity may fluctuate somewhat or even markedly across settings and time of day. They can also vary as a result of various factors in the situation, such as the schedule of consequences for behavior, novelty, adult supervision, and other factors. Below I show a summation of the results of research on such setting variation. Findings suggest that symptom severity may be generally better in the situations in the left column and typically worse in situations on the right. Therefore, it is wise to focus more time in the evaluation on exploring the settings in the right column in which symptoms are more likely to be expressed or more severe, on average.

Better settings:

Worse settings:

Fun

Boring

Immediate results

Delayed consequences

Frequent feedback

Infrequent feedback

High salience

Low salience

Gaming apps

Homework

High (smart) technology

Low technology—chores or paperwork

Early in the day

Late in the day

Supervised

Unsupervised

One-to-one

Group

Novelty

Familiarity

Fathers

Mothers

Strangers

Parents

Clinic exam room

Waiting room

This pattern is not well explained by viewing ADHD as a disorder of inattention or its other official symptoms. It is much better accounted for when we look at this pattern through the lens of EF-SR theory. The situations on the right place a much greater

demand on executive function and self-regulation, whereas those on the left much less so. Adopting that theory for understanding ADHD not only allows you to better understand and so assess the nature of ADHD across such situations, but it permits you to better explain it to parents, teachers, and adult clients as well.

Teacher Contact or Interview

Although it is rarely possible for primary care professionals, mental health professionals should at some point, before or soon after the initial evaluation session with the family, contact the children's core academic subject teachers. I find that this is helpful so as to clarify further the nature of the children's problems in that setting and determine what, if any, accommodations have already been made for this child. This will most likely be done by phone unless the clinician works within the child's school system or parents are willing to pay out of pocket for such a consultation in person at the school.

Clinical Tip

- ✓ Like parent reports, teacher reports are subject to bias. As always, the attitudes of the reporter of information about ADHD or that person's own psychological issues, be they parent or teacher, must always be weighed in judging the validity of the information itself. This can be partially assessed by asking the parents during their interview whether they have experienced any indications of uncooperativeness or even of prejudice by the teacher against ADHD specifically. Long-standing clinical experience with various school districts in the region in which one practices and their policies and attitudes toward evaluations of children for ADHD can also be a guide here. For instance, in one city where I practiced, one school district was well known to limit the number of children entering special education services by encouraging teachers to complete behavior rating scales sent to them by private practitioners with all zeros or the lowest possible rating, as some teachers later confessed to doing.

Many children with ADHD have problems with academic performance and classroom behavior, and the details of these difficulties need to be obtained. Although this may initially be done by phone, some mental health professionals may wish to arrange a visit to the classroom if time and resources permit. Such direct observation and recording of the children's behavior can prove quite useful if further documentation of ADHD behaviors

is necessary for planning later contingency management programs for the classroom. Granted, this is unlikely to prove feasible for most clinicians working outside of school systems, particularly in the climate of increasing managed health care plans that severely restrict the evaluation time that will be compensated. But for those professionals working within school systems, direct behavioral observations can prove very fruitful for diagnosis, and especially for treatment planning, as DuPaul and Stoner recommend in their excellent text *ADHD in the Schools* (2014).

Parent Self-Report Measures

It has become increasingly apparent that child behavioral disorders, their level of severity, and their response to interventions are, in part, a function of factors affecting parents and the family at large. As noted in [Chapter 4](#), several types of psychiatric disorders are likely to occur more often among family members of a child with ADHD than in typically developing children. That these problems might further influence the frequency and severity of behavioral problems in children with ADHD and especially the level of conflict with parents has been demonstrated in numerous studies over the past 40 years. Briefly assessing the psychological integrity of parents, therefore, is an essential part of the clinical evaluation of children for ADHD, the differential diagnosis of their prevailing disorders, and the planning of treatments stemming from such assessments. Thus the evaluation of children for ADHD is often a family assessment rather than one of only the child.

These are some assessment methods that clinicians have found useful in screening of parents for certain important variables relevant to the understanding and treatment of children having ADHD:

- *Symptom Checklist 90—Revised* (SCL-90-R; Derogatis, 1994). This instrument not only has a scale assessing depression in adults but also scales measuring other dimensions of adult psychopathology and psychological distress. It can be completed by parents in the waiting

room during the time their child is being interviewed.

- *Barkley Adult ADHD Rating Scale–IV* (Barkley, 2011). This should be completed twice—once for their current behavioral adjustment and a second time for their recall of their childhood behavior between ages 5–12 years. Clinically significant scores on this scale do not, alone, ensure the diagnosis of ADHD in a parent but raise such a possibility. If either parent screens positive, consider referral of the parent to a relevant professional for further evaluation and treatment of adult ADHD, if necessary.

Clinical Tip

- ✓ Do not mail out the parent symptom checklist in advance with the other rating scales. You will need to briefly introduce the purpose of self-report scales to the parents so as not to offend them with the request for such sensitive information. Typically, I have indicated to parents that a complete understanding of a child's behavior problems requires learning more about both the children and their parents. This includes gaining more information about the parents' own psychological adjustment and how they view themselves in their role as parents. The rating scales are then introduced as one means of gaining such information. Few parents refuse to complete these scales after an introduction of this type.

Psychological Testing

Given the high likelihood of learning disabilities (LD) coexisting with cases of ADHD in children, including some type of short screening test for the major academic achievement skills (reading, spelling, math) in your evaluation is quite justified. Should the child's scores suggest some deficiency in any domain, a more thorough battery of academic achievement tests could be administered. Given that most children with ADHD are having educational difficulties, it would also be prudent to determine whether ID is a contributing factor to these problems beyond whatever may be accounted for by ADHD. It therefore makes sense to include a brief screening scale of intelligence in the initial evaluation of children with ADHD. Here again, if the child places in the deficient range of the screening scale, a more complete

intelligence test could be administered to clarify the extent and nature of this deficiency. That said, clinicians need to make parents aware that such testing can also be provided at no expense to the family through the child's public school if that child is having significant problems with school adjustment and academic performance. The delay often involved in obtaining such testing usually prompts parents to at least agree to a screening evaluation of academic achievement and intelligence, after which, if necessary, more complete assessments of these domains could be done through the child's school. Apart from addressing these two issues (LD, ID), there is little or no reason to administer other psychological or neuropsychological tests to children as part of an evaluation for ADHD.

The Feedback Session

The feedback session with parents concludes the diagnostic evaluation. As with the parent interview, children under the age of 16 are not generally included in the feedback session, but they may be invited in at the end of the session to be given diagnostic conclusions at a level appropriate to their age and cognitive development.

Step 1. Give parents some idea of how the diagnosis of ADHD was or was not arrived at given the evidence collected in this evaluation. It helps to explain that there is no direct test for ADHD—no lab test, X-ray, neurological exam, or psychological test that tells us that a child has ADHD. What we have to do instead is collect a lot of information and analyze it logically. Step 1 is to establish whether the symptoms of ADHD are or are not present and how atypical they are relative to other children of this age.

Clinical Tips

- ✓ Explain to the parents that any rating scales concerning their child have been scored and that these scores are compared with the scores that have been collected on hundreds, if not thousands, of children of the same age. If their child's scores are consistently placing them at or above the 93rd percentile in the areas of activity level, impulse control, or attention span, that suggests ADHD, because it suggests that the child is having more difficulty than 93 of 100 children of the

same age. This is the approximate level of “developmental deviance” that should be established by the scales.

- ✓ Explain to them as well that when you reviewed the official symptoms of ADHD with them (from DSM-5), you were determining how many symptoms the parents described as occurring often or more frequently, had occurred in more than one setting, and were leading to impairment or harm to their child. Affirming that all of these criteria (except the unreliable age of onset) were met can further reassure parents that the problems experienced by their child are not typical.
- ✓ Additional details that can help you explain the diagnosis to parents are provided in [Chapter 5](#).

Step 2. Establish a history consistent with the notion of a “developmental” problem. Do these symptoms have a long-standing history that stretches back over time, for at least the past year—not something that cropped up last week or last month, or something that only came about after a trauma occurred in the child’s life?

Step 3. Show whether these persistent and atypical symptoms are leading to impairment in major domains of life for their child or teen. If ADHD is present, this is easily done, as it is usually what brought the parents to the evaluation.

Step 4. Rule out any other logical explanation for the problem. Is there anything else going on that would overrule ADHD as a diagnosis or be a better explanation than ADHD for the problems the child is having?

In sum, walk parents through the data obtained about their child, step by step, so they can see clearly how the diagnostic conclusion was reached. Before any discussion of a treatment plan occurs, ask parents if they have any questions about the diagnostic process or any comments about the conclusions that were drawn.

Clinical Tip

- ✓ Always ask parents if they are surprised that their child was (or was not) diagnosed with ADHD. The answer to this question can help determine where in the process of readiness to change—that is, to engage with treatment—the parents may be. Initial surprise from parents suggests that they may need more explanation concerning the nature of ADHD and justification for the diagnosis. They may also resist initial treatment recommendations until their skepticism is abated. Initial agreement and acceptance of the diagnosis instead indicates that

you have affirmed their initial suspicions that something was “wrong” with their child and that they were correct in pursuing your evaluation, and it provides a further openness to more detailed information on ADHD and especially on the management plan.

Parents should leave the diagnostic interview with the impression that the clinical evaluation was comprehensive and competently administered. This sense of security will help them cope with the grief and disappointment they may experience at being told that their child has a developmental disability, as well as the confidence to follow any treatment recommendations that are made. Additional types of information can be provided during the feedback session or in the first parent counseling session; see [Chapter 7](#) for a comprehensive list of what should be covered during one of the meetings with parents.

Should ADHD be diagnosed, provide the parents with some information about its specific nature and symptoms, its neurodevelopmental causes, its life course risks, and the available evidence-based treatments for its management. To assist with this, a set of handouts on ADHD are provided in [Appendix A \(Handouts 3–17\)](#) for you to share with parents during this discussion. Also see [Chapter 5](#) for specifics on helping parents understand what to expect for their child now that they have a diagnosis of ADHD. Then follow up by recommending a few books and credible websites (see [Handout 16](#), [Appendix A](#)) that contain far more information about ADHD than can be provided in this conference. They can also access brief summaries of ADHD from my website (www.russellbarkley.org, Fact Sheets page) and some of my lectures for parents on ADHD on YouTube. If, during this discussion, parents seem doubtful about the seriousness of ADHD and its need for a combination of treatment approaches, often including (but not always) the use of medication, or should they balk at your recommendation of medication specifically, the following ideas may help:

- Show them a copy of [Figure 2.1](#), which summarizes the various life course impairments and health consequences known to be linked to

ADHD when it is unmanaged. To facilitate that discussion, the figure is also in [Handout 13](#) in [Appendix A](#), which you can reproduce and use during this feedback conference. In addition, appropriate answers to questions parents frequently ask about the diagnostic process and conclusions are provided at the end of [Chapter 2](#).

- Refer them to the chapters on medication in my book *Taking Charge of ADHD: The Complete Authoritative Guide for Parents* (Barkley, 2020) or to the excellent book by Drs. Wilens and Hammerness (2016), *Straight Talk about Psychiatric Medications for Children*.
- Suggest they visit the website of the U.S. national foundation for ADHD, www.chadd.org, for the fact sheets posted there about medication (and www.adhd-federation.org for the World Federation for ADHD if they are not U.S. residents). These and other resources are given in [Handout 16](#) in [Appendix A](#).

Clinical Tips

- ✓ In explaining the causes of ADHD to parents, note that most cases arise from heredity or other genetic factors (about 65% of cases). But some cases of ADHD can arise from nongenetic yet still biological factors. Some problems with brain development and organization can be acquired from various life events or experiences that adversely affect brain development and functioning, most of which occur during pregnancy. For parents who seem skeptical of the neurodevelopmental origins of ADHD, especially when there is no evidence of the disorder in their extended families, you might consider mentioning these other possible biologically mediated causes:
 - Especially low birth weight and associated minor brain hemorrhaging
 - Maternal phenylalanine levels (possible)
 - A role for stress/anxiety during pregnancy (arguable)
 - Maternal obesity at the time of conception (but the mother's obesity could be a marker that she has ADHD and that is what creates the risk for offspring ADHD, not the obesity itself)
 - A breech delivery
 - The extent of white matter abnormalities due to birth injuries, such as parenchymal lesions, intracerebral bleeding, and/or ventricular enlargement
 - Increased placental size that may signal the occurrence of disturbances in the maternal environment during pregnancy, perhaps limited to boys
 - Prenatal toxins such as alcohol consumption
 - Prenatal cocaine exposure
 - Postnatal elevated body lead burden during the first 2–3 years

- Vitamin D deficiency
- Household and outdoor pesticide exposures during critical periods in pregnancy or child's early development
- Streptococcal infection (triggering an immune response of antibodies that destroy cells of the basal ganglia)
- Traumatic brain injury (TBI); people with ADHD are also more likely to experience TBIs and those can exacerbate their preexisting ADHD symptoms and executive function deficits
- Stress or persistent anxiety during pregnancy (though probably just a marker for maternal ADHD)
- Season of a child's birth—fall or winter (a proxy for the timing of seasonally mediated viral infections)
- Early severe deprivation and malnutrition (may constitute a separate type of ADHD due to its severity and unusual comorbidities)

Details on etiology provided in [Appendix C](#) can be used as needed when talking to parents.

Diagnosing Comorbidity

The term *comorbidity* refers to the likelihood of two or more psychiatric disorders co-occurring with each other. At least 50–60% of community-identified children with ADHD have a second disorder, and 25–35% have a third disorder. The figures are markedly higher for children and adults seen in mental health clinics, where more than 80% have one other disorder, and 50–60% or more have two or more. For clinicians working in mental health settings, the take-home point is that it is unusual to see ADHD as a lone disorder.

Why is this the case?

1. *Research shows that many disorders that coexist with ADHD share underlying genetic factors.* This implies that the demarcation of categorical disorders as portrayed in DSM is much fuzzier in nature.
2. *There may be some overlap in the social or other environmental factors that increase risk for these disorders beyond shared genetic risk.* ADHD in a parent contributes to disrupted parenting, poor parental monitoring of a child or teen's activities, marital dissatisfaction, and substance use disorders (SUDs)—known risk factors for children developing

oppositional defiant disorder (ODD) and, later, conduct disorder (CD).

3. *Overlap in the symptoms included in the DSM criteria for some of these disorders create an artifactual, inflated risk of comorbidity with that other disorder.* For example, inattention, distractibility, and impulsivity may appear in various guises in the symptom lists for bipolar disorder (BPD) and borderline personality disorder. This symptom overlap increases the odds that someone with ADHD may qualify for these other disorders by virtue of their having ADHD alone. It should be of little surprise that patients identified with ADHD, therefore, have a high likelihood of one or more of these disorders.
4. *The symptoms of one disorder may involve psychological traits that can magnify risk for the other disorder.* That is to say that a disorder such as ADHD can lead to conditions and experiences in life over time that can pose cumulative risks for the emergence of the other disorder, especially where there is already a shared genetic susceptibility to that other disorder. For example, the numerous failures in major life activities, as well as social rejection, experienced by those with ADHD may increase their liability for an anxiety disorder, dysthymia, or even major depression. And both the greater risk-taking behavior and generally disruptive behavior by the child can lead to a greater risk for injury or abuse or victimization by others—all of which elevate the risk for PTSD, anxiety, and depression in the child.

It is important to note that several of these possible pathways to comorbidity could coexist due to the extreme variation in the executive functioning–self-regulation (EF-SR) phenotype (see [Chapter 1](#)) and its component executive functions.

Several factors besides the four noted above appear to predispose children with ADHD to experiencing a comorbid psychiatric, neurodevelopmental, or learning disorder by adolescence. To begin with, the greater the severity of

ADHD symptoms, the greater the risk for presence of comorbidity, implying that as liability for one disorder increases, it increases for other conditions as well.

Other general risk factors for comorbidity are:

- Living in a nonintact family structure
- Low parental income
- Decreased parental life satisfaction
- Parental depression

Clinical Tip

- ✓ Keep in mind that these are correlated risk factors only, not causes of the comorbid disorder. In fact, the causal arrow in these relationships is unclear, as some of these factors, such as low parental income or living in a nonintact family, could arise from the parent's own psychopathology. Shared genetic liability could be the real causal factor.

Other factors are linked to risk for more specific disorders, such as:

- Decreased parental interest in and monitoring of the child and their activities (linked to child CD)
- Affiliation with deviant peers (related to child CD and SUDs)
- Parental ADHD (related to child ODD)
- Parental depression (related to child ODD/CD and childhood depression)
- Parental antisocial personality (related to child CD and SUDs)
- Parental substance abuse (linked to child CD and SUDs)
- Parental anxiety disorders (linked to child anxiety disorders)

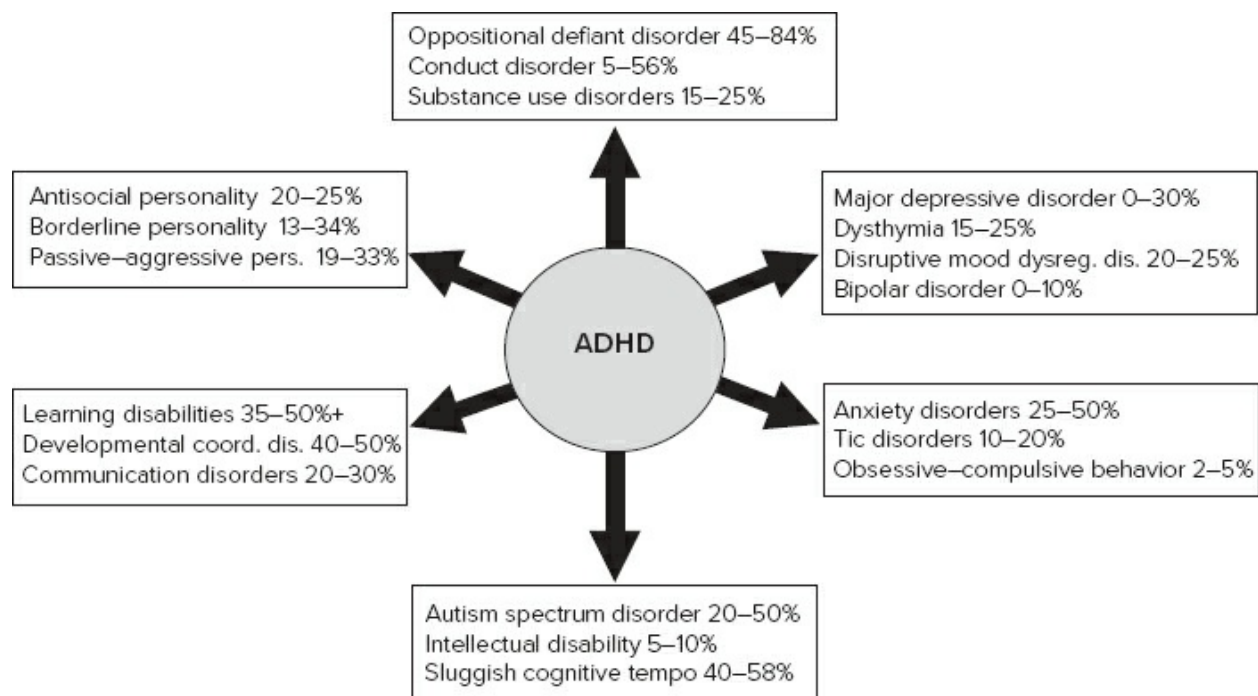
Clinical Tips

- ✓ Be alert for these other factors when a child or teen with ADHD also has any comorbidities, because they are likely going to have some impact on parental and child adherence to treatment recommendations.
- ✓ Pay particular attention to the component of EF-SR that is poor self-regulation of emotion as seen in ADHD. This may be a predisposing factor to comorbidity with oppositional defiant disorder (ODD; see the upcoming section on ODD/CD) and also to anxiety, depression, disruptive mood dysregulation disorder (DMDD), posttraumatic stress disorder (PTSD), and bipolar disorder (BPD), among others. Other factors are likely at play in those predispositions, but a general propensity for impulsive emotional expressions and subsequent poor self-regulation of strong reactive emotions, particularly negative ones such as frustration, anger, impatience, and hostility, is surely among them.
- ✓ Likewise, irritability, reflecting more of a chronic than episodic emotional brittleness or quickness toward anger, may also be a substantial risk factor for mood and anxiety disorders, as well as reactive aggression. The relatively new diagnosis of DMDD appears to capture this propensity for irritability and impulsive destructive–aggressive actions with extreme levels of those symptoms and is designed to be used with children who previously were thought to have BPD without mania. Little is known about the overlap of DMDD with ADHD and its impact on impairments, life course, and treatment planning.
- ✓ As discussed in the next section, the presence of the comorbid disorder(s) can further adversely impact functioning, life course risks, and possibly treatment planning, among other important clinical concerns. Indeed, the second disorder may, in some cases, be as or more important to treatment planning as is ADHD, given that the former may alter decision making or at least give pause in such an enterprise. For instance, in using amphetamines in cases of ADHD in which tic disorders, Tourette syndrome, BPD, or possibly anxiety disorders are present, you would surely want to proceed more cautiously, if at all. The treatment implications of comorbidities are discussed in full in [Chapters 6–10](#).

Diagnosing Specific Comorbidities

Comorbidity with other neurodevelopmental and psychiatric disorders is exceptionally common in individuals with ADHD. The following brief review shows that the presence of a comorbid disorder with ADHD often adds to the severity of the ADHD and possibly the coexisting condition(s) as well. It also adds to the extent of impairment of the child or teen with comorbidities. Even more, the presence of ADHD with any of these other disorders also markedly worsens the extent of impairment largely because of its pervasive deficits in EF-SR. Those will also worsen the course of the other disorders and may signal a more persistent form of ADHD than might be seen in ADHD absent any comorbidity.

The most common comorbidities in children and teens with ADHD were listed in [Chapter 3](#); they are shown graphically in [Figure 4.1](#) and are discussed in this section in descending order of their co-occurrence with ADHD. Note that 50–87% of people with ADHD have a second disorder.



[Follow for extended description](#)

FIGURE 4.1. Comorbid neurodevelopmental and psychiatric disorders occurring in the context of ADHD. Dis. = disorder; dysreg. = dysregulation; pers. = personality disorder.

Oppositional Defiant Disorder/Conduct Disorder

ODD is the most common co-occurring disorder with ADHD. Also, it is often a prelude to or concomitant with CD.

Fast Facts about ODD/CD

- ODD is a persistent pattern of hostile, defiant, and argumentative behaviors that may include refusal to obey instructions, temper tantrums, and irritable and angry behavior.
- CD is defined as a pattern of actions that violate the rights of others or major norms of society and its rules. It usually consists of a variety of antisocial behaviors such as lying, stealing, fighting, carrying or using weapons, destruction of property, cruelty to others or animals, forced sexual activity, and running away from home.
- Both ODD and CD are 11 times more likely to occur in the context of ADHD than their base rates in the population (ODD = 3.3%; CD = 3.2%) would suggest. As depicted in [Figure 4.1](#), 45–84% of children with ADHD have ODD, and 5–56% may develop CD.
- Where these disorders coexist with ADHD, especially CD, they signal a greater genetic loading for ADHD among family members, additional cognitive deficits, and maybe even distinct neural correlates than in ADHD alone.
- Their coexistence also predicts a more severe and persistent course for both ADHD and ODD/CD than is the case when the disorders occur in isolation, perhaps because severity of ADHD is related to the development of these other disorders.
- These children with ODD/CD are also at increased risk for a variety of antisocial activities, drug use, peer rejection, teen pregnancy, intimate

partner violence, and school failure and early dropout, among other adverse outcomes from childhood through adolescence.

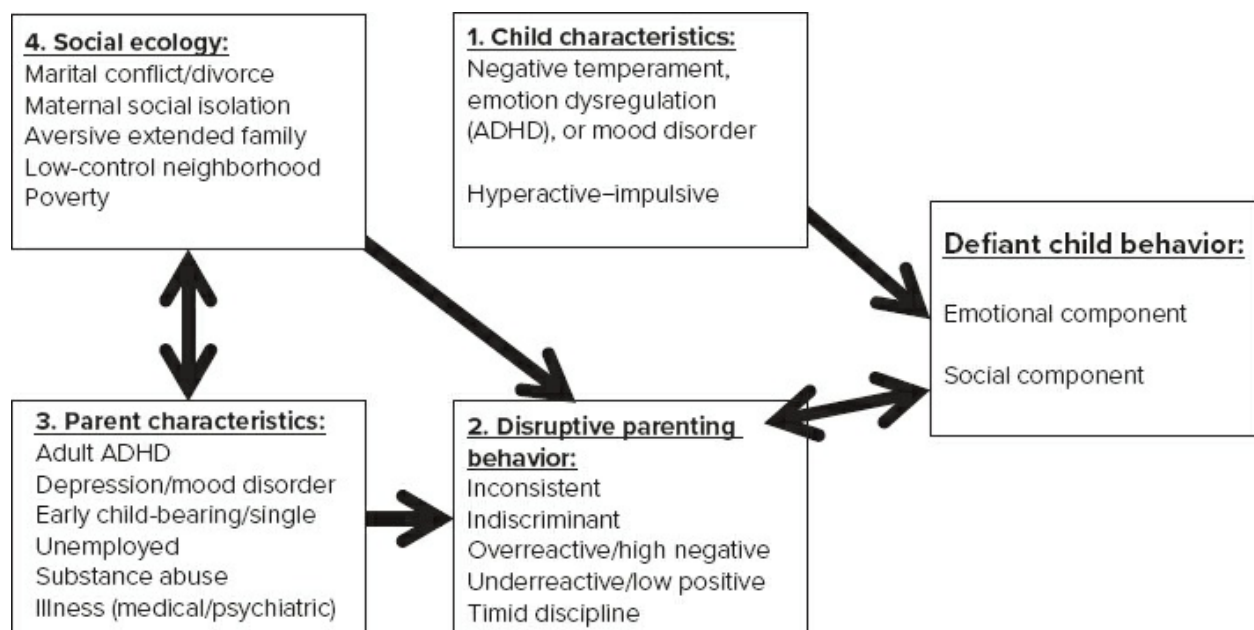
- Children with ODD/CD are also more likely to develop depression and anxiety disorders.

Clinical Tips to Assist with Diagnosis

- ✓ Disrupted parenting is a factor that has been well established as a contributor to current and future risk for ODD, so watch for a pattern of inconsistent, indiscriminate use of consequences often coupled with higher rates of expressed emotion and vacillation between lax/timid and harsh discipline. This is especially so where the less common comorbidity of CD is also present, in which case lower parental monitoring, parent antisocial behavior and drug use, and child/teen affiliation with deviant peers are also likely to be in the family picture. ODD/CD also might co-occur with ADHD if the family has greater psychopathology and experiences more social adversity. These children also are more likely to experience divorce of their parents and placement in foster care.
- ✓ Note that if the severity of ODD comes to include explosive, destructive, or physically aggressive behavior and places 2–3 or more standard deviations above the mean on rating scales that measure aggression or conduct problems, such as those on the Child Behavior Checklist (CBCL; Achenbach, 2014), the child might also have DMDD or BPD. The conduct problem behaviors in these two disorders go well beyond those seen in the typical child with ADHD and ODD.
- ✓ Does the child you are evaluating have specific learning disabilities (SLDs)? Even children with ADHD alone have a substantial risk for SLDs, but the risk is greater with ODD/CD as well.
- ✓ Are you evaluating an older child? Know that up to 46% of children with comorbid ADHD plus ODD may manifest suicidal ideation by adolescence, and 21% may make a suicide attempt—rates far higher than for ADHD only, rates of which are in turn higher than for typical children. This fact is discussed further later in the chapter in regard to depression.
- ✓ Don't expect only one possible developmental path. There is conflicting evidence on whether ADHD predates the development of CD or CD codevelops near or at the same time as does ADHD, even if not fully diagnosable. Some young children with ADHD have certainly been shown to manifest patterns of early lying, stealing, reactive aggression, and fighting, whereas others also show the pattern of callous–unemotional traits and instrumental predation against others associated with psychopathy. Yet other longitudinal studies also identify cases in which ADHD emerged first, to be followed several years later by ODD and then, in adolescence if not earlier, by the development of CD by age 15. So, for now, it appears that both developmental courses to CD likely exist. Worth noting is that the presence of ODD or CD with ADHD significantly increases the risk for child maltreatment and PTSD compared with cases of ADHD alone. Such maltreatment is linked to an increased risk for subsequently more antisocial behavior and arrests beyond the risks for those attributable to either ADHD or CD.

EF-SR Theory and ADHD/ODD Comorbidity

As [Figure 4.2](#) shows, ODD consists of two dimensions of symptoms (emotional and social), and each arises from a separate origin. The emotional component of ODD seems to be due to the child's having a disorder involving dysregulated emotion (ADHD, DMDD, BPD, major depression). But the social symptoms of ODD arise directly and primarily as a consequence of disrupted parenting (Factor 2). Such disrupted parenting is likely a consequence of the occurrence of psychological maladjustment in the parent (Factor 3) and adversities in the social ecology of the parent and family (Factor 4). The longer ODD persists in development, the more likely it is that a comorbid disorder is associated with it and the more likely it is that disrupted parenting can contribute.



[Follow for extended description](#)

FIGURE 4.2. The four-factor model of oppositional defiant disorder and the role of ADHD. From *Defiant Children, Third Edition* (Barkley, 2013). Copyright © 2013 The Guilford Press. Adapted with permission.

Clinical Tip

- ✓ Anticipating treatment, disrupted parenting will require behavioral parent training in addition to an ADHD-specific intervention. Factors 3 and 4 will require more direct intervention for those parental problems.

When we view ADHD as a deficit in executive functions and self-regulation, we can see how the impulsive emotions and poor self-regulation of provoked strong emotions that are inherent in ADHD take a child halfway down the road toward meeting the criteria for ODD by virtue of its own dysregulated emotional dimension. In particular, the impulsive emotions, involving impatience, frustration, anger, quickness to react, and being excessively excitable or easy to arouse, elevate the risk for the emotional component of ODD. It only takes a few years of social learning via disrupted parenting primarily for the social component of ODD to arise.

This lack of adequate emotional self-regulation in ODD would also partially explain the linkage of these two disorders to later risk for anxiety and depression in adolescence. That is due to these downstream affective risks being associated in research with the emotional component of childhood ODD, which, as just explained, largely comes from the executive function deficits of ADHD. We can account for the association of ADHD with CD by adolescence due to the well-known linkage of CD with the social conflict component of childhood ODD and the disrupted parenting that contributes to it.

Substance Use, Dependence, and Abuse Disorders

ADHD alone raises the risk for SUDs in teens (and adults), and ODD/CD on top of ADHD increases the risk even more. This does not mean, however, that fully diagnosable SUDs are that common in the general population or among those with ADHD. Substance experimentation and use are, however, commonplace in middle school, high school, and emerging-adult age groups. Because the excess use defined as SUD causes cognitive, behavioral, and

physiological symptoms that are pathological and that reflect impaired self-control, social impairment, risky usage, or pharmacologically related criteria (such as tolerance, physiological signs of addiction and withdrawal), clinicians would be wise to be on the lookout for emerging patterns of substance use in patients they are evaluating.

ADHD may predispose teens to an earlier onset of SUDs, a more rapid progression from initial experimentation to full SUD occurrence, a more chronic course of the SUD than in teens without the disorder, a more resistant response to interventions for SUDs, and a greater probability of recurrence even if symptoms initially desist following treatment. Even if those with ADHD do not qualify for an official SUD, they may be using substances more often and in a more erratic or bingeing fashion than typical peers. All this being said, the majority of teens with ADHD do not qualify for SUDs either as teens or in adulthood.

Fast Facts about SUDs

- SUDs involve a persistent pattern of excess use of one or more of 10 categories of drugs, including alcohol, nicotine, and cannabis, as well as opioids, hallucinogens, and other drugs, including prescription drugs.
- SUDs often have their onset in adolescence or young adulthood, with 2–11% of the general population ages 13–17 having an SUD (averaging about 5%) and 4–18% having one at ages 17–20.
- ADHD alone poses twice the risk for future SUDs in teens and adults, independent of any contribution to SUD risk posed by comorbid CD. Teens with ADHD are likely to initiate drug use earlier, escalate its use more quickly, and achieve a greater frequency of use over time than teens without ADHD seem to do.
- Where ODD/CD is present along with ADHD, the risk quadruples that of typical adolescents and more than doubles that of adolescents with ADHD alone.

- The inverse comorbidity is even more likely, in that youth and adults with SUDs have a 23–59% risk of ADHD or have had it earlier in their lives, even if it is undocumented in their initial assessment for SUDs.
- Nicotine, often via smoking, in adolescents with ADHD is the top substance of excess use and abuse. It is often initiated earlier, escalates more quickly, achieves a higher frequency of use, and may be more difficult to reduce or cease in response to treatment than in typical adolescents. And it seems to be another gateway or risk factor for use of other substances and SUDs.

Clinical Tips to Assist with Diagnosis

- ✓ Consider family history. A family history of SUDs, which is more probable in families of those who have ADHD, further predisposes those with ADHD to developing SUDs as well. Although this could be a result of parental modeling of substance use, such transmission across generations is also due to shared genetic risks between ADHD and SUDs. Perhaps that shared genetic risk helps to explain the underlying disrupted neurobiological networks shared by ADHD and SUDs, possibly in altered dopamine transmission in the reward circuits of the brain.
- ✓ Comorbid BPD, although far less common in ADHD than in other disorders, also creates an elevated risk for SUDs in those with ADHD. That risk goes beyond the increased risk for SUDs posed by BPD alone.
- ✓ Excessive **nicotine** use signals a risk for later SUDs that is higher than in teens with ADHD who do not smoke and is a risk well beyond that of teens without ADHD. Over time, as teens with ADHD move into adulthood, they smoke more than others (including other smokers), are more likely to qualify for nicotine use disorder, persist in smoking longer into adulthood than other smokers without ADHD, and find it more difficult to quit smoking than do smokers without ADHD. The latter may be due to teens and adults with ADHD experiencing more intense withdrawal symptoms and cravings during efforts at abstinence than do smokers without ADHD.
- ✓ Though often not assessed for its excessive use due to its ubiquity in society, **caffeine** is likely the second most common substance of excess use and may even be the first. Adolescents with ADHD have recently been shown to consume more caffeine-containing beverages, to do so later into the afternoon, and to suffer more sleep problems than usual as a result. Such inefficient or disrupted sleep can feed forward to exacerbate daytime inattention and sleepiness, further adversely affecting work or school performance.
- ✓ **Cannabis** is the next most used substance among teens with ADHD. Although teens with ADHD seem no more likely to experiment with cannabis than other teens, once they have tried it, they are more likely to continue to use it and use it more frequently (nearly 11% report using it daily).

Teenagers with ADHD are twice as likely as other teens to develop a **cannabis** use disorder. This pattern appears to continue into adulthood. Smoking is a risk factor for eventual marijuana use even in the typical population, and so it is not a surprise that it is so among youth with ADHD as well. Like nicotine, marijuana use in adolescence is a gateway into (predictor of) an increased risk for other substance use and even abuse.

- ✓ Especially by late adolescence and emerging adulthood, **alcohol** use is high in the general population, making excess use or abuse of alcohol among teens or young adults with ADHD difficult to detect as problematic relative to typical peers. But adolescents with ADHD do seem to have an earlier onset of initial experimentation with alcohol. And they may have more episodes of binge drinking and drunkenness than teens without ADHD, even if their average daily consumption is not different from that of typical teens. By adulthood, when drinking among the general population declines, the results of studies of ADHD become more consistent in showing that those with ADHD diverge from typical adults in their extent of alcohol consumption and eventual risk for alcohol use disorders.
- ✓ Does the child or adolescent you are evaluating have co-occurring ODD/CD? This comorbidity may further increase the risk for the use and abuse of illegal substances besides nicotine, cannabis, and alcohol. It is thought that this may occur through other correlates known to link up with ODD/CD, such as poor parental monitoring of the teen's activities, including drug experimentation, and affiliation with deviant peers who are also likely to be experimenters or users, thus posing a peer pressure or social suggestibility contribution to drug use. Once substance use is initiated, various research found an interactive developmental spiraling effect between these two comorbidities—that is, over time, CD symptoms at Time 1 continued to worsen the risk for drug use by Time 2 follow-up, even after controlling for Time 1 drug use. Likewise, drug use at Time 1 predicted increased antisocial activities over time, even controlling for CD at Time 1. In short, each disorder exacerbates the other over time.
- ✓ Is the child or adolescent you are evaluating a biological female or male? Most of the risks above apply more to males with ADHD than to females with the disorder. Follow-up studies of females do not find that they have higher risks for excess substance use and SUDs as teens than do typical females. But by adulthood, females with ADHD do.

EF-SR Theory and Elevated Risk for SUDs

The EF-SR theory of ADHD can help us understand this risk for comorbid SUDs via two possible pathways. First, the executive function deficit of disinhibition in ADHD is a known risk factor for initial substance use experimentation. It, along with the generally poorer self-regulation inherent in ODD, is also a risk factor for further substance use once it is initiated and can certainly explain the greater difficulties these young people have with

drug rehabilitation. Adequate self-regulation is necessary for self-improvement, including adherence to the treatment recommendations that are usually part of treatment programs.

EF-SR theory also raises an interesting possibility about the role of genetics in SUDs among those with ADHD. It may be that ADHD creates the executive function deficits that increase the risk for SUDs and that it is this shared executive function phenotype that explains the shared genetic variation between disorders, not genetics alone.

As to the predisposition for excessive use of particular substances, it seems probable that the impulsivity dimension (or more likely its executive function component of poor self-restraint) predicts experimentation with nicotine, whereas the inattention (metacognitive executive function) dimension predicts escalation and maintenance, perhaps via the problems it poses for self-monitoring and further self-regulation. There is also the likely possibility here of self-medication (nicotine seems to improve inattention in ADHD).

As with nicotine, EF-SR theory proposes an explanation for heightened risk of cannabis use: that deficient self-regulation leaves one open to repeatedly engaging in poor decision making about drug use.

The same pathway seems to exist for alcohol. The executive function component of poor inhibition coupled with the disinhibitory effects of initial alcohol consumption may be interacting to heighten the risk for binge drinking seen in those with ADHD. A recent large-scale population study (Zhou, Sealock, & Gelernter, 2020) using genome-wide scans comprising over 435,000 people found that problematic alcohol use was related to the personality trait of risk taking (impulsivity), among other factors, through shared genetic liability, suggesting that it is this dimension of EF-SR (ADHD) that creates this liability.

Depression

Evidence is mixed on whether ADHD is associated with a higher risk for

depression; some studies do not find an association when controlling for the presence of other disorders, such as CD or cognitive disengagement hypoactivity syndrome (CDHS; formerly referred to as sluggish cognitive tempo [SCT]). The risk for depression posed by the comorbidity with ODD/CD could arise from an increased number of adverse life events, peer problems, and a parental history of depression. On the other hand, these environmental factors could simply represent markers for parental ADHD and/or depression, and it is that parental disorder that genetically creates the risk to offspring for comorbidity, as well as causing the familial disruption/adversity. There is, after all, evidence for substantial shared genetic liability between ADHD and depression (see [Figure 4.2](#)), and so those possible environmental mediating variables cannot totally account for this comorbidity.

Fast Facts about Depressive Disorders

- Major depressive disorder (MDD) includes a persistent pattern of depressed mood or loss of interest or pleasure that also involves vegetative symptoms, insomnia, agitation, fatigue, feelings of worthlessness, diminished concentration, and even recurrent thoughts of death, among others. These symptoms must occur for a period of 2 weeks or longer and reflect a change from prior levels of functioning.
- A milder variant involving less persistent symptoms that recur during a 2-year period is persistent depressive disorder (PDD), previously called *dysthymia*.
- As many as 20–35% of children or youth with ADHD may have depression, which is 8–10 times greater than population base rates (2.6%); conversely, 14–20% of children with depression have comorbid ADHD.
- Children and teens with ADHD and depression often have greater impairment, an earlier onset of depression, a greater likelihood of relapse

in their depression after treatment, and higher rates of suicidality (especially attempts) than children with depression alone. Unfortunately, they are also more likely to be successful or, if they survive, to require hospitalization due to the severity of the attempts.

- By adolescence, they may also experience more negative or stressful life events, greater family conflict, and more trauma exposure than do adolescents with ADHD alone. Hence a dual-factor model of this comorbidity might be applicable here. That is, the presence of ADHD, along with a family history of both ADHD and depression, creates a genetic liability for depression. But that liability becomes manifest under conditions of increased negative events, social stress, family conflict, and trauma exposure that the executive function deficits in ADHD are highly likely to contribute to cumulatively over development.

Clinical Tips to Assist with Diagnosis

- ✓ A child who is living in conditions of increasing negative events, social stress, family conflict, and trauma exposure may start to manifest symptoms of depression if the child has ADHD and a family history of both ADHD and depression. Comorbidity often leads to greater impairment, an earlier onset of depression, a greater likelihood of relapse in depression after treatment, and higher rates of suicidality than does depression alone. By adolescence, they may also experience more negative or stressful life events, greater family conflict, and more trauma exposure than do children with ADHD alone. Hence a dual-factor model of this comorbidity might be applicable, in which the presence of ADHD, along with a family history of both ADHD and depression, creates a genetic liability for depression that becomes manifest under increased negative events.
- ✓ Is your patient a biological female? Some clinical studies suggest that females with ADHD may be more prone to depression than males. However, that reflects the same pattern in the general population, so the take-home point is that your female patients might be more prone to depression, generally speaking, than males.
- ✓ Is low self-esteem a sign of developing depression? Low self-esteem was once thought to be common in children with ADHD due to their high risk of failure in familial, educational, and peer social settings. But subsequent research found that, if anything, children with ADHD view themselves as more competent than they are in these situations. It is not clear whether this positive bias is due to their diminished self-awareness or to an ego-protective mechanism to maintain self-worth. In either case, low self-esteem should not be written off as just a consequence of having ADHD. Other research suggested that, in those with

ADHD in whom low self-esteem was evident in early childhood, and especially anhedonia in later childhood, it was likely to be a marker for risk for later depression. So, when low self-esteem is evident, more clinical monitoring of the child is warranted in order to detect any escalation of depression that may occur with time, as well as for subsequent signs of increased suicidality.

- ✓ As mentioned in [Chapter 1](#), it is important to be specific when using a symptom such as “inattention” to diagnose ADHD, because other disorders also involve various types of inattention. Depression is one of them. ADHD is associated with difficulties with goal-directed actions and with sustaining such actions in boring tasks (persistence), as well as heightened distractibility to task-irrelevant events. If anything, it represents an excess coupling of attention to external, often goal-irrelevant events, in the momentary context. Depression, in contrast, seems to be more aligned with symptoms such as those seen in [CDHS](#) (formerly SCT, see discussion later in this chapter), including staring, daydreaming, mind wandering, mental fogginess, and sluggishness or sleepiness. Ruminative thought and the inattention arising from it are also common in depression but far less so in ADHD. Indeed, recent studies suggest that once CDHS symptoms are controlled, there may be no significant association of ADHD with depression. In any case, both depression and CDHS seem to involve a decoupling of attention from events in the external environment and a redirection of attention to mental content. Hence, the inattention seen in ADHD is not identical to that seen in depression (or CDHS, anxiety disorders, or OCD).
- ✓ The risk of suicidal ideation and suicide attempts is increased three- to fivefold in children and adolescents with ADHD when depression enters the mix. Up to 20% of children or adolescents with ADHD may experience suicidal ideation, especially if they have comorbid depression; up to 12% may have made plans at least once for an attempt, and 18–20% have made at least one attempt. By high school, studies found that 33% of adolescents with ADHD had considered suicide, and 16–22% had attempted it. A meta-analysis of all the research through 2018 found that those with ADHD had a 3.5 times higher likelihood of thinking about suicide, were 4.5 times more likely to make a specific plan, were 2.4 times more likely to make an attempt, and were 6.7 times more likely to succeed.
- ✓ Always consider a relatively rapid onset of depression (or anxiety) in anyone with ADHD to be a possible sign of the person being victimized in some way, through either bullying or physical, sexual, or emotional abuse. Thus more careful interviewing in such cases is warranted, perhaps along with other investigations through other sources of information, such as teachers.

EF-SR Theory and Comorbid Depression and ADHD

The self-regulation deficits associated with ADHD clearly lead to a variety of impairments in major life activities and self-defeating decision making driven by impulsivity and poor contemplation of delayed consequences (as discussed in [Chapter 1](#)). Hence, ADHD creates a variety of adverse social consequences that, cumulatively, increase the risk for PDD and possibly even major

depression. This may be made more likely by the shared genetic risk between the disorders that leaves people with ADHD with a higher susceptibility to depression if they experience adverse social events, which they clearly do. Depression undoubtedly has an association with adverse social experiences. Add to this the impulsive emotion and poor self-regulation of strong emotion evident in ADHD due to its executive function deficits, and you have a situation in which multiple factors are converging to generate a higher risk for depression (and [anxiety disorders](#); see the discussion later in the chapter).

EF-SR theory also may give us some insight into why some children and teens with both depression and ADHD think about committing suicide and others make attempts. It seems to be the comorbidity with depression that predicts the risk for suicidal ideation, particularly in adolescents, whereas the impulsivity of ADHD predicts the risk for the attempts. Notably, those attempts are often more serious (leading to hospitalization or death).

Disruptive Mood Dysregulation Disorder

Research on the overlap of ADHD with DMDD is exceptionally limited, owing largely to the fact that it is a new disorder in DSM-5.

Fast Facts about DMDD

- DMDD is believed to consist of severe and recurrent temper outbursts that may include verbal rages, physical aggression, or destruction of property that is out of all proportion in intensity and duration to the situation or provocation.
- Initial research suggests that about 27% of children with DMDD may have ADHD, which is 4–5 times greater than the prevalence of ADHD alone in the population.
- Inversely, approximately 20–39% of children with ADHD manifest irritable/angry mood with temper outbursts or frankly qualify for a DMDD diagnosis—so there is evidence of some shared morbidity.
- DMDD is included within the depressive disorders in DSM-5 largely

because longitudinal studies indicated that, over time, the greater risk was for depression. BPD and associated manic episodes are not a common outcome of DMDD over development. This is what led DMDD to be split off from BPD in DSM-5, even though chronic irritability alone was viewed as a feature of BPD in children in the earlier DSM-IV. That turned out to be a mistake that led to much greater misdiagnosis of BPD in children.

Clinical Tips to Assist with Diagnosis

- ✓ Is it DMDD or ODD? In some sense, DMDD is a more severe form of ODD, one in which irritable, angry mood plays a more predominant and longer lasting role, occurring as it does even between these severe temper outbursts. In ODD, the temper outbursts, although often provoked by parental demands or those of other authorities, are milder than those in DMDD, more time limited (which is the difference between an emotion and a mood), and typically provoked on that occasion; the mood of the child with ODD between such episodes is usually unremarkable.
- ✓ Is it DMDD or ADHD? Although children with ADHD may be characterized as displaying impulsive emotion and deficient emotional self-regulation, this is more often shown in low frustration tolerance, being overly excitable, being quick to anger when provoked, and being impatient. But irritability is not as chronic a mood state in such children as it is in those with DMDD, nor are the anger outbursts as extreme and irrational as in the latter condition. ADHD does not involve a mood disorder as much as emotional impulsivity on provocation. Moreover, the emotional reactions in ADHD are understandable (rational) in reaction to a provocation, even if poorly self-regulated, as noted in [Chapter 2](#), whereas those related to a mood disorder, such as DMDD, are less understandable as a reaction to something specific and thus are more capricious, variable, extreme, and long lasting than the emotional problems seen in ADHD.

EF-SR Theory and Differential Diagnosis

The emotional difficulties in ADHD are initially due primarily to the deficiency in inhibition seen in ADHD. Such emotions are provoked and hence usually *situation specific*, of *short duration* (an emotion, not a mood), and, as noted above, *rational* or *understandable* given the provocation, but poorly inhibited and subsequently not well regulated. In ADHD, the individual is generally more easily aroused, excitable, and emotionally

disinhibited in the moment, but this is not a long-lasting mood. Once provoked, the strong emotions in those with ADHD may be more difficult for them to calm and soothe or otherwise self-regulate by using various executive strategies. In DMDD, the irritable, angry mood lasts much longer (a mood, not an emotion), occurs across situations, and is not easily understood as arising from a specific provocation. It is not merely the result of an executive function deficit.

Bipolar Disorder

Bipolar disorder (BPD) and its subtypes reflect recurrent episodes of manic, hypomanic, and depressive episodes with some cycling between them. Research has revealed an interesting relationship between BPD and ADHD.

Fast Facts about BPD

- Manic episodes include persistent, abnormal, elevated, expansive, or irritable mood and increased activity/energy present most of the day nearly every day, for at least 1 week or longer. (Depressive episodes were described previously in the chapter.)
- Children with ADHD in community samples seem to have no higher risk for BPD (0–2%) than the population as a whole (base rate about 2%), which may also be the case for clinic-referred children with ADHD who were followed to adulthood.
- The inverse association between the two disorders, however, is quite remarkable. Among children with BPD, the risk for comorbid ADHD is quite high (60–90% or higher), being 2.8 times greater than adolescent-onset BPD.

What might be at work here? In children with ADHD referred to clinics, especially those seen in tertiary care settings, there is a significantly higher risk (11–30%). Perhaps that is due to a referral bias in which worse or more comorbid cases make their way through primary to tertiary care centers due

to their severity and the complex care they necessarily require. Yet this could also have arisen in earlier studies reliant on the DSM-IV criteria, in which irritability could be substituted for classic manic symptoms and cycling of moods was not a requirement in rendering a diagnosis of BPD in children. Irritability is far more likely to be associated with ADHD and hence drives up the apparent comorbidity with the older version of BPD in DSM-IV. With the creation of DMDD (see the preceding section) in DSM-5 to capture these cases of chronic irritability with unipolar depression, we may see the comorbidity of ADHD with BPD be reduced in future research while that between ADHD and DMDD increases.

As to the high rate of ADHD in those diagnosed with BPD, the earlier the onset of BPD, the greater the risk that ADHD will also be present. For instance, in adult onset, it is likely that about 15–25% of cases also manifest adult ADHD. Cases of adolescent onset of BPD see a doubling of this rate of comorbidity, to about 35–50%. And this rate nearly doubles again for childhood onset of BPD (up to 90%).

The same relatively one-way relationship is evident among biological family members. Families of those with ADHD do not typically show elevated rates of BPD among extended family. And parental ADHD is not a significant risk factor for offspring BPD in the absence of BPD in the extended family. But families of children with BPD have 7–8 times the risk for BPD among other family members. And if parents have BPD, the risk to offspring for either BPD or ADHD is 8 times greater than in families that do not have parental BPD.

This likely one-way arrangement between these two disorders may arise in part because of brain organization. Disorders at lower level brain networks or systems, such as dysfunctions in the caudate, greater basal ganglia, and limbic system (or even much lower level sleep, appetitive, and arousal systems linked to the brainstem and related structures) that are likely to exist in BPD, can give rise to disorders of systems perched above these brain regions and dependent on them, such as the higher level executive networks linked to ADHD. But disorders of higher level systems or networks, such as ADHD, do

not affect the functioning of lower level systems as much except perhaps in their top-down regulation for goal-directed action, thus producing one-way comorbidities.

Clinical Tips to Assist with Diagnosis

- ✓ Where is the child in development? When BPD arises in children, its first manifestation is likely to be severe hyperactivity in the preschool period, evolving into ADHD by age 6 or so, but with apparent subthreshold mood and manic symptoms. It then further evolves into diagnosable BPD by or before age 12 or up to the early 20s, where cases now usually exhibit comorbid BPD plus ADHD. Cases in which BPD symptoms do not appear until adulthood are far less likely to have ADHD as an associated condition (about 25%).
- ✓ Where the comorbidity exists, the onset of BPD is often earlier, the BPD symptoms are more severe, the cycling between moods may be more rapid, and the course of disorder may be worse, including a heightened risk for suicide than in BPD alone. This may signal that BPD plus ADHD is a distinct type of BPD, but evidence of this is inconclusive to date.
- ✓ Where ADHD is present, experts in BPD diagnosis recommend that the ADHD symptoms (including irritability) that appear on the BPD list *not* be counted toward the threshold needed for a diagnosis of BPD. The reason is that those ADHD symptoms are of no value in the differential diagnosis of these disorders. After discounting those ADHD symptoms, if the child or teen still meets criteria for BPD, then it is likely to be a valid diagnosis, as the clinician will then have relied more on the mood disturbance and related symptoms to render a diagnosis of BPD. In contrast to the shared symptoms of ADHD, symptoms of mania, cycling of moods, grandiosity, hypersexuality, and markedly less need for sleep are far more specific to BPD and thus useful in the differential diagnosis of the two. So too may be the episodic nature of BPD (including its overlapping ADHD symptoms) in contrast to the chronic nature of ADHD symptoms as seen in cases of ADHD without BPD.

EF-SR Theory and Differential Diagnosis

Unlike ADHD, BPD is not primarily a disorder of executive function or self-regulation except during the manic or cycling episodes, when obviously irrational mood states can overwhelm the executive function system, causing irrationality. The problem with differential diagnosis occurs when both disorders are present, in which case the executive function deficits associated with ADHD are quite apparent even when manic or cycling episodes are absent. Hence, BPD is usually an episodic disorder of mood, whereas ADHD is a chronic unremitting disorder of the major executive functions.

Anxiety Disorders

Anxiety disorders (ADs) have as an essential feature persistent patterns of excess anxiety, including worry, as well as fear and even panic, that may precipitate heightened alertness to perceived threats, avoidant behavior, increased physiological activation, and excess muscle tension. The focus of the anxiety or fear may be quite specific, as in simple phobias, or broader yet more domain-specific, as in social anxiety disorder, or even broader and nonspecific, as in generalized anxiety disorder. ADs occur in 10–20% of the U.S. population.

Fast Facts about ADs

- Children with ADHD appear to be 2–4 times more likely to have an AD than the general U.S. population, or about 10–40% (averaging to about 25%).
- Children with ADHD and ADs may have a somewhat lower level of impulsivity than those with ADHD alone, although results are mixed on this issue. They may also have lower rates of reactive and proactive aggression than do those with ADHD alone. Hence anxiety may be protective against some of the risks associated with the hyperactive–impulsive symptom dimension of ADHD.
- Comorbid anxiety may bring additional forms of disadvantage or impairment, such as a greater risk for subsequent depression, greater sleeping problems, or more social withdrawal than in children with ADHD alone.
- The basis for this co-occurrence of disorders is not well understood. Unlike depression, there does not seem to be as strong a shared genetic contribution between these disorders. Also unlike depression, there does not seem to be an elevated rate of exposure to negative life events, family conflict, or trauma. Thus PTSD is not more common in this comorbidity than in children with ADHD alone, as it was found to be in those having comorbid ODD/CD discussed earlier.

Clinical Tips to Assist with Diagnosis

- ✓ Consider your patient's age. ADs occur in 25% of children with ADHD on average, but by adulthood, more than 45% of clinic-referred adults with ADHD have an AD. Baseline level of ADHD, especially inattention, is a predictor of risk for later anxiety over time, even controlling for baseline level of anxiety.
- ✓ Is there a family history of ADs? It is possible that a parental history of anxiety may be contributing independently of ADHD to the childhood risk given the moderate levels of heritability for anxiety independent of any family genetic loading for ADHD.

EF-SR Theory and Increase in Anxiety with ADHD over Development

The massive executive function problems that ADHD may produce lead to a variety of failure experiences in many major domains of life activities, particularly when ADHD is unmanaged. Such failures are not the same as the more distressing adverse life events linked to depression. Yet, over time, such failures become predictable in certain environments, such as school or work, and could with sufficient exposures to such failures set up anticipatory anxiety before and during the next encounter with that situation. Perhaps there is an interactive effect between the diminished self-regulation of emotion in ADHD and the repeated exposure to failure experiences that combine to produce anxiety and increase its occurrence with ADHD over time.

Tic Disorders and Obsessive–Compulsive Behavior

Tic disorders (TDs) can range from simple, transient tics, which are quite common, to chronic simple (single) tics to multiple tics (transient or chronic) and on to multiple chronic tics and vocalizations, known as Tourette syndrome. Obsessive–compulsive behavior (OCB) may simply be a cognitive variant of this spectrum and is more likely an associated feature of the more severe TDs along this spectrum, though it may also occur without tics.

Fast Facts about TDs and OCB

- Tics are sudden, rapid, and recurrent yet nonrhythmic motor movements or vocalizations.
- OCB refers to a pattern of persistent obsessions (repetitive, persistent thoughts, images, or urges that are unpleasant and experienced as involuntary) and/or compulsions (repetitive behaviors or mental actions that the person feels driven to perform, often in response to an obsession or rigidly applied rules to reduce the obsession or a feared event).
- If OC behaviors recur often enough, become time-consuming, and lead to clinically significant distress and/or impairment, they would rise to the level of a disorder, or OCD.
- A minority of children or adults with ADHD have TDs (10–20%, usually for simple tics), which may be arguably higher than the base rate of community samples (about 5–12%), who are rarely referred; hence simple TDs are far less detected.
- Few patients with ADHD manifest OCB (3–8%), which is just slightly if at all higher than population base rates (2–3%).
- The inverse pattern is much different, suggestive of a one-way comorbidity as is evident for BPD (see above)—50–60% of cases having TDs (especially Tourette) and 30–51% of cases of OCD may have ADHD.

Clinical Tips to Assist with Diagnosis

- ✓ Look closely at family history. As for BPD, the high percentage of those with TDs or OCB who also may have ADHD can arise in part because of the hierarchical nature of brain organization. ADHD plus OCB may represent a distinct disorder from ADHD, in which both disorders are transmitted together in families rather than being separately inherited from family members simply having either disorder. In fact, DSM clusters these two disorders together because evidence suggests they may be part of the same spectrum, family, or cluster of genetically related disorders, with the bridge between the motor and cognitive features (TD vs. OCB) being what is called “the just-right phenomenon.” That refers to a compulsion to make things feel just right or ordered for the individual. Their shared nature is also evident in families given that a significant number of family

members of probands having one disorder also have the other and that more severe cases of tic disorders, such as Tourette syndrome, usually have OCB or full OCD as an associated feature.

In this set of comorbidities, it is the presence of ADHD (and hence its multiple executive function deficits) that is typically contributing to most of the impairments. It is also contributing more to risk for comorbidity for other forms of psychopathology, especially externalizing disorders, than the risks for these evident in TDs alone. Even so, perhaps when TD or OCB is added to ADHD, they may increase the risk for different disorders, such as internalizing psychopathology (e.g., anxiety, depression, social withdrawal). In short, each disorder (ADHD or TD/OCB) conveys different risks for comorbid disorders and impairment, but that posed by ADHD seems worse or more severe in magnitude.

- ✓ Does your patient show any signs of hoarding? Hoarding, considered a variant of OCB, appears to occur more often in cases of ADHD (9%). Childhood ADHD inattention is also a specific predictor of adult hoarding.
- ✓ Could this be CDHS (formerly SCT, discussed later in the chapter)? Still to be ruled out is whether the nature of the inattention or ADHD linked to hoarding is really CDHS, which is far more common in and predictive of internalizing psychopathologies such as OCB. Because it is not widely recognized and rarely assessed as a comorbidity, CDHS is being overlooked in such studies. Yet it is likely to be present because it correlates moderately with ADHD inattention (about .45). That said, a majority of the evidence indicates that it is ADHD, when added to TD or to TD plus OCB, that contributes the most to further impairment and psychopathology. The addition of TD, OCB, or both to ADHD, in contrast, adds little to its impairments, even if it creates risk, perhaps, for certain types of comorbid psychopathology (i.e., internalizing problems).

EF-SR Theory and Differential Diagnosis

EF-SR theory makes plain that it is ADHD that is the pervasive problem with the executive function components, which would not be expected to occur in specific motor disorders such as tics. Of course, OCB can interfere with goal-directed actions, but more due to perfectionism than the distractibility, impulsivity, and lack of self-motivation as seen in ADHD. That said, as discussed above, the comorbidity of ADHD with the more severe TDs such as Tourette syndrome may exist due to the hierarchical nature of brain organization, in which Tourette adversely affects lower level systems that radiate upward to affect executive function networks and thus yield executive function deficit disorder (EFDD).

Intellectual Disability

Intellectual disability (ID) is now characterized as involving not just deficient intellectual functioning, as it did in earlier decades, but *also* impaired adaptive behavior. The modern adoption of this two-stage criterion typically restricts the diagnosis to about 1–3% of the population. It is difficult to estimate the rate of ID among children with ADHD because ID is often an exclusionary criterion to enter research. The inverse comorbidity of ADHD with ID ranges from 9 to 40%, or about 2–8 times the population base rate for ADHD.

On average, children with ADHD are likely to place 7–9 IQ points lower than the mean for the general population, for several possible reasons:

- ADHD symptoms interfere with IQ test taking, which could lead to test scores being underestimated.
- IQ tests require many executive functions, such as working memory. So, by design, these tests may reveal executive function deficits. That is why IQ and executive function tests are significantly correlated, sharing 20% or more of their variance.
- As polygenic risk scores (the number of ADHD-related genetic markers someone has) rise, intelligence declines.
- There is also a developmental link between the disorders such that earlier levels of ADHD symptoms are correlated with lower IQ in adolescents even after controlling for baseline IQ. Thus we should find some level of overrepresentation of ID in ADHD cases.

Even when children are placed on medication and tested, most of the difference in IQ test scores between children with ADHD and typical children remains. Similarly, attempts to parse out the overlap between IQ and executive functioning tests still find that about half or more of the score difference remains (about 4–5 points lower). Therefore, it appears that there is some true comorbidity between ADHD and ID. Children who have ID do not demonstrate any differences in their ADHD, but there is suggestive evidence that by adolescence ADHD symptoms may be more severe when ID

is present and that there may also be a higher risk for CD.

Autism Spectrum Disorder

Autism spectrum disorder (ASD) is a neurodevelopmental disorder that comprises persistent and abnormal deficits in social communication and interaction across many contexts, as well as persistent performance of restrictive, repetitive behaviors, interests, or activities. Before DSM-5, official diagnostic guidelines precluded the codiagnosis of this condition and ADHD. That error was corrected in DSM-5, and rightly so.

Fast Facts about ASD

- About 20–50% of clinically referred children with ADHD may have ASD, though usually such cases fall toward the higher end of functioning on the ASD spectrum.
- The overlap is lower in community samples examining comorbidity (about 22%). But 33–78% of clinically referred patients with ASD may have comorbid ADHD. In community samples, the overlap is about 28–41%. The co-occurrence seems to be somewhat less in adolescents with ADHD, being 11–13%, but others have suggested it may be even higher than in childhood.
- This co-occurrence of ASD with ADHD makes sense given that rating scales of these two disorders share about 25–30% of their variance with each other. Also, studies of twins show a genetic correlation of .7–.8 between the disorders. Molecular genetic studies of polygenic risk scores likewise show some shared genetic risk between the disorders.

Clinical Tips to Assist with Diagnosis

- ✓ The inattentive presentation seems to be the most common ADHD presentation in children with ASD, followed by the combined presentation.
- ✓ Recent research suggests that it is CDHS (formerly SCT) that is the more common attention deficit associated with ASD. It may be mistakenly giving rise to

the elevated rates of inattentive presentation of ADHD, as most studies do not assess for CDHS. As in children and adolescents without ASD, CDHS contributes unique risks for social withdrawal, internalizing symptoms such as depression, and social and educational impairments even after controlling for any overlapping ADHD.

- ✓ When ADHD links up with ASD, the ADHD symptoms may be more severe, and the children are more likely to have comorbid externalizing disorders (ODD, CD) in addition to the usual high risk for internalizing symptoms (anxiety, OCB) often seen in ASD alone.
- ✓ Children with co-occurring cases of ASD and ADHD are also more delayed in adaptive functioning, may have greater cognitive deficits, and are more impaired in functioning in major life activities than are those with either disorder alone.

EF-SR Theory and ADHD plus ASD

The EF-SR theory extended to ADHD also has some useful applicability to understanding ASD. But the pattern of such deficits will be different. Where ADHD results in deficits across the board in most or all executive function components, especially disinhibition, ASD may have a primary impact on verbal working memory through its substantial disruption of language development, typically, and does not involve impulsivity. Other apparent executive function deficits could arise from the altered reinforcement properties of various stimuli in ASD. So it is not so much executive function that is a primary disruption here as it is sensitivity to more basic reinforcement mechanisms. Similarly, the emotional problems linked to ASD have less to do with impulsivity and top-down self-control than with excessive perceptions of threat that generate anxiety, fear, and panic via lower level perceptual–limbic networks, as may occur in anxiety disorders. Likewise, the nature of inattention in these disorders is different. ADHD, as noted earlier, involves an overcoupling of attention to events in the moment, leading to distractibility and the poor guidance of goal-directed action by mental representations (working memory) related to those goals. In contrast, ASD involves a decoupling or disengagement of attention and conscious cognition from the external environment and a shift of attention to mental content or to simply staring, as occurs in internalizing disorders such as depression. The obsession with restrictive interests in ASD can likewise create

major problems with the mental flexibility needed for planning and problem solving, yet the latter may arise secondarily from an excessively narrow focus of attention (and altered reinforcement values) and not from primary deficits in the mental manipulation of information. All of this is to say that the executive function deficits that may characterize each disorder may differ and can be understood better via EF-SR theory.

Specific Learning Disabilities

One of the most common comorbidities with ADHD besides ODD are the SLDs. They are now considered neurodevelopmental disorders comprising significant delays/deficits in domain-specific forms of keystone academic skills (reading, spelling, math, and writing) that are not attributable to ID or cultural inopportunity to learn. About 2–8% of children have each of these SLDs.

They are distinct from ADHD but, when comorbid with it, may well add to the common educational performance problems evident in ADHD, such as underproductivity of work, classroom disruptive behavioral problems, peer relationship difficulties, and teacher–student conflict. All of these elevate the risk for special education services, grade retention, school suspension, or even expulsion (especially if CD is a comorbidity).

The co-occurrence of each type of SLD with ADHD is often 15–50% in clinic-referred cases of ADHD, with the higher estimates being for reading and handwriting disorders. Yet several other SLDs may be present also. Overall, up to half or more of children with ADHD may have at least one SLD. Considering the inverse relationship, approximately 33% of children with an SLD are likely to have ADHD as a coexisting disorder.

The disorders may co-occur in part due to their small shared underlying genetic liability. But each disorder also has distinct genetic contributions to it not shared with the other. Typically, the shared genetic effects are between inattention symptoms and reading disorders, with the link between the two being specifically attributable to shared problems in slow reading speed and

greater response variability.

Clinical Tip

- ✓ SLDs are not primary disorders of the EF-SR system, though they could have certain specific secondary adverse effects on working memory in certain situations. Therefore, EF-SR theory has little to say about them.

Communication Disorders

Besides SLDs that comprise disorders of academic achievement, children with ADHD are likely to have disorders of receptive and expressive language, known as communication disorders. Approximately 8% of children may have a communication disorder. In contrast, 20–90% of children with ADHD are likely to have one or more such disorders. More recent estimates indicate that children with ADHD are 3–4 times more likely to have a communication disorder than the general childhood population. And 17–33% of children with a communication disorder may have comorbid ADHD, being roughly 2–6 times more likely than would be expected from population base rates for ADHD. Even in the absence of formal communication disorders, children with ADHD often perform more poorly on tests of receptive and expressive language, perhaps due to their executive function deficits and problems with the pragmatic aspects of communication that are commonplace in children with ADHD.

Clinical Tip

- ✓ Language disorders per se are not primary executive function disorders, and so EF-SR theory does not inform their nature and management the way it does for ADHD.

Developmental Coordination Disorder

Developmental coordination disorder (DCD) involves delays or deficits in the

acquisition and execution of coordinated motor skills substantially below those of peers. Those deficits do not reflect inopportunity to learn such skills or abilities, and they must interfere with activities of daily living appropriate to the child's age.

Numerous studies dating back as far as 50 years have documented an increased occurrence of motor coordination deficits and “clumsy child syndrome” associated with ADHD and its precursor diagnosis of minimal brain dysfunction. Such problems may be evident in 5–8% of young children in the general population, declining to 1–2% by age 10 years. Studies, particularly in Sweden, have shown that approximately 50% of children with ADHD qualify as having DCD or motor–perceptual dysfunction. More generally, half of children with ADHD have problems with motor skills and control. This makes sense given that ADHD appears to arise primarily from delayed maturation of the frontal lobes, which house both executive functions and non–executive function motor control brain networks. Thus, although ADHD as a frontal lobe syndrome is very much an EFDD, it is also going to be linked with non–executive function problems with the adjacent motor programming and execution networks.

Cognitive Disengagement Hypoactivity Syndrome

Formerly known as sluggish cognitive tempo (SCT) but recently renamed by a work group of experts (Becker et al., 2021) in their review of this disorder, cognitive disengagement hypoactivity syndrome (CDHS) is a relatively new attention disorder that was first researched in the mid-1980s but did not receive much attention until after 2000. For more information on CDHS than space permits here, see works on SCT by Barkley (2015c, 2018) and Becker and Barkley (2018). Accumulating evidence implies that CDHS has more in common with internalizing forms of psychopathology (depression, anxiety withdrawal, excessive sensitivity to potential adverse consequences, etc.). Although there is no official symptom list for CDHS, as there is for ADHD, researchers have identified the most salient symptoms. In my own research and that of Becker and colleagues, those best at identifying CDHS were the following:

- Daydreaming
- Trouble staying awake/alert
- Mentally foggy/easily confused
- Stares a lot
- Spacey, mind is elsewhere
- Lethargic
- Underactive
- Slow-moving/sluggish
- Doesn't process questions or explanations accurately
- Drowsy/sleepy appearance
- Apathetic/withdrawn
- Lost in thoughts

- Slow to complete tasks
- Lacks initiative/effort fades

As noted, the attention problems seen in CDHS are distinctly different from those evident in ADHD, with the former involving a decoupling of attention from external events to focus more on internal mental content, such as daydreaming or mind wandering. ADHD, in contrast, involves a weakness in mental representations related to goal-directed action guiding such behavior effectively, leading to an overcoupling of attention to external events in the moment rather than mental ones related to task performance and the future more generally. The two disorders overlap in about 50% of cases of each, reflecting comorbidity, yet they are not simply subtypes nor proxies of each other.

Concerning impairment, CDHS is less impairing than ADHD but more so than is typical for children. In adults, CDHS is more impairing than ADHD in educational and workplace settings but less so in other domains of life, although even there the level of impairment is greater than in control cases. Research finds CDHS to be reliably associated with social withdrawal and passivity and, possibly, social anxiety. Although ADHD is more impairing in social relationships than is CDHS, the two disorders both interfere with school performance to a substantial degree, though in differing respects. CDHS shows little risk for disruptive school behavior but impaired academic work, whereas ADHD often predisposes to disruptive school behavior. Although CDHS does not predispose as much toward sleeping difficulties as does ADHD, it is modestly associated with elevated daytime sleepiness. When CDHS is comorbid with ADHD, impairments across all 15 major domains of life activities I surveyed were rated worse than in either disorder alone, suggesting that their adverse impact is additive, not duplicative, as one would find in the comorbidity of two distinct psychopathologies.

Clinical Tips to Assist with Diagnosis

- ✓ There is no official set of diagnostic criteria for CDHS (formerly SCT). But my own research suggests that if parents endorse 3 or more of the 12 symptoms on my published SCT rating scale (Barkley, 2018), and if they occur often or more frequently, this represents the 93rd percentile for the population. That is a traditional index of clinical significance and statistical deviance. That cutoff score combined with evidence of impairment from the symptoms could be used for the time being as unofficial diagnostic criteria for CDHS (or SCT) in children. The last two symptoms in the preceding list (Slow to complete tasks, Lacks initiative/effort fades) were as likely to be associated with ADHD as with CDHS in children and adolescents. *So they are not recommended for assisting with differential diagnosis between these two types of attention disorders.*
- ✓ The two dimensions most often identified using such symptoms are a daydreamy/spacey factor and a sleepy/sluggish/underactive dimension or factor.
- ✓ The distinctiveness of CDHS dimensions from those of ADHD are evident across all of the various approaches to measurement studied to date, such as parent and teacher ratings and observations of behavior in clinical settings, as well as across children, youth, and adults ages 6–89, and in all countries studied for it to date.
- ✓ Longitudinal research spanning nearly a decade of follow-up shows that the symptoms are stable over time, even more so than in ADHD hyperactivity, and predictive of later risk for depression. Cross-sectional studies also imply stability of symptom prevalence across most of the human lifespan.
- ✓ Although there is a moderate correlation of CDHS inattention (daydreaming) with ADHD inattention, such that they share 25% or so of their variance, CDHS symptoms are as independent of ADHD symptoms as are symptom dimensions of other types of child psychopathology from each other.
- ✓ The prevalence of CDHS in U.S. surveys is 5–6% in children and adults. The disorder is equally common in males and females, although the latter might show slightly less severe symptoms, though not to a clinically appreciable degree.
- ✓ There are no differences in CDHS symptom frequency or disorder prevalence across ethnic groups in the United States.
- ✓ CDHS does show more of an association with low socioeconomic status and income and greater risk for unemployment and disability, either in parents of children with CDHS or in adults with CDHS, than may even occur in ADHD.
- ✓ ADHD may overlap with CDHS in 40–59% of children with CDHS. Conversely, 39% of children with CDHS are likely to have ADHD. Thus we see substantial comorbidity between these two disorders, yet approximately half of people with one do not have the other disorder.
- ✓ CDHS shows no or even a negative association with impulsivity and may pose some risk for slower sensory processing speed or speed of responding besides the symptomatic item of slow motor movement or hypoactivity.
- ✓ There is little significant relationship to executive function deficits once the overlap of CDHS with ADHD is statistically removed, except perhaps for a mild deficit in verbal working memory on testing and the self-organization factor on executive function ratings, though both are arguable.

- ✓ Unlike ADHD, there is no risk of comorbidity for ODD/CD or other externalizing psychopathology as well as psychopathy, and some evidence suggests the risk is negative, with CDHS reducing the chances of ODD, in particular, below population rates when it is present.
- ✓ CDHS does show a reliable linkage to risk for depression and possibly anxiety, with 25% or so of children with CDHS having a diagnosis of depression.
- ✓ Although the risk for ASD in CDHS is not well studied and may be no higher than population rates, the inverse relationship is remarkable, with up to 60% of children with ASD showing moderate or greater elevations in CDHS symptoms.
- ✓ Otherwise, CDHS has a much lower risk for SLDs and BPD than is seen in ADHD and does not differ in those respects from population rates.

An intriguing hypothesis is that CDHS arises from pathological mind wandering (PMW) or maladaptive daydreaming—an idea consistent with a dysregulated default mode network in the brain seen in some studies of CDHS. Also consistent with this possibility is that research on PMW typically shows high levels of CDHS-like symptoms and a propensity for ruminating on unresolved problems, thus predisposing individuals to depression.

CDHS in children and teens is clearly not a disorder of executive function as ADHD surely is, and thus EF-SR theory has little to inform us about it or its management.

5

Talking to Parents about What to Expect

An evaluation of a child or adolescent for ADHD is a complex, multistep process that should produce a wealth of data on which to base a diagnosis, especially when done in a mental health setting. Following the principles and steps laid out in [Chapters 2](#) and [3](#) and using the rating scales and other forms in [Appendix A](#), you should be able to ascertain whether the individual youth has ADHD and any comorbid conditions. Your diagnosis is intended to lead directly to appropriate interventions that will help the child or teen function as effectively as possible from now on. But before you can recommend (and implement, if you will be the treating clinician) treatment, you need to talk to the patient's parents (and, in some cases, to the patient as well). Parents will be most likely to follow through on your proposed plan if they understand how and why your diagnosis was made, what the diagnosis means for their child now and in the future, and where the family will go from here.

This is the focus of the feedback conference, to which most parents will bring a variety of emotional reactions and questions. I introduced the goals of the feedback conference in [Chapter 3](#). In this chapter, I help you prepare to respond to parental reactions and to answer their questions fully and

compassionately. The chapter will also help you explain what the family can expect for this child and how parents can play a significant positive role in ensuring a healthy future for their growing child.

Explaining the Diagnosis

The feedback conference should usually begin with a discussion with the parents of the findings you collected during the evaluation and what they signify for this child. Some clinicians wonder whether the child should be part of this discussion. My own experience is that this is not a good idea to begin with, as there are comments and critical points you may need to make candidly about the child or teen that the patient's presence will inhibit. Moreover, most children are not going to comprehend well the adult-level discussion you wish to have about the various findings and how they led to the diagnosis, and you don't want to have to substantially lower the level of the discussion here just for the child's or teen's sake. Also, parents need to be able to ask candid questions that they would be reluctant to raise if the child or teen were present.

In my experience, a separate brief discussion can be held with a teen or preteen (10–12 or older) who is of reasonable intellectual level and has shown some concern about their own adjustment, signaling awareness of problems and possibly openness to information about ADHD. Even then, however, my own experience is that most children and youth do not see themselves as having the problems or, at least, the degree of problems that have been portrayed by parents and teachers during the evaluation. Many are not yet open to the idea that they have significant problems, much less a disorder. They did not call you for this evaluation, and they are usually not ready to accept and change their behavior. So, if you think it necessary, discuss ADHD in simplified terms with the preteen or teen in a separate meeting and let the parents have your full attention for this initial feedback conference.

Clinical Tips

- ✓ If you are not going to have a separate meeting with the patient, counsel the parents to be ready to educate the child about ADHD when the child indicates some openness to such information.

- ✓ Parents will recognize this “open window of opportunity to teach” when the child (1) asks questions about why they are struggling to succeed in certain activities, make friends, or get reasonable grades at school or (2) is lamenting yet another day in which something distressing and demoralizing has happened to them, such as receiving a time-out at school, criticism, or rejection by schoolmates or neighborhood peers.
- ✓ I advise parents to have some books or even videos about ADHD aimed at their child’s age level available in the house to supplement their own explanation of ADHD to their child (you can find these at www.addwarehouse.com or any major Internet bookseller).
- ✓ Parents know the child far better than the clinician, of course, and thus are better prepared to know when the child will be open to such information about the disorder and will usually be more sensitive to the child’s feelings during that discussion. To help the parents with this, I explain to them that I use the individual-differences perspective on human deficits:
 - Suggest that parents explain to the child that every single person has a profile of strengths and weaknesses, aptitudes and deficits. Recommend that they choose some of their own (weak vision, baldness, lack of athletic ability, poor art ability or mechanical reasoning, etc.) to disclose to their child, explaining that one simply accepts them, finds ways to compensate for them, and then gets on with trying to adapt to and succeed at life.
 - The next step is to note the child’s own strengths and aptitudes.
 - Then parents follow this with mention of the child’s ADHD-related deficits.
 - Finally, they can discuss ways that someone with those deficits can compensate for them or treat them, just as wearing glasses or contact lenses can correct for visual deficits. I find that this helps children see that they are just like all other people in having some deficits that they have to accept and deal with and be open to owning the disorder as nothing to be ashamed of.
 - Parents can now suggest that the child look at the books on ADHD they have obtained or watch a video.
 - Also, have parents Google ADHD success stories so their child can see all the celebrities who have succeeded despite ADHD (Michael Phelps, Adam Levine, Justin Timberlake, Paris Hilton, Howie Mandel, Bubba Watson, Ty Pennington, Simone Biles, etc.). A recent documentary titled *The Disruptors* (Soechtig, 2021) is entirely about children with ADHD, their families, and the successes and struggles they have all had. It includes comments from many of the celebrities named above. Recommend that parents and older children or teens watch it together.
 - The education of the child about their ADHD is not done in one single sitting but occurs over multiple occasions as those windows of opportunity to explain ADHD arise, as noted above. Should the child have many questions that parents do not feel confident answering, suggest that they all meet with you for a further opportunity to have the child’s questions answered.

The parent feedback conference will certainly include discussion of

relevant findings regarding the various concerns the parents brought up during their initial interview (school functioning, peer rejection, home conflicts, etc.). A primary focus of this meeting is, however, to explain to them whether the child has met the diagnostic criteria for ADHD (and any other disorders) as set forth in the most recent version of DSM (currently DSM-5). In many cases, especially if you operate within a specialty clinic for ADHD, the child will meet such criteria.

Because parents vary in their readiness and willingness to accept a diagnosis, I find it helpful to go through each criterion and explain how the information collected about the child fulfilled it. It is important for parents to buy in to the diagnosis if they are to support any treatment the child ends up receiving.

Developmental Inappropriateness

1. Explain how many symptoms of **inattention** were endorsed as occurring often or more frequently (at least six out of nine) from the parent interview, the teacher interview (if one was done), or the teacher rating scale of ADHD that was completed. Assuming you used a parent rating scale of ADHD symptoms, as recommended here, you can also present the information on the percentile rank of the child's symptoms relative to those of other children of the same age and sex to provide further evidence of the inappropriateness of the child's symptoms compared with those of peers.
2. Explain how many symptoms of **hyperactive-impulsive behavior** were endorsed for this child, just as you did for the inattention symptoms, again highlighting both parent and teacher reports. Once more, six of nine symptoms are required for the cutoff to be met on this symptom list. Some children qualify on both symptom lists, but that is not necessary for the diagnosis, so long as six of nine are present on *either* list.

Note that if a female child meets criteria for fewer than six symptoms on either list (say, five or four) but was rated by parents and teachers on

the ADHD rating scale as being in the clinical range (> 93rd percentile), the criteria for developmental inappropriateness have been met. The reason is that the symptom thresholds on these DSM lists were based more on males than females, and thus they may be slightly biased against diagnosing girls.

Clinical Tips

- ✓ Typically, I look for symptoms to be at least at the 93rd percentile to be clinically significant (1.5 *SDs* above the normal mean) and refer to those between the 84th and 93rd percentile as marginally significant.
- ✓ Note any disparities between the two parents from their interview, but qualify this by explaining that disparities are common, depending on who spends more time with the child, especially engaging in schoolwork, chores, or other situations requiring self-regulation. So long as at least one parent reported sufficiently high symptoms and the reports of the other were also elevated, even if not to the same degree, there is little to make of such differences. But if one parent reported incredibly low symptoms and those reported by the other were in the clinical range, take time to explore this difference further with the parents to identify its reasons. Sometimes one parent, more often the father, denies any problems with the child, sometimes claiming to have been this way as a child and having turned out just fine. (Given the genetics of ADHD, the father may well have had it as a child, and the relevant issue here is not how fine this adult turned out, which is arguable in some cases, but whether life could have been better had the parent's own struggles in school or with peers been identified and treated.)
- ✓ If scales were collected from more than one teacher, present an average across the scales if they are relatively consistent with each other. If they are grossly inconsistent between teachers, explain why that might be the case and whether it influenced your decision making about the diagnosis. For example, if the art, music, or gym teacher reported a low level of symptoms, this makes perfect sense, given the higher level of activity in those classes, how much more fun and rewarding they may be to the child, and that they involve far fewer demands for sustained self-regulation. In contrast, the English or math teacher may have reported a significant amount, enough to place the child at an extreme level (the 93rd percentile) compared with other children of the same age and sex. This, too, makes sense given the far greater demands such classes place on sustained self-regulation and that they involve more seatwork, mental concentration, and less reinforcing activities to the child.
- ✓ Give an example of one or more symptoms endorsed by both parents and teachers if you think that is helpful.

Clinical Tip

- ✓ Remember, the rating scales offer a far more accurate picture of developmental inappropriateness for females than does DSM in such cases. Even in males, the scales offer a finer grained numerical estimate of developmental deviance than the more crude, and global, symptom count from DSM that is used across so many different ages across childhood and into adolescence.

Duration

Discuss whether the child has met the criterion for the **duration** of symptoms, which is at least 6 months. This is usually readily drawn from the parent reports about the age of onset of the child's behavioral difficulties.

Clinical Tip

- ✓ The duration criterion is easily met for children 4 or 5 years of age and older but could be harder to establish for a preschool child, as some ADHD-like behaviors are more normative until around 3–4 years of age. With these young children, look for additional evidence of disorder by identifying any impairment from such behaviors (see the subsection on [impairment](#) later in this chapter), such as a preschooler being asked not to return to their day care or preschool setting because of persistently disruptive behavior.

Age of Onset

Did the child show any symptoms that caused concern or impairment by age 12? If so, their inclusion in the DSM criteria means that you should mention it to parents, but I prefer not to place any emphasis on this criterion if all others were met. One would never abstain from giving a diagnosis just because the age-of-onset criterion had not been met by age 12.

Clinical Tips

- ✓ The fact that this information usually comes from the parent interview can limit both its reliability and its validity. As noted in [Chapter 3](#), parents (and patients) can be off by as much as 2–5 years (later) in reporting onset from what it likely was in reality, so even a reported onset up to age 15–16 is likely sufficient to meet this requirement.
- ✓ When parents doubt the diagnosis, claiming that the child was “just fine” until after age 12, when problems became evident and now meet the criteria, stress that

onset means onset of *symptoms*, not of *impairment*. A child of high intelligence may have shown symptoms of ADHD well before age 12, before it adversely affected their educational functioning, which might not be until middle or high school.

Situational Pervasiveness

Discuss how you determined that the child's symptoms were evident in more than one setting or major life activity, typically construed as home, community, school, or peer functioning. Usually this will be by parent report from the interview, but it may also be evident in the teacher ratings.

Impairment

Besides degree of symptoms, the most important criterion to establish that a mental disorder exists is **impairment** as a consequence of those symptoms. Explain to parents why you believe their child's impairments are in fact caused by the symptoms identified. The term refers to ineffective functioning in a major life activity that is sufficient to have led to adverse consequences for the child (peer rejection, frequent family conflicts, inadequate self-care and adaptive functioning for age, risk-taking behavior that has led to frequent accidents and injuries, day care or teacher complaints about behavior or academic performance, school discipline or dismissal, etc.). Impairment must be evident in one or more major life activities, typically construed as home, community, school, or peer functioning.

Clinical Tips

- ✓ It is incredibly rare for this criterion not to be met, given that it is most often the reason that the child has been referred for this evaluation in the first place. But be alert for the possibility that the parents have sought an evaluation because their child is not keeping up with the other students in a high-achieving school or other setting, not that the child is demonstrating impairment when compared with the typical population. In some instances, high-resource families who emphasize education and have intelligent children may construe grades that are lower than they expect, despite being satisfactory, as a sign of a disorder when that is not the case. The goal is to help parents understand that the problem they are observing

is a mismatch between child characteristics and the school (or other setting) in which the child is enrolled, not a consequence of a neurodevelopmental disorder. Having a candid discussion about the difference and the likely need for these parents to lower their expectations for this child to more appropriate levels is a good place to start. In some cases, it may be warranted to recommend that the child be placed in a different school with more typical peers if the demands of the initial school are simply too great for this child's level of intellectual ability or academic achievement skills.

- ✓ Also, be aware that a problem of parental denial of disorder can arise when parents are under coercion to seek the evaluation of the child, as in a court-ordered examination or one strongly encouraged by school personnel. This can make it far harder to establish that all DSM criteria have been met due to parental refusal to disclose the true state of their child's problems, perhaps for fear that the child may be removed from their custody or that it will lead to one parent gaining sole custody in a custody dispute. In those cases, information from others, especially teachers, is vital to reaching a diagnosis.
- ✓ There may arise cases in which the child or teen falls just a symptom or two shy of the requisite six symptoms on either list and may score in the marginally significant range of symptoms on the parent and teacher rating scales (86th to 93rd percentile), yet there is clear evidence of harm or impairment occurring for this child. In such cases, you can tell parents that this is an instance of marginal, mild, or borderline ADHD, and that you believe the diagnosis is still appropriate and that interventions are warranted. Explain that ADHD is a spectrum representing a more extreme end of a normal continuum and not a category. Thus marginal cases will exist in which children are suffering impairment. After all, it is the relief of suffering (reduction of harm or impairment) that is our overriding goal in this enterprise, so it is appropriate to diagnose and treat marginal cases when impairment is evident despite not all DSM criteria having been satisfied.

ADHD Presentations

As I noted earlier, ADHD is really a single, albeit heterogeneous, disorder comprising two highly related dimensions of symptoms that can vary separately over time in their relative levels of severity and can change in that relative nature with development. You should acknowledge the type of presentation that the evaluation has established as present at this time but also explain that this could change in a week, month, year, or longer to a different presentation, yet still represent the same disorder.

Clinical Tip

- ✓ Stress to parents that one dimension of symptoms may be more prominent in their child for the time being, and likely more impairing than the other, but that the level

of severity is not fixed and is highly likely to change over time. *What is more important is that the existence of ADHD has been established.* I find it important to make parents aware of this potential fluctuation in the two symptom dimensions so that they are not misled by inaccurate information in the trade or mainstream media that claims otherwise (that there are different types of ADHD) and that is out of date.

Other Disorders

1. Briefly explain to parents that an important element in reaching a diagnosis of ADHD or any other disorder is **differential diagnosis**—the need to weight various types of information in determining that the diagnosed disorder is the one that best explains the child’s symptoms. Share with parents that you considered whether other neurodevelopmental or psychiatric disorders that nearly always produce inattention were ruled out in this case and why, so parents can appreciate the care that was taken in reaching the final determination of ADHD as the most likely disorder involved in this case.
2. Explain any conclusions you have reached about comorbidities. See [Chapter 4](#) for information about diagnosing comorbid disorders that you can pass on to parents at your discretion.

Clinical Tip

- ✓ *ADHD inattentive presentation (or ADD) versus CDHS (or SCT).* As discussed in [Chapter 4](#), there is a second attention deficit that is being increasingly studied at this time. Although it is not an official disorder in the DSM, it nonetheless is gaining substantial evidence that it exists, is distinct from ADHD, may overlap with it, and produces its own forms of risks and impairments in contrast to ADHD. Originally called *sluggish cognitive tempo* (SCT), the condition has been renamed *cognitive disengagement hypoactivity syndrome* (CDHS) by a work group of SCT investigators in November 2021 (Becker et al., 2021) to give it a less offensive and more accurate name, representing its cognitive and motor symptom dimensions (I am on that work group).

So, which one is it, ADHD or CDHS? One simple way of determining this is to establish that the child has six or more symptoms of inattention but three and usually fewer symptoms of hyperactivity/impulsivity (HI). That is likely to be a case of CDHS, as CDHS does not involve problems with inhibition and self-regulation like those inherent in ADHD. So, if the child was ever considered impulsive and poorly self-regulated, it’s ADHD. If there has never been a whiff of impulsivity

during development as a persistent problem and the child is more often viewed as passive, hypoactive, or overly inhibited, it is most likely CDHS.

This is where your use of a CDHS or SCT rating scale can come in handy in showing just how much CDHS is present and that it is the more impressive problem in the child than the inattention documented on the DSM symptom review. Now, if the child had six or more inattention symptoms and four or five HI ones, then for the time being the diagnosis should be ADHD of the inattentive presentation, as there is clear evidence here of a self-regulation disorder even if it falls somewhat below the official symptom threshold for HI symptoms. If the child has the ADHD inattentive presentation, you don't need to explain here what CDHS is to the parents. The child just has a milder version of the combined presentation. But if the child's problems are more consistent with CDHS, the child has high ratings on the CDHS/SCT scale, and there is no history of disinhibition and generally poor self-control, then it is CDHS and not ADHD that should be diagnosed unofficially, and the parents should be told about this new attention disorder. Yes, for the sake of billing insurance and clinical records, some official diagnosis must be given—that is, ADHD inattentive presentation—but make it clear to parents that this diagnosis is purely for administrative purposes and not the “real” diagnosis in this instance; that is CDHS.

Explaining Current and Future Risks during the Feedback Conference

At this point, parents are likely to want to know what the prognosis is for their child and what they can do to reduce the child's impairments and boost the chance of a happy, healthy future. Statistics regarding life outcomes, persistence of ADHD into adulthood, and health risks that you can share are provided elsewhere in this book ([Appendix A](#), [Handouts 3–14](#)) and in the following pages. What is important to stress to parents right now is that there are effective treatments and that they can reduce impairments considerably, if not erase ADHD symptoms entirely.

As discussed in [Chapter 2](#), if left untreated, ADHD poses considerable risks for other problems to arise both now and in the future. It is just as important to explain these to parents as to explain the basis on which you made a diagnosis of ADHD (and any other disorders). Not explaining these risks—and what parents can do now to minimize them—would be tantamount to diagnosing a child with diabetes without discussing what the future risks are if the diabetes is not managed (vision and other eye problems, including eventual blindness; heart and circulatory problems; risk for infection and even gangrene and, should that happen, the risk for amputation of digits and limbs, etc.). Not only does explaining the risks associated with untreated ADHD ensure that parents perceive the gravitas of the present situation, but it can offset any misperceptions relayed through the media that ADHD is either a gift or “superpower” or just a trivial disorder of attention (and possibly forgetfulness and organization), as if being “a ditzy child” were its *sine qua non*. So, take time in the feedback conference to discuss potential risks if treatment is not undertaken.

Clinical Tips

- ✓ As commendable as it is to treat a child to reduce current adverse consequences,

we also need to treat (as with diabetes) to prevent possible future secondary harms from an unmanaged disorder. The diagram showing potential impairments and harms associated with ADHD provided in [Chapter 2 \(Figure 2.1\)](#) is also provided as [Handout 13](#) in [Appendix A](#). It can be copied and given to the parents as part of this discussion.

- ✓ Parents may very well feel overwhelmed by the myriad risks associated with ADHD, so be sure to explain that not all children with ADHD will experience all these risks or to the same degree. Indeed, most will not experience most of these risks. The risks are based on studies of large samples of children and adolescents with ADHD that show that they have a higher likelihood of experiencing them than do other children, even if a majority of them do not fall prey to that type of harm or risk. The risks are averages, not guarantees of every outcome. Providing this perspective can mitigate the possibility of demoralization and dysphoria in parents. Risks represent an increased probability of such an outcome, not a guarantee.
- ✓ The opposite, failing to discuss such risks or minimizing them too greatly, can be just as problematic. Parents could end up having a Pollyanna-ish view that ADHD is no big deal and nothing that a little more sleep, less caffeine and screen time, and more fish oil supplements can't address. Clearly, therefore, you need to walk a fine line in this discussion, neither over-pathologizing ADHD and its risks nor understating those risks. The goal is for parents to take ADHD and the need to treat it seriously without feeling utterly overwhelmed emotionally and helpless in the face of the tsunami of potential harms. It may help to give examples of the harms ADHD can do in various domains of life; see the box "[A Sampling of Higher Risks Associated with ADHD](#)" on [page 88](#).
- ✓ Perhaps the best way to walk that fine line effectively is to repeatedly emphasize what research has shown. *Virtually every major type of risk studied to date—from accidental injuries to teen pregnancies to risk of suicide to car accidents, crime, substance use, and abuse—has been shown to be reduced to typical or near typical levels by treatment, and in particular the ADHD medications.* So, get out [Figure 2.1](#), briefly note each major category of risk, and let parents see the specific ones in each category, using your clinical judgment to emphasize some more than others based on what you have learned in the evaluation while being sure to at least mention all of them. (See [Table 5.1](#) for comparative lists of risks associated, respectively, with inattention, HI, and emotional regulation deficits.) Then state that evidence to date shows that treatment can greatly reduce such future risks while also addressing the current ADHD symptoms and extant impairments. For more details on each domain of heightened risk that you can refer to in talking to parents, see [Handouts 8, 13, and 14](#) in [Appendix A](#).
- ✓ Wrap up this discussion by instilling hope in parents that, although ADHD is a serious condition, they have chosen to do the right thing by pursuing the evaluation and being open to the various treatments you will shortly discuss with them. Also note that ADHD is among the most responsive disorders to existing treatments, especially medications, with more cases responding to a greater extent to available treatments than in nearly any other serious psychiatric or neurodevelopmental disorder. To make this point concrete for parents, consider giving them this example: There are meta-analyses that show that antidepressants and anti-anxiety drugs improve symptoms by about one-third of a standard deviation, known as an effect size. ADHD medications change ADHD

symptoms from .68 to 1.4 standard deviations and thus are two to three times more effective than these other widely dispensed medicines.

A Sampling of Higher Risks Associated with ADHD

A wealth of data is available on the possible negative consequences throughout life for those with ADHD who do not receive treatment. These include (even with treatment) a higher risk of mortality, as detailed in the following:

- Children with ADHD are nearly twice as likely to die in childhood.
- Adults with ADHD are 3 to nearly 5 times more likely to die by midlife compared with people without ADHD.
- During any 4-year period, adults with ADHD in the United States are almost twice as likely to die as adults without ADHD.

The negative consequences also include a decreased life expectancy of up to almost 10 years. These risks are very difficult for parents to consider, and it may be suitable to point this out only to those stuck in denial and resistance to treatment. But the following examples of risks (not all-inclusive) can drive the point home that mitigating risks by managing ADHD through effective treatments is paramount.

- The risk of injury is higher for those with ADHD across the spectrum of specific injuries, from fractures and sprains to bruises, burns, and more.
- Motor development is delayed in those with ADHD (e.g., developmental coordination disorder in 30–50% or higher, a 5-year lag in development of movement skills and agility compared with their peers into adolescence, and reduced physical fitness, strength, and stamina as measured on physical fitness tests).
- Those with ADHD have a greater risk for language disorders: expressive language deficits in 10–54%, pragmatic deficits in 60%.
- Academic impairments are comparatively high in those with ADHD: poor school performance in 90% or more of those with ADHD, a 10- to 15-point deficit in academic achievement, and learning disabilities in 24–70%.
- Positive adjustment in adolescence is lower for those with ADHD in both girls (20–65%) and boys (10–86%). The reason is that ADHD management continues into adolescence in only 25–30% of cases, and even fewer into early adulthood (5–15%).

TABLE 5.1. Increased Risks Linked to Different Symptom Lists

Inattention	Hyperactivity/impulsivity	Emotional self-regulation deficits
Poor attention to traffic density and speed while crossing streets when vehicles are present	Emotional impulsiveness and poor emotional self-regulation	Social rejection
Greater risk for children in pedestrian–auto and cyclist–auto accidents in traffic settings	Development of oppositional defiant disorder (ODD)	Interpersonal hostility and marital dissatisfaction
Greater crash risks when driving a vehicle (made worse by in-vehicle distractions, such as smartphones)	Peer relationship problems and peer rejection	Intimate partner violence
Accelerated use of nicotine products following experimentation (perhaps due to self-medication—nicotine has beneficial effects on attention)	Likelihood of experimenting with drugs or other substances	Greater number of job dismissals
Poor follow-through on chore performances and completion of other tasks in the home and community settings	Excessive speeding when driving a vehicle	Greater parenting stress and family conflict in families with children with ADHD
Poorer work performance as teens and adults in employment settings	Risky sexual behavior and risk-taking behavior more generally	Greater parenting stress in parents who have ADHD
Inattention to the comments and needs of others in social interactions	Suicide attempts	Greater risk for impulse buying, excessive debt, and poorer credit ratings by young adulthood
Reduced self-monitoring in social situations	Accidental injuries	Road rage, or the aggressive use of a motor vehicle against another driver
	Reactive aggression when provoked or frustrated	Driving while intoxicated
	Worsening of inattention symptoms by adolescence	Risk for vehicular crashes
	Greater risk for adverse health outcomes, earlier mortality, and shorter life expectancy	

Clinical Tip

- ✓ In discussing these various risks based on specific symptom domains, be sure to consider each child’s symptom profile so as to increase or decrease the weighting you might give to some of these risks in your discussion of them, thus tailoring or individualizing the material for each case.

ADHD-Increased Risks in Various Life Domains

ADHD is among the most impairing disorders clinicians manage on an outpatient basis, being rivaled or exceeded, depending on severity, mainly by the other neurodevelopmental disorders: autism spectrum disorder (ASD), bipolar disorder (BPD), and intellectual disability (ID). This was made evident to me from the results of the nationally representative sample of children in the United States I used to norm the Barkley Functional Impairment Scale—Children and Adolescents (Barkley, 2012). Parents reported whether or not their children had been diagnosed with any other psychiatric or developmental disorders. We used those reports to cluster children by diagnosis and compare them with ADHD cases that were defined as ADHD in two ways: (1) as parent-reported diagnosis and (2) as determined more rigorously by our research criteria that required the child to be rated by parents on the DSM symptoms as placing at or above the 93rd percentile (+1.5 *SDs*) and to be impaired in at least one major life activity. Because ADHD overlaps with many of these disorders and often worsens their impairment, as discussed in [Chapter 4](#), its influence on the ratings of 15 different home, school, and community settings was removed statistically in the comparisons. *The end result was that ADHD produced larger degrees of impairment (as measured by effect sizes) on both the Home–Leisure factor and the School–Work factor than all 14 other disorders, though ASD, BPD, and ODD were only somewhat less so and closer to ADHD in this regard. This effect of ADHD on impairment was especially strong if it was defined by the research criteria, under which it nearly doubled the level of impairment of those other disorders (ASD, BPD, ODD) in these factor scores.*

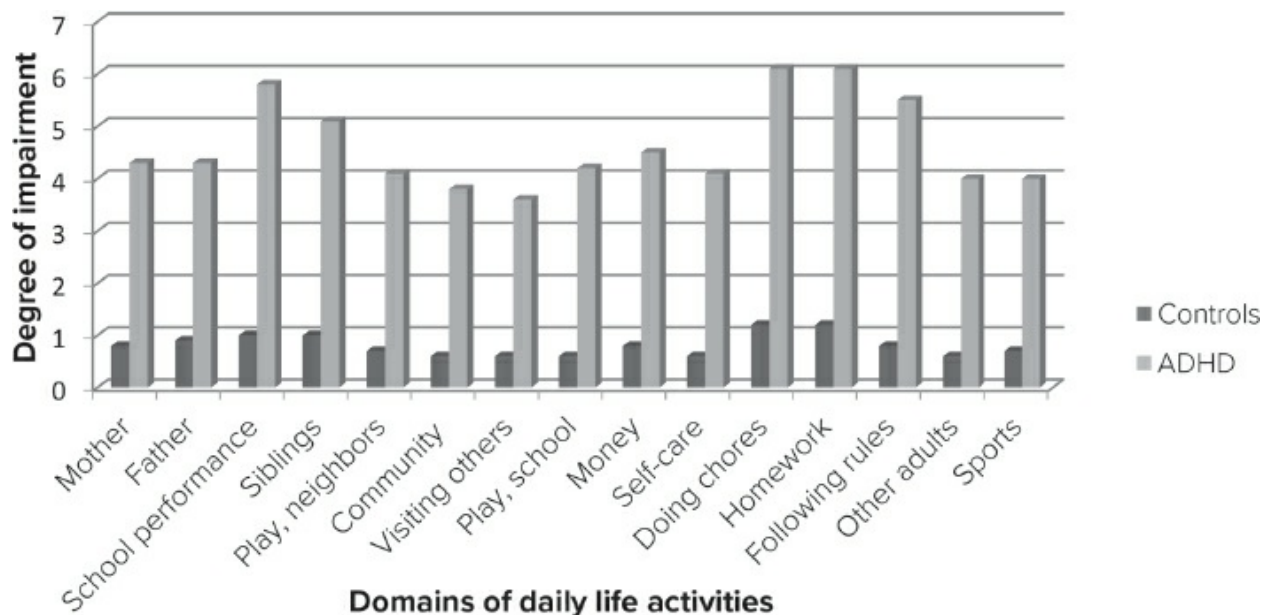
Clinical Tips

- ✓ You might want to show parents [Figure 5.1](#), which was drawn from a random representative sampling of the U.S. population in 2012. The data used to create the graphs come from a study comparing ADHD cases with a large community control group (Barkley, 2012).

You can also explain to parents that, by adulthood, the number of domains previously or currently adversely influenced by ADHD has grown to such an

extent that, on average, adults with ADHD place above the 93rd percentile (+1.5 SDs) in 5 or more of 15 domains we surveyed in their *current* functioning. The number of domains in which they may have been impaired at some time across their lifespan is considerably higher.

- ✓ For any parents who question how a “simple problem with paying attention or being too active” could cause so much harm, you can give them a simple overview of the extended-phenotype theory and my EF-SR theory of ADHD (see [Chapter 1](#)).



[Follow for extended description](#)

FIGURE 5.1. Comparisons of ADHD and typical children in a national U.S. sample concerning parents’ ratings of impairment in 15 different domains of daily life activities. Data used to construct the graph are from Barkley (2012).

As noted earlier in the chapter, nothing is to be gained by overwhelming parents with the negative implications of their child’s having ADHD. But knowing how broadly and deeply their child’s life into adulthood can be affected by ADHD can provide great incentive to follow and support treatment recommendations. Where it seems wise, you can offer the following details:

- *Family relationships.* Because it interferes with compliance with house rules and parental dictates, ADHD can increase parent–child conflict, which can lap over into sibling conflicts. This strife is bidirectional and often worse when the child also has ODD or a parent has ADHD (as in 25–35% of cases), and the strife frequently increases during adolescence. These parent–teen conflicts may be related to specific topics, such as curfew, school performance, choice of clothing and music, disruptive behaviors within the family, sibling conflict, use of the family car, money, affiliation with certain friends, and even drug use. Obviously, such problems affect parents’ ability to guide their children and keep them safe.
- *Peer relationships.* People with ADHD are much more likely to experience peer relationship difficulties, with up to 50% having no close friends by the end of second grade. That figure rises to 70% if they also have ODD/CD. The problems with peers persist to varying degrees into adulthood. More specifically, those with ADHD are more likely to be rejected and less likely to be accepted by the broader peer group, less likely to have mutual friendships, and more likely to have friendships that are more negative in quality and less stable over time. They are more likely to bully or to be victimized themselves and are more likely to have interactional problems on social media as well as in person.
- *Education.* Parents are probably well aware of impairments in this domain of their child’s life. They have been discussed in [Chapter 2](#), and treatment of them is discussed in [Chapters 6](#) and [8](#).
- *Dating and sexual relationships.* Teens and adults with ADHD report poor-quality dating relationships 4–5 times more often than their typical peers, and adults who grew up with ADHD are less likely to marry and more likely to marry at a later age. Once married or cohabiting, they report higher levels of marital dissatisfaction, a greater likelihood of having extramarital affairs, and greater risk for marital separation. Over a 30-year follow-up, adults with ADHD have a 2.5 times higher divorce rate by

midlife than people without ADHD (31 vs. 12%). Older adults with ADHD (ages 60–94) were also more likely to be divorced or to have never married, but also to have fewer family members in their social network and to experience emotional loneliness. Also troubling are findings of greater verbal aggression and more intimate partner violence in male adults with ADHD. As noted elsewhere, those with ADHD are likely to have sex at an earlier age and to experience more teenage pregnancies—but it is worth pointing out that a recent study showed that medication reduces the risk for early pregnancy by 30% or more.

- *Occupational functioning.* At least as adolescents, those with ADHD seem to be no different from normal adolescents in their functioning in their jobs. But consider that most jobs taken by adolescents are unskilled or only semiskilled and are usually part-time and typically of limited duration (summer months). Once they enter adulthood and take on full-time jobs that require full-time labor and mature EF-SR abilities, independence of supervision, acceptance of responsibility, and periodic training in new knowledge or skills, their EF-SR deficits handicap them on the job. Their occupational status by adulthood often ranks significantly lower than that of control groups, even into their 40s. They are viewed by employers as performing significantly worse in their jobs and consequently are more likely to be fired than typical adults.
- Adults with ADHD also have twice the risk for workplace accidental injury, higher rates of absenteeism due to sickness, use of more sick days, and more unexcused absences from work and are more likely to be on unemployment benefits, disability, or social assistance.
- They may also show up to a 33% reduction in earnings and a 15% greater likelihood of being on unemployment support or other forms of social assistance. More young adults with ADHD were also still residing with parents or had returned to do so after failed gambits at independence. They were also receiving greater financial support from parents into their late

20s or 30s.

- *Financial problems.* Given the poor impulse control and self-regulation deficits associated with the disorder, problems with handling money would be anticipated in adults with ADHD. Research shows that fewer young adults with ADHD had ever had a credit card or a savings account. More reported having trouble saving money to pay their monthly bills. Their average savings were lower, and they owed significantly more money to other private individuals than typical peers. At our age-27 follow-up, the same individuals reported more trouble managing their money, buying on impulse, missing rent payments, having utilities turned off for nonpayment, having a vehicle repossessed, declaring bankruptcy, and not saving for retirement than did children in the control group by adulthood.
- *Driving risks.* Driving is a domain that can markedly increase morbidity and mortality for teens and adults with ADHD, as well as for others they encounter. Specifically, teens and adults with ADHD are more likely to have driven an automobile before being licensed and to have more speeding tickets and accidents (scrapes and crashes), though not all studies show this. They are likely to be more impulsive, risk taking, and distracted in behind-the-wheel driving observations taken in natural settings. They display greater levels of road rage, are more likely to have had their licenses suspended or revoked, and are not likely to view their driving performance as being that much different from other typical drivers, even though it is significantly worse.

Helping Parents Cope with the Diagnosis of ADHD

Having their child evaluated is a big step for parents, who have invested a good deal of mental, physical, and emotional energy into trying to do right by their child. This sets the context for how they may receive the diagnosis that their child has ADHD.

Clinical Tips

- ✓ First, take a moment after explaining how you reached the diagnosis, its causes, and its risks, and ask how they feel hearing all of this. Just as many people say, upon first hearing that they have cancer or some other serious diagnosis, that they were numb and stopped listening so as to just process this change in their circumstance, many parents experience a moment of shock and disbelief when they are told their child has ADHD or some other neurodevelopmental disorder. You may have just told them their child is not who they thought they were, thus forcing a sizable reframing of their perspective about their child.
- ✓ Do *not* minimize this moment. Parents who have already done a lot of reading and research about their child's likely problems and treatment may be well past this moment of shock and realization and instead feel vindicated that their concerns are supported by an official diagnosis, but others may find the moment of diagnosis heartbreaking.
- ✓ From the several thousand parents I have counseled personally about ADHD, as well as the thousands of others I have heard from at my public speeches, I have come to realize that parents' emotional reactions to information about ADHD vary widely yet are an important part of their adjustment to their child's diagnosis. They also influence the quality of the investment they are able to make in helping and advocating for their child. So take time after rendering the diagnosis in the feedback conference to get some idea of where the parents are emotionally and in their reaction to that disclosure before barreling on into a treatment plan.
- ✓ As clinicians well know, parents frequently experience a grief reaction when told that their child has a chronic medical, developmental, or psychiatric disorder. While the stages of grieving are not as fixed in nature and sequence as was once believed, the phases of grieving may still occur even if their existence and order are not guaranteed.

Denial or Relief?

Some parents may initially engage in *denial* of the label or diagnosis or the

largely neurological basis of it. They hold desperately to their original view that nothing is so wrong that it cannot be righted by some diet, form of counseling, cutting down on screen time, or simple behavior management methods. This reaction is likely to occur when the parents did not suspect that much was wrong with their child in the first place. Typically, it is a relative, a day care worker, a preschool teacher, or even the parent of a playmate who broaches the possibility that a problem exists. Until then, they didn't see this problem coming at them or their child. When parents are the last to know that their child has problems—in this case ADHD—it is natural for them to deny or minimize the extent of the problem until they can reevaluate the information they are receiving and come to see the problems of their child on their own.

Clinical Tip

- ✓ If you find parents resisting a diagnosis, the best way to erase their doubts is to do what I recommend first in the feedback conference—explain the basis for your rendering this diagnosis. The data don't lie. You covered that material in the hope of heading off parental denial that can result from a superficial explanation of the child's diagnosis. But should this denial persist through this feedback conference, encourage them to seek a second opinion from someone you trust who knows about ADHD.

Most parents willingly accept the information they receive about ADHD from a professional, especially after such a thorough evaluation and explanation of the findings. Some may even embrace its message as the answer they have desperately sought for so long. Finally, they have a name for their concerns about their child and can pursue ways to help. These families often have a welcomed sense of *relief* from the burden of uncertainty—and often alleviation of their guilt as well—guilt based on the possibility that they had caused this problem through inept child rearing. By explaining that ADHD has a biological basis, you allow them to let go of the sense that they personally created the problem.

Clinical Tip

- ✓ I encourage you to state this matter-of-factly: “You did not cause this condition in your child through the way you have raised them.” For many parents that is the “get out of [guilt] jail free” card they may be open to hearing, with the sense of relief that it may bring to them.

Anger

For some parents, a diagnosis of ADHD evokes *anger* aimed at anyone who may have previously assured them that nothing was wrong, such as a well-meaning pediatrician; anger at those who blamed the problem on the parents’ child-rearing methods or on family problems, such as their own parents, a relative, or even a pastor; and anger at the missed opportunities they would have had to improve their child’s well-being had someone told them the truth earlier. Sometimes other people had been dismissive of the parent’s concerns, reassuring them that nothing was wrong or that it was just a “phase” children may go through and that the parents should just hang in there, give more hugs, and all would be well. All too often, practitioners in my field, relatives, and the media chastise, shame, or otherwise “bash” parents in their quest to lay blame for the disorder. When the parents finally realize they are not at fault and that the disorder is “real,” anger and resentment are not unreasonable reactions.

Grief

It is both natural and healthy for parents to manifest a mild *grief* reaction to the information about their child’s ADHD. Almost all parents, when confronted with the news that their child is disabled in some way, will grieve for this loss of normalcy. Some parents grieve over their child’s future and attendant risks; others are reacting to the alterations that the family must make to accommodate ADHD.

Clinical Tips

- ✓ Tell parents that most parents you have counseled about ADHD had such a reaction to varying degrees, so that if they find themselves having those feelings, it is entirely normal and to be expected. They should not fight it or judge it as pathological. Explain to these parents that for most people this grieving will pass as they reframe their views of their child and the child's problems.
- ✓ I have been told by other parents, however, that they never fully resolve this grief. It's OK for you to tell parents this, too. Grieving can come and go. It's part of the normal human response of parents to dealing with a chronic condition in their child. Assure them that they will adapt to it and then for a time seem to put it behind them as they confront the day-to-day responsibilities of child rearing and work. But when the child has been doing particularly well for a long period and then has a regression or a significant crisis, the feelings of mild sorrow could return.
- ✓ If feelings of sorrow do return, reassure the parents that they can call you to talk about it, or send them to a parents' support group in your region where they can commiserate with other parents who have children with ADHD. They should be told that such commiseration can help tremendously. So suggest that they check out www.chadd.org for a local parent support group or supportive Internet chat rooms or blogs. If the grief reaction persists, consider offering them some short-term counseling with you or a more appropriate professional who is knowledgeable about ADHD or therapy with parents of children with disabilities.

Acceptance

I nearly always explain to parents as part of my commentary on grieving that it is a natural process that often leads to the desired outcome of dealing with information on ADHD: acceptance of their child for who they really are.

Acceptance leads to embracing the concept of their child as who the child rightly is as opposed to what they had hoped their child would be when first learning they were expecting.

Clinical Tips

- ✓ Your job here is to encourage the parents to accept the child they have and love the one they are with and stop pining for the concept of that child they dreamed about while awaiting its delivery.
- ✓ I also tell parents that there is peace of mind at the end of this phase, as if a cloud has been lifted, allowing the parents to see their child's problems and their own reactions to these problems more realistically. From this new perspective, they can more clearly see that their child has a problem that the child did not ask for,

cannot help having, and needs their help in dealing with, including protection from those who will not understand. The child needs the parents' advocacy to obtain the child's legal entitlements among the community and school services. This change in perspective can be profound and moving, both to the parents experiencing it and to anyone who has the privilege to witness it as I have. Please browse the Internet or search for a video on YouTube called *Welcome to Holland*, bookmark it, and share it with parents. Be sure to find the ones that deal with ADHD, as there are many variations of it for various childhood disorders such as ASD and Down syndrome. It is a presentation designed to help parents confront and resolve their grief and anger and come to acceptance of having this particular and special child instead of the one they thought they would have.

- ✓ Further reassure parents that when they have reached this stage of acceptance, they may now thirst for knowledge about how best to help this child. Perhaps they are now motivated to enter a support group, counseling, or a formal child management training program that provides them with the skills and techniques that may help their child succeed. They may also find that they want to know about ways to modify the environment, not the child, in order to reduce the problems the child may experience in specific situations. Tell parents that the goal is to permit the child to succeed, given the symptoms and circumstances, and not to get rid of the ADHD.
- ✓ Help parents to learn that acceptance also means recognizing that some things simply cannot be modified to permit children with ADHD to succeed maximally or adapt as well as do children without ADHD. Failure to accept some limitations for their child can potentially instill intolerance, anger, and frustration in them, as well as put undue pressure on the child to conform to their own very unreasonable expectations.
- ✓ The bottom line is that parental acceptance of a child's ADHD and all it may entail will free them to fulfill the role so crucial to the child's progress. Counsel them that, more than other parents, these parents must actively support the child's self-esteem, perhaps via less traditional routes, and work to improve their competence in meeting the daily demands of life, whereas children without ADHD build their own paths through academic and social success.
- ✓ Note that they will need to exercise creativity to find successful outlets for their child, perhaps in organized sports, fine arts, hobbies, science, mechanical projects, or even in more nontraditional pursuits, such as music, drama and acting, photography, electronics and computers, cooking, and so forth.
- ✓ You can suggest that they Google ADHD success stories to see the myriad ways in which well-known people with ADHD have succeeded, often in surprising ways.
- ✓ Further, advise parents that once they have truly accepted their child's ADHD, they can look beyond the child's limitations and see—as no one else can—their unique strengths and talents.

Wrapping Up the Feedback Conference

At this point, parents should understand that a diagnosis of ADHD does not sentence their child to a lesser life, that symptoms can be managed and impairments minimized with proper treatment, and that parents themselves have a lot of power to help their diagnosed child. Before launching into a treatment plan for this specific child, you might suggest that parents review my *12 Principles for Raising a Child with ADHD* (Barkley, 2021).

Principles and Guidelines for Treating ADHD

The history of treatment for ADHD is largely one of hit-or-miss accidental discoveries. For instance, the use of stimulant medications for ADHD was an accidental by-product of their use in managing the headaches that were a side effect of pneumoencephalograms, which were being done on adolescents with disruptive behavior. The adoption of contingency management methods for children with ADHD was simply an outgrowth of their successful use with more developmentally impaired populations, such as those with autism or intellectual disability (ID). We now know that behavioral parenting training (BPT; see [Chapter 7](#)) is far more effective for the management of oppositional defiant behavior than it is for ADHD. We also know that, just as ADHD is not caused by an absence of Ritalin, helpful as the drug may be for symptomatic management, it is surely not caused by faulty environmental learning contingencies as applied by parents or teachers—despite that claim having been widespread several decades ago.

Interventions that arose through accidental discoveries, even when they proved effective, were not likely to lead to comprehensive treatment regimens that offered patients the best possible outcomes, because they did not have a

reasonable theory of the disorder as a foundation. This chapter explains how the executive function–self-regulation (EF-SR) theory of ADHD fills that void, leading to treatments that address the neurodevelopmental nature of ADHD and help children compensate for lingering symptoms at home, in school, in their social lives, and in the other domains of their lives. The EF-SR theory provides us with treatment principles that can be applied by clinicians, parents, and teachers. The principles for managing a child with ADHD set forth below flow directly from my theory of ADHD, which suggests that those with ADHD are affected by “time blindness,” a far-reaching deficit in the human ability to anticipate the future and organize actions and sustain them toward that future.

Treating Time Blindness

Simply describing the symptoms of a disorder, as DSM does, is not a theory. It provides no premises from which one can logically derive first principles about *what* is going wrong in the disorder and *how* that might be addressed, if not through cure, then through symptomatic management and accommodations. A good theory provides a statement of the relationships among various constructs believed to be involved in the disorder, how they interact, how they may develop in typical people, and what may be going wrong in those with ADHD. Because it articulates the processes involved in normal development and how they might go astray in the disorder, it makes testable predictions about the disorder, as well as about how it might best be managed.

In contrast to DSM, the theory of EF-SR discussed in [Chapter 1](#) and detailed in my earlier book on executive functions (Barkley, 2012) provides such a theory of EF-SR and, by extension, of ADHD. It contains numerous premises, explanatory constructs, and processes concerning executive function and self-regulation. From those, it hypothesizes how EF-SR may develop, and it makes numerous testable predictions about their nature and effects in both typical and ADHD samples. Furthermore, it implies a host of principles that ought to prove beneficial in managing ADHD symptoms and thus reducing or precluding their associated impairments. These principles provide a much-needed theoretically driven framework for psychosocial interventions for ADHD, along with some insights into how ADHD medications may be achieving the improvements they create at the cognitive and behavioral levels of analysis.

Principles Derived from the EF-SR Theory and Their Implications for Managing ADHD

The EF-SR theory asserts that the executive functions are largely

neurologically and genetically mediated psychological instincts that are part of universal human psychology that arose out of human evolution. Although they can be enhanced in their effectiveness through practice and augmented by various cultural devices or situational accommodations, they do not originate purely from learning. Just as a capacity for language in humans is not learned, though the specific symbol system one utilizes surely is the result of interacting with a specific culture, executive functioning does not arise purely out of social learning. We are prewired with mental modules (networks) for executive functioning that will emerge with maturation and that provide us with self-regulation.

Treatment Principle 1: Treat the underlying neurological substrates of executive functions.

The neurogenetic basis of ADHD results in serious deficiencies in the development of the universal human abilities mentioned above. Only a treatment that can result in improvement or normalization of the underlying neurological and even genetic substrates of executive function is likely to result in an improvement or normalization of the phenotypic deficits described in [Chapter 1](#).

Such deficiencies do not arise from faulty learning, parenting, or any other purely social process. Thus psychosocial interventions for ADHD are largely means of coping with, compensating for, and otherwise accommodating these deficits in order to reduce the harm that they may pose for the individual in specific situations. They are not a cure. They succeed only so long as they are implemented, providing little long-lasting benefit by themselves when withdrawn, although improvements over time are achieved by neurological maturation while these interventions are ongoing and, perhaps to a much lesser extent, from any compensatory actions the person may acquire while interacting with the psychosocial program. As my own early intervention studies showed, a majority of change in children across a year of intensive treatment was due to maturation occurring underneath the

specific effects of treatment.

Clinical Tip

- ✓ To date, the only treatment that exists that has any hope of achieving this end is medication, such as stimulants or the nonstimulants such as atomoxetine, viloxazine XR, or guanfacine XR. These temporarily improve or normalize the neural substrates in the prefrontal regions and related networks that likely underlie these executive function deficits, such as those associated with ADHD. Evidence to date suggests that this improvement or normalization in ADHD-related executive function deficits may occur as a time-limited consequence of active treatment with stimulant medication only during the time course the medication remains within the brain. For instance, research shows that clinical improvement in behavior occurs in as many as 75–92% of those with ADHD and results in normalization of behavior in approximately 50–60% of these cases, on average. The model of executive functioning developed here, then, implies that medication is not only a *useful* treatment approach for the management of certain executive function deficits in ADHD but may be a *predominant* treatment approach among those treatments currently available.

Treatment Principle 2: Treatments must address the fact that ADHD creates a weakness in the ability of private, self-directed actions and the information they generate to alter behavior and guide it toward task completion and other goals.

In the EF-SR theory, self-regulation is defined as (1) a human action that is directed at oneself, (2) in order to alter the likely occurrence of subsequent behavior from what would have occurred otherwise, (3) so as to alter the likelihood of a delayed event or consequence for that individual. An executive function is a specific class (type) of self-directed actions (item 1 in the definition above) intended for self-modification of subsequent actions.

Three key and testable premises are contained in this theory of executive functioning and have implications for ADHD treatment:

1. People direct actions back at themselves in order to modify or guide subsequent behavior. We restrain ourselves, watch ourselves, see to ourselves, talk to ourselves, motivate ourselves, and emote to ourselves often across the day. Such actions are self-evident to any typically

developed human being. Children and adults with ADHD do this far less so than do typical peers. They direct more of their actions, instead, at the world around them. They are delayed in the self-direction of actions so necessary for subsequent self-guidance.

2. These self-directed actions are initially, primarily public but become less visible to others over development due to increased inhibition of brain activity leaving the basal ganglia and entering the spinal cord that would otherwise activate motor actions. This is the privatization or, as Vygotsky called it, *internalization* of those self-directed actions. Children with ADHD are delayed in this process of privatization. As a result, they display more publicly observable self- and other-directed behavior than others and more observable (but ineffective) efforts at self-regulation than do others of their age. For instance, children with ADHD engage in self-speech later than do other children. And then they do it out loud far longer into development than typical peers who are moving on to subvocal whispers, then just facial movements, then unobservable self-speech that creates the mind's voice. Children with ADHD do not just talk too much; they talk out loud too much. Other children keep that running commentary in their heads.
3. With the increasing privatization comes an increased regulation of behavior by these self-directed, internalized actions; their power as mental representations to guide behavior increases. Children and adults with ADHD will display less governance of their behavior by mental representations and self-directed actions due to this weakened governing mechanism.

Clinical Tips

- ✓ Do as Vygotsky admonished us to: *externalize* these forms of action and information. That is, make them physical in form and place them within the visual or other sensory fields in order to provide stronger stimulus control over the desired actions. For instance, when other children are coming to direct their

attention toward themselves for self-awareness/monitoring, children with ADHD are late in doing so, less effective at it when they do, and fail to use such self-knowledge for the improvement of their own welfare. You cannot restrain yourself and change yourself if you are not monitoring yourself. This should also be the case for the other executive functions. That will result in delays in self-restraint, in visual imagery and its guidance of behavior (nonverbal working memory), in self-speech and its rule-governed behavior (verbal working memory), in emotional self-regulation using these earlier four executive functions, in self-motivation using the previous five executive functions, and in planning/problem solving via mental play with the mentally held contents in working memory.

- ✓ Give children with ADHD much greater assistance with prompting and using self-restraint (inhibition) and self-directed attention for self-awareness, such as through more frequent accountability checkups by caregivers, stop signals that explicitly prompt self-assessment and reporting, video self-modeling, reflective devices, and self-evaluation methods (e.g., daily self-completed behavior report cards).

Treatment Principle 3: Address the delayed transitions away from external events, immediate reinforcement, the temporal now, and control by others.

With maturation, we progressively come to be guided more by covert or mental representations held in working memory that permit self-control, deferred gratification, and goal-directed actions toward conjectured futures, largely social in nature, and often using social and cultural means (Barkley, 2012). But children with ADHD are delayed in these shifts in what is controlling their behavior over development and are governed more by the external, the immediate, the now, and control by others than by mental representations, the ability to delay gratification, the conjectured future, and self-control.

Clinical Tips

- ✓ Greater management of ADHD symptoms and behavioral control will be found through using externally arranged information and events, more immediate consequences, a focus more on what is to be done now than on what lies ahead in the future, as well as a reliance on others to make them accountable for their actions. Clinicians and caregivers need to cease relying so much on mentally recalled information (working memory), delayed consequences (promises of future rewards or threats of future punishment), focusing on future goals over immediate steps toward them, and general *self*-regulation. Make key pieces of information that should guide behavior at that place and time in the natural ecology *external* in

some way through prompts, signs, cards, pictures, lists, posters, and anything that can be put in the visual or other sensory fields to guide behavior. In short, offload working memory to some external storage device (note, cue, etc.).

- ✓ Time must also be made external by using timing devices that are visible to the client.
- ✓ Artificial motivating consequences must be injected into the usual delays between the present moment and typical normal consequences in order to sustain behavior across these gaps in time.
- ✓ Information that should be held and manipulated in mind to solve a problem should not only be made externally represented in some way but should also provide for manual manipulation of those pieces of information to play with their combinations and support.
- ✓ External cues must be provided to inhibit strong emotion and to promote the use of self-calming, self-soothing, and visual imagery and self-speech to regulate it.
- ✓ Better yet, clients and caregivers should be advised that avoiding situations that evoke strong emotions or modifying those situations to be less provocative is preferable to merely learning and using emotion regulation strategies.

Treatment Principle 4: Treat ADHD as a disorder of performance—of doing what one knows, not of knowing what to do.

All the suggestions above to externalize the information that should be guiding behavior will be most helpful when they assist with the performance of a particular behavior at the *point of performance* in the natural environments where and when such behavior should be performed. That is why avoiding highly provocative situations is preferable to learning emotion regulation strategies. As I noted in [Chapter 1](#), the point of performance is that place in the natural setting and that time when that information would have been most useful to guide subsequent behavior—these are the problematic situations and tasks manifested by someone with ADHD.

Clinical Tips

- ✓ Deemphasize skill training and knowledge review; emphasize reengineering the setting in which the problem occurs to prompt performance of those skills and reinforce their occurrence.
- ✓ The farther away in space and time a treatment is from this point of performance, the less effective it is likely to be in assisting with the management of EF-SR deficits. Not only is assistance at the “point of performance” going to prove critical to treatment efficacy, but so is assistance with the time, timing, and timeliness of behavior.

- ✓ Any benefits of treatment are not likely to last if you remove the assistance within a short period of time once the individual is performing the desired behavior. The value of treatment lies not only in eliciting behavior likely to already be in the individual's repertoire at the point of performance where its display is critical, but also in maintaining the performance of that behavior over time in that natural setting. Like a ramp for someone in a wheelchair that allows entrance to a building, these adjustments at key points of performance are not so much training or teaching knowledge as they are accommodations or prostheses that temporarily improve the problematic performance. Hence their removal usually leaves the person with ADHD disabled again.

Treatment Principle 5: Address the inability to sustain the long chains of actions required to meet goals over time.

An important role of executive functions is to help us build and guide behavioral sequences across time toward future events. People with ADHD cannot construct and sustain long, complex chains of actions aimed at goals that will benefit them. Many human goals, especially by adulthood, require long chains of actions involving nested sets of actions that achieve various subgoals needed to eventually attain the larger, later goal. This allows for incredibly complex chains and subchains of human actions directed at ever larger and ever later goals. Those with ADHD are also time blind in the sense of not being able to mentally represent time to get where they want to go in the future, even in getting to those smaller subgoals that build toward the larger, later goal.

Clinical Tip

- ✓ Externally represent or remove gaps in time. Those gaps make it difficult for children and adolescents with ADHD to keep their eye on the prize that lies far ahead, instead focusing on maximizing the immediate rewards and escaping from immediate hardships or aversive circumstances. Time blindness makes it difficult not only to sustain actions that will lead to a desired goal in the distant future but also to see negative consequences of current actions if those consequences are too far ahead. Using external representations of time, such as clocks, timers, and counters, can reduce this temporal myopia. So can closing the gaps in time between the components of a behavioral contingency by using smaller work quotas and more frequent and immediate consequences. Rather than saying that a project must be done over the next month, assist the child or teen with doing a step a day toward that eventual goal so that when the deadline arrives, the work has been done. And keep doing it. This is not a learned skill; it is an

accommodation that is like a prosthesis or scaffolding that permits adequate task performance *despite* the neurogenetic and largely permanent deficits in executive functions and the timeliness of human action.

Treatment Principle 6: Address deficits in the ability to self-motivate.

Executive functions are instrumental in self-motivation, allowing us to use visual imagery about the past (hindsight) and, from it, images about a hypothetical future (foresight) and our imagined goals, as well as self-speech to keep us moving toward our imagined goals. ADHD creates a deficit in visual imagery and self-speech, and especially in its governance of motor actions, that must be filled with environmental aids.

Clinical Tips

- ✓ Provide artificial, external, and frequently administered sources of motivation at the point of performance in the context in which the work or behavior is desired. For instance, a child may need to be provided with artificial rewards, such as tokens, throughout the performance of a task or other goal-directed behavior when there is little or no immediate consequence associated with that performance. Such artificial reward programs must be sprinkled across the delays in time that exist for the natural consequences to bridge these lengthy gaps and engender sufficient motivation, albeit external, to complete the task.
- ✓ Behavior modification methods are particularly well suited to achieving these ends. After all, they involve the arrangement of artificial consequences that are more salient, immediate, and frequent than are the natural consequences for goal-directed action. Many techniques exist within this form of treatment that can be applied with children and adolescents with EF-SR deficits.
- ✓ In general, there are two reasons to practice behavior management with anyone: for *informational* training and for *motivational* sustaining. The former is done with individuals who have not yet acquired a skill, such as children with ID, autism spectrum disorder (ASD), or specific learning disabilities (SLD). Once the skill is taught through behavioral or other pedagogical methods, those training methods and artificially arranged incentives can be withdrawn, and the behavior is usually sustained, presumably by contact with the natural contingencies that sustain the behavior of typical peers. But in EF-SR disorders such as ADHD, the issue is not ignorance or lack of knowledge of a skill, as I have repeatedly noted; the problems are with the skill's timing and execution at key points of performance and with the self-motivation needed to sustain the performance. Behavioral treatments can provide the motivational or behavior-sustaining assistance at those key points.
- ✓ Complaining to these individuals about their lack of motivation (laziness), drive, willpower, or self-discipline will not suffice to correct the problem. The deficit here is not some life choice. Pulling back from assisting them to let the natural

consequences occur, as if this teaches them a lesson that will correct their behavior, is likewise a recipe for disaster.

Treatment Principle 7: Take measures to replenish self-regulatory strength and willpower.

There is ongoing controversy over whether anyone—typical people or most individuals with ADHD—has innately limited pools of these resources for self-regulation. There is some evidence to support the idea that there is a limited resource pool for self-regulation, with research indicating that each implementation of self-regulation (and hence executive functioning) across all types of executive functions (working memory, inhibition, planning, reasoning, problem solving, etc.) depletes this limited resource pool temporarily. This would mean that protracted self-regulation may greatly deplete the available pool of effort, making it increasingly difficult to exert self-control over subsequent time periods. In addition, such temporary depletions may be further exacerbated by stress, alcohol, or other drug use, illness, or even low levels of blood glucose.

Clinical Tips

- ✓ Research on typical people indicates that the following factors may serve to rapidly replenish the resource pool:
 - Routine physical exercise
 - Taking 10-minute breaks periodically during self-regulation–strenuous situations
 - Relaxing or meditating for at least 3 minutes after self-regulation–exerting activities
 - Visualizing the rewards or outcomes while involved in EF-SR tasks
 - Receiving periodic small rewards throughout the tasks for self-regulation–demanding settings
 - Engaging in self-affirming statements of self-efficacy prior to and during such tasks
 - Generating positive emotions
 - Arguably, consuming small amounts of glucose-rich beverages during the task
- ✓ Some research further suggests that the actual capacity of the resource pool may be boosted not only by routine physical exercise but also by routine practicing of tasks involving self-regulation daily for 2 weeks.

Treatment Principle 8: Treat ADHD and especially its executive function deficits as a mostly chronic condition.

As I have said several times in this book, it's important to view and treat ADHD as a condition not unlike diabetes. The underlying neurological deficits cannot be “cured,” and therefore treatment must be ongoing. Fortunately, multiple means of treatment can provide symptomatic relief from the deleterious effects of the condition, including taking daily doses of medication and changing settings, tasks, and lifestyles. As discussed in [Chapter 5](#), immediately following diagnosis, your task is to educate the patient and family on the nature of the chronic disorder and then design and implement a treatment package for the condition, the goals of which are not just symptomatic reduction but also a reduction in the risks for secondary harms that can now and later occur if the disorder goes unmanaged.

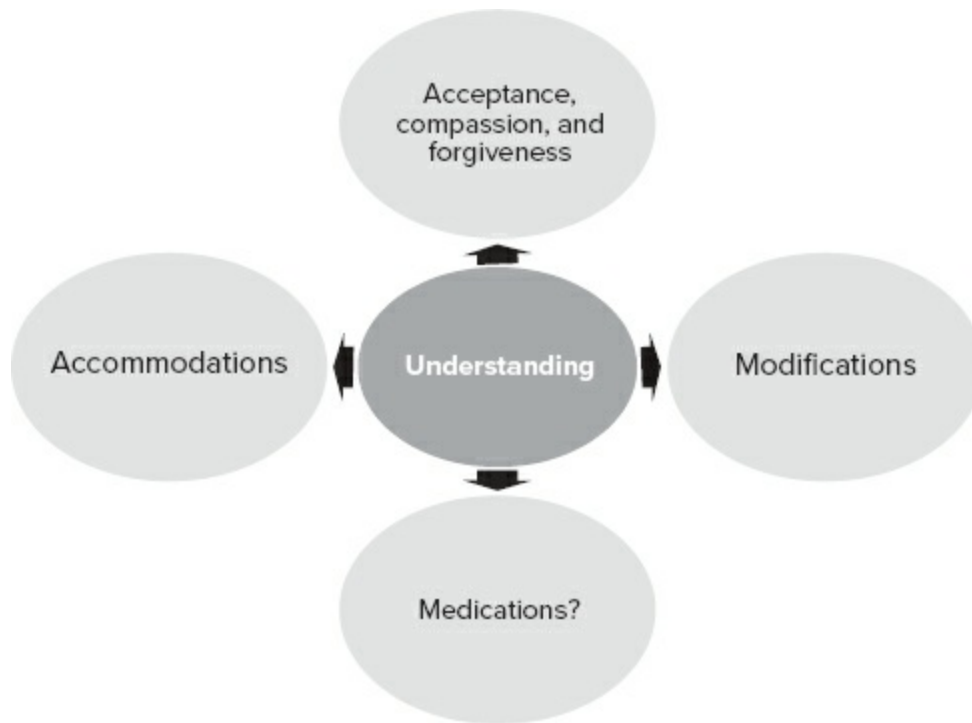
Clinical Tips

- ✓ The treatment package must be maintained over long periods to maintain the symptomatic relief that the treatments initially achieve. Ideally, the treatment package, so maintained, will reduce or eliminate the secondary consequences of leaving the condition unmanaged.
- ✓ Each patient is different, and so is each instance of the chronic condition being treated. As a result, symptom breakthroughs and crises are likely to occur periodically over the course of treatment that may demand reintervention or the design and implementation of modified or entirely new treatment packages.
- ✓ Changes to the environment that may assist those with the disorder are not viewed as somehow correcting earlier faulty learning or leading to permanent improvements that can permit the treatments to be withdrawn. Again, the more appropriate view of psychological treatment is one of designing a prosthetic social environment that allows the patient to better cope with and compensate for the disorder in order to improve effectiveness in performing major life activities. Behavioral and other technologies used to assist people with executive function deficits are akin to prostheses that reduce the handicapping impact of a disability, and the ADHD medications combined with psychosocial treatments can offer temporary symptomatic control in order to prevent or reduce further secondary harm from unmanaged disorder.

Just as with diabetes, effective treatment comprises a combination of

different interventions to manage its symptoms and prevent those secondary harms. And so the treatment package for diabetes includes counseling about the disorder so that the person better understands it and why various approaches to management must be taken. So do many cases of ADHD. Diabetes treatment also includes medication taken daily, in many cases, that temporarily manages the underlying pathophysiology of the disorder. So does ADHD. Having diabetes necessitates paying closer attention to daily hygiene, health maintenance, diet, and exercise; that's true of ADHD as well. The treatment package for diabetes also involves modifying one's own behavior in order to more effectively monitor the disorder, to manage it across the day, and to reduce or minimize the daily problems the disorder would cause if one had not done so. Yes, ADHD is like that, too. Finally, diabetes requires that various accommodations be made to assist with managing it. Here accommodation means making changes to the physical and social environment surrounding the affected person to facilitate control of the symptoms but also to reduce the potential for those harms to begin to occur. ADHD requires that changes to the surrounding context also be implemented, not so much to eliminate its symptoms as to reduce the impairments that they can produce if the environment is not so altered.

I have graphically depicted this framework in [Figure 6.1](#). It is also provided as [Handout 15](#) in [Appendix A](#), which you can reproduce and share with clients at the end of your evaluation when you discuss the treatment package needed to manage ADHD.



[Follow for extended description](#)

FIGURE 6.1. The five components of the ideal treatment package for managing ADHD.

The figure conveys the five elements in the ideal treatment package. These are: (1) Counseling clients and families to create a better *understanding* of ADHD, which hopefully leads to (2) *acceptance* of the disorder, *compassion* for the person affected, a willingness to help, and *forgiveness* of the person so affected for the problems the disorder may create for others. These two components are then coupled with (3) efforts to *modify* the behavior of both the affected person and any caregivers, (4) making changes to the environment to reduce impairments (*accommodations*), and, if needed, (5) applying *medication(s)* for management of ADHD and any comorbidities, where appropriate.

Treatments to Reduce Risk and Preserve Life

As discussed in [Chapters 2](#) and [5](#), ADHD brings with it elevated risk for various health problems and other impairments that result from executive function deficits. Clinicians will want to include in treatment packages any interventional and preventive methods that can reduce these specific risks. Here are brief suggestions for some of these risks and impairments.

Peer Relationships

Research to date has not documented the effectiveness of routine social-skills interventions for improving the social lot of people with ADHD. This is most likely because these programs focus on teaching knowledge and skills.

Clinical Tip

- ✓ Because ADHD is far more a disorder in performing the skills and knowledge one knows than in knowing what to do, programs that place more of an emphasis on the use of social skills in key settings in the natural environment where problems exist may do better than traditional skills training–based intervention. For instance, the latest social training program, parent friendship coaching, designed by Amori Mikami (2015) and based on the EF-SR theory, has shown success in helping children with ADHD in their social relations (see [Bibliography](#)).

Moving into Adolescence and Independence

As children with ADHD head toward adolescence, they enter situations with new risks. It's important to encourage parents and other caregivers to take extra precautions to protect these children from the increased risk that their disorder imposes.

Dating and Sex

Four to five times more teens with ADHD than typical teens report only fair-

to poor-quality dating relationships. Emotional regulation problems and impulsivity may account for some issues involved in intimate relationships, including the increased rate of teen pregnancies among girls with ADHD.

Clinical Tips

- ✓ See [Handout 25](#) in [Appendix A](#), which provides more specific suggestions for addressing the problems with risky sexual activities and which can be given to parents.
- ✓ If you work with a lot of teenagers with ADHD, it will be helpful to identify regional resources for helping your clients address these social difficulties. Interventions for distressed relationships will be required for many teens and young adults with ADHD and their partners beyond just the clinical management of ADHD symptoms via traditional treatments.
- ✓ See [Chapter 5](#) for advice on talking to parents about the risks in this domain for their teenagers.

Driving

As enumerated in [Chapter 5](#), teenagers with ADHD are subject to a long list of increased risks associated with driving. Fortunately, various factors seem to improve the driving performance of teens (and adults) with ADHD.

Clinical Tips

- ✓ Recommendations for mitigating driving risks in teens are given in a reproducible handout in [Appendix A \(Handout 26\)](#). Among them may be the use of a standard rather than an automatic transmission. The reason for this may be that manual transmissions require more mental and motor engagement in the task of driving that may help drivers with ADHD sustain their attention better to driving than is the case with automatic transmissions.
- ✓ Additional driver training and education, even using simulators, has not been found to improve these risks.
- ✓ Evidence is certainly accumulating that ADHD medications can significantly improve the driving performance of teens and adults with ADHD, which translates into a reduction in adverse driving outcomes such as crashes, injuries, and citations.

Lifestyle and Lifespan

One of the biggest risks raised by ADHD is to life itself. Research has found that individuals with ADHD are more likely than their typical peers to die young, discussed briefly in the next section, and that their estimated life expectancy is lower (see the box [“ADHD and Estimated Life Expectancy”](#) on the facing page).

Early Mortality

In 2012, Rachel Klein, Salvatore Mannuzza, and colleagues, who have conducted the longest follow-up study of children with ADHD into midlife, found that more than twice as many had died by age 41 as in their control group (7.2 vs. 2.8%). However, the sample sizes in such studies of clinic-referred children are inadequate to detect such differences as being significant with any degree of statistical power. Even so, such findings have now been confirmed in multiple epidemiological studies of populations in the United States, Sweden, and Taiwan. These studies show the following:

- Children with ADHD are nearly twice as likely to die in childhood.
- Adults with ADHD are 3 to nearly 5 times more likely to die in adulthood by midlife compared with people without ADHD.
- Indeed, during any 4-year period, adults with ADHD in the United States are almost twice as likely to die as typical adults.

The greatest cause of early mortality in these studies is accidental injury. But death by suicide is also a significant factor by adolescence and young adulthood, although in a far lower percentage of cases. The Taiwanese study also found that death from homicide was twice as likely as in typical peers. This risk of dying younger than usual was also found by Demontis and colleagues (2019) in a genome-wide study of ADHD genetics, in which they observed a shared genetic relationship between ADHD and earlier mortality even in the parents of patients having ADHD, most likely reflecting the higher risk for ADHD in those parents.

Clinical Tips

- ✓ Clinicians might want to consider sharing [Handout 13](#) in [Appendix A](#) to show parents how ADHD that persists into adulthood affects various domains of impairment including life expectancy, especially when the parents seem recalcitrant at accepting the diagnosis, downplay its seriousness, or feel that therapies of lesser effectiveness or disproven benefits, such as diet and food supplements, are the best way to address the problems posed by ADHD.
- ✓ Obviously, clinicians must try to reduce those first-order factors that are predisposing to reduced life expectancy, such as obesity, smoking, excess alcohol use, poor diet, poor sleep, limited exercise, and so forth, in children and adults with ADHD. After all, ELE is malleable: Change the adverse health and lifestyle factors affecting it, and one can improve quality of life, as well as life expectancy.
- ✓ However, our results also suggest that without efforts to address the background trait of poor inhibition specifically and ADHD symptoms more generally, trying to improve only those first-order health behavior factors may have limited, if any, success.
 - Adding ADHD *medications* will likely prove helpful. We now know this in view of multiple studies that show a reduction in many of these domains of adverse events as a result of medication treatment for ADHD, as summarized in the meta-analysis by Boland et al. (2020).
 - Adding other evidence-based psychosocial treatments to address the background traits predisposing those with ADHD to engage in these first-order adverse activities, as well as targeting the first-order risk events directly, is also likely to be useful.

Primary care physicians play a significant role in reducing ADHD's threat to life expectancy, because they are the ones most likely to be trying to improve the adverse health and lifestyle activities of individuals. That is why it's so important to understand the linkage between ADHD, poor inhibition, and reduced life expectancy. When you are aware of this connection, you will be more likely to screen for the significant role that ADHD may be playing in any failure to improve the adverse health and lifestyle activities of your patients.

PCPs and mental health professionals also need to become better educated about the services in their communities that can assist them with addressing the health risks linked to ADHD so as to make more and more knowledgeable referrals of their clients to these programs.

Clinicians will only be as good as their contacts list, given that most clinicians are not well trained to deal with these specialized areas of life activities. That makes it imperative that they maintain a roster of area professionals who are so qualified and to whom referrals, as appropriate, can be made.

ADHD and Estimated Life Expectancy

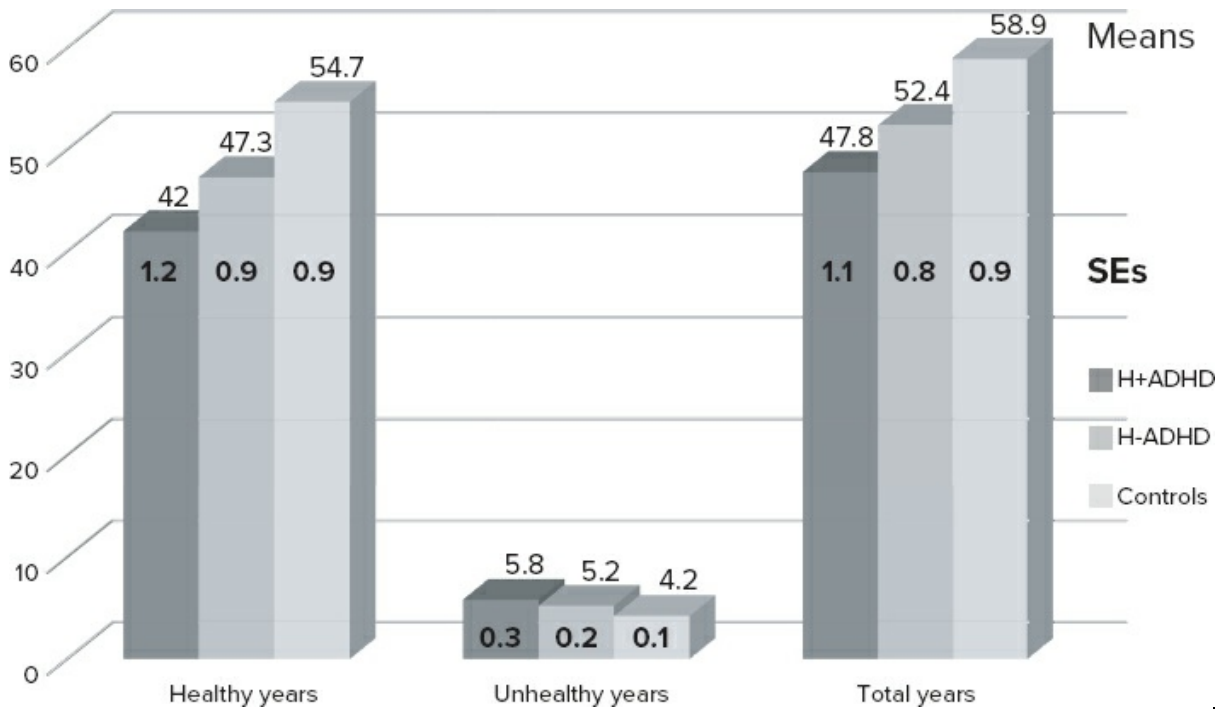
Nearly 30 years ago, very indirect evidence began to arise that intimated that ADHD

may have a detrimental impact on life expectancy. A longitudinal study of gifted children initiated by Terman at Stanford University (see Friedman et al., 1995) indicated that, even among this gifted sample, children who placed below the bottom 25th percentile of the population in the personality trait known as *conscientiousness* had a 7- to 8-year reduction in their lifespan compared with the remainder of their sample.

Conscientiousness is surely based on executive function and self-regulation; in a sense, it is the effective use of self-regulation in making choices in one's life. Low conscientiousness predisposes people to engage in all sorts of adverse health and lifestyle activities that are known to reduce life expectancy. If those in the bottom quartile on this trait had a significant reduction in lifespan, even among gifted children, those with ADHD would be expected to have an even greater reduction in life expectancy because those with ADHD place in the bottom 5–7% of the population in their poor inhibition (related to conscientiousness).

Mariellen Fischer and I decided to use our Milwaukee longitudinal study (Barkley & Fischer, 2019) to examine the possibility of reduced life expectancy in our sample of children with ADHD and controls at their young-adult follow-up (mean age 27 years) and found that those who had ADHD as children manifested a 9.6-year reduction in estimated healthy life expectancy in remaining years, a 1.2-year period of greater unhealthy life expectancy in remaining years, and an overall 8.4-year reduction in total life expectancy compared with children in the control group by young adulthood.

Even more striking was that the persistence of ADHD to adult follow-up was associated with an even worse impact on these estimated life expectancy (ELE) measures (see [Figure 6.2](#))—a 12.7-year reduction in healthy life expectancy and an 11.1-year reduction in total ELE than was seen in control cases. People with persistent ADHD had a 5.3-year reduction in healthy life expectancy and a 4.6-year reduction in total ELE compared with those with nonpersistent ADHD combined presentation (ADHD-C). Both those with persistent and with nonpersistent ADHD had significantly lower ELEs by adulthood than did controls.



[Follow for extended description](#)

FIGURE 6.2. Estimated life expectancy for children whose ADHD persisted to adulthood (H + ADHD: Hyperactivity as a child, ADHD as an adult), compared with those whose ADHD did not persist (H – ADHD) and to control children followed to adulthood. SEs = standard errors.

The magnitude of such reductions in life expectancy can be appreciated by understanding that *such reductions are far greater than those associated with smoking, obesity, alcohol use, high cholesterol, and high blood pressure either individually or combined!*¹ Furthermore, our results are likely underestimates, as they do not take into account other risk factors that do not enter the calculations here yet can reduce ELE (other drug use, history of accidental injuries, etc.), not to mention the known association of social stress and isolation from others with ELE,² both of which occur more often in people with ADHD. We also showed that the background executive function of behavioral disinhibition explained more than 30% of the variance in life expectancy in our samples. Failing to appreciate this substantial second-order background factor of disinhibition could easily lead not only to (1) overlooking its role in contributing to poor health-related behavior but also (2) failing to understand why certain individuals may be limited in their success with adhering to recommendations for health improvement activities intended to lessen those first-order risk factors.

¹ For instance, obesity is associated with a –4.2-year reduction in life expectancy, or –7 months per unit of body mass index overweight; smoking 20 or more cigarettes per day with approximately –6.8 years; excessive alcohol use with –2 years in men and –0.4 years in women; substance use disorder with –10 years; elevated blood pressure with –5.2 years. Conversely, every year of education after high school was associated with an increase of +11 months.

² Snyder-Mackler et al. (2020).

Impact of Comorbidities on ADHD Management

In some cases, the comorbid disorder with ADHD may have an adverse impact on the degree of response or response rate to the traditional ADHD treatments, such as medications, and may even indicate a greater likelihood of adverse effects or outright treatment discontinuation (e.g., ASD, ID). In other instances, the ADHD medications may actually improve some aspects of the comorbid disorder (oppositional defiant disorder/conduct disorder, language and coordination disorders) and possibly make comorbid cases more available for and responsive to interventions targeting the comorbid disorder. Yet overall, treatments will still have to be added that target the comorbid condition apart from the treatments being used to manage the ADHD.

Oppositional Defiant Disorder/Conduct Disorder

Both stimulant and nonstimulant forms of ADHD medications can be as beneficial as in pure ADHD (whereas such medications are not beneficial when oppositional defiant disorder [ODD] occurs alone).

Clinical Tips to Assist with Treatment

- ✓ Higher doses of ADHD medications than for pure cases of ADHD alone are often required, most likely because patients with comorbid disorders often have more severe ADHD. The clinical response to ADHD medications often shows nearly as substantial a decline in ODD and even some conduct disorder (CD) symptoms as in ADHD symptoms, arguing for some shared aspects of neurological/genetic factors between them.
- ✓ Certainly, more extensive forms of behavioral parenting training (BPT) (with children) and behavioral family therapy (with teens) are in order. Yet the success rates for such training decline markedly with age.
- ✓ Where psychopathic traits are evident in children with ADHD, and hence early CD, implementing ADHD medications first seems to make these children more amenable to the effectiveness of BPT.
- ✓ Children with callous–unemotional presentation who are started in BPT without medication may show a poorer response or no response at all.

Substance Use

In the 1980s, there were some concerns that stimulant treatment of children with ADHD might predispose (sensitize) them to a greater likelihood of abusing other substances later in development, particular other stimulants, such as cocaine. Subsequent research did not, however, support this hypothesis. Treatment with ADHD medications does not predispose children to any further risks for later substance use or abuse beyond those risks posed by ADHD or comorbid CD alone, as was shown in a meta-analysis of 15 longitudinal studies (Wilens, Faraone, Biederman, & Gunawardene, 2003). Some clinical research suggests that sustaining treatment with medication into adolescence may well reduce the risk for excess substance use or substance use disorders (SUDs) for certain substances. More recent population-wide epidemiological studies supported this conclusion in finding a 31% reduction in SUDs over a 3-year period of medication management of youth with ADHD. Other research suggests that the later stimulant treatment is initiated, the less likely it may be to reduce the risk for SUDs, thus arguing for earlier and sustained medication management.

Clinical Tip to Assist with Treatment

- ✓ Most experts agree that it is prudent to manage the EF-SR deficits of ADHD with stimulant medications even where SUDs are comorbid, so long as a specific stimulant abuse disorder is not present, such as abuse of cocaine, crack, or methamphetamine. Even in that case, the risk is not so much of the prescribed stimulant drugs being abused as of the user reverting to abuse of the illegal stimulant while taking the prescribed one. Doing so enhances the effects, including negative ones, by this double combination. There is also the risk that the patient may attempt to sell the prescribed medication in order to purchase the preferred illegal one. In such cases, long-acting, less abusible forms of stimulant therapy or nonstimulant ADHD medications may be preferable. But absent preferential stimulant abuse specifically, using prescribed stimulants, especially less abusible extended-release formulations, to manage ADHD in the context of other forms of drug use or abuse is not contraindicated and may prove helpful for ADHD management. By managing the ADHD and improving self-regulatory capacity via ADHD medication, it is also possible that patients with comorbid conditions may respond better to efforts at drug rehabilitation than they would have had their ADHD gone unmanaged. This, however, has not yet been definitively shown to occur in the several studies examining the issue while treating adults with comorbid disorders with ADHD stimulants.

Depression

The co-occurrence of depression does not appear to adversely affect the treatment response of ADHD symptoms to ADHD medications. Those medications also may have some beneficial effects on the deficient executive function component of emotional self-regulation. Hence, they improve the emotional impulsivity and even mild forms of demoralization that may be evident in ADHD. The contribution of these medications to the possibility of lessened impairment and so to greater success in life could also help diminish demoralization.

Clinical Tips to Assist with Treatment

- ✓ The ADHD medications have not been found to be helpful in the management of more serious forms of depression beyond lessening simple demoralization from repeated failure when it coexists with ADHD. In that case, adding an antidepressant is more likely to prove helpful.
- ✓ It is now recommended that clinicians start treatment by addressing the more severe and impairing disorder in this comorbidity, after which the lesser disorder can be the focus of management. When depression is the more severe presenting problem, perhaps as evident in neurovegetative signs or suicidal ideation, antidepressants—perhaps in conjunction with cognitive-behavioral therapy—are indicated initially. ADHD medications can be added later to address that lesser condition. Conversely, when ADHD is the more impairing disorder, its management takes priority, and that for depression is added later.

Disruptive Mood Dysregulation Disorder

The more typical forms of psychosocial treatments, such as parent training, social skills training, or school behavioral interventions, are not of much benefit for the irritability evident in disruptive mood dysregulation disorder (DMDD). Perhaps if the psychological treatment targets irritability and temper outbursts specifically, it may be helpful as an adjunct to medication. In contrast, stimulant medications may reduce the degree of irritability often evident in ADHD. But those medicines may be far less effective in addressing

the extreme irritable moods that constitute DMDD than the psychosocial treatments noted above.

Clinical Tips to Assist with Treatment

- ✓ When DMDD co-occurs with ADHD, experts recommend the use of mood stabilizers and second-generation antipsychotics for its management, given that ADHD stimulants are unlikely to address this condition.
- ✓ Nevertheless, DMDD is very difficult to treat pharmacologically and psychosocially, sometimes necessitating inpatient psychiatric treatment both for safety reasons and for close monitoring of the use of trials of more powerful mood stabilizers and antipsychotics.
- ✓ At some point, ADHD medications are likely to be needed to address those clinically impairing symptoms related to that disorder, but, as with BPD, priority is given to managing the mood disorder first, followed by appropriate forms of ADHD medications.

Bipolar Disorder

Clinical Tips to Assist with Treatment

- ✓ The presence of BPD with ADHD warrants management of the mood disorder first, according to experts, before enacting ADHD-specific treatments, such as ADHD medications.
- ✓ When comorbid with ADHD, BPD is less responsive to the usual medications employed to manage it and may require multiple medications.
- ✓ That said, ADHD medications do benefit the management of ADHD symptoms in this comorbidity.
- ✓ There is no evidence that using stimulant medications with children with comorbid ADHD/BPD results in any increased risk for manic symptoms or mood destabilization.

Anxiety Disorders

This comorbidity may increase positive responding to psychosocial interventions (assuming ODD/CD are not present), at least for parent-reported anxiety in their children, and may not be related to a reduced or even adverse ADHD medication response as was earlier believed. But note the

following.

Clinical Tips to Assist with Treatment

- ✓ About half of the studies do report a lower degree of response to stimulants in children with high levels of internalizing symptoms generally. But others using specific diagnostic criteria to assess anxiety disorders (ADs) suggest that children with this comorbidity respond similarly to stimulants as do children with ADHD without anxiety. Indeed, it is possible to see a reduction in mild symptoms of anxiety in association with ADHD medication management. So, the association of anxiety with poorer ADHD medication response remains arguable.
- ✓ Does comorbid anxiety reduce the degree of improvement of ADHD symptoms from ADHD medications? Perhaps, but not always.
- ✓ Does the use of ADHD medications in these cases worsen anxiety? Probably not, but perhaps in some cases.
- ✓ Does the use of ADHD medication in these co-occurring cases produce other unwanted effects? Maybe, as some research shows that stimulants may worsen working memory performance in patients with comorbid anxiety, suggestive of a cognitive toxicity.
- ✓ Should anxiety be a contraindication for using ADHD stimulants? No. Many children with ADHD can still benefit from those medications, even when anxiety is present.
- ✓ Stimulants are unlikely to manage comorbid anxiety of a more severe nature, whereas nonstimulants, such as atomoxetine, may be beneficial in such cases.
- ✓ The addition of anxiolytic medications may be indicated in some cases of comorbidity, as might cognitive-behavioral therapy targeting the anxiety symptoms, given that a small amount of research suggests it could be beneficial in this comorbidity in children and youth.
- ✓ Experts in childhood ADs suggest that if ADHD or ODD is present, the comorbidity should be managed first lest it contribute to poor treatment response to the psychosocial interventions.
- ✓ Social skills training might be beneficial for those children with social anxiety and withdrawal, even if it is not beneficial for their social deficits stemming from co-occurring ADHD.

Tic Disorders and Obsessive–Compulsive Behavior

It was previously thought that the presence of tic disorders (TDs) or obsessive–compulsive behavior (OCB) ruled out the use of ADHD stimulant medications, as they might exacerbate the TD or OCB. Subsequent research showed that the risk of this occurring was markedly lower than previously assumed, and clinicians were encouraged to consider the use of these

medications in managing the ADHD. About 30% of patients with comorbidities might show an exacerbation of the TD, more often with amphetamines than methylphenidate. Ceasing the medication should usually lead to remission of the tic if it was provoked by the medication. In 40% or more of cases, no exacerbation was seen, and in up to 30% of cases, the tics improved during the drug trial.

Clinical Tips to Assist with Treatment

- ✓ Current advice is to consider using medications when the ADHD is contributing to significant impairment. But start lower than the usual beginning dose, go slower in titration, and monitor TD/OCB frequency more closely for potential exacerbation.
- ✓ The presence of TD/OCB does not alter the psychosocial management of ADHD other than that behavior modification approaches to TD/OCB will likely need to be added to target those symptoms specifically.
- ✓ Medications more specific to the management of TDs or OCB may need to be combined with ADHD management when the former disorders are moderately to severely impairing.
- ✓ This comorbidity may be less responsive to treatments for OCB than when OCB occurs without ADHD.

Intellectual Disability

The treatments required for each disorder are distinct from those for the other, with little likelihood that treating one markedly benefits the other condition.

Clinical Tips to Assist with Treatment

- ✓ Although management of comorbid cases usually follows the principle that the more impairing disorder should be managed first, there is reason to believe that reducing ADHD symptoms and improving executive function deficits may make people with ID more available for learning academically as well as for training in adaptive behavior skills. That may be because the self-regulatory deficits inherent in ADHD make all such people less available for learning.
- ✓ The response rate of these patients with comorbidity to ADHD medications is equivalent to or only slightly lower than in patients with ADHD only (45–66% vs. 75–80%), but there may be a higher incidence of side effects. However, if IQ is below 50, then fewer cases appear to respond to these medicines, being closer to 50% or lower than the usual 75% positive response rate.

- ✓ There is a paucity of research on the value of psychosocial treatments for ADHD in the context of ID. But there are ample clinical reasons why the former would certainly have to be adapted somewhat for patients with ID and their families from those formats used for patients with ADHD only (more individualized family and child training, longer training time, systematic efforts to program for treatment generalization to other settings, etc.). And even those may not succeed if IQ is especially low (< 50).
- ✓ Indeed, typical behavioral parent training programs for ADHD or ODD place a strong emphasis on language and compliance with household rules and parental verbal instructions. Thus an adequate baseline level of language and IQ are requirements for even entering BPT programs such as my own.

Autism Spectrum Disorder

When ASD co-exists with ADHD, the ADHD can be treated effectively with the various ADHD medications. But these patients are somewhat less likely to respond positively to ADHD medications than those with ADHD alone (47–49% vs. 75–80%, respectively), may experience somewhat more side effects (particularly social withdrawal and irritability), and have far higher discontinuation rates (18% vs. 3–8%) compared with patients with ADHD only. Nevertheless, this does not preclude using ADHD medications with most patients with co-occurring disorders, as was once believed.

Clinical Tips to Assist with Treatment

- ✓ Treat the ADHD as you otherwise would, but expect fewer positive responders. Bear in mind that ADHD medications do not seem to have as large or reliable an effect on improving ADHD symptoms in comorbid cases and certainly do not improve ASD symptoms.
- ✓ The major evidence-based treatments for ASD will still need to be applied, regardless of the presence of comorbidity with ADHD.
- ✓ It is possible, though yet to be empirically demonstrated, that managing the ADHD and associated EF-SR deficits with medication may make these patients more amenable to the intensive behavioral and other treatments typically used with patients with ASD.

Specific Learning Disabilities

It is customary to view the co-occurrence of these disorders as requiring that

each be treated separately, given that the interventions for one do little to improve the deficits associated with the other.

Clinical Tips to Assist with Treatment

- ✓ Some research does show that ADHD medications may improve reading speed. The nonstimulant atomoxetine may also improve phonetic aspects of reading besides speed in children with comorbid ADHD and reading disorder. The presence of attentional difficulties has also been shown in limited research to adversely affect treatment for reading disorder, but that requires more investigation to be accepted definitively.
- ✓ The presence of an SLD may reduce positive responding to methylphenidate in children with ADHD versus those without (55 vs. 75%, respectively). That is mainly a result of the presence of a math disability. It may reduce the positive response rate to stimulant medications by as much as half (37 vs. 75%). Children with ADHD who had only a reading disorder did not show this reduction in response rate (Grizenko, Bhat, Schwartz, Ter-Stepanian, & Joobar, 2006). It is not clear why this reduced responding in the presence of a math disorder should be the case. It is possible that math disorders are more likely to occur with cognitive disengagement hypoactivity syndrome (CDHS; formerly sluggish cognitive tempo [SCT]) as a comorbid condition. Given that degree of CDHS severity predicts a lower or poorer response to ADHD stimulants, that might explain the reduction in response rate. However, Natalie Grizenko, who conducted this research, assured me personally that she had ruled out that possibility in her analyses. Clearly this pattern of reduced responding is an enigma.

Communication Disorders

Clinical Tips to Assist with Treatment

- ✓ Treatment of patients with comorbid conditions with the ADHD medication methylphenidate is indicated for the management of ADHD. It may even produce modest positive benefits for specific communication abilities, especially speech organization, the pragmatics of discourse, and speech intonation and intensity, reducing the loud, fast, unclear, and often intrusive nature of spoken language in children with ADHD. Less is known about the value of using amphetamine medications to do so, but, given their similarity of effects in other domains of ADHD functioning and the greater potency of amphetamines, one could logically expect amphetamines to produce similar effects.
- ✓ Beyond these improvements, children with ADHD having communication disorders will require speech and language interventions that specifically target their communication deficits.

Developmental Coordination Disorders

Clinical Tips to Assist with Treatment

- ✓ Unlike with the SLDs or other neurodevelopmental disorders, ADHD medications have been shown to significantly improve the motor coordination difficulties of children with ADHD. Improvements may occur in 28–67% of such cases.
- ✓ When motor coordination disorders persist following ADHD management, they may require separate remediation programs, as through occupational and physical therapy and additional classroom accommodations. However, the specific intervention of sensory integration training, sometimes used by occupational therapists, has been shown not to be of benefit to children with ADHD.

Sluggish Cognitive Tempo

Little research exists on treating CDHS.

Clinical Tips to Assist with Treatment

- ✓ One drug study found atomoxetine, the ADHD nonstimulant, to be specifically beneficial for CDHS (formerly SCT) symptoms even after controlling for drug effects on ADHD symptoms. Another finds that severity of CDHS is predictive of a reduced response to methylphenidate.
- ✓ One project found that children with CDHS were as responsive as or more responsive than children with ADHD to behavior modification methods used for managing symptoms and impairment at home and school.
- ✓ There is no evidence on other treatments for CDHS, but, given its apparent links to internalizing disorders in which cognitive-behavioral therapy has proven beneficial, perhaps that therapy might be explored with CDHS.
- ✓ Some norepinephrine or serotonergic reuptake inhibitors have been found useful to some degree for depression or anxiety, but the degree to which they may be helpful for CDHS is not known; however, they may be promising, given the finding related to atomoxetine mentioned above.

Parent Counseling and Behavior Management Training

This chapter briefly discusses each of the major evidence-based psychosocial treatment paradigms implemented with parents and families of children and adolescents with ADHD: (1) parent education and counseling concerning ADHD, (2) parent training in behavior management skills, and (3) parent training in social skills coaching. With my executive function–self-regulation (EF-SR) theory as a foundation, effective methods in each category can be made even more useful.

Parent Education and Counseling

In my 40-plus years of clinical experience, I have found parent education and counseling to be the most important step in working with families of children and teens with ADHD. Research done by Anastopoulos and colleagues (Anastopoulos, Shelton, DuPaul, & Guevremont, 1993) years ago confirmed this when they compared behavioral parenting training (BPT) with an ADHD information control group: Both groups changed nearly as much even though the information-only group was not taught the management skills that the BPT group received. The lesson we learned was both important and sobering: Simply providing correct, science-based information to parents about their child's condition and the appropriate treatments that might be employed for it was powerful to them. It resulted in the majority of improvement in their reports about their children's behavior and their relationships with them apart from any value they found in the specific behavior management techniques we taught only to the BPT group. And much of that information about ADHD came from EF-SR theory apart from simply basic knowledge about ADHD etiology, risks of impairment, and evidence-based treatments for ADHD management.

The initial feedback session or the first session of BPT should cover the essential knowledge set forth in earlier chapters of this book explained in accessible terms that nearly all parents can understand. This conversation with them should include any important information that has not already been covered in the postevaluation feedback session:

- Information about the symptoms of ADHD, how they stem from impaired executive function and self-regulation, the nature of executive function and self-regulation, and the concept of ADHD involving a delay in the child's executive or self-regulatory age.
- How those symptoms were identified in their child during the

evaluation (see [Chapter 5](#) for details).

- Diagnostic criteria you followed in reaching a decision that ADHD or self-regulation deficit disorder (SRDD) was present.
- The various causes of ADHD, which clearly fall within the realm of biology, for the most part, and genetics and brain development specifically (see [Chapter 3](#) and [Appendix C](#)).
- The risks children with ADHD have for various comorbid disorders (see [Chapter 4](#)).
- The risks children and teens with ADHD are exposed to if their disorder is not treated or treated well. A list of *potential* adverse consequences in various life domains that might befall a child in the absence of treatment is covered in depth in [Chapter 5](#).
- The relative permanence of ADHD or SRDD over development—a chronic disability for most, but not all, children that must be managed daily to prevent secondary harms from befalling their child while striving to help them function as close to normal as one can.
- The likelihood that parents may experience a mild grief reaction to the diagnosis of ADHD, its neurogenetic nature, its incurability, and its probable persistence over development (see [Chapter 5](#) for how to help parents cope with the news of your diagnosis of their child).
- A forewarning about the various unproven and disproven remedies that are promoted for ADHD but have little or no scientific basis supporting them and, in some cases, ample evidence to refute their effectiveness for ADHD (see [Appendix D](#)).

Clinical Tips

- ✓ Consider showing parents the pie chart diagram that summarizes the causes of ADHD ([Handout 12](#)) or the entire group of fact sheets ([Handouts 3–14](#), [Appendix A](#)), as well as [Appendix C](#), for details on etiology with which you can supplement your explanation as desired.
- ✓ You can give parents [Handout 14](#) while discussing comorbidities (see [Appendix](#)

A).

- ✓ When talking to parents about the potential adverse consequences of absent or inadequate treatment, be sure to state that there is no guarantee that their child will experience such harms but only that a child or teen with ADHD has a significantly elevated risk of doing so.
- ✓ You can use [Handout 13](#) (see [Appendix A](#)) to help parents appreciate the diversity and severity of these risks.
- ✓ When discussing the permanence of ADHD over a child's development, consider comparing ADHD to diabetes—a chronic medical problem without a cure that requires a package of interventions used on a near daily basis so that the child has a chance to live a nearly normal life (see [Chapter 2](#), [page 105](#) for more details).

The information provided during this initial session often leads parents to be more receptive to the various interventions offered to them. I came to believe that this major shift was a consequence of a reframing of parents' views of their child's problems. Instead of viewing their child as “bad” or “naughty” and viewing themselves as incompetent at dealing with it or, even worse, believing that they were in some way the cause of the ADHD, they had moved to a more scientifically based and compassionate view that their child was born with a neurodevelopmental disorder that was not of their child's or their own doing. Parents we spoke to about this transition in their cognitive framework for understanding their child told us that they felt a sense of relief in knowing that they (and their child) were not the cause of ADHD through the way they were dealing with each other.

Clinical Tip

- ✓ Parents' reframing of ADHD may make them more open to proposed interventions. But don't expect this to always be the case, particularly where medication is one of the options. Some parents will still want time to think about the use of medication. I view reluctance to introduce neurotropic medications into their child's body and brain as a natural protective instinct and not to be maligned; instead, parents need to be informed. For more information on that option, you can refer the parents to the excellent trade book on child psychopharmacology by my friend and colleague, Timothy Wilens, MD, titled *Straight Talk about Psychiatric Medication for Children* (see [Bibliography](#)), or to the chapters on medications in my own book, *Taking Charge of ADHD: The Complete Authoritative Guide for Parents* (Barkley, 2020).

I have found that reframing ADHD as a pernicious disorder of executive function and self-regulation tends to lead to parents' increased compassion for their child's plight (and their own). Viewing ADHD as a disability, not "just" a problem of inattention, reduces negative judgments about the disorder and promotes forgiveness for a child's past problems. It also, however, often leads to grief.

Be Alert to a Parental Grief Reaction

A mild but palpable grief reaction is normal. Most typical parents do not want to be told that their child has a relatively permanent condition. Although it can be managed such that their child can lead a nearly typical life, it, like diabetes, cannot be cured by available interventions. I have found that parents are surprised by clinicians' candor in forewarning them that they might experience some grief, but they are grateful as well.

You may find that some parents initially resist the diagnosis as part of *denial* of its presence or severity. Others experience *anger* or at least *frustration* at the many months or years it had taken them to get the right information about and diagnosis of their child's problems, including from primary care clinicians who had told them that there was nothing wrong or at least nothing to worry about, that their child was just being a child; this is sometimes stated in rather condescending language to the parents. Many parents went right to the *sadness* or *grief* stage, experiencing some sense of sorrow for their child and themselves. I discuss how to respond to these parental reactions in [Chapter 5](#).

Clinical Tips

- ✓ Some parents experience grieving during the feedback conference or shortly thereafter, but for others it might come during the initial parent education session. Parents negotiate the phases of grieving in varying order.
- ✓ Whenever it occurs, I believe such grieving is highly therapeutic. Indeed, having no emotional reaction to the diagnosis and the information provided in this session may signal that the parents didn't really "get it" and might be holding on to some delusions that somewhere there is a quick cure for their child's problems, perhaps

through alternative medicine, dietary supplements, herbal remedies, cognitive training exercises or games, neurofeedback, chiropractic head massage, or other such offerings on the Internet and in their community.

- ✓ Some parents may complete the initial feedback or counseling session with you about ADHD yet show little change in their emotional state. This can be an instance of denial, but in other cases it may reflect the fact that these parents have gotten accurate information about ADHD before even consulting with you, and so their grieving has largely already occurred beforehand, and what they seek from you is more confirmation of and reassurance about their earlier conclusion that their child has ADHD.

Introduce the Concept of a Delayed Executive Age

Decades ago, I invented the clinical and developmental concept of a child's *executive age*, introduced in [Chapter 1](#) within my explanation of executive function. I borrowed it from the older concept of mental age as applied to intelligence and ID. After reviewing numerous research studies, including my own longitudinal research, I came to see ADHD as comprising a delay of 25–40% or higher in a child's development of the typical executive functions and the self-regulation they provide, averaging to about 30%. This is not intended to be a precise number but a rough clinical estimate to help parents better understand the concept of the neurodevelopmental delay characterizing ADHD. Here are the points I suggest you make to parents:

1. First, take time to briefly review my theory from [Chapter 1](#) that ADHD is more than a disorder of attention or excess movement but a broader, more important one of delayed and deficient executive function and the self-regulation that it permits. Briefly note the seven major mental executive functions and the fact that most or all children with ADHD are delayed in most or all of them. This is going to manifest itself in their daily behavior and functioning through five major problems with executive function in daily life—self-restraint, time management, self-motivation, emotional self-control, and planning and problem solving. This explanation often resonates quite well with parents, as it fits better with their daily observations of their child than does reducing all the

child's difficulties to a simplistic notion of attention deficits.

2. Then say “Your child is delayed in developing these important executive functions. This means that your child differs from typical children in a *quantitative*, not a *qualitative*, way.” It is as if your child were not as tall as typical children or less skilled at art; the difference is a matter of degree, not some pathology or grossly abnormal sort of condition.
3. Tell the parents that their child's delay may be about 30%—more for severe ADHD and less if it is mild. So, if their child is 10, he has the self-control and executive functions of a child of about 7.
4. You may say, “This is the approximate developmental level at which you can expect your child to self-regulate. You'll have to adjust your expectations downward for your child's self-regulation, independence, self-care, adaptive functioning, and other domains of life that children are required to master as they develop self-control.” I would tell parents that a lot of the conflict they are experiencing with their child or teen with ADHD happens because they are demanding that the child behave like anyone else of that chronological age, especially concerning self-management. And their child simply *cannot* do so, which sets up an automatic conflict between the parents and their child. It is a conflict the child cannot win because it is not possible, without treatment, for them to behave anywhere near like other children when it comes to doing chores, following rules, governing themselves, handling their daily responsibilities, time management, getting schoolwork done, controlling their emotions, and so forth. Most parents find this to be a profoundly useful insight into the nature of their child's disorder and daily functioning.
5. Tell the parents that, to help their child with ADHD, they must restructure their demands and other features of any situation to make them more consistent with someone of this executive age.

Clinical Tips

- ✓ Most parents can immediately see what needs to get done now to make their home life better for them and their child or teen with ADHD. But you can offer a few examples that make the point even clearer:
- “If your child is 10 and is being given 3rd- or 4th-grade amounts of work to do for homework, that is just crazy! Therefore, the first order of business is to change the length of that homework to suit a 7-year-old. Break it up into smaller quotas, provide more supervision, help, and feedback to the child, offer up some incentives for getting it done, and find other ways to support a 7-year-old being asked to do 10-year-old amounts of work and organization. That includes talking with the teacher about making the same adjustments to the in-class and homework assignments.”
 - “If your 14-year-old daughter with ADHD were asked to babysit a neighbor’s infant, you would have to remember that she has the self-control of a 9-year-old. Thus the answer is no. We generally don’t let 9-year-old girls or boys babysit infants unattended by another adult. And the same admonition applies if a 14- to 16-year-old girl with ADHD wishes to go on solo dates with a boyfriend. Remember that this is a sexually developed yet highly suggestible adolescent with the self-control of a 9- to 12-year-old going on a date by herself. Should you permit that? I think not. Wouldn’t chaperoned dating or group dating with many other friends and a parent to supervise them be a better option for this teen?” No wonder girls and women with ADHD suffer more sexual victimization than typical peers.
 - “Think about your child as a 16-year-old who now wants to drive a car. Parents reflexively permit this because of the teen’s chronological age. But the concept here mandates that they rethink that permission. The way to address it is to do a lot of revamping of the normal process by which teens learn to drive independently. The reason is that you just gave someone with the self-regulation of an 11-year-old a license to drive independently. There are lots of adjustments to this process that need to be made, one of which is to implement a graduated approach to the licensing process that contains various stages of decreasing supervision based on success at the earlier, more supervised levels of driving. Another is to buy a device that plugs into a car’s smart port that will block cell phone signals when the car is turned on. Or you can download an app that will make the phone unavailable when it is moving at a speed faster than someone can walk. Another is more frequent checking in with the teen when they are using the car, which may include GPS tracking through the find-my-phone app on most smartphones.” The point here is not what to do specifically about driving. It is to illustrate how a delay in the teen’s executive age automatically leads to sensible adjustments to our expectations and sensible accommodations to address that delay. See [Handout 26](#) in [Appendix A](#) for use with families with a teen with ADHD on that topic.

Emphasize That All Effective Treatments Must Be at the

Point of Performance

As discussed in [Chapters 1](#) and [6](#), the EF-SR theory of ADHD posits that, for those with the disorder, the problem does not arise from their *not knowing what to do* when difficult situations arise in their lives. Their main problem is *not doing what they know*. Parents of children or youth with ADHD really need to learn this concept, because we are all such big believers in the power of pedagogy. You teach it, and they'll do it. But this is not true in the case of ADHD. ADHD, like SRDD, is a performance disorder, not an information deficit disorder. Performance problems can only be addressed effectively at those points of performance in the natural setting where that knowledge or skill should be deployed. Psychosocial treatments work by altering those problematic points of performance to make the person with ADHD more likely to show what they know. Such treatments do not work when they are instituted elsewhere with no intentional programming as to how to change that point of performance, such as occurs in psychotherapy or play therapy, which make few or no provisions for helping people change those critical points of performance.

Parents need to understand this point explicitly if they are to avoid wasting time and money on therapies that make no such efforts to address the problematic points of performance and alter them in ways that make performing the right behaviors more likely. The point of performance for a problem with getting classwork done is in *that* classroom and not at a child guidance clinic that is miles away, after school, where the child with ADHD is playing with dolls or a sand table and with her behavior being reflected to her with psychotherapeutic intent. The point of performance for homework difficulties is the specific setting in the home and at the usual time when homework is to be done, not the office or home of a tutor once a week. Not that the latter may not be helpful with specific learning disabilities or buttressing learning of academic achievement skills, but it is not going to fix the homework problem in that home. And the point of performance for problem behaviors at recess is *that* school's playground at the actual recess

periods when that child is released to play freely with others. It is assuredly not a Saturday-morning social skills therapy group at a private practitioner's mental health clinic with six to eight other kids this child has never met before and will never encounter again. Therapies such as these, instituted away from the key points of problematic performance, do not generalize to the real-world points in the natural ecology of that child and are therefore ineffective. So spend time in this counseling session conveying this essential idea to parents.

Introduce the 12 Best Principles for Parents

Presently, there are no formal parent training programs or related manuals for families with a child or teen with ADHD that are founded on an EF-SR theory of the disorder. To begin to fill that gap, I have recently published a book for parents on the best principles they need to know that are largely based on this theory. In *12 Principles for Raising a Child with ADHD* (Barkley, 2021), I set forth a series of what I consider to be the most essential ideas parents must know about managing ADHD and its EF-SR deficits in their child or teen. Space precludes a detailed examination of these principles here but, briefly, they are as follows:

Parent Principle 1: Use the keys to success. Encourage parents to draw from actions that have contributed to the success of many adults: (1) identifying nontraditional aptitudes in their child; (2) promoting their child's further development of these aptitudes; (3) finding community resources to further promote those aptitudes into real talents; and (4) never giving up on their child—supporting the child in constructive ways through thick and thin with unconditional acceptance and guidance.

Parent Principle 2: Remember that it is a disorder. ADHD has been called the silent disability because it gives off no physical stigmata or other reminders that the child is disordered or developmentally disabled in some way. The

signs of the disorder are all in the child's behavior and cognition. This can delude parents and others into thinking there is nothing wrong with the child other than misbehavior, and people generally mistakenly believe that such misbehavior arises from the social environment and especially poor parenting. Periodic reminders that ADHD is as much a neurodevelopmental disorder as autism spectrum disorder (ASD), intellectual disabilities, cerebral palsy, Down syndrome, and other brain-based, widely accepted disabilities except for the fact that it arises from the executive, self-regulatory brain. These are necessary to maintain the right framework for understanding and raising this child or adolescent. That framework leads to acceptance, compassion, and a willingness to help and leads away from moral condemnation as simply a "bad child" (with bad parents).

Parent Principle 3: Be a shepherd, not an engineer. This concept emphasizes the neurobiological basis of ADHD and the fact that the child with ADHD will remain in most cases a person with ADHD into adulthood. Alternatively, it means that parents cannot train ADHD out of the child merely by how they choose to deal with their child and that there are no cures for this condition. But there are lots of ways to manage it, make accommodations for it, and otherwise cope with it so that this child can lead a relatively typical and successful life. There is no cure for child diabetes, either, but we do not give up on treating it. So please encourage parents to accept the child they have, let go of the idea of the one they wanted, and get busy managing the condition to improve their child's life (and their own).

Parent Principle 4: Get your priorities straight. Advise parents to reduce the number of directives and chores they give their child with ADHD to those that really matter to the child's development. A clean bedroom on a school day is not of any developmental relevance.

Parent Principle 5: Mindful parenting—Be there and be aware. Say the following to convey this idea: "When you are with your child with ADHD, really *be*

with your child, fully attentive to the moment, what your child is doing that is well, helpful, or just appropriate and expressive of your care for your child.”

Parent Principle 6: Promote your child’s self-awareness and accountability.

Suggest that parents give immediate, frequent, salient feedback, approval, praise, and other consequences, after which they can move to prompting self-reporting and accountability.

Parent Principle 7: Touch more, reward more, and talk less. Say “No matter what feedback or advice you are giving, make it personal, go to the child, touch the child’s arm or shoulder as a sign of care and intimacy, make eye contact, and say what you must in brief, genuine language.”

Parent Principle 8: Make time real. Underscore the importance of supplementing the broken inner clock, using various external means to represent time and its passing during time-sensitive tasks.

Parent Principle 9: Working memory isn’t working—Offload it and make it physical! Recommend that parents place key pieces of information on cards, notes, or other media in the visual field at the point of performance to prompt their child to remember the rules for this situation.

Parent Principle 10: Get organized. Tell the parents, “Look at all of your child’s work and play spaces and organize them with your child to make them more productive places to be.”

Parent Principle 11: Make problem solving external and concrete. Children with ADHD cannot manipulate mental information involved in problem solving as well as others. Tell parents they need to find ways to reduce the pieces of a problem to physical forms that a child can see, manipulate, take apart, and recombine to aid mental problem solving.

Parent Principle 12: Be proactive—Plan for difficult situations at home and away.

Ask parents to examine their experiences with their child for obvious, recurring problematic situations. Then encourage them to strive to do the following just before starting any one of them: (1) Review verbally with the child several rules that will govern this situation and write them on a card to hand to the child if needed; (2) have the child repeat them back; (3) explain the rewards available for following the rules; (4) explain the disciplinary consequences that will happen immediately for not doing so; (5) give the child active things to do during this situation; (6) reward throughout the task or event; (7) act quickly to punish inappropriate behavior or rule violations; and (8) evaluate with the child collaboratively how the situation played out once it is done.

Make Health and Lifestyle Recommendations

I recommended in [Chapter 5](#) that you talk to parents during the feedback session about the health risks that often affect those with ADHD so that they can start helping their child avoid these risks now. The initial counseling or education session is a good time to make recommendations about health- and lifestyle-related problems that were noted in the evaluation. At the very least, this includes the recommendation for most children and adolescents with ADHD to increase their exercise during the week. Evidence is accumulating that routine aerobic exercise multiple times per week has beneficial effects in helping to cope with, manage, or even reduce ADHD symptoms to some degree. Besides such macro-movement, we encourage parents to incorporate micro-movements into various tasks the child may have to do, including school homework, that can help improve attention and productivity. Allowing standing and movement while working seems to help children and teens with ADHD stay on task and complete more work.

If you shared the handout on health-related risks linked to ADHD (see [Handout 13](#) in [Appendix A](#)) with parents, as part of this counseling session you should now add recommendations that you believe to be in order to address any apparent increased risks for accidental injuries, dietary issues,

obesity, sleeping difficulties, issues with dental hygiene, driving, Internet addiction, and closer monitoring of adolescent activities both inside and outside the home to reduce risky sexual behavior or the propensity for substance experimentation and antisocial activities. [Appendix A](#) also contains a few specific handouts ([Handouts 19–26](#)) that deal with some of these risks and set forth some basic recommendations I would proffer to parents for dealing with these specific issues if they are pertinent to a particular case.

Behavioral Parent Training

All the programs that have some evidence for their effectiveness largely target oppositional child behavior and parent–child conflict, for which they are proven to be helpful. Studies focused on children with ADHD show only modest and inconsistent benefits of this therapy for classical ADHD symptoms or executive function deficits:

- In unblinded parental assessments of treatment effects, some improvements may be noted in ADHD symptoms, though even larger changes are evident in child conduct problems.
- In assessments thought to be blinded or more distal from the training (observations, teacher ratings, etc.), smaller effects, if any, are noted for ADHD but larger, more robust effects are seen, again, for conduct problems and parent–child conflict.

All BPT programs are founded to varying degrees on social learning theory and behavior modification principles. There is certainly evidence that facets of oppositional defiant disorder (ODD) and even conduct disorder (CD) are learned and thus can be dealt with fruitfully using social learning and behavioral principles. But ADHD does not arise from such learning, which likely explains the limited and arguable success of these programs for addressing ADHD symptoms and related executive functioning deficits.

Therefore, when considering including BPT in a particular family's treatment plan, keep in mind that most BPT programs are optimally suited for improving child compliance with parental directives and household rules. Parenting is not the cause of ADHD, and thus improving parent management will not rid the child of the disorder. Conduct and behavioral problems such as ODD are, however, known to have a substantial contribution to their variation made by parenting practices. So it makes sense that most BPT

programs would do better for child conduct problems than for ADHD symptoms.

Parents also report substantial improvements in their sense of parental competence, parenting skills, and parenting self-esteem—worthy outcomes even if the impact on child behavioral problems is not as great or evident (for ADHD). In some cases, there is arguable evidence for some improvement in marital satisfaction or in parents' own psychological problems. Perhaps that is due to parents coming to be more consistent with each other in the rules they have for their children and in how they deal with child misbehavior.

Clinical Tips

- ✓ Recommend BPT for a majority of those families of children with ADHD in which:
 - ODD or related behaviors are problematic.
 - Parenting appears to be disrupted (inconsistent, lax, vacillating from lax to harsh, highly emotional, timid, etc.), even if it has not yet engendered ODD at diagnosable levels.
 - One parent has ADHD (which can lead to disrupted parenting).
 - The child is suffering from depression or seems to be at risk for later depression (disrupted parenting has also been shown to partially mediate the link of ADHD with concurrent or later child depression).
- ✓ For children without ODD, select certain methods from the larger program of BPT to teach for certain issues the parents may have with their child, such as dealing with chores (teach the home point system) or school misbehavior (implement a daily behavior report card). Handouts that you can use with parents for implementing these methods and others dealing with child management can be found in [Appendix A \(Handouts 17 and 23\)](#). A clinician manual and a trade book are also available for my own BPT program (*Defiant Children: A Clinician's Manual for Assessment and Parent Training* [Barkley, 2013] and *Your Defiant Child: 8 Steps to Better Behavior* [Barkley & Benton, 2013], respectively). But teaching the entire 8- to 12-week program is usually not necessary.

Are BPT Programs Necessary for Children Taking ADHD Medication?

Given that ADHD medications are 2–3 times more effective for ADHD (and possibly for ODD when it coexists with ADHD in younger children), why bother with recommending psychosocial programs generally and BPT in

particular? Here are the reasons:

- It has been shown that 15–25% of children with ADHD do not respond to any single ADHD medication, and 8–10% or more may not respond well to any of them or have sufficiently serious adverse reactions to warrant immediate discontinuation. For these groups, alternatives to medication have to be provided.
- Within the first year or two of medication use, 16–64% of families have desisted using it for a variety of reasons (cost, side effects, onset of adolescence and teen noncooperation, etc.). Parents need other tools to deal with their child’s behavioral problems in such cases.
- Medication cannot cover the entire waking day—there will be periods in which the child is off medication, so parents need alternative management tools for those periods.
- Research shows that 50–80% of children and teens with ADHD have another disorder that is unlikely to be addressed by ADHD medications. Although ODD in young children with ADHD is quite responsive to ADHD medications, changing as much as the symptoms of ADHD are improved, this becomes less likely in older children and teens in whom the ODD has persisted. In that case, social learning may solidify the ODD interaction patterns of the child or teen with ADHD (as discussed in [Chapter 4](#) on the role of disrupted parenting in the genesis of ODD), thus requiring that countermeasures be used by parents to help the child unlearn these conflict tactics.
- Adding psychosocial programs and specifically BPT to medications usually results in additional benefits, as well as increasing the percentage who are likely to respond. It also can result in some cases in less need for medication, via lowering doses needed or number of doses required either during the day or the week, while maintaining the same level of benefit.

- There exist special subpopulations of children with ADHD and even parents in which opportunities for learning appropriate social and parenting behaviors were not available (adoptees from third-world orphanages, children from impoverished or crime-ridden geographic regions), and thus that lack of knowledge needs to be redressed.
- Adding BPT to a recommendation for ADHD medication may enhance parents' acceptance of the medication, as it is seen not as an exclusive treatment but as part of a more comprehensive treatment package. Parents like to know that more is being offered them to do to help their child than simply fill a prescription.

How BPT Programs Are Structured

BPT programs are more structured interventions than parent education. Generally, they involve training parents in contingency management and other methods to help reduce problematic behavior. There are numerous well-studied BPT programs available through commercial sources, and their respective clinical manuals or the books written for a parent audience are quite adequate for teaching the techniques. The most commonly used programs having some evidence for their effectiveness are the following:

- Defiant Children (Barkley, 2013)
- Community Opportunities for Parent Education (Cunningham, Bremner, & Secord, 1998)
- Parent–Child Interaction Therapy (PCIT; Eyberg & Robinson, 1982)
- The Incredible Years Program (Webster-Stratton, 2006)
- Positive Parenting Practices (PPP; Sanders, 2012)
- Parents Are Teachers (Becker, 1971)
- The Noncompliant Child (McMahon & Forehand, 2005)

- New Forest Parenting Program (Thompson et al., 2009)
- Parenting Hyperactive Preschoolers (Harvey, Herbert, & Stowe, 2015)
- Treating Explosive Kids (Greene & Ablon, 2006)

Many of these programs have been around for decades. The programs by Webster-Stratton, Thompson, and Harvey are targeted mainly at preschool children. The others encompass a wider age range up to adolescence. There has been little innovation in these methods over that time except for two programs. One was the development of the program explicitly intended for preschool children with ADHD called the New Forest Program by Thompson and colleagues in Europe and a different program for that age group by Harvey in the United States. Neither is based on my EF-SR theory. Those programs focus to some extent on ADHD-specific symptoms, such as inattention, and with preschool children, but they also convey general behavior management strategies, as do traditional BPT programs. The other programs are for children with conduct or behavioral problems and can be used up until adolescence. They focus more on parent–child conflict, compliance, and improving parental consistency of consequences (see the [list](#) below).

Another innovation occurred when some developers tried augmenting BPT with sessions focusing on parent stress management, mindfulness meditation, or marital/relationship therapy. While these are intuitive additions, research showed that there was little increase in program effectiveness.

A third innovation under way now is the development of Internet-based parental self-help versions of these programs, some of which come with periodic in-person assistance from a clinician. Unfortunately, there is no centralized registry for such programs at present for clinicians to access easily.

Most of these programs share many of the same principles and methods, despite some variations among them. Common to nearly all of these, except the last one developed by Green and Ablon,¹ are the following methods taught to parents:

- Increase parental attention, praise, respect, and approval for positive and prosocial child behavior as soon after the behavior as possible.
- Decrease parental expressions of negative emotions toward the child, adopting instead a more business-like but neutral tone of voice.
- Implement planned parental ignoring of those gambits of disruptive “attention getting” behavior that are not in response to a command or instruction (noncompliance).
- Learn to give more effective commands via adjustments to the style and content by which they are given.
- Make daily responsibilities better organized and clearer (using posted lists) while also making access to child daily privileges contingent on immediate compliance with parental commands, chore charts, and household rules (typically through a home token system but, for teens, through behavior contracts as well).
- Give commands to the child in person and next to the child, not from several rooms or floors away by yelling loudly. Go to the child, affectionately touch the child’s shoulder or arm, get the child to look at your face, say what you want done briefly and in a business-like tone, and, if necessary, have the child say it back.
- Decrease the repetition of directives or commands that only serve to delay the inevitable confrontation around noncompliance—for instance, in my program, parents are taught to give one command, count to 5, then give a warning, count to 5, then implement discipline, such as loss of tokens, privileges, or placement in time-out.
- Back up such commands within 10–15 seconds after stating them with a disciplinary consequence for noncompliance. Simply put, quit stalling.
- Prevent the child’s escaping from compliance with the command or rule while doing something else, such as watching TV or playing a video game after the parent had issued the instruction. Parents are

taught to eliminate these sources of competing or distracting activities before or once the command has been given.

- Implement transition planning just *before* entering settings or initiating activities in which conflict often occurs in order to be more proactive and head off potential problems (as in my program in *Defiant Children* [2013]).

To these programs, some developers add other parent exercises focused on building up a better relationship or a more positive attachment with the child. This is often done through nondirective play periods several times per week in which parents simply comment positively or otherwise attend to ongoing positive child play behavior, as in my program. Research has shown that such relationship building is not necessary for families who seek assistance with problem behaviors in primary care, school, or other community service settings that are not specifically mental health or psychiatric clinics. The reason for this is that the child's problems usually have not reached such an extreme stage that the parent-child relationship is primarily negative. But by the time parents may seek assistance from secondary- or tertiary-level mental health settings, which are the settings in which I usually practiced, these relationship-focused exercises were important and effective to teach, as the parent-child relationship had grown quite conflicted and negative.

Clinical Tip

- ✓ The greatest obstacle to recommending these programs to parents (if you are not providing the training yourself) is locating professionals within their geographic region who provide BPT of any sort. This issue of unavailability can be partly circumvented by relying on trade book versions of these interventions that parents could try to implement on their own, such as those listed above. But these will not be so effective for parents of seriously problematic children or where parental psychological limitations make a strictly self-implemented program likely to fail. So it will be up to you to search your area to identify possible professionals who provide such training. Good places to start are regional university psychology clinics or medical center psychiatry departments that may focus on training their students in such programs. Otherwise, state psychiatric and psychological

association websites may offer lists of clinicians annotated with their specialties that could offer suggestions for BPT-trained professionals.

Program Effectiveness and Predictors of BPT Success

The effectiveness of BPT declines with age of the child, such that it is most effective in early childhood (65–75% positive response) and remains at that level through elementary school. But by 12–14 years of age, it declines to about a 25–35% response rate. That is still better than traditional approaches to family therapy but is just one-third the response rate for young children. Such a fall-off in benefit is not unexpected when one considers that adolescents are psychologically and socially individuating from their parents, that parental influence over them declines markedly, that peer influence and other out-of-home effects become more prominent in their influence, and that genetic differences in personality and especially psychopathology become more prominent as influences on family relationships and teen disruptive behavior.

What factors influence success in these programs?

- *Parental motivation to attend BPT.* Parents who neither requested BPT (as in community screenings identifying high risk or ADHD/ODD children) nor seem interested in receiving it (when offered by clinicians after an evaluation of their child) are not good candidates, as most of the former families and 28% or more of the latter will not attend any sessions even if they are free of charge.
- *Parental psychological disorder.* Parental ADHD significantly increases risk for failure in BPT, as do parental depression and substance use disorders. Yet evidence is mixed as to whether treating parental ADHD with medication results in improved participation in BPT. These disorders still need to be managed before or coincidental with the use of BPT to offer the chance to at least try to increase the likelihood of a positive response to BPT.

- *Chronic health problems in the parent*, such as chronic fatigue syndrome and others. These problems make it harder to apply these methods consistently, suggesting that, where possible, the unaffected parent take on more of the child-care role, while the affected parent assumes other household responsibilities instead.
- *Parental education*. Less educated parents and those from lower socioeconomic strata will require more one-to-one training rather than group-based training in BPT and may not respond quite as well even then.

Clinical Tips

- ✓ Although BPT programs do not address EF-SR deficits directly, some of the methods being taught to parents are consistent with some of the management principles arising out of the EF-SR theory of ADHD:
 - The deficits in self-motivation and time blindness associated with ADHD do respond to the use of artificial rewards and to the use of swift, mild punishment for rule infractions. *But the closer the components of contingencies of reinforcement are brought together, the more effective they will be with a child with EF-SR deficits.*
 - Making instructions brief and clear, as well as posting them on chore charts or other bookkeeping methods used in token economies, can help with offloading some of the working memory demands in the assigned tasks within these programs and so be of some help to children and adolescents with ADHD.
 - Transition planning procedures for becoming more proactive in preparing for immediately subsequent situations ordinarily fraught with conflict is another way to make expectations brief, clear, and external for the child with ADHD, once again helping with the working memory aspects of those activities, as well as enhancing motivation to comply through their promise of immediate consequences.
- ✓ Be sure to give parents a clear understanding of the rationale for recommending BPT. When you have explained that ADHD does not arise from parenting, why, parents will wonder, do they need such training? As Anil Chacko and colleagues (Chacko et al., 2015) have written elsewhere, addressing this well-known obstacle to BPT, as well as ensuring that parents understand what is expected of them in such training, may help to improve participation in and compliance with it.
- ✓ If you are delivering the training, be prepared to assign homework, monitor progress, check weekly for noncompliance, and address obstacles to implementing the skills as they arise. It is not enough to simply convey the information and skill sets to parents throughout training.

Side Effects of BPT

When treatments are powerful enough to produce behavior change, it should be no surprise that they can have side effects. Yet even though warnings about their occurrence have been sounded for decades, they have received little notice in clinical practice. It is important, therefore, to be aware of the following sorts of adverse events common to many psychosocial interventions, among others:

- Patient and family distress may increase.
- Stigma or fear of stigma in children and teens may increase.
- Family or couples' sessions may increase conflict with others.
- Patient anxiety, dissociative episodes, reexperiencing of traumatic events, distorted thinking, and so forth can increase.
- BPT and behavioral family therapy may increase aggression and family conflict.
- Group training of children and teens can lead to deviancy training.
- Disorder symptoms or deterioration in treatment targets may be worsened.
- The obtaining of more effective treatment (i.e., medications) can be delayed.
- Other therapies (medications) may be less expensive.
- Treating clinicians who fail to consider the potential to produce harm often may not monitor or detect side effects.
- Effects are less likely to be reported to clinicians by patients due to the perception that the relationship may be adversely affected.

These and other adverse events (AEs) can occur during BPT (see Barkley, 2018b, and Allan & Chacko, 2018, in the Bibliography). Why? Some of these AEs arise due to variability in children's psychological characteristics,

comorbidity, and so forth, as well as in parental fidelity in implementing the methods. Other AEs may arise from lack of clinician training in implementing these methods. About 10–24% of parents may report a deterioration in the intended targets of treatment, such as a worsening of their child’s ODD symptoms or other conduct problems and of parent–child/teen conflict as a function of BPT. Some of these individuals had quite severe ODD (or possibly disruptive mood dysregulation disorder) symptoms. Thus, instituting limit setting, discipline, or even contingent use of privileges was enough to spark greater conflict between parents and children or even an escalation to violence by the child. Other children may experience an increase in sadness or depression and a decrease in self-worth, especially during the use of disciplinary methods.

Care therefore needs to be taken to ask about such adverse events periodically during training and not just naively assume that there is never any worsening of parent–child relations from such programs. Perhaps if the child or adolescent is already known to be physically violent, then alternative programs probably need to be used, such as that by Greene and Ablon (2006) on collaborative problem solving. Or clinicians can at least implement only the positive reinforcement aspects of the BPT program.

Clinical Tip

- ✓ For children whose language age or intellectual development is below age 2 or 3, consider using more intensive conditioning programs, such as those used for children with ASD, given that much of the focus of the BPT program is language based and that such children may be oppositional primarily due to limited language or mental abilities.

Cognitive-Behavioral Therapies for Teens with ADHD

Parent–Adolescent Problem Solving and Communication Training

Like BPT programs for ODD that are extrapolated to ADHD as discussed earlier, family training programs for parent–teen conflict (usually related to comorbid ADHD and ODD) have also been extrapolated to teens with ADHD. One form of cognitive-behavioral therapy (CBT) for adolescents and their parents is problem-solving and communication training (PSCT). A version of this approach was initially developed by Gerald Patterson and Maureen Forgatch (Forgatch & Patterson, 1989) back in the 1970s and 1980s for use with teens with aggressive behavior or conduct problems. This approach was further refined by Arthur Robin and Sharon Foster in the 1980s (see Robin & Foster, 1989). The paradigm focuses on training the parents and the oppositional teen in (1) steps of problem solving and negotiation, (2) more positive patterns of communication during problem solving, and (3) detecting and countering unreasonable beliefs about each other that can work to the detriment of problem solving (e.g., “My teen is intentionally sabotaging our family life and our rules”; “If my parents loved me, they would let me do as I wish”). Like BPT, the program focuses primarily on reducing parent–teen conflict and improving problem-solving skills in both parents and teens, as well as fostering better compliance with rules by the teens. It does not focus on ADHD symptoms or executive function deficits. There is evidence across several studies that the program is better at addressing such parent–teen conflict than is a wait-list control group. Booster sessions are recommended periodically to monitor family interaction problems and help sustain initial treatment gains.

Arthur Robin and I have combined elements of my Defiant Children program focused on behavior management with his PSCT approach. We tested these methods in several studies with adolescents having both ADHD

and ODD. The various methods are explained in our clinical manual, *Defiant Teens* (Barkley & Robin, 2014). Our research found that both programs improved parent–teen conflict at the group level compared with a traditional family therapy-as-usual control group, although neither of our two programs was better at doing so than the other. However, fewer families dropped out of the BPT program when compared with the PSCT program. We subsequently combined these approaches and compared it with PSCT only. The combination was in some ways superior to either program used alone, particularly in preventing family dropout from therapy. Keep in mind that we also modified the contingency management methods I developed for children to be more age-appropriate for adolescents (e.g., replacing time-outs with grounding, replacing token systems with point systems).

When examined at the individual level of analysis (instead of traditional group comparisons), we noted that these two programs and their combination were helpful for just a minority of families (20–35%). Between 18 and 38% of families dropped out of these treatments before completion. And 10–20% or more of families in the respective treatments reported worsening of family conflicts with their teens due to treatment. Just as with BPT, side effects or AEs can occur with behavioral family therapies for adolescents with ADHD, including deterioration in the intended targets of therapy (see Barkley, 2018b). Yet these modest response rates were superior to what we found with traditional family therapy, which served as our treatment-as-usual comparison group, with which only 5–10% of families improved.

Clinical Tips

- ✓ Future innovations with this program need to combine it with medication for the teen's ADHD, put more focus on the peer affiliations and out-of-home activities of the teen along with parent–teen problem-solving skills, use additional services to improve competence at school, and seek out more prosocial peer groups or organized peer activities (e.g., sports or scouts) in which to involve the teen.
- ✓ I would also recommend finding community resources to further develop any nontraditional aptitudes the teen may have (sports, art, music, drama, entrepreneurial interests, technology, etc.) as a counterweight to the limited

success most teens with ADHD are having at school. That limited success can lead them to lose motivation to participate in or even attend classes and becomes a major predictor for drifting into antisocial activities and affiliation with antisocial peers.

Planning and Organizational Training of Teens with ADHD

Self-organization is a major executive function deficit in daily life associated with ADHD. Three programs have been developed that work directly with teens with ADHD on organizational skills related to schoolwork (homework, mainly).

The Sprich–Safren Program

One such program was developed by Sprich and colleagues (Sprich & Safren, 2020) and is a downward extension of their CBT program aimed at executive function deficits in adults with ADHD. Sprich’s program comprises 12 sessions of 45-plus minutes each in which therapists work individually with teens. Parents are included in several sessions to make them aware of the skill sets being taught to their teen and how to promote their use at home. Those sessions also work on parent–teen communication in similar ways to my program with Robin, noted earlier. Like traditional CBT, teens are given a few sessions focusing on some cognitive restructuring methods (identified as adaptive thinking) to assist them with thinking more rationally about their emotions, what may be provoking them, and how to use thought monitoring and self-speech to try to correct maladaptive feelings and cognitions. Most sessions (modules) work on organization, time management, scheduling, managing distraction, and procrastination/self-motivation. Booster sessions are also provided after treatment termination as a form of relapse prevention.

Research with this program finds that it significantly improves adolescent ADHD symptoms and executive function deficits based on parent ratings and independent evaluators. All teens were on medication during training, and thus the program should be seen as complementary with or a supplement to

medication and not as an alternative to it. It is unclear how well these benefits are sustained after treatment termination and relapse prevention sessions. A variation on this program was also studied by other investigators and found to be effective in improving adolescent self-esteem and parent and teacher ratings of inattention. To the authors' credit, a manual has been commercially published, along with a separate workbook for adolescents so that clinicians can use them to implement this program (Sprich & Safren, 2020).

The HOPS Program

Another CBT-like program for teenagers that focuses even more on skill and strategy training of teens with ADHD and that is concentrated on school homework is the Homework Organization and Planning Skills (HOPS) program by Langberg (2011). Most of the 16 sessions involve a therapist training the adolescent in various methods related to homework recording and scheduling, organization of materials, time management and planning, and motivation, among other executive function–related domains. Yet parents are provided with several sessions to make them aware of the same strategies, to help them with monitoring and supporting their use at home, and even to offer some advice on using contingency management to reinforce teen utilization of the strategies.

Evidence from research shows marked improvement in homework completion and fewer problems surrounding its performance. Noteworthy here, too, is that a manual is commercially available for mental health clinicians to learn and implement this program as needed with clients, thus making it potentially more widely available (Langberg, 2011).

The STAND Program

A third intervention targeting teen homework and schoolwork intended for adolescents with ADHD is the Supporting Teens' Autonomy Daily paradigm (STAND) developed by Sibley (2020). It also strives to address the executive function–related deficits associated with adolescent ADHD, such as time

management, organization, planning, and self-motivation, among others. The program uses 10–12 parent–teen 1-hour weekly sessions to permit better collaboration between parent and teen in addressing the executive functioning–and schoolwork-related problems and tailor the methods to the specific family ecologies of each family. Doing so also allows the therapist to implement more PSCT recommendations, such as my program with Robin (Barkley & Robin, 2014), to help with parent–teen communication and problem solving. This approach differs from the previous two by incorporating more sessions in which parents are involved in helping teens to implement these skills in the home setting. It also targets self-efficacy, or cognitive beliefs concerning one’s ability to master skills and succeed in meeting challenges encountered in developing adaptive functioning.

Clinical Tips

- ✓ Be alert for adverse effects in a subset of teens with ADHD arising from these organizational training programs. These are discussed in detail by Bourchtein and Langberg (2018), along with suggestions for addressing them. Some of these AEs include increased depression, setting the teen up for additional failure to achieve goals in the program or in school, maladaptive or negative thinking and demoralization, increased apathy toward program goals, increased parent–teen conflict, greater family distress, and outright resistance to such training, as described in the family training approaches above for teens with ADHD and ODD/CD.
- ✓ It is important to periodically inquire about these and other AEs during treatment, as parents and teens are often reluctant to voice them voluntarily when not prompted to do so.

Mindfulness Meditation Training of Teens with ADHD

Some research has focused on training teens with ADHD in mindfulness-based methods of improving their ADHD, other-reported psychopathology (depression, anxiety), and homework and schoolwork performance. The studies are few (four or five, depending on whether methodology is scientific or whether just clinical pre–post observations are used) and involve quite small samples. Their results were weak, if any, for ADHD symptoms and

arguable for other areas of teen adjustment that were assessed. So this remains an experimental approach with some promise, but it does not have sufficient evidence to recommend clinical adoption for dealing with teens with ADHD at present. It needs much greater and more rigorous research (see Davis & Mitchell, 2020).

Friendship Coaching: Training Parents to Improve Child Social Skills

Social skills training, as traditionally taught to children and youth with ADHD at most clinics and in schools, is not effective in improving the peer relations of children or teens with ADHD. This is likely due to the fact that such traditional programs are not designed based on what is known about the problems inherent in the peer relationships and interactions of children and teens with ADHD. As Amori Mikami (2015) has articulated so well, social skills interventions for children and youth with ADHD need to be founded on empirical evidence of precisely what the problems are that they experience in interacting with other children.

The failure of such programs to improve peer relations for teens with ADHD is also due to the following:

- The focus on skill training, or the imparting of knowledge, in the inchoate belief that the major problem here is that children and youth with ADHD do not know appropriate social skills.
- The fact that the training is often done in groups of children initially unfamiliar to the child with ADHD, thus making generalization back to the teen's typical social group and ecology highly doubtful.
- The fact that many such social skills groups take place in artificial or atypical settings and not in the flow of typical social interactions in the natural ecology as they occur in the lives of child participants.

As the EF-SR theory of ADHD makes plain (see [Chapter 1](#)), the greater problem in ADHD is not whether one knows what to do but whether one can do what one knows. Imparting more knowledge about social skills, then, does not automatically translate to a child's using those skills where and when it would be advisable to do so (the point of performance). To be effective, any

program must focus on the performance problems in the typical flow of the child's interactions with peers and in those natural settings.

Once the precise nature of a child's social problems is known, on the other hand, therapists and other caregivers can create various external prompts and support *at key points of performance during the natural flow of peer interactions in the typical social ecology of the child*. This sort of structure or scaffolding prompts and reinforces the utilization of those social behaviors necessary to improve peer relations with typical peers in natural settings.

Based on her studies of peer problems in children with ADHD and on EF-SR theory, Mikami designed the Parental Friendship Coaching program. It is intended to address the obstacles noted above and others. The program by Mikami does the following:

- It addresses the hypothesized performance deficits in children with ADHD. Because parents are heavily involved in their children's social interactions, especially during play dates, Parental Friendship Coaching relies on parents to provide their children with *in vivo* reminders during peer interactions, increasing the probability of generalization of skills and instructing parents to reinforce what their child is learning such that the parent (not the clinician) provides the child with instruction in social skills knowledge.
- It takes account of the social contextual factors that influence peer relationships, whereas traditional social skills training largely ignores the influence that peers' attitudes, cognitions, and behaviors also have on the social problems of children with ADHD.
- It does not assume that improving the behavior of the child with ADHD will result directly in peers' increased liking of the child with ADHD. Instead, Friendship Coaching trains the parent to arrange fun, structured social opportunities for peers to see the child with ADHD in a positive light (in some cases, this requires the peers to change their initial negative impressions of the child with ADHD); doing this also requires the parents

to broaden their own social networks.

- It trains parents in how to select the “correct” potential friends who will help bring out the best social behavior in the child with ADHD.

Mikami’s Parental Friendship Coaching program consists of eight 90-minute group sessions for parents. There are also two 45-minute individual sessions. In the individual sessions, the therapist emphasizes three topics:

1. Parents learn to increase the warmth and positivity in their relationships with their children with ADHD, because parents who have positive relationships with their children may help their children to have good peer relationships, as children use their parents’ behaviors as a model to follow in peer interactions.
2. Parents learn to coach their children in key social skills. Parents might use discussion and role plays to help children learn the skills. Yet such coaching in social knowledge and skills differs from traditional social skills training in several ways. First, parents focus more specifically on skills important to helping the child develop friendships. Second, parents learn how to introduce contingencies to improve the generalization of these skills during *in vivo* peer interactions, how to monitor their child’s enactment of these skills during the play date, and, if the child is not showing socially skilled behavior, how to intervene via reminders or redirection. Parents then debrief their child after the play date about the behavior the child displayed and provide any reinforcements, if needed, to encourage the child to display the social skills again—things found in previous research to encourage children’s skillful behavior in peer situations.
3. Parents are trained to address social contextual factors to maximally facilitate their child’s peer relationships. For example, it is well known that parents who have good social competence and social networks

themselves help their children make friends, because these parents arrange play dates for their children with the children of their own friends. Friendship Coaching trains parents to judiciously select the correct peers as potential friends for their child—such as peers who seem positively inclined toward their child (or at least not negatively inclined), who are relatively tolerant and open-minded about ADHD symptoms, and who have interests like those of their child; they can also seek out relationships in which the peer and their child bring out good behavior (or, at least, do not bring out bad behavior) in one another.

Results of research studying this program show that it yields reliable and significant improvements in the social skills of children with ADHD. A similar program has also been developed by Mikami for use by teachers in regular education settings to help children with ADHD with their social skills in that setting. Regrettably, the educator program is not yet commercially available, but the parent version of the Mikami program should be by early 2022. I look forward to this program becoming more widely available. Until then, I do not recommend standard social skills training programs. Indeed, 25% of children with ADHD exposed to such training groups get more aggressive as a function of deviancy training by more aggressive peers in the same group. As Mikami (2018) has discussed, social skills training programs can produce side effects or AEs in a substantial minority of children, including the deviancy training just noted, not to mention changes in self-perceptions and possible stigmatizing by others because of such participation in treatment.

¹ The program by Green and Ablon does not focus so much on contingency management following traditional operant conditioning principles. Instead, it teaches parents collaborative problem solving in which the child is actively invited into brainstorming possible ways of resolving parent–child conflicts so as to reach agreement with parents on a resolution of the problem. Only two studies to date by the developer have been published, both from the same single project. They showed little or no advantage of this approach over traditional BPT (my program specifically) for improving child conduct problems,

although some parents reported greater acceptability of the problem-solving methods being taught.

School Management of ADHD

The school setting is the major domain of life activities most likely to be impaired in children and adolescents with ADHD. Fortunately, there are numerous evidence-based methods that can improve the behavior and performance of many children and adolescents with ADHD in this crucial aspect of life. As this chapter shows, the vast majority of these methods are consistent with the EF-SR theory of ADHD and the management framework derived from it and explained in [Chapter 6](#).

The goal of this chapter is to provide an overview of these various management methods. You can find additional detail in *Managing ADHD in School* (Barkley, 2016) and in the chapter by Pfiffner and DuPaul (Barkley, 2015). Some other sources of information are listed in the Bibliography for this chapter and at the end of this book (see [Handout 16](#) in [Appendix A](#)). Also, a reproducible handout ([Handout 30](#) in [Appendix A](#)) contains numerous specific strategies to use in helping manage someone with ADHD at school that you can share with teachers, either directly or by providing it to parents. You can also draw from the commercially available manuals for assisting teens with ADHD with school homework, discussed in [Chapter 7](#).

Besides the specific methods for making accommodations in school,

modifying disruptive behavior, and increasing productive school performance, children and adolescents with ADHD are eligible for special educational services under both the Individuals with Disabilities Education Act (IDEA; usually under the “Other Health Impaired” category if not eligible due to a comorbid condition) and Section 504 of the Americans with Disabilities Act. Clinicians should familiarize themselves with these federal entitlements (and state regulations for implementation) and the services they may mandate for patients having ADHD.

Clinical Tips

- ✓ Each state is allowed to draft its own policies for implementing the federal regulations within its school districts, so expect considerable variation across states in what services can be provided under them. DuPaul and Stoner (2014) provide an invaluable resource, as do various materials provided online at www.chadd.org and in the CHADD educators' manual (CHADD, 2006).
- ✓ Please bear in mind that one of the most effective treatments to combine with these entitlements, accommodations, and management methods is ADHD medication, discussed in [Chapters 9](#) and [10](#). Most research shows that such medications produce far greater improvements at far less cost and for many more children and teens with ADHD than can school behavior management methods or programs alone. The combination of medications with school psychosocial programs often yields the most optimal results.

The Importance of Teachers

The number-one factor for boosting school success for a child with ADHD, in my opinion, is not the type of school, whether public or private, but the qualities of the teacher assigned to work with that child that year. Teachers who are open to learning about and making accommodations in their classes for disabled students, and who understand or are willing to learn about ADHD and its nature as a disorder of EF-SR, not to mention its etiologies and life course risks, get the best results from children and adolescents with ADHD. They understand that it is a disability and that they need to provide accommodations for the EF-SR deficits if the children are to do and learn better while in their care. *It matters less that a child is receiving formal or informal special educational accommodations at school or has a paper individualized education plan (IEP) on file than that teachers are willing to implement these accommodations and plans for that child or adolescent.*

Clinical Tips

- ✓ Strongly encourage parents to be proactive in the selection of teachers to work with their child with ADHD, meeting with the school principal each spring just before student assignments to teachers are about to be made for the fall term. In that meeting, parents should ask for assistance in identifying the most knowledgeable and experienced teachers in that next grade for working with their child with ADHD. Leaving this to chance can be a recipe for disaster the following academic year and will be incredibly difficult to correct after the fact.
- ✓ It may be that the assigned teachers can be expected to be inadequate to the task or are subsequently proven to be so. When no other option exists within that school district, parents should either seek out experienced educator/tutors to work with the child after school to make up the ground being lost during the school day or seek out a nearby private, even parochial, school that is well known to have teachers at that grade level more knowledgeable and compassionate in educating a child or adolescent with ADHD. Better to pay out of pocket than lose an entire school year to a teacher who is not competent in ADHD.
- ✓ If no such schools are known to you, then encourage parents to see if there is a parent support group for families who have children with ADHD in the area, such as on the www.chadd.org website. If so, ask their president or other members whom they recommend as teachers. If not, and if there is a university nearby, contact their school psychology or special education department to see who they

have learned are the best teachers and schools in the area for a child or teen with ADHD.

Behavior Management in Schools

All of the principles of behavior management set forth in [Chapter 7](#) are highly similar to the principles that need to be followed in applying behavior management methods in the school setting. Among them is the need for frequent, immediate, and more salient consequences and greater accountability for rules, tasks, and assignments more often in the school setting. These tactics, combined with using both proactive and reactive contingency management strategies to address disruptive behavior and unproductive work behavior, work well in school settings.

Clinical Tips

- ✓ Some of the 12 principles I set forth in [Chapter 7](#), from my recent book (Barkley, 2021), will also prove useful in school settings, such as offloading working memory demands, externalizing time, making problem solving manuals, using more external motivators, and transition planning.
- ✓ Lessons from [Chapter 6](#) and the treatment framework also apply here, such as instituting methods at key points of problematic performance in the natural ecology of the child or teen.
- ✓ Applying also are those suggestions for dealing with time blindness and the myopia to the future inherent in the disorder (external timers, dividing longer tasks into shorter quotas with frequent breaks and immediate rewards, etc.).
- ✓ Also important is understanding that treatment is as much about improving motivation to show what a student knows as it is about knowing how to behave (the difference between a performance disorder, such as ADHD, and a knowledge disorder, such as autism spectrum disorder or specific learning disorder).

What follows has been adapted from my books of advice to parents and teachers (Barkley, 2016, 2020) that is just as applicable to clinicians.

What to Look for in a School

The first step in helping a child with ADHD achieve educational success is to choose the right school. In the real world, many of us don't have such a choice. Either finances rule out private school or the community is not large enough to provide a variety of options. In these cases, parents select the options that are available, which often can come down again to getting the best possible teacher. Still, more and more parents today—whether their children have ADHD or not—are basing their housing decisions on the local school system, so if a child has ADHD, parents may want to know your advice on what to look for in a school. Here is what to tell them:

1. *Speak with principals* about their awareness of ADHD as an educational disability, how much in-service training the teachers have had on the disorder, and how receptive the school is to enrolling such children (assuming this is a private school; public schools must accept them).
2. If the school accepts such children, *inquire about class sizes*. They should be as small as possible (12–15 per teacher is ideal, and 30–40 is absurd). Also, what extra assistance is available to help a teacher? Does the school have school psychologists, psychiatrists, clinical psychologists, and special educators to consult with teachers about children who have problems? Are there master teachers within the school who have extra training in ADHD, learning disorders, or behavior disorders and who can serve as advisers or mentors to younger, less experienced, or less knowledgeable teachers about classroom management methods for dealing with ADHD?
3. Ask about what the *school's attitude toward the use of behavior-modifying medications* by children with ADHD is. Some schools believe that medication is neither necessary nor beneficial. These schools are clearly out of touch with the scientific literature and should be avoided. Even if

this child is not currently taking any medicine, at some point they may need it, and then parents will want a school that is knowledgeable and cooperative. What mechanisms does the school have in place for the administration and monitoring of medication? Most schools have formal policies about such matters. Many schools require, for example, a signed statement from a physician about the type and dosage of medication and the timing of its administration. Public schools also often require the physician to submit a separate approval form to the state department of education before they will permit medicines to be given at school.

Fortunately, with the development of long-acting ADHD medications, it is becoming less common for children to need to take medication during school hours. A dose of one of these newer medications once in the morning before school or, with a new delayed-release version, even the night before (see [Chapter 9](#)) can often be enough to get them through the school day with sufficient medication in their bloodstream.

4. Ask whether the school has *formal procedures for disciplinary actions and appeals* of those decisions. If so, tell the parents to get a copy of the written policies to see what rights their child may have should behavior problems necessitate disciplining them for misconduct. Then they can determine how comfortable they are with these policies. Be sure the policies are not just punitive but also stress the efforts the school is likely to make to help the student with ADHD avoid repeating the offenses.
5. Ask whether the principal encourages *open and frequent home-school communication*. Will parents be welcome to drop by the school periodically to see how their child is doing? Can they request parent-teacher conferences without a lot of red tape? Is the input of parents valued by the school? Some schools will provide daily journals that the children take back and forth between home and school each day concerning behavioral issues that day. Many others have Internet-accessible portals for parents and teachers to communicate with each

other about important matters. The journal or website also can indicate what was studied in each major subject and what the homework in that subject is each day. These journals or website portals are great for keeping parents informed about a child's daily performance. Other schools allow or even encourage teacher-parent contact via e-mail for much the same purposes.

6. Ask whether, if parents feel it necessary, the *school staff is open to having an outside professional, such as you or another expert, visit the school* with them to discuss their child's ADHD and educational program and perhaps make further recommendations to improve it. If the school principal or teacher seems defensive about such outside advice, suggest that parents find another school.
7. Ask *how many other children entering your child's grade or class also have behavioral, learning, or emotional problems*. Most teachers can handle only a few such children in any regular classroom with other, typically functioning children. If there are more than two or three per class, advise parents to ask for a different classroom or find another school.

Choosing a Teacher for a Child or Adolescent with ADHD

In making the best possible choice for your child, you need to evaluate teachers, as noted above, based on *knowledge* and *attitude*.

How Well Informed Is the Teacher?

Unfortunately, many teachers are uninformed about ADHD or are out of date in their knowledge of the disorder and its management. Some teachers have a poor grasp of the nature, course, outcome, and causes of this disorder. They also may have misperceptions about which treatments are helpful and which are not. When this is the case, little positive change will result from attempting to establish curriculum adjustments and behavior management programs within that classroom. Just as the first step in helping any child or adolescent with ADHD is for parents to become educated about ADHD, the initial step of school intervention is the education of teachers about the disorder. Armed with the information in this book, you can help parents determine from interviews with the principal and teachers whether a particular teacher is informed on ADHD. If not, parents can still do a lot to help.

Clinical Tips

- ✓ By understanding the methods presented here and in [Handout 30](#) in [Appendix A](#), parents can be equipped to pass along recommendations to their child's teacher for possible implementation.
- ✓ You or the parents can also raise these techniques as suggestions at school conferences about this child's school performance or can even request, when appropriate, that some of them become a formal part of the child's written IEP if this child is going to be receiving formal special educational services.
- ✓ As a clinician, if you have time to consult with schools, you can also help educate the teacher by providing brief reading materials such as those listed in [Handout 16](#) in [Appendix A](#), or [Handout 30](#) for teachers in [Appendix A](#), or even by sharing my book *Managing ADHD in School* (Barkley, 2016) with the teachers.

What Is the Teacher's Attitude toward Behavior Modification Techniques and Accommodations?

Whether any individual teacher can and will adopt the behavioral programs advocated in this book is greatly influenced by the teacher's educational training and philosophy, as well as by their personal experience and beliefs about the educational process. In some cases, intensive training of the child's teacher by a school or clinical psychologist expert in these behavioral programs may be required. Children with ADHD who had teachers who were more domineering in these consultations and less open to the advice and information of the consultant had worse outcomes in school (Erchul & Martens, 2010). Such teachers are substantially less likely to implement any of the consultant recommendations or to make changes in their classrooms for individual children with ADHD. Teachers who use a permissive approach to education are also often unlikely to use behavior modification out of misplaced concern that these methods are too mechanical and do not adequately foster a child's natural development and motivation to learn. This is certainly not true. In some cases, these beliefs may be altered through the success of a consultation with a professional trained in behavioral programs. In other cases, such beliefs will not change and may greatly interfere with the effective use of behavioral programs in this child's classrooms.

Clinical Tips

- ✓ Even with training, "booster" visits by the professional to the school following training may be necessary to maintain the teacher's use of behavior management procedures.
- ✓ If a teacher is disinclined to follow the necessary methods, even once trained in doing so, a transfer to an alternative teacher with a philosophy more consistent with using behavioral programs may be beneficial.
- ✓ In cases of poor teacher motivation or a conflicting philosophy, be assertive. Press the school administrators for either greater teacher accountability or a transfer of this child to another classroom or school, rather than wasting a year of the child's education.
- ✓ When this is not possible, you may want to advise parents to supplement the

child's education outside of school through additional tutoring, summer school review programs, and possible extra parent involvement at home in reviewing schoolwork.

- ✓ Bear in mind that most parents are not very good tutors for their own children, so an outside professional tutor is best whenever possible.
- ✓ Another important issue for clinicians to advise parents to consider is how well adjusted the child's teacher is. Have other parents filed complaints against this teacher for incompetence, "malpractice," or ineffective teaching? Parents certainly cannot request that each of their child's teachers undergo a psychological evaluation, but they can seek information from the principal or other school staff members (or parents of former students from that class) about that teacher's reputation in dealing with children with behavior problems.
- ✓ Parents can also ask for the names of parents whose children are currently in that teacher's care so that they can call those parents to get a clearer view of that teacher's competence.

Some teachers resist behavioral techniques or other executive function accommodations not because of a conflicting teaching philosophy but because they believe the problems of children with ADHD are socially based. That is, such teachers see the problem behaviors as stemming from conflicts or chaos at home or excessive "screen time." Perhaps they see medication as the only solution because ADHD has a biological basis and they can't be bothered with or see any need for making any accommodations for this child. Other teachers may resent altering their teaching style if they believe that this suggests that their own behavior is causing a child's problems.

What Can You Advise Parents to Do to Be of Help?

Overall, the importance of a close collaboration among parents, the child's teachers, and any professional experts on the treatment team cannot be stressed enough. However, successful collaboration can easily be hindered by attitude—not just the teacher's but that of the parents as well. Are parental efforts being hampered by an attitude they formed over a long history of conflicts with school personnel? Or are their expectations unrealistic? Are they waiting for the school to "cure" their child's problems while they remain passive or uninvolved? If this child is having few difficulties at home, have they persuaded themselves that poor teaching or management at school is

causing this child's difficulties in the classroom?

Also, as I noted earlier, be aware that in many cases the behavioral programs suggested here will need to be combined with medication to treat the school problems of a child with ADHD. Recent research shows that the combination of behavioral programs and medication produces improvements that are superior to either treatment used alone.

Finally, when parents find one or more good, sensitive teachers for their child, encourage them to be supportive and praising. Positive attention by parents to a child's teachers builds a stronger relationship with them, just as it does between parents and their child or teen with ADHD.

Clinical Tips

- ✓ Be sure to examine the parents' attitudes periodically, or encourage them to do so, to see if they are hindering the collaborative process.
- ✓ If antagonism has arisen between the parents and a teacher, parents may want to ask a professional consulting with them, such as you, to come to the school to help mediate consultations with the teacher.
- ✓ If this child is having serious problems with school adjustment, you should consider recommending that parents employ medication for this child (see [Chapters 9](#) and [10](#)).
- ✓ Encourage parents to assist their child's teachers in any way they can.
- ✓ Advise them to be open to the teachers' suggestions of what they can do to help.
- ✓ Urge parents to convey their approval and admiration not only to the teachers but also to the school principal. Occasional holiday and birthday cards sent to them, such as e-cards or even small gift cards to local coffee shops or restaurants, can go a long way to cementing a good relationship between parents and their child's teachers and motivating them to go that "extra mile" to help educate this child. All this can greatly strengthen a parental relationship with such teachers, increase the teachers' desire to tailor their classroom programs to this child's special needs and abilities and to assist parents in finding future teachers of similar thinking as this child progresses through that school, and encourage them to come to the child's defense when decisions about educational programming must be made by school administrators.

Some Advice about the Classroom and the Curriculum

Various factors related to the structure of the classroom environment, classroom rules, and the nature of work assignments are important to consider if parents are to help their child with EF-SR deficits at school. In the past, professionals told parents and teachers to reduce the amount of stimulation in the classroom because it could lead to excessive distractibility in children with ADHD. Research evaluating such measures found, however, that they did not improve classroom behavior or academic performance in such children. Similarly, suggestions that traditional classrooms are too restrictive and that classrooms affording greater freedom and flexibility, such as open-concept classrooms, are best have not been supported by research.

There are several features of the classroom, however, that may need some adjustments when a teacher is working with a child or adolescent with ADHD.

Clinical Tips:

- ✓ Keep necessary classroom adjustments in mind when you advise parents about shopping for next year's classroom and teacher for this child.
- ✓ Remember them as well when you or the parents meet with that teacher to plan the approach to the school year.

Seating Arrangement

Believe it or not, one important point is the seating arrangement in the classroom. Altering seating arrangements is sometimes as effective as a reward program in increasing appropriate classroom behavior. Research suggests the following for seating a child with ADHD:

- *A traditional desk arrangement in rows facing the front of the classroom, where the teacher typically locates while lecturing. This is far better for*

children with ADHD than modular arrangements, in which several or more children share a larger table, especially if they face each other while working. Such arrangements seem to provide too much stimulation and too many opportunities for social interaction with other children, which distract a child with ADHD from attending to the teacher or classwork.

- *Move the child closer to the teacher's desk or wherever the teacher spends the most time while instructing the class.* This not only discourages classmates from giving the child attention for disruptive behavior but also makes it easier for the teacher to monitor this child and to dispense rewards and fines quickly and easily. *Classrooms that are physically enclosed (with four walls and a door) are usually much better for a child with ADHD than so-called open classrooms.* Open classrooms are usually noisier and contain more visual distractions. Research shows that noisy environments are associated with less attention to work and higher levels of disruptive behavior in children with ADHD.

Classroom Routine and Structure

Advise parents that a well-organized and predictable classroom routine is also helpful:

- *The posting of a daily schedule and classroom rules can add to this sense of structure.*
- *Use of feedback charts at the front of the class that display how children are doing in following rules, behaving, and working may also help your child with ADHD.*
- *In some cases, "nag" recordings are particularly helpful.* Although this is not really a factor in classroom structure, it is an example of the type of measure the school should be open to using. Before doing work at their

desk, the child takes out a small portable digital recorder, puts on an earpiece so the recording does not distract other students, and turns on the player. The child then proceeds to do the work while the recorder plays reminders to them to remain on task, not bug others, and the like. Some soft background music on the recording won't hurt, either. As I noted earlier, a little stimulation in a setting in which work has to be done is helpful, not harmful, to concentrating and being productive. The effectiveness of these recordings will depend greatly on their being combined with consistent methods for enforcing rules and with the use of rewards and punishments for working and proper conduct.

The following additional changes to classroom structure and curriculum are likely to be helpful:

1. As is true for all children, *academic tasks should be well matched to the child's abilities*. For children with ADHD, increasing the novelty and interest level of the tasks through use of increased stimulation (e.g., color, shape, texture) seems to reduce disruptive behavior, enhance attention, and improve overall performance.
2. The teacher should *change the style of presenting lectures and task materials* to help maintain the interest and motivation of children with ADHD. When low-interest or passive tasks are assigned, they should be interspersed with high-interest or active tasks to optimize attention or concentration. Tasks requiring an active as opposed to a passive response may also allow children with ADHD to better channel their disruptive behaviors into constructive responses. In other words, give a child with ADHD something to do as part of the class lecture, work assignment, or activity, and the child's behavior will be less of a problem.
3. *Academic assignments should be brief to fit with a child's attention span*. As I discussed in [Chapters 1](#) and [7](#) when discussing the valuable concept of a child's executive age, a good rule of thumb is to assign the amount of

work that would be appropriate for a child 30% younger. Feedback regarding performance of assignments should be given immediately, and time limits for getting work done should be short. This can be aided by the use of timers, such as clocks or cooking timers.

4. A child's *attention during group lessons may be enhanced by delivering the lesson in an enthusiastic yet task-focused style*, keeping it brief, and allowing frequent and active child participation. A teacher who pretends to be more like an actor—who is vibrant, enthused, and emotionally charged (recall Robin Williams in the movie *Dead Poet's Society*)—will get much more attention than one who drones on about some dry subject.
5. *Breaking classroom lectures up with brief moments of physical exercise* may also be helpful. This reduces the sense of fatigue and monotony that children with ADHD may experience more often than typical children during extended academic work periods. The teacher can try jumping jacks or brief dancing by the desk (with short music clips), a quick trip outside the classroom for a brisk 2-minute run or walk, forming a line and walking about the classroom in “conga line” fashion, or other such brief physical activities. These can revive the attention span not only of a child with ADHD but of other children as well.
6. The teacher should *schedule the difficult academic subjects in the morning* and leave the more active, nonacademic subjects and lunch to the afternoon periods unless the child is on an ADHD medication. It is well known that the ability of a child with ADHD to concentrate and to inhibit behavior decreases greatly over the school day. Or teachers can consider alternating such low-appeal lessons or desk work with high-appeal activities to further sustain effort to the low-appeal tasks.
7. Whenever possible, *classroom lectures should be augmented with direct-instruction materials*—short, highly specific drills of important academic

skills or, even better, computers with software that does the same thing.

What Placement Is Best for a Child with ADHD?

In many cases, the measures described thus far and the programs presented in the handout for teachers ([Handout 30](#) in [Appendix A](#)) will be sufficient, especially for children with mild to moderate ADHD symptoms or for children whose inattention and behavioral problems are controlled with medication. However, in other cases, especially in children with severe ADHD symptoms and accompanying problems of opposition, aggression, or learning disabilities, alternative educational placements—for example, special education or private school—may be necessary. Ideally, these placements should include classes with a small student–teacher ratio, and the classes should be taught by teachers with expertise in behavior modification.

Special Educational Services

Obtaining special educational services for children with ADHD is often a difficult and time-consuming process. A child with ADHD who is failing may be eligible for special educational services according to the guidelines specified in Public Law 94-142, the predecessor of the current IDEA. Advise parents to ask their school district to explain the IDEA and their child’s rights under it.

Clinical Tips

- ✓ Keep in mind that a diagnosis of ADHD is not enough to qualify a child for special educational services; the child must also be experiencing a significant impairment in school performance because of it.
- ✓ It is also essential to become familiar with federal, state, and local district guidelines. Parents can get all of this information from their local school district. Both you and parents can find additional information in the following resources (see [Bibliography](#) for publishing details):
 - *All about ADHD: The Complete Practical Guide for Classroom Teachers, Second Edition* (Piffner, 2011)
 - The third edition of *How to Reach and Teach Children with ADD/ADHD* by Dr.

Sandra Rief (2016)

- The *CHADD Educators Manual* (CHADD, 2006)
- *Managing ADHD in School* (Barkley, 2016)

- ✓ You and especially the parents should become acquainted with the director of special education within that school district.
- ✓ You are only as good as your personal telephone directory or contact list in dealing with the educational problems of your child clients with ADHD. A good file of telephone numbers can go a long way toward locating resources within the private sector, such as private schools, formal and informal tutoring programs, and special summer camps.
- ✓ Contact your local parent support association (e.g., your local branch of CHADD or the Attention Deficit Disorder Association [ADDA]—see [Handout 16](#), [Appendix A](#)) for advice on resources in your area for school problems and tell parents to do the same. These organizations can sometimes even send a professionally trained advocate with parents to school meetings. In some cases, parents may need to get a second opinion about their child's problems because they disagree with the school staff over the nature and extent of those problems and the child's eligibility for services. Perhaps that is why the family has sought your clinical expertise for this child or teen with ADHD.

Developing Classroom Management Programs for Children with ADHD

The following material is intended for clinicians who consult with schools about the management of children with ADHD or help develop behavior management programs for school use.

Whether or not medication is used, numerous important principles are helpful to keep in mind in developing classroom management programs for children with ADHD. These stem from the theory presented in [Chapter 1](#) that ADHD involves a developmental deficiency in a child's executive functions and self-regulation abilities.

Principles for Behavior Management Programs in Classrooms

A review of the empirical research on classroom management programs for children and teens with ADHD yields a number of principles that should be considered in designing future such interventions for any child or teen. These are set forth below.

Clinical Tip

- ✓ These principles can also be provided to teachers as basic guidelines for behavior management with students who have ADHD.

1. *Rules and instructions must be clear, brief, and (wherever possible) represented physically* in the form of charts, lists, and other visual reminders. Relying on children's memory and on verbal reminders is often ineffective. Encourage children with ADHD to repeat instructions out loud and even to utter them softly to themselves while following through on the instruction.

2. *Rewards, punishments, and feedback used to manage behavior must be delivered swiftly and immediately, and the entire approach to using consequences must be well organized, systematic, and planned.*
3. *Frequent feedback or consequences for following the rules are crucial to maintaining a child's compliance.*
4. Children with ADHD are less sensitive to social praise and reprimands, so *the consequences for good or bad behavior must be more powerful* than those needed to manage the behavior of children without ADHD.
5. *Rewards and incentives must be put in place before punishment is used, or children with ADHD will come to see school as a place where they are more likely to be punished than rewarded. Make sure the teacher waits a week or two after setting up a reward program at school before starting to use punishment. Then make sure the teacher gives two to three rewards for each punishment. When punishment fails, first determine whether the extent to which rewards are available is insufficient; when it is, punishment will not control a child's behavior.*
6. *Token reward systems can be kept effective over an entire school year with minimal loss of power, provided that the rewards are changed frequently. Children who have ADHD become bored with particular rewards faster than other children, and teachers who fail to recognize that fact often give up on a token program too soon, believing it has stopped working when the problem is just boredom with the specific privileges that children can purchase with their tokens.*
7. *Anticipation is the key with children who have ADHD, especially during times of transition. To ensure that the child with ADHD is aware of an impending shift, ask the teacher to review the rules before going into the new activity; have the child repeat these rules, including rewards for good behavior and punishment for misbehavior; and follow through on this plan once the activity begins. Think aloud, think ahead is the important*

message for educators here.

You can also share some or all the 12 principles I set forth in the preceding chapter, as well as these: (1) strive for consistency, (2) do not personalize the child's problems, (3) maintain a disability perspective on the child, and (4) practice forgiveness. With these rules in mind, a creative teacher can easily devise an effective management program for a child with ADHD.

8. Sometimes *children with ADHD may need extra help outside of school to stay on pace with typical children* in getting school homework done or keeping up their academic skills and knowledge. Some parents step in and play the role of tutor to the child, which in some cases can work very well. However, many parents make poor tutors, or issues between the parent and child that arose in other situations carry over to adversely affect the time set aside for this tutoring. For these reasons, and others, it makes sense to encourage parents to hire a formal tutor to work with their child several times a week. In addition to such a tutor, or instead of one, parents should check out the self-taught courses on the Internet at Khan Academy (www.khanacademy.org). These are courses designed for children and adolescents to complete on their own, and they cover many of the academic subjects that children and adolescents are likely to be taking at school. They use a self-paced format that seems better for the child with ADHD than do lectures by teachers in school. Parents (or a tutor) can also work together with the child or teen on these courses initially. The courses are free. However, there are also a variety of websites that offer school lessons for all grades for children being homeschooled that may be as entertaining and engaging as those at Khan Academy (or more so). Although not free, these other websites are inexpensive and may offer good supplemental learning material for children with ADHD who need such extra help.

Classroom Structure, Task Demands, and Academic Curricula

Proactive strategies such as modifying the structure of the classroom environment were discussed earlier (see [p. 147](#)). Other proactive strategies, including clearly stating classroom rules and the nature of task assignments, making beneficial use of computer-assisted instruction and assistive technology, and giving explicit instruction in academic skills are also important.

Actively Teaching Expectations

Clinical Tips

- ✓ Teachers should be encouraged to actively teach rules and expectations to all students throughout the school year. Ideally, teaching and modeling of rules and expectations would occur schoolwide at the point of performance (i.e., setting and time where behavioral expectations are relevant).
- ✓ As noted earlier, transitions from one area of the school to another often are a trigger for problem behavior, so teachers should be encouraged to teach, model, and practice efficient transition behaviors with students, especially in new or typically problematic settings.
- ✓ Specifically, encourage teachers to:
 - Actively teach expectations for student engagement by discussing, modeling, and praising children for following them (i.e., catch students following rules) and ensure that academic and nonacademic routines are regularly taught and practiced by all students.
 - Use active supervision practices, such as frequently scanning and circulating through the classroom while monitoring student attention and behavior.
 - Remind students about expected engagement behaviors before an activity begins rather than waiting until after a rule has been broken.
 - Correct behavioral errors (e.g., calling out without permission) in a brief, clear, and consistent manner, like instructional strategies for correcting academic errors.
 - Maintain a brisk pace of instruction and use a range of verbal, nonverbal, and visual cues to precorrect and redirect disruptive behaviors so that instruction is uninterrupted.
 - Frequently communicate expectations about use of class time and task

engagement in a clear manner through using explicitly taught routines and procedures.

Modifying Academic Assignments and Expectations

Students with ADHD frequently exhibit difficulties starting and independently completing academic assignments. Here are recommendations you can make to teachers for altering academic assignments to enhance performance:

1. *Assign academic work that is well matched to the student's abilities.*
Increasing the novelty and interest level of the tasks through use of sensory stimulation (e.g., color, shape, texture) seems to reduce activity level, enhance attention, and improve overall performance for students with ADHD.
2. *Vary the presentation format and task materials (e.g., through use of different modalities) to help maintain interest and motivation.* When low-interest or passive tasks are assigned, they should be interspersed with high-interest or active tasks to optimize performance. Tasks requiring an active (e.g., motoric) as opposed to passive response may also allow students with ADHD to better channel their disruptive behaviors into constructive responses.
3. *Design academic assignments that are brief (i.e., accommodated to the child's attention span) and presented one at a time rather than all at once in a packet or group.* Short time limits for task completion should also be specified and may be enforced with the use of external aids such as timers. For example, a timer may be set for several minutes, during which time the student is to complete a task. The goal for the student is to complete the task before the timer goes off. Feedback regarding accuracy of assignments should be immediate (i.e., as they are completed).
4. *Deliver group lessons in an enthusiastic yet task-focused style, keep it brief,*

and allow frequent and active child participation to enhance student attention.

5. *Intersperse classroom lecture or academic periods with brief moments of physical exercise to diminish the fatigue and monotony of extending academic work periods.*
6. *Schedule as many academic subjects into morning hours as possible, leaving the more active, nonacademic subjects and lunch to the afternoon periods.*
7. *When necessary and deemed helpful, implement accommodations for written work, such as reducing the length of the written assignment (particularly when it is repetitious, breaking it into smaller work quotas having shorter work periods with brief breaks from work, and allotting extra time to complete work).*
8. *Provide task-related choices to increase on-task behavior and work.* Choice making typically is implemented by providing a student with a menu of potential tasks in a particular academic subject area from which to choose. For example, a student who is having difficulty completing independent math assignments would be presented with several possible math assignments to choose from. The student would be expected to choose and complete one of the tasks listed on the menu during the allotted time.

Providing Computer-Assisted Instruction

Computer-assisted instructional (CAI) programs seem well suited for engaging students with attentional/distractibility problems and motivational deficits, as discussed by DuPaul and Stoner (2014). For example, these programs typically include clear goals and objectives, highlight important material, simplify tasks, and provide both immediate error correction and feedback regarding accuracy, and many (perhaps the more effective ones) also

have a game-like format. Students with ADHD would be expected to be considerably more attentive to these types of teaching methods than to lectures or individual written assignments. Several controlled case studies suggest that these methods are helpful for at least some students with ADHD and may be considered as an adjunct to other academic or behavioral interventions.

Improving Academic Skills

For students with both ADHD and academic skills deficits or learning disabilities, remedial instruction in skill areas such as reading, writing, spelling, and math is recommended. For a review of instructional strategies for remediation, see DuPaul and Stoner (2014). Many students with ADHD also have difficulty with organizational and study skills. Instruction in time and materials management is required. Such training may include note-taking strategies, desk checks for neatness, and filing systems for organizing completed work.

Strategies to address academic performance difficulties associated with ADHD can include explicit instruction, parent tutoring, and peer tutoring. The most important way to address potential academic difficulties is for teachers to use principles of explicit instruction when working with students with ADHD. Explicit instruction is a direct approach to teaching that involves (1) providing clear information to students about what is to be learned; (2) instructing skills in small steps using concrete, multiple examples; (3) continuously assessing student understanding; and (4) supporting active student participation that ensures success. A key aspect of explicit teaching is the use of instructional momentum that involves lesson pacing (e.g., using a predictable lesson process that includes varied instructional activities) and managing instructional transitions (e.g., giving clear directions for transitions). There are five key elements of explicit instruction, including daily review and prerequisite skill check, teaching of new content, guided practice, independent practice, and weekly/monthly review of skill

attainment. Although the impact of explicit instruction on academic achievement has not been specifically studied with students with ADHD, there is an abundant literature supporting this teaching approach for children and adolescents with emotional and behavioral disorders. Further, the tenets underlying the explicit-instruction approach have a long history of support in the behavior analytic research literature.

Peer tutoring involves students working in pairs and helping each other practice academic skills, typically reading, math, and spelling. Peer tutoring focuses specifically on improving academic skills (a target that has been relatively unaffected by traditional contingency management programs) and provides a learning environment well suited to the needs of students with ADHD (i.e., involving immediate, frequent feedback and active responding at the student's pace; DuPaul & Stoner, 2014). A meta-analysis of 26 single-case research design studies including over 900 students from the general school population (including those with and without disabilities) found moderate to large effects of peer tutoring on academic achievement). Peer tutoring effects were consistently strong across dosage (i.e., duration, intensity, and number of sessions), grade level, and disability status. Of relevance for the use of this strategy with students with ADHD is the fact that the strongest effects were found for youth with emotional and behavioral disorders relative to other disability groups.

The most prominent and widely studied peer tutoring program is classwide peer tutoring (CWPT), in which all students are paired for tutoring with a classmate. Students are first trained in the rules and procedures for tutoring their peers in an academic area (e.g., math, spelling, reading). Sitting in adjacent, separate seats, the tutor reads a script of problems to the tutee and awards points to the tutee for correct responses. The tutor corrects incorrect responses, and the tutee can practice the correct response for an additional point. The script (problem list) is read as many times as possible for 10 minutes, and then the students switch roles, with the tutee becoming the tutor and the tutor becoming the tutee. During the tutoring periods, the teacher monitors the tutoring process and provides assistance if needed.

Bonus points are awarded to pairs following all the rules. At the end of the session, points are totaled, and those with the most points are declared the “winners.” Studies have found CWPT to enhance the on-task behavior and academic performance of unmedicated students with ADHD in general education classrooms. Further, research indicated that typically achieving students also showed improvements in attention and academic performance when participating in CWPT.

Behavior Management Methods for the Classroom

If you consult with schools about behavior management methods for children or adolescents with ADHD, you may find the specific advice in [Handout 30](#) in [Appendix A](#) on classroom accommodations for ADHD to be very helpful. Because they are like the principles discussed for behavioral parenting training in [Chapter 7](#), they are not reviewed again here. The greatest improvement in classroom behavior and academic performance is likely to come only from a combination of strategies and may also include ADHD medications.

Clinical Tip

- ✓ Be aware that, as with all effective treatments for ADHD, some adverse effects or side effects can arise from implementing these behavior management strategies, as discussed by Piffner and DuPaul (2018). These can include increased frustration, anger, and defiance or even violence when limits are set on misbehavior and disciplinary strategies are initially implemented, or when children fail to meet the criteria of performance required to obtain desired reinforcers. Although it is uncommon, some stigma can arise if children with ADHD are singled out from their classmates to receive these special procedures. Be conscious of these and other possible adverse effects and actively inquire about and periodically monitor them.

Limiting the Side Effects of Punishment

Despite the overall effectiveness of punishment, some unpleasant side effects may occur if it is used improperly. These unwanted effects include the escalation of the problem behavior, the child's dislike of the teacher, or (in rare cases) the avoidance of school altogether. Here are several guidelines to reduce possible adverse side effects:

1. *Punishment should be used sparingly.* Excessive criticism or other forms of punishment may also make the classroom unpleasant or aversive.

Frequent harsh punishment may even increase a child's defiance. This is especially likely in cases in which a teacher mistakenly serves as an aggressive model—that is, the teacher's use of punishment teaches the child to be aggressive, like the teacher.

2. *When negative consequences are used, children should be taught and rewarded for alternative appropriate behaviors that are not compatible with the inappropriate ones.* This practice will help by teaching the children appropriate skills, as well as by decreasing the potential for the occurrence of other problem behaviors.
3. *Punishment involving the removal of a reward or privilege is to be preferred to punishment involving the use of an aversive event, such as isolation.* But there may be times when a time-out period should be invoked with a child. Even then, the “do a task” variant of time-out is preferable to the standard procedure, as it involves an active response by the child during the period of isolation (completing worksheets at an isolated desk) and also gives the child some control over terminating the time-out period earlier by completing the worksheets more quickly.

Getting Results to Last and Carry Over to Other School Situations

Despite the substantial success of behavioral methods in school, there is little evidence that the gains made by children under these programs last once the programs are stopped. Also, the improvements that may occur in one setting or classroom in which the programs are used (say, reading class) often do not carry over to settings in which the programs are not being used (say, math class or recess). This can be very disappointing to both parents and teachers.

Clinical Tips

- ✓ Even though research continues, there are difficulties with making results last and generalize to other settings that have not been resolved. Specially arranged

treatment programs for children with ADHD simply may be required across most school settings.

- ✓ For now, be prepared to keep behavior management programs in place for long periods of time over the course of a child's education.

Here are some strategies to consider, although they all have drawbacks:

- *Use management programs wherever the child's behavior is a problem.* Unfortunately, not everyone can do these programs or do them as well as others.
- *Withdraw the management methods gradually—by reducing the frequency of feedback (fading from daily to weekly rewards) and substituting more natural rewards, such as praise and regular activities for token rewards.* This may increase their endurance, but not their generalization to other places. One study found that the abrupt removal of punishment, even when a powerful token program was in use, led to a dramatic deterioration in class behavior, but when punishment was removed gradually, high levels of paying attention and hard work were maintained.
- *One particularly effective way to fade out a management program involves changing the places in school where the programs are in effect on any given day.* The child is never quite sure when or where the programs will be used and learns that the best bet in these circumstances is to keep behaving well everywhere.
- *Another alternative is to implement a daily behavior report card that involves rating the child's behavior by each teacher that day, with the card going home and the ratings converted into a home point system with access to home rewards.* This program is discussed below, and copies of several different kinds of report cards are provided in [Handout 29](#) in [Appendix A](#).

Having Classmates Help with Behavior Management

Some studies show that classmates can intervene directly to encourage good

behavior in a fellow student with ADHD. Using classmates as “behavior sheriffs” has practical advantages. It provides an alternative to the teacher being compelled to observe everyone all the time, and it may require less time than traditional teacher-mediated programs. It may also serve to improve the behavior of the “sheriffs” and to encourage the transfer of the improved behavior into other situations where the same peers are present.

Here are a few ways this can be done:

- Teachers can encourage classmates to ignore the disruptive and inappropriate behavior of the child with ADHD.
- Peers can also increase this child’s appropriate behavior by giving the child praise and positive attention for it.
- Token programs, in which classmates monitor the behavior of the child with ADHD and give or take away tokens for good or bad behavior, can also be successful as long as they are supervised by a teacher.

Clinical Tips

- ✓ Classmates should usually be rewarded for their own efforts. Otherwise, what’s in it for them? In some cases, praise is sufficient, but the teacher can also use tangible rewards or a token program. Rewarding these children not only reinforces their efforts, but also ensures that the program is carried out well.
- ✓ The teacher should train and supervise classmate sheriffs carefully. Programs carried out by classmates are successful only to the extent that these classmates have the ability and interest to learn the methods and to carry them out accurately.
- ✓ Classmates should not get involved in the punishment aspects of any program.

Home-Based Reward Programs

In a home-based reward program, the teacher sends home an evaluation of how the child with ADHD behaved in school that day, and the parents use it to give or take away rewards available at home. This method has been studied for decades in research projects and is effective in modifying a wide range of problems that children with ADHD have at school.

Clinical Tips

- ✓ Because of its ease of application and the fact that it involves both the teacher(s) and parents, this is often one of the first interventions you should try. That is why I have provided you with sample cards along with the instructions for how to establish such a program in [Handout 28](#) in [Appendix A](#).
- ✓ Overall, home-based reward programs may be even more effective when combined with classroom-based programs, which give the parents frequent feedback, remind parents when to reward a child's behavior, and forewarn parents when behavior is becoming a problem at school. Furthermore, the type and quality of rewards available in the home are usually far more extensive than those available in the classroom—a factor that may be critical for children with ADHD, who need more powerful rewards to improve behavior and sustain the improvements.
- ✓ Teachers who have been unable to start a classroom management program may be far more likely to cooperate with a note-to-home program because it generally requires much less time and effort than classroom-based programs.
- ✓ Despite the impressive success of note-to-home programs, the effectiveness of such a program depends on accurate evaluation of the child's behavior by the teacher.
- ✓ Teachers should be advised to take measures to prevent children from undercutting the system by failing to bring home a report or by forging a teacher's ratings and even initials on the card or failing to get certain teacher initials altogether. Teachers should treat missing notes or initials the same way as a "bad" report (e.g., a child fails to earn points or is fined by losing privileges or points). The child may even be grounded for the day (no privileges) for not bringing the note home.

Managing the Academic Problems of Adolescents with ADHD

All of the recommendations made so far apply as much to adolescents with ADHD as to younger children. However, the changes that take place in high school—the greater number of teachers involved with each student, the shorter class periods, the increased emphasis on individual student responsibility, and the frequent changes in class schedules from day to day—are likely to result in a dramatic drop in educational performance as many children with ADHD enter high school. After all, time management and self-organization are executive functions and are often deficient in teens with ADHD. The problems are compounded by the fact that teachers have little or no accountability for particular students at this level of education. Only when a teen's misbehavior becomes sufficiently serious to attract attention or when academic deficiencies are grossly apparent will someone take notice. Usually, the response of the school is punitive rather than constructive.

It is very easy for average adolescents with ADHD to fall through the cracks at this stage unless they have been involved with the special educational system before entering high school. Those who have will have been “flagged” as in need of continuing special attention. But the others are likely to be viewed merely as lazy and irresponsible. It is at this age level that educational performance becomes the most common reason adolescents with ADHD are referred for professional help.

Dealing with large schools at this age level can be frustrating for parents and for a teenager with ADHD alike. Even the most interested teacher may have difficulties mustering sufficient motivation among colleagues to be of help and keep the adolescent out of trouble at school. Several programs for helping parents and adolescents improve their homework (and schoolwork) performance were discussed in the [previous chapter](#), such as the Homework Organization and Planning Skills program (HOPS; Langberg, 2011) or the

STAND program (Sibley, 2020). Here are a few additional ideas that may help:

1. If the teenager is failing or doing poorly and has never had special education, *encourage the parents to immediately request a special education evaluation* if one has not been done before or within the past 3 years. Federal law (the IDEA) requires a reevaluation every 3 years that a child is in special education. Special educational services will not be forthcoming until this evaluation is completed, and this can take up to 90 days or longer in some districts. The sooner it is initiated, the better.
2. *Adolescents with ADHD usually require counseling about the nature of their disability.* Although many have already been told that they are “hyperactive” or have ADHD, a lot of them have not come to accept that they have a disability. They have yet to “own it,” as musician and TV celebrity Adam Levine, who has ADHD, discusses in his YouTube video on this topic. Counseling can help these teenagers learn to accept their limitations and find ways to prevent their disability from creating significant problems. Such counseling is difficult, requiring sensitivity to the adolescents’ desire to be independent and to form their own opinions of themselves and their world. It often takes more than a single session to succeed, but patience and persistence can pay off. Perhaps you are comfortable with providing such counseling in your own clinical practice. If not, then find a counselor or other professional who knows about ADHD and refer the family to this professional to spend a few sessions counseling the adolescent about the disorder.
3. *Counsel the adolescent on the advantages of returning to medication* if it has been used successfully in the past. Medication can improve school performance and help the teen obtain those special privileges at home that may be granted due to such improved performance (use of the car, later curfew, higher allowance, etc.). Adam Levine went back on

medication after discontinuing it for a while as a teenager. Share this with the adolescent you may be counseling or have them read about Adam online, where he discusses his ADHD and use of medication. Adolescents who are concerned about others learning that they are on medication should be reassured that only they, their parents, and the physician will be aware of this.

4. *Instruct parents to schedule a team meeting at the beginning of each academic year, and more often as needed, at the teenager's school. This meeting should be attended by the teachers, school psychologist, guidance counselor, principal, parents, and the adolescent with ADHD. Give parents a copy of the fact sheets on ADHD ([Handouts 3–14](#)) and the one on Classroom Accommodations for Children and Adolescents with ADHD ([Handout 30](#)) in [Appendix A](#) to take to this meeting to give to each participant. If you think it is helpful and your type of practice is amenable to doing so, go along with the parents to give advice. Briefly review the nature of the adolescent's disorder and the need for close teamwork among the school, parents, and teen if the teen's academic performance is to be improved. Get the teachers to describe the current strengths and problems of the adolescent in their classes and to make suggestions as to how they think they can help with the problem. Some of these might include the following:*
 - Be available after school a few days each week for extra assistance.
 - Reduce the length of written homework assignments.
 - Allow the adolescent to provide oral or recorded narratives as a means of demonstrating that knowledge has been acquired, rather than relying on just written, timed test grades.
 - Develop a subtle reminder system to alert the teen when they are not paying attention in class without drawing the whole class's attention to the fact.

At this conference, the adolescent is encouraged to make a public commitment to doing specific things to improve school performance. The team, or a subset, should agree to meet again in 1 month to evaluate the success of the plans and troubleshoot any problem areas. Future meetings may need to be scheduled, depending on the success of the program to date. Meetings should be scheduled at least twice a year to monitor progress and keep the school attentive to the needs of this teen. The adolescent always attends these meetings.

5. *Introduce a daily home-school report card* as described earlier. These are often more critical for teens than for any other age group to provide daily feedback across most or all class periods. Also, a home point system must be set up that includes a variety of desired privileges that the teen can purchase with the points earned at school, such as driving time, extra allowance, electronic privileges or even devices or apps for them, desired clothing, and so forth. Points can also be set aside in a savings book to work toward longer term rewards. Remember, however, that it is the daily, short-term privileges and not these longer term rewards that give the program its motivational power. So make sure that parents don't overweight the reward menu with long-term rewards.

Once the adolescent can go for 3 weeks or so with no 4s or 5s (negative ratings) on the card, the use of the card is cut back to once or twice a week. After a month of satisfactory ratings, the card system can either be faded out or reduced to a monthly rating. The adolescent is then told that if word is received that their grades are slipping, the card system will be reinstated.

6. *Encourage the school to provide a second set of books to the parents*, even if it means putting up a small deposit, so that homework can be done even if the student leaves a book at school. These books can also be helpful to any tutor that was hired by the parents.
7. *Ask one of the teen's teachers, the homeroom teacher, a guidance counselor,*

or even a learning disabilities teacher to serve as the “coach,” “mentor,” or “case manager.” This person’s role is to meet briefly with the adolescent three times a day for just a few minutes to help keep them organized. The student can stop at this person’s office at the start of school. At this time, the “coach” checks to see that the student has all the homework and books needed for the morning’s classes. If a behavior report card is being used with this student, it can be given to them at this time. At lunch, the student checks in again with the coach, who checks that they have copied all necessary assignments from the morning classes, to help them select the books needed for the afternoon classes, and then to see that the student has the assignments that are to be turned in that day for these afternoon classes. If the behavior report card is being used, it can be reviewed by the coach at this time and discussed with the adolescent. At the end of school, the student checks in again with the coach to see that they have all assignments and books needed for homework. Again, the behavior report card can be reviewed by the coach and discussed with the student before sending it home for further review by parents and conversion into the home point system. Each visit takes no more than 3–5 minutes, but, interspersed as they are throughout the school day, these visits can be of great assistance to organizing the teen’s schoolwork.

8. If you believe parents should not help with homework, then *advise the parents to consider a private tutor*, as discussed above, or have their son or daughter attend any extra help periods that the school requires the teachers to hold at the end of the school day. The student can go to one extra help period per week for each course. And advise parents about the Internet self-taught courses at Khan Academy (www.khanacademy.org) and elsewhere, discussed earlier in this chapter, that can be as beneficial for teens as for children with ADHD.
9. *Advise parents to set up a special time each week to do something alone with their son or daughter that is mutually pleasurable.* This provides

opportunities for parent–teen interactions that are not work-oriented, school-related, or fraught with the tensions that work-oriented activities can often involve for teens with ADHD. These outings can contribute to keeping their relationship with the teen positive. They can also counterbalance the conflicts that school performance demands frequently bring to families.

Clinical Tips

All of the preceding are valuable practical suggestions that apply specifically to helping adolescents succeed in school (and often elsewhere as well), but the following are particular “hazards” of adolescence to keep in mind:

- ✓ Children with ADHD can easily fall through the cracks once they hit high school if they have not yet been involved in special education. Strongly advise parents of teenagers who have not been receiving such services to have their student assessed for special education now.
- ✓ A teenager who is doing poorly in school may not have owned the disability of having ADHD. Separate counseling may help, as it can take several sessions and you may not have the resources to offer them within your own practice.
- ✓ Be prepared for the adolescent to resist the idea of medication and consider setting up a behavior contract by which they earn certain rewards (money, extra free time, etc.) for taking the medication daily.

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The Stimulant and Nonstimulant Medications for ADHD

Undoubtedly, the most effective interventions with the largest evidence base for the management of child and adolescent ADHD is medication, for the following reasons.

- They have a sizable evidence base for their effectiveness.
- They offer a window of safety that is incredibly well established.
- They improve 70–90% of clinical cases, normalizing 50–60% of such cases.
- They are convenient to administer.
- They provide an alternative when psychosocial treatments produce side effects, do not work, or do not work well enough.
- They are less expensive than psychosocial methods of treatment.
- They can be used for years, even into and across adulthood.
- They are active in community settings in which no caregivers may be present to provide active psychosocial treatment (unsupervised

activities, driving alone or with friends, free time in schools, bus rides, etc.).

- They reduce symptom severity and associated executive functioning–self-regulatory deficits.
- They may reduce family stress, parent–child conflict, and adult–partner conflict.
- They reduce risks of impairments in major life activities (home, school, peer group, community).
- They reduce risks for some health-related problems (obesity, injuries, substance use, etc.).
- They reduce risks for some comorbid disorders, both externalizing (oppositional, conduct) and internalizing (anxiety, depression).
- They reduce economic burden to family and society.
- They may offer the possibility of neuroprotection (technically, neuroenhancement) over time (see the following section).

I review the stimulant and nonstimulant medications for children and adolescents with ADHD here. [Chapter 10](#) provides guidance in choosing between these two classes of medications and addresses other medication issues. For even more detail about these medications, consult the Bibliographies for these two chapters, especially the review by Connor (2015). The medications approved by the U.S. Food and Drug Administration (FDA) for ADHD are listed in [Table 9.1](#). See also the ADHD Medication Guide at <http://adhdmedicationguide.com>.

TABLE 9.1. Available FDA-Approved Treatments for ADHD

Generic name	Formulation and	Duration	How	Usual absolute and weight- FDA-approved based maximum dosing dose for

(brand name)	mechanism	of activity	supplied	range	ADHD
MPH (Ritalin) ^a	Tablet of 50:50 racemic mixture d,l-threo-MPH	3–4 hours	5-, 10-, and 20-mg tablets	0.3–2 mg/kg/day	60 mg/day
Dex-MPH (Focalin) ^a	Tablet of d-threo-MPH	3–5 hours	2.5-, 5-, and 10-mg tablets (2.5 mg Focalin equivalent to 5 mg Ritalin)	0.15–1 mg/kg/day	20 mg/day
MPH (Methylin) ^a	Tablet of 50:50 racemic mixture d,l-threo-MPH	3–4 hours	5-, 10-, and 20-mg tablets	0.3–2 mg/kg/day	60 mg/day
MPH-SR (Ritalin-SR) ^a	Wax-based matrix tablet of 50:50 racemic mixture d,l-threo-MPH	3–8 hours Variable	20-mg tablets (amount absorbed appears to vary)	0.3–2 mg/kg/day	60 mg/day
MPH (Metadate ER) ^a	Wax-based matrix tablet of 50:50 racemic mixture d,l-threo-MPH	3–8 hours Variable	10- and 20-mg tablets (amount absorbed appears to vary)	0.3–2 mg/kg/day	60 mg/day
MPH (Methylin ER) ^a	Hydroxypropyl methylcellulose base tablet of 50:50 racemic mixture d,l-threo-MPH; no preservatives	8 hours	10- and 20-mg tablets 2.5-, 5-, and 10-mg chewable tablets 5-mg/5-ml and 10-mg/5-ml	0.3–2 mg/kg/day	60 mg/day

			oral solution		
MPH (Ritalin LA) ^a	Two types of beads give bimodal delivery (50% immediate-release and 50% delayed-release) of 50:50 racemic mixture d,l-threo-MPH	8 hours	20-, 30-, and 40-mg capsules; can be sprinkled	0.3–2 mg/kg/day	60 mg/day
D-MPH (Focalin XR) ^c	Two types of beads give bimodal delivery (50% immediate-release and 50% delayed-release) of d-threo-MPH	10–12 hours	5-, 10-, 15-, 20-, 25-, 30-, 35-, and 40-mg capsules	0.15–1 mg/kg/day	30 mg/day in youth; 40 mg/day in adults
MPH (Metadate CD) ^a	Two types of beads give bimodal delivery (30% immediate-release and 70% delayed-release) of 50:50 racemic mixture d,l-threo-MPH	8 hours	20-mg capsule; can be sprinkled	0.3–2 mg/kg/day	60 mg/day
MPH (Daytrana) ^a	MPH transdermal system	12 hours (patch worn for 9 hours)	10-, 15-, 20-, and 30-mg patches	0.3–2 mg/kg/day	30 mg/day
MPH (Concerta) ^{a,c}	Osmotic pressure system delivers 50:50 racemic mixture d,l-threo-MPH	10–12 hours	18-, 27-, 36-, and 54-mg caplets	0.3–2 mg/kg/day	72 mg/day
MPH (Quillivant XR)	Extended-release liquid	10–12 hours	25 mg/5 mL	0.3–2 mg/kg/day	60 mg/day
MPH (Jornay)	12 hr. delayed-	12+	20-, 40-,	60–80 mg	100 mg/day

PM)	release tablet (microbeads)	hours	60-, 80-, 100-mg		
AMPH ^b (Dexedrine Tablets)	d-AMPH tablet	4–5 hours	5-mg tablets	0.15–1 mg/kg/day	40 mg/day
AMPH ^b (Dextrostat)	d-AMPH tablet	4–5 hours	5- and 10- mg tablets	0.15–1 mg/kg/day	40 mg/day
AMPH ^b (Dexedrine Spansules)	Two types of beads in a 50:50 mixture short- and delayed- absorption of d- AMPH	8 hours	5-, 10-, and 15-mg capsules	0.15–1 mg/kg/day	40 mg/day
Mixed salts of AMPH ^b (Adderall)	Tablet of d,l-AMPH isomers (75% d- AMPH and 25% l- AMPH)	4–6 hours	5-, 7.5-, 10-, 12.5-, 15-, 20-, and 30-mg tablets	0.15–1 mg/kg/day	40 mg/day
Mixed salts of AMPH ^{a,c} (Adderall-XR)	Two types of beads give bimodal delivery (50% immediate-release and 50% delayed- release) of 75:25 racemic mixture d,l-AMPH	At least 8 hours (but appears to last much longer in certain patients)	5-, 10-, 15, 20-, 25-, and 30-mg capsules; can be sprinkled	0.15–1 mg/kg/day	30 mg/day in children Recommended dose is 20 mg/day in adults
Lisdexamfetamine (Vyvanse) ^{a,c}	Tablets of dextroamphetamine and L-lysine	12 hours	30-, 50-, and 70-mg tablets		70 mg/day
Atomoxetine ^{a,c} (Strattera)	Capsule of atomoxetine	5-hour plasma half-life but CNS effects appear to last much longer	10-, 18-, 25-, 40-, 60-, and 80-mg capsules	1.2 mg/kg/day	1.4 mg/kg/day or 100 mg

Guanfacine ER ^d (Intuniv)	Extended-release tablet of guanfacine	Labeled for once- daily dosing	1-, 2-, 3-, and 4-mg tablets	Up to 4 mg per day	Up to 4 mg per day
Clonidine ER ^d (Kapvay)	Extended-release tablet of clonidine	Labeled for twice- daily dosing	0.1-mg tablet	0.1–0.2 mg twice daily	Up to 0.4 mg daily

^aApproved to treat ADHD ages 6 years and older.

^bApproved to treat ADHD ages 3 years and older.

^cSpecifically approved for treatment of ADHD in adults.

^dApproved to treat ADHD in youth 6–17 years old as monotherapy or as adjunctive treatment with stimulant

From “Pharmacotherapy of ADHD in Adults” (Prince et al., 2015). Copyright © 2015 The Guilford Press. Adapted with permission.

Of course, as stated by Zuddas, Banaschewski, Coghill, and Stein (2018), before starting medication treatment, clients with ADHD should see their physicians for the following evaluations:

- History of exercise syncope, undue breathlessness, and other signs of cardiovascular problems
- Heart rate and blood pressure (plotted on percentile chart)
- Height and weight (plotted on growth chart)
- Family history of cardiac disease
- Physical exam of cardiovascular system
- Past personal or family history of serious cardiac disease, a history of sudden death in young family members, or abnormal findings in personal history or cardiac exam, in which case an electrocardiogram should be performed

- Risk assessment for substance abuse, misuse, or diversion

Understanding the Full Value of Medications through the EF-SR Theory

Despite hundreds of reliable studies showing their effectiveness and safety, you will find that some parents (and some other clinicians) resist using stimulant and nonstimulant medications for ADHD in children and adolescents. Myths spread from misconceptions created in the popular press and digital media, and they tend to be tenacious.

Clinical Tips

- ✓ To counter concerns about ADHD medications, refer parents (or other clinicians you are working with) to whatever chapters in professional textbooks or research reviews on these medications the parents may seem to welcome learning about (see [Bibliography](#) and [Handout 16](#) in [Appendix A](#)).
- ✓ An excellent source that may also help parents of children with ADHD learn what they want to know about medications is *Straight Talk about Psychiatric Medications for Kids* (Wilens & Hammerness, 2016; see [Handout 16](#), [Appendix A](#)). Another source is my own book for parents, *Taking Charge of ADHD: The Complete Authoritative Guide for Parents* (Barkley, 2020).
- ✓ To respond to suggestions that treatments unproven by research be tried instead of medication, refer parents (or other clinicians) to [Appendix D](#).
- ✓ [Chapter 10](#) addresses some specific myths that you may encounter from parents and others.
- ✓ If you have explained ADHD according to the EF-SR theory, you will find that the explanation in this section of how medication directly treats the origins of ADHD (neurogenetic deficits in executive function and self-regulation abilities) resonates with many parents.

Just as ADHD is far more than merely inattention, restlessness, and verbal impulsivity, as it is classically portrayed in DSM-5, the effects of medications for ADHD are more varied than just improving those rather superficial symptom domains. *Medications for ADHD are known to produce their improvements by upregulating various executive function networks in the brain*, including all the executive functions described in [Chapter 1](#) and their underlying brain networks noted in the discussion of etiologies in [Appendix](#)

C. As explained, much of the disruption in the development, functional variability, and problems with interconnectivity of these brain regions and the networks among them originates in either the genetics of the disorder (or executive function and self-regulation) or in acquired injuries to these brain networks. If ADHD is a neurodevelopmental disorder of largely neural-genetic origins, and less so of acquired ones, there is no logical reason not to view the medications that manage it effectively as neurodevelopmental therapies, or *neurogenetic* ones as I prefer to call them. Here is the rationale:

- These medications serve to greatly improve and even normalize the functional activity of these networks and their role in various executive functions while the medications are in use.
- There is also growing evidence that these medications may promote further growth, development, and connectivity among the ADHD-related brain regions through their prolonged use, at least in a substantial minority of cases.
- Those regions and networks are functioning defectively largely as a consequence of variation and mutation in the genes that build and operate them or because of other factors that may have caused brain maldevelopment.

Why does viewing medication as neurogenetic treatment for a neurogenetic disorder matter? It matters because it counters the persistent, false claim that stimulant medications for ADHD are masking or merely papering over the “real” origins and problems of ADHD. The neurogenetic deficits in executive function and self-regulation *are* the real origins and problems of ADHD. These medications are getting right to the root of the disorder, and in many cases they are actually erasing the deficits (as long as the medications continue to be taken). Just as insulin may temporarily correct the underlying anatomical and physiological origins of diabetes, ADHD medications do the same for the underlying executive function and self-

regulation deficits that define ADHD.

Also, when parents (and clinicians) view medications through this lens, they can see how very beneficial the medications really are; they can appreciate the wider array of neuropsychological domains and daily adaptive behaviors that these medications improve. To put it another way, with this view of ADHD medications, parents can visualize how their child might benefit in all domains of life, throughout life, as implicated in the extended phenotype of ADHD (see [Chapter 1](#)).

Consider, specifically, that ADHD medications, as best demonstrated by the stimulants, are known to improve not only inhibition (self-restraint) for the majority so treated but also self-awareness, nonverbal and verbal working memory, impulsive emotional expression and the self-regulation of emotions, motivation, and even planning and problem solving. If EF-SR theory extended to ADHD is correct, that means that ADHD medications are improving (1) the self-direction of human actions (executive functions), (2) their privatization or internalization, and (3) especially their governing influence over behavioral guidance toward goals and the future. They are likely doing so through their effects on the basal ganglia and thalamus, which most likely is the switching station for determining public-versus-private expressions of these actions being used for self-regulation. They are also directly benefiting cortical regions and their subcortical networks that mediate the working memory systems, the top-down regulation of emotions and motivations for goal-directed actions, and the cortical regions crucial to manipulating cognitive representations to achieve planning and problem solving.

Via these beneficial, albeit temporary, executive function effects, ADHD medications are improving the treated child's (1) time management, (2) self-organization and problem solving, (3) self-restraint, (4) self-regulation of emotion, and (5) self-motivation. Furthermore, if that is the case, then they are promoting the transition along the dimensions of what is influencing or controlling human actions from (1) external events to mental representations about time, goals, and the future; (2) the temporal now to the hypothetical

future; (3) immediate consequences to delayed ones and, hence, delay of gratification; and (4) others to the self.

One only needs to look across the hundreds of studies on the neuropsychological and adaptive effects of these medications to understand that this is so (again, see [Bibliography](#) and [Handout 16, Appendix A](#)). This is not to say that they do so in equal measure across everyone with ADHD and across all executive functions; this expectation fails to respect the heterogeneity in the EF-SR deficits seen across clients with ADHD, not to mention their individual differences in comorbidity, brain organization, and genetic functionality. But it is to say that among the 50% or more whose behavior is being normalized, and the 25–40% or more whose behavior is being significantly improved, if not normalized, medications are the means of achieving those improvements.

All of that is why I boldly assert here that ADHD medications are forms of neurogenetic therapies for the EF-SR deficits inherent in ADHD—and that that is why they are by far the best treatment for ADHD in children and adolescents.

The FDA-Approved Stimulant Medicines

The stimulants, the drugs commonly prescribed for ADHD, are so named because they activate certain areas of the brain, especially those involved in executive functions and, hence, self-regulation. That is the reason that children and adults with ADHD may be more inhibited and self-controlled while on them. These medicines have been shown to be effective in improving behavior, academic work, and social adjustment in anywhere from 50 to 95% of children with ADHD. How well a client responds may depend, however, on the presence of other problems.

Clinical Tips

- ✓ The truth is that medication does not help everyone. For that reason—and because medication is no exception to the rule that misinformation about ADHD abounds—parents and clients should be given as much background knowledge as you can give them upon making this treatment recommendation. Help them to understand the neurogenetic means by which these medications achieve their benefits, as suggested earlier.
- ✓ Then encourage them to gather even more information before or after agreeing to a trial of medication for their child or teen with ADHD.

The ADHD stimulants consist of the chemicals called methylphenidate and amphetamine. Among some of the more widely recognized brand names of the methylphenidate medications available in the United States are Ritalin, Concerta, Metadate CD, Focalin, and the skin patch Daytrana, as well as the newest delayed-release form known as Jornay PM. There are also liquid and gummy variations on those same chemicals. The most common brand names for drugs using amphetamines are Dexedrine, Adderall, Adderall XR (extended release), and Vyvanse. All these medications activate within an hour or so of being ingested, but the new Jornay PM is taken the previous night at about 9:00 P.M. and does not activate until about 6:00 A.M. the next morning. It then lasts much of the day, like the other extended- or sustained-

release versions of these various medications. Jornay PM is presently FDA-approved only for use with children.

How the Stimulants Work

If the stimulants are so named because of their ability to increase the level of activity or up-regulate the functionality of certain regions of the brain, why don't they make people more hyperactive? It seems that the areas of the brain that they activate are responsible for the executive functions—for inhibiting behavior, maintaining effort or attention to tasks and goals, and more generally creating self-regulation. That seems to be the reason that they are so helpful to those with ADHD. By increasing brain activity in the self-regulation centers, these medicines allow children and teens to demonstrate more control over their own behavior, more focused activity toward the future, and less random restlessness and distractible, off-task behavior.

The two stimulants for ADHD are the medications d-amphetamine (AMP, as in Dexedrine) and methylphenidate (MPH, as in Ritalin, Metadate CD, Concerta, and Daytrana). Several more recently invented stimulant variants are either just the d-isomer of methylphenidate (Focalin) or are simply a combination of the d- and l-isomers of amphetamine (Adderall, Adderall XR, and Vyvanse). As noted previously, more information on these medicines can be found on the Internet at <http://adhdmedicationguide.com>.

Clinical Tip

- ✓ Because caffeine (found in coffee, tea, soft and energy drinks, and other foods) is a stimulant, some parents ask whether this drug or the beverages containing it will help their children with ADHD. Certainly, adolescents and adults with ADHD often consume such products excessively. Although there were some early reports in the popular press in the 1970s that caffeine might be useful, the scientific studies done on this subject have not borne this out. This is probably because caffeine works on very different neurotransmitters in the brain from the ones most likely involved in ADHD. Although it may improve alertness, it usually does not address the myriad executive deficits associated with ADHD and may even exacerbate restless or fidgeting behavior. Therefore, it is recommended that you consider only the stimulant drugs just listed and not recommend caffeine to treat ADHD.

Over the past decade or more, important technological developments have created new delivery systems that allow children and adolescents to get longer lasting relief from ADHD symptoms while taking these stimulant medications than was available with the regular immediate-release forms of amphetamine (Dexedrine, Benzedrine) or methylphenidate (Ritalin). They can be found in medication brand names such as Concerta, Metadate CD, Focalin XR, Ritalin LA, Daytrana, and Jornay PM, all of which contain versions of methylphenidate, and Dexedrine, Adderall XR, and Vyvanse, the latter two of which are extended-release forms of Adderall, an amphetamine.

There are up to eight different methods by which these two drugs are delivered into the body. These methods are described in the box on [pages 171–173](#). The methods also differ in how long they maintain the blood levels of the drug in the body, and so in the brain. There are hundreds of studies on the safety and effectiveness of these stimulants and delivery systems.

The stimulants work primarily by increasing the action of certain neurochemicals that occur naturally in the brain. The way the brain handles information is based on how these chemicals that are produced in the brain cells (neurons) are released from them to communicate with (influence) other nerve cells nearby. Although we don't know all the neurochemicals that are influenced by the stimulants, we do know that two of them are dopamine and norepinephrine. Both occur naturally throughout the brain but are concentrated very heavily in the prefrontal executive function regions and related brain areas and networks, which we believe may be one of the primary sites causing the problem in ADHD. By increasing the amounts of these chemicals that are released from nerve cells into the intercellular space or by keeping the released chemical there longer, the stimulants increase the action of these brain cells, which seem to be those most responsible for inhibiting our behavior and helping us use self-control.

Evidence from functional neuroimaging and studies of brain functional connectivity suggest that the stimulants activate both blood flow and electrical activity in areas of the brain that create goal-directed, task-oriented behavior, such as the executive function networks, and enhance the stimulus

or reinforcement (interest) value of these goals and tasks, probably through increased activity in brain reward circuits and regions (e.g., nucleus accumbens and ventral attention/reward networks). They may also achieve some of their effects by decreasing activation in brain areas that are subject to task-irrelevant distractions.

Therefore, it is not surprising that an abundance of research shows these medications to be effective at the rates noted at the beginning of this chapter. If each of these stimulants is tried in succession, it is estimated that up to 91% of people with ADHD will respond to at least one of them. There are some cases in which medication alone is enough or is the only practical way to address the concerns a parent may have about a child. For most cases, though, the greatest benefit of stimulant neurogenetic therapy seems to come from a combination of these agents with other psychological and educational treatments or, in rarer cases, with other medicines.

The Eight Stimulant Delivery Systems

The first five delivery systems I think of as the 5 Ps—*pills, pumps, pellets, patches, and prodrug*. The various brand names of ADHD medicines you will hear about are either one form or another of MPH or AMP and involve one of the following delivery systems.

- **Pills:** These are the original versions of these medicines that have been available for many decades. The first versions of AMP were discovered in the 1930s, whereas the first version of MPH was discovered in the 1950s. In pill form, these medications are absorbed quickly, usually within 15–20 minutes, after being taken by mouth and swallowed. They can reach their peak level in the blood (and so in the brain) in 60–90 minutes usually and may last 3–5 hours in controlling the symptoms of ADHD in most people. That was their problem. If you wanted to control the symptoms of ADHD across the waking day of, say, 14–16 hours for most children and adults, you had to take these medications two to four times per day or more often. The inconvenience that posed to people having to take these drugs is obvious, not to mention the fact that many had to remember to take these drugs so often and frequently forgot to do so. These and other problems with these immediate-release pills led pharmaceutical companies to explore better ways to get the medicines into the body and keep them active there longer. The brand names you are likely to hear about for these pills are Ritalin (MPH, a mixture of d-MPH and l-MPH), Focalin (just d-MPH), Dexedrine (d-AMP), Benzedrine (l-AMP), and Adderall (a mixture of the d- and l-AMP forms or salts).
- **The Pump:** Then came the invention of an ingenious water-pump system for

delivering these drugs into the body and keeping them in the bloodstream longer. The brand name for this system is Concerta, and it contains MPH. It is a capsule-appearing container with a small laser-drilled hole on one of its long ends. Inside there are two chambers. One chamber contains a paste-like sludge of MPH, and the other chamber is empty. Powdered MPH coats the outside of the capsule. Now here is the neat part: When a person swallows the capsule, the powder goes right to work, just as it would in the pill form of MPH described above (i.e., Ritalin). That gives just enough time for the capsule to start to absorb water from the stomach (and later the intestines). The water is absorbed through the wall of the pump in a continuous, even flow into the empty chamber. As that chamber fills up, it presses against the other chamber that contains the MPH paste. That pressure then squeezes the MPH paste out of the hole in the capsule. It is designed to do that continuously for 8–12 hours or more. The final result is that many people, especially children, only need to take one capsule a day, and not the usual two to three or more they would have to take using the regular pills.

The capsules come in various size doses of course, so that physicians can adjust the dose to better suit the individual needs and responses of their patients with ADHD. One problem, though, is that some older children and teens, and especially adults, may need a longer course of medication each day than what this provides. To deal with that issue, some physicians use the pills of MPH or AMP toward the end of the day. They do this to get an extra 3–5 hours of treatment with medication after the Concerta may be losing its beneficial control of ADHD symptoms. Even so, you just have to love the human ingenuity that led to the discovery of this delivery system.

- **The Pellets:** At around the same time as the water-pump method was being invented, chemical (pharmacological) engineers were modifying a method that uses time-release pellets to create a way to keep medicines in the body and bloodstream longer than the pills. This method had been used for years with some cold medicines, such as the old Contac brand. But the system had to be modified in various ways for use with MPH and AMP. Now we have time-release pellets for both stimulants. Little beads of the drug are coated in such a way that some dissolve immediately after being swallowed, and others dissolve 1, 2, 3, or more hours later. This means that the drug can be more gradually activated and absorbed into the bloodstream across 8–12 hours for most people. Here is another ingenious delivery system. It has the added advantage that someone who simply cannot or does not want to swallow the capsule that contains these pellets can open the capsule (pull it apart) and sprinkle it on a teaspoon of applesauce, yogurt, or other food and swallow it that way. It does not change the way the drug will work in the body, typically.

You may have heard of these delivery systems by the brand names of Ritalin LA (MPH), Focalin XR (d-MPH), Metadate CD (MPH), and Adderall XR (AMP) in the United States. Again, there are different sizes (doses) to these capsules to permit a physician to adjust the dose for an individual to their optimum level. Like the water-pump method, these time-release pellet systems sometimes are supplemented late in the day with a regular or immediate-release pill version of the same drug. That permits even longer symptom control, if necessary. Some research exists that shows that this pellet system gives a little better control of ADHD symptoms in the morning than in the afternoon hours. In contrast, the pump system provides a bit better control in the afternoon than morning hours. Both delivery systems provide good control of ADHD symptoms across the day, but not at the same hours of the day. This can be an issue sometimes in deciding which delivery system may be better for someone, depending on when they need the greatest control of their ADHD

symptoms during the day.

- **The Patch:** The next invention of a delivery system for the stimulants was FDA-approved just a few years after the pump and pellet. It is a patch with an adhesive coating that is applied directly to the skin, such as on the back of the shoulder or on the buttocks. The patch contains MPH. When applied to the skin, the MPH is absorbed through the skin and gets into the bloodstream by that means. So long as the person wears the patch, MPH is being delivered into the body during the day. Because the stimulants can cause insomnia or trouble falling asleep, the patch needs to be removed several hours before bedtime to permit the drug left in the body to be broken down and removed without adversely affecting sleep onset. Another problem is that 15–20% of people experience a skin rash at the site of the patch and may need to stop using the patch for this reason.

This delivery system used to go by the brand name Daytrana (MPH). As with the drugs discussed above, the patch comes in different doses to better adjust the amount of the drug to the individual.

- **The Prodrug:** In 2008, another delivery system received FDA approval, but only for use with adults with ADHD, and that system goes by the brand name of Vyvanse (a form of AMP). Here is yet a further example of human inventiveness. One of the problems with the immediate-release pills, as well as the pellet systems, is that they have the potential to be abused. That is usually done by crushing and inhaling the powder from the pills or the crushed beads from the pellet systems. That powder can also be mixed with water and injected into a vein. Whether snorted through the nose or injected into a vein, the stimulants get into the blood very quickly, and so into the brain rapidly. It is this rapid invasion of the brain by the drug and nearly as rapid decrease in certain brain regions that creates the “rush” or euphoria that people can experience with stimulants delivered in this fashion. This does not occur with the oral ingestion of the drug. This prodrug was designed so that the drug cannot be activated unless it is in the human stomach or intestines. The drug is designed in such a way that the d-AMP lasts 10–14 hours, typically—greatly reducing any abuse potential while providing for the desired longer course of action from a single dose.
- **The Delayed-Onset System:** In 2019, the latest delivery system was approved, called Jornay PM, which comprises a reformulation of the drug MPH. This drug is taken at night, typically between 6:30 and 9:30 P.M., and reliably activates 12 hours later. It is approved for people 6 years of age and older. But it is anticipated that the company will likely come out with a version that uses the drug AMP and seek FDA approval for use of that variant in children and adults with ADHD sometime in the near future. This product was developed because early morning hours can be very difficult for families of children with ADHD, even if those children are taking one of the other stimulant delivery systems noted above. The reason is that it can take up to 60–90 minutes for those medications to reach their therapeutic level—a time period that overlaps with the hours parents and children are getting ready to leave home for school and work. Hence, children with ADHD on those other systems are essentially unmedicated or undermedicated for this crucial and stressful time of the weekday morning. This delivery system solves that problem.
- **Liquid Extended Release:** There are now liquid versions of the extended-release (XR) forms of MPH and AMP that may be helpful when clients profess difficulties swallowing the pills or capsules that are used in these other systems above.

- **Dissolvable Gel “Gummy” Systems:** Another formulation of MPH uses a gel product like that seen in gummy vitamins and candy. This gel dissolves on contact with saliva in the mouth and is not affected in its pharmacological properties if chewed by the child.

Clinical Tips

Physicians wishing to prescribe stimulant medications for ADHD should take into account the following factors in choosing a stimulant or nonstimulant:

- ✓ The percentage of children with the primarily inattentive form of ADHD (sometimes called ADD) or sluggish cognitive tempo (SCT), most recently cognitive disengagement hypoactivity syndrome (CDHS; see [Chapter 4](#)) who respond well to the MPH medication may be lower—from 20 to 55%—than that of children with the more typical forms of ADHD. And the magnitude of the response they have to the medicine may not be as impressive. On the plus side, the necessary dose when benefits are found may be lower than that used with more typical forms of ADHD.
- ✓ Stimulants may help people with ADHD who are also developmentally delayed (or have intellectual disability [ID]) only if the general delay is not too severe. In one study, children with mental ages greater than 4 years or IQs above 45 often had positive responses, whereas those with lower mental ages or IQs generally responded poorly.
- ✓ Children with ADHD who have seizures may have more side effects (behavior problems) while on the stimulants than are seen in children with ADHD who do not have seizures. But otherwise, their response is as good as that of children with ADHD who do not have seizures. Thus physicians should feel confident in using them in such cases of coexisting ADHD and seizure disorders.
- ✓ Some people with brain injuries from trauma or open head wounds or those who develop ADHD symptoms after being treated with radiation and/or chemotherapy for head and neck cancers or leukemia may develop symptoms of ADHD to a degree that warrants a possible trial on stimulant medications. These patients may also respond well, but both some research and my experience suggest that the probability of a good response is lower in this group with these types of “acquired” causes of ADHD and that the likelihood of side effects is somewhat elevated.

Effects on Behavior and Emotions

Unquestionably, the stimulants produce positive effects on sustained attention and persistence of effort to work. The medicines also reduce restlessness and gross motor activity in children. In many cases, children’s

attention to assigned work is so greatly improved that their behavior appears normal. Most people taking the medicine are far less impulsive and have fewer problems with reactive aggression and impulsive emotions, noisiness, noncompliance, and disruptiveness. However, 5–10% of cases may experience an increase in mood lability, dysphoria, anxiety, hostility, or explosive outbursts. Overall, the drugs improve an individual's executive function deficits and the capacity for self-regulation. Effect sizes (degree of improvement measured as a proportion of a standard deviation) for the stimulants range from 0.57 (MPH) to as high as 1.52 (AMP), which puts them among the largest documented in drug research in psychiatric medications. For instance, effect sizes for antidepressants or antianxiety medications are typically in the range of 0.3 to 0.4. Meta-analyses show that longer acting stimulant formulations produce larger effect sizes than immediate-release versions.

For information on medication effects in children and adolescents with various comorbid disorders, see [Chapter 4](#). For most comorbid conditions, however, the stimulants remain useful for ADHD management without typically exacerbating the comorbid disorder. However, in some cases, such as individuals with autism spectrum disorder, ID, obsessive–compulsive disorder, tic disorders, or seizure disorders, as well as in preschoolers, side effects may be somewhat more common, and response rates may be somewhat lower than the typical 75% response rate. Also, the degree of improvement (effect size) may be less than for noncomorbid cases or cases having comorbid oppositional defiant disorder or conduct disorder (ODD/CD). That said, there is some evidence that small minorities of patients with ADHD and comorbid anxiety, tics, or obsessive–compulsive behavior may have those symptoms exacerbated by stimulants or, as in the case of anxiety, some cognitive toxicity (on working memory) might become evident. In other comorbid instances, doses may need to be somewhat higher, such as in comorbid ODD/CD. As noted in [Chapter 6](#), the severity of CDHS (or SCT) symptoms seems to predict a reduced response to stimulants.

Learning and Academic Performance

Numerous studies have been conducted on the effects of stimulants on intellect, memory, attention, and learning besides general behavior. The studies show that the stimulant medicines are very likely to improve attention, impulse control, fine motor coordination, reaction time, working memory, sense of time, and planning and problem-solving abilities on a variety of objective measures and even more on ratings of ADHD symptoms and executive function deficits in daily life. When those with ADHD must perform learning tasks, the medicine seems to help them (1) be available for such learning if they are acquiring new information and (2) perform more efficiently what they already know and in a more organized manner, with less task-irrelevant activity. Neurogenetic therapies especially result in those with ADHD being more productive (getting more work done that is goal directed). No medicine can actually improve intelligence or knowledge, but the stimulants increase the ability to show what one has already learned. And used over several years, that improvement in productivity and availability to learn new material does translate into improved academic knowledge (achievement) in the case of children and adolescents with ADHD. In general, the drugs produce their greatest influence in situations that require self-control, restriction of behavior to situational demands, and concentration on assigned tasks—situations such as school and work.

Social Behavior

Treatment with stimulant medication has been found to reduce the intensity and improve the quality of social interactions between people with ADHD and others. Stimulants increase the ability to comply with instructions or commands and to maintain that compliance over time. The medicines also reduce behavior that competes with getting work done, such as inattention, distraction, restlessness, mind wandering, and forgetfulness. In turn, others, such as parents, teachers, partners, or employers, respond by reducing their

level of control and their degree of supervision over the person with ADHD. They may also increase their praise and positive reactions to the children with ADHD. There has been some concern among a few professionals that these medicines may reduce a child's interest in socializing with others. Recent studies have not shown this to be a problem, but it may be possible in rare cases if the child is taking a very high dose.

The degree of improvement differs among clients, and each should be expected to have a unique response. We are all unique individuals, including in our brain functioning. Researchers have not seen important differences between males and females in their drug response, although one study suggested that girls may experience optimum improvement from their daily dose somewhat later in the day than do males. Clinicians should expect to see greater improvement in ADHD symptoms and the executive functioning–self-regulation aspects of social behavior with moderate or higher doses, but they will have to try each client on several different doses before discovering which one is best. Moreover, they may also have to try more than one drug or delivery system.

Brain Development and Functioning

Over the past decade, more than 33 studies have been published on the longer term effects of stimulant treatment on brain development and functioning (Frodl & Skokauskas, 2012; Ivanov, Murrough, Bansal, Hao, & Peterson, 2014; Moreno-Alcazar et al., 2016; Schulz et al., 2012; Spencer et al., 2013). These studies document a quite surprising finding that is unreported by the popular media: Longer term stimulant treatment may promote brain growth and connectivity in the very brain regions from which ADHD symptoms are known to arise—cortical gray matter, subcortical basal ganglia, and cerebellar regions.

Although several years of treatment are usually required for such changes to occur, they have been noted most often in studies of children. But a more recent study with adults found similar results. It is not clear how long one

needs to be on these medications to see these effects, what doses are optimal to produce them, whether one stimulant is better at doing so than another, and other important clinically relevant details. It is also unknown whether the nonstimulants, such as atomoxetine, have similar effects on brain growth. But given that the regions of the brain that this drug affects overlap by 70% or more with the regions in which stimulants are active leaves that possibility open (Schulz et al., 2012).

These findings are robust enough to withstand a meta-analysis or two. Evidence to date suggests that these results may occur only in a minority of cases (about 25–40%), and it is not clear why some and not other cases of ADHD see such results. Fairness dictates that I convey that there is some skepticism among a few neuroimaging experts, such as Katya Rubia, who remain unconvinced that the effects are real and are not due to some methodological factors common to such naturalistic studies (i.e., cases are not randomized to active or placebo medication groups and followed over time). Future research will untangle all this, but for now they remain one of the more exciting findings in the neuroimaging of drug effects.

Duration of Drug Effects

Just how long drug effects last depends on the type of medicine and the preparation or delivery system being used to get the drug into the body and bloodstream; details are given in [Table 9.1](#) on [pages 165–166](#). Regardless of how they are delivered into the body, these medications are swiftly absorbed into the bloodstream and cross into the brain quickly and easily. They are also largely eliminated from the body within 24 hours. This means that if someone has an undesirable reaction, it will usually last only a few hours to a day. It also means that children and adolescents must take this medication at least once daily every day to get its benefits.

The older immediate-release forms of these medicines, such as the pills Ritalin or Dexedrine, act quickly (typically within 30–45 minutes) to enter the bloodstream and begin to change symptoms. They reach their peak in

improving behavior within 1–3 hours. They may control behavior for 3–6 hours, but each person reacts somewhat differently, and each stimulant acts differently. Some changes in behavior are noticeable within 30–60 minutes after taking the medicine, again depending on which one is being taken. The problem with these immediate-release versions was that people with ADHD had to take them several times a day, including during school or work, and that caused a lot of problems, especially for schools.

Besides these immediate-release fast-acting tablet forms of methylphenidate and amphetamine (Ritalin and Dexedrine), both come in sustained-release preparations. These latter preparations reach their peak influence somewhat later than the fast-acting forms (usually in 3–5 hours) and may produce effects that last much longer (typically 8–12 or more hours). Also keep in mind that amphetamines, such as Dexedrine and the newer compounds Adderall, Adderall XR, and Vyvanse, are nearly twice as potent as methylphenidate preparations such as Ritalin. As a result, they may produce greater changes in behavior, and their effects may last an hour or two longer than methylphenidate preparations are likely to do. Of course, being stronger, they can also result in somewhat more side effects. For instance, some research suggests that AMP is more likely to exacerbate tics than MPH. Because the AMP variants are stronger or more potent than MPH, they are typically given in somewhat lower doses (usually half as much as Ritalin or generic methylphenidate) to avoid overdosing or excessive side effects.

Clinical Tips

- ✓ Parents often ask whether their child could develop a tolerance to stimulants so that the current dose would become ineffective over time. Though some physicians have reported that a few people in their practice seemed to develop some tolerance (loss of effect) over a longer period of use (typically 3–6 months), research studies have not been able to document such an effect.
- ✓ If you observe that a child's dose is losing its effectiveness, perhaps the child has grown since starting on the medication. Increased body mass would require you to increase the dose to get the same effects on behavior.
- ✓ Parents may also ask whether their child will need to have regular blood tests to monitor the amount of the drug in the bloodstream. This is not a requirement for taking the stimulant medications. The amount of drug in the bloodstream does not

seem to be related to how well it works to control behavior, so there is no need for such tests.

Stimulant Side Effects

Children and adolescents can experience various side effects when taking these medicines. The vast majority are minor, although some can be annoying. Keep in mind that if any of these are bothersome enough to warrant stopping the medication, they will likely go away once the medicine “washes out” of the body—within 24 hours typically. Most of these side effects are clearly related to the dose of medicine: Higher doses produce more side effects.

Clinical Tips

- ✓ Note that it has been estimated that 1–3% of people with ADHD cannot tolerate *any* dose of *any* stimulant medication, and that figure rises to 8% of preschool children with ADHD.
- ✓ Ask parents if any of their family members have had an adverse reaction to the medicine you are going to prescribe for their child. It's impossible to predict whether someone will have any of the side effects discussed here, but there may be a genetic basis to expect that a child might have a similar reaction to that experienced by a close biological relative.

The following pages describe the side effects your patients might experience with the stimulant medications. How likely are the specific side effects?

- Over half of people with ADHD treated with these medications show decreased appetite and insomnia. To a lesser extent, mild stomachaches or headaches occur (about 20–35%).
- Even fewer people (< 10%) may experience increased anxiousness, irritability, or proneness to feeling sad or crying. However, many of these side effects (especially those associated with mood) were present when the people took a placebo. This means that in some cases these

side effects may represent problems that are associated with ADHD rather than with the medicine. In most cases, the actual side effects were less frequent than this and quite mild.

Decreased Appetite

All of the stimulants seem to reduce appetite to some degree—temporarily and mainly in the late morning or early afternoon, which explains why over half of all people on these drugs may eat little of their lunch while on the medicine. This is what may cause them not to gain weight, in the case of children or teens, while on the medicine and possibly even lose some weight if their calorie intakes fall below normal. For many people, their appetite comes back (sometimes with a vengeance!) by evening.

Clinical Tip

- ✓ Advise parents to make sure their child or teen eats adequate types and amounts of food each day at any time of day to grow well.

Increased Heart Rate and Blood Pressure

It is typical for heart rate and blood pressure to increase mildly while taking these medicines. These changes are minor, and are similar to walking up half a flight of stairs. They do not place most people with ADHD at any risk. However, if your child or adolescent client has high blood pressure, as some African American children and adolescents may demonstrate, you should make sure to take this into consideration before deciding to prescribe one of the stimulants.

Insomnia

From one-third to nearly one-half of patients placed on stimulant medication may notice that it is harder to fall asleep at bedtime (insomnia) after taking these medicines during the day. Adults find this less of a problem than do

parents of children with ADHD. Most children fall asleep within an hour or so of their typical bedtime before starting medication. Some research has found that 20–35% of people taking stimulants during the daytime actually fall asleep better than they did prior to taking medication.

Clinical Tips

- ✓ If insomnia keeps a child up longer than an hour past the child's typical bedtime or if the parents are concerned about the problem, you (or the prescriber) can consider reducing the dose or having the child take the medicine earlier in the morning.
- ✓ Another option is to try a medication that does not cause this side effect, such as the nonstimulants (see [Chapter 10](#)).

Nervous Tics and Mannerisms

One possible side effect that you should be somewhat concerned about is nervous tics—abrupt twitches of small muscle groups around the face or, less likely, in other parts of the body. Nervous blinking, squinting, or making faces are just some of the tics that can be seen. Other tics are vocal—abrupt noises such as repeated sniffing, throat clearing, or sharp, loud utterances. In its extreme form, the combination of multiple body tics with these vocal noises is called *Tourette syndrome*. You should know that 10–15% of typical children will show some sort of tic or nervous mannerism during childhood, so simple or occasional tics are nothing to worry about if they develop and may have nothing to do with the stimulant medication a child is taking. Some research has shown that such tics in children with ADHD may be made worse by the medicine in a minority of cases (about 35% or fewer). If this happens, in my experience the tics return to their normal level within a week or so after the medicine is stopped. In about 20–25% of other cases, however, the tics the child may have had prior to starting the medication may actually get better on medication. In about half of the cases, the preexisting tics remain unchanged from their premedication level. Evidence suggests that the amphetamine preparations, such as Dexedrine, are more likely to result in a worsening of

tics than are those containing methylphenidate.

A few children have developed the full Tourette syndrome, though it is not clear in research studies that the medicine caused the disorder. It may have worsened it or hastened its appearance in a child who was prone to get the disorder in the first place. But this is quite rare. In most cases, as I discussed above, children with a history of tics or Tourette syndrome can take the stimulants safely with no worsening of their tics.

We have noticed that up to 15% of children placed on stimulants may develop other simple nervous mannerisms, such as nail biting, skin picking, lip biting, or hair twirling (and rarely trichotillomania), even if they did not have them previously.

Clinical Tips

- ✓ A prescribing physician should ask whether a child or adolescent with ADHD has a personal or family history of tics or Tourette syndrome before trying a stimulant drug. If so, the client should be started on a lower-than-usual dose of medicine to see how such children may react to these drugs.
- ✓ When these medications are used and tics (or other nervous mannerisms) develop, the treatment should be stopped immediately. The tics or other behavior will usually subside within 7–10 days. Treatment can then be resumed at a lower dose if the client's behavioral adjustment has deteriorated dramatically.
- ✓ If the tics return even at the lower dose, trying an alternative medication (such as the nonstimulants discussed in [Chapter 10](#)) may be successful.
- ✓ Failing this, parents should be warned not to have their children treated with stimulants in the future without alerting the treating physician to this history of tic reactions to the stimulant medicines.
- ✓ Should tics worsen for a child who had them before taking stimulant medication, you can stop the medication, whereupon the tics often return to their previous levels, and consider a nonstimulant medication for ADHD management instead.

Temporary Psychosis

This is a very rare side effect at the typical doses used for managing ADHD. All of the stimulant medications have the potential to produce temporary symptoms of psychosis (thought disorganization, rapid speech, skin hallucinations, extreme anxiety, supersensitivity to noises, etc.) at very high

doses. In very rare cases this can happen at low doses. Such reactions occur in fewer than 1% of treated cases, being slightly more common in very young children and less so in older ones. If this occurs, the problem often lasts only until the dose wears off.

Clinical Tip

- ✓ This reaction can be frightening to some parents. If it happens, have the patient go to a hospital emergency room and tell the attending physician what has occurred. The physician can, if desired, administer another medication, such as a dopamine antagonist, that counteracts the effect of the stimulant and can make this reaction diminish more quickly.

Long-Term Effects

Critics of stimulant use for treating ADHD have contended that the stimulants pose a high risk because we have no rigorously controlled studies on the potential long-term negative effects that might be caused by persistent use of the medications. Parents and colleagues likewise often ask about the status of evidence for long-term safety and effectiveness. The critics are right, up to a point, that we have no such studies, with the longest controlled randomized trials lasting up to 3 years. But here is the reason: The studies needed to address this issue are unethical and would be exorbitantly expensive and take a long time to complete, as it would mean that no medications would be approved for use until at least one generation of children had been followed for life after receiving these medications.

So, to evaluate the stimulants' long-term safety, we must turn to other, somewhat less direct sources of information. Here are highlights of what we know:

- The stimulants have been on the market for 70–90 years, and in none of the millions of patients treated with these medications, many for at least several years, have any reports of significant long-term side effects been noted.

- The results of more than 700 short-term scientific studies do not imply that significant long-term side effects would be likely. As I note under Myth 3 in [Chapter 10](#), even significant problems with growth have now been shown to be a relatively transient occurrence, and the failure to grow as much as expected is usually relatively minor for most children.
- Finally, so far, findings from studies of the neurochemical actions of these medications in the brains of humans have not shown any clear indications that long-term or enduring side effects would be expected from extended oral medication use.

What is important is that our understanding of the risks associated with the use of medications be well informed and weighed against the long-term hazards of not treating, as discussed previously, including earlier mortality. As of this writing, the stimulant medications are safer and more effective than nearly every other class of medication used in psychiatry, and that is all that can be said presently.

The Nonstimulant Medications for ADHD

Although they are not as effective as the stimulants, several other medications can be of some benefit to those with ADHD. But keep in mind that only four of those covered here—atomoxetine (Strattera), viloxazine (Qelbree), guanfacine XR (Intuniv), and clonidine XR (Kapvay)—have received FDA approval for use in the management of ADHD. With the development and government approval of these medicines, there has been a marked and welcome decline in the use of older tricyclic versions of antidepressants for managing ADHD. The reason is that atomoxetine, viloxazine, guanfacine XR, and clonidine XR have been studied more extensively and have been found to be much safer medications with fewer significant side effects on heart functioning than seems to be the case for the tricyclic antidepressants. Therefore, atomoxetine, viloxazine, guanfacine XR, or clonidine XR should be tried before using a tricyclic antidepressant for the management of ADHD symptoms. Here I briefly discuss the four FDA-approved nonstimulants for ADHD. I give brief mention to two other drugs used primarily for management of older teens with ADHD, albeit off label (bupropion and modafinil). [Chapter 10](#) also offers guidelines for choosing between stimulant and nonstimulant medications and for addressing specific medication issues.

As with the stimulants, I believe it is beneficial to view these FDA-approved nonstimulants as forms of neurogenetic therapies or neurodevelopmental medications. Granted, they achieve their beneficial effects through somewhat different physiological mechanisms and neural networks, and they may not be quite as effective. But they overlap approximately 70–80% with the brain regions and networks that are improved by the stimulants. That may explain why they are beneficial but not quite as much so as the stimulants—they are affecting, though not quite as much, the brain mechanisms that support executive functioning and self-regulation, and so they reduce ADHD symptoms.

The past 20 years have seen the development and FDA approval of atomoxetine, viloxazine, guanfacine XR, and clonidine XR for the management of ADHD in children. The availability of these medications certainly broadens the ability of clinicians to treat the diversity of patients who have ADHD (and its comorbidities), and so they provide alternative treatments for those patients who may be having significant side effects from the use of stimulants (e.g., insomnia) or who may have coexisting disorders that could potentially be worsened by stimulants (arguable anxiety, tic disorders, insomnia, low appetite).

Atomoxetine (Strattera) and Viloxazine (Qelbree)

Atomoxetine (Strattera) and viloxazine (Qelbree) are nonstimulant medications developed for the treatment of ADHD; the former has been FDA-approved since 2003 for children and adults with ADHD, and the latter received FDA approval for use with children in April of 2021. Both are specific norepinephrine reuptake inhibitors. They slow down the reuptake or reabsorption of the neurotransmitter norepinephrine back into nerve cells in the brain once that chemical has been released during activation of that nerve cell. Atomoxetine and viloxazine primarily affect norepinephrine reuptake, but they may also have some effects on the chemical dopamine (somewhat like the stimulants discussed above). However, viloxazine may also have effects on the neurochemical serotonin. Numerous studies have now been published that demonstrate the effectiveness of atomoxetine in the treatment of ADHD. Markedly less so has been published to date on viloxazine. There is also extensive research available on the safety of these medications when used with children, adolescents, and, in the case of atomoxetine, with adults who have ADHD.

Since it was first approved by the FDA in 2003, more than 5 million patients have taken atomoxetine, providing ample evidence for its effectiveness and safety. Given its strong similarity to atomoxetine, viloxazine will likely show a very similar profile of benefits and side effects. However,

just a few studies currently exist on its benefits and side effects. Thus atomoxetine is to be preferred for the moment given its larger evidence base. Evidence indicates that these nonstimulant drugs not only improve the symptoms of ADHD but also reduce oppositional and defiant behavior and anxiety. Parents of children on atomoxetine have reported fewer emotional difficulties and behavioral problems, as well as greater self-esteem, in their children and less emotional worry for themselves and fewer limitations on their personal time. However, research comparing this medication with the stimulants typically finds that the degree of improvement in ADHD symptoms is somewhat less than that of the stimulant MPH, though the percentage of children who respond positively to atomoxetine is about the same as for the stimulants, around 75%. One advantage of this medication, however, is that someone who fails to respond to methylphenidate still has a 55–60% chance of responding well to this medicine. Atomoxetine has been found to improve bedwetting in children, again because of its principal effect of norepinephrine in the brain.

Considering side effects, unlike the stimulants, these nonstimulants typically do not result in insomnia or difficulties falling asleep in the evening. They also do not appear to exacerbate motor or vocal tics in children who have tic disorders. The side effects include mild loss of appetite, nausea, and sleepiness or sedation, particularly during the first few weeks of use of the medication. Less common are insomnia, irritability, and mood swings. There can be slight reductions in expected growth in height and weight, but probably less than occur with stimulants. Atomoxetine also results in mild increases in diastolic blood pressure and heart rate but with no significant changes on electrocardiogram patterns (ECG intervals). Fewer than 10% of patients treated with this medication needed to have the medicine stopped because of significant side effects. Research has now followed treated cases for more than 3 years and supports the long-term efficacy, safety, and tolerability of atomoxetine for the treatment of childhood and adult ADHD. Again, such results are very likely to be found eventually for viloxazine, as well, but the effects simply have not yet been thoroughly studied.

From 2003 to 2010, just two cases of severe liver injury were reported to the manufacturer of atomoxetine and the FDA, out of more than 5 million patients who have taken it since its FDA approval. These patients recovered with normal liver function after discontinuing the medication. It is not clear in one of these cases that the liver problem was related to the medication, whereas in the second case it may have been.

Clinical Tips

- ✓ For now, atomoxetine is the preferred drug compared with other nonstimulants, given the greater length of time it has been approved and used for ADHD, the far greater number of controlled studies investigating it, and the vastly greater number of patients treated with it to date.
- ✓ Early evidence suggests that whereas both medicines may take several weeks to titrate the medicine to a therapeutic dose, the titration time for viloxazine may be somewhat less.
- ✓ These medications should be discontinued in any patients with jaundice (yellowing of the skin or whites of the eyes) or laboratory evidence of liver injury.
- ✓ Experts and the manufacturer recommend that patients on atomoxetine be cautioned to contact their doctors immediately if they develop pruritus, jaundice, dark urine, upper-right-sided abdominal tenderness, or unexplained “flu-like” symptoms. However, any risk of liver problems appears to be exceptionally rare.

Guanfacine XR

Guanfacine XR (Intuniv) is approved for the management of ADHD in children and adolescents (ages 6–17 years). Guanfacine and [clonidine](#) (see below) were originally used to treat high blood pressure by reducing heart rate and relaxing the walls of blood vessels, allowing the blood to flow more easily. Therefore, they are classified as *antihypertensive* drugs. They were reformulated into extended release versions for use in managing ADHD and are marketed under the brand names of Intuniv and Kapvay, respectively (see below).

Intuniv has been formulated to have a sustained release across the waking hours. This is done by making the medication into pellets and covering the pellets in coatings that dissolve at different intervals.

Clinical Tips

- ✓ Unlike other antihypertensive drugs (see clonidine, discussed in the next section), guanfacine has weaker effects in reducing blood pressure and other effects on heart functioning and so is generally considered to be safer for use with children than the more potent alternative clonidine.
- ✓ To avoid destruction of the time-release coatings in the extended-release form of guanfacine, parents should be sure their child does not crush or chew the tablet but swallows it whole.

This long-acting drug produces its effects in the brain by influencing small mechanisms on nerve cells called alpha-2 receptors. These receptors are like portals or sphincters that appear to adjust the strength or purity of an electrical signal that flows through the nerve fiber when it is activated. They do so by opening or closing these little valve-like ports on the nerve. Intuniv seems to work in ADHD by closing these ports and thus reducing the degree of “noise” (openness of the valve-like receptors) entering the nerve cell. This enhances the electrical signal in the nerve cells, especially those in the prefrontal (executive) lobes of the brain, where such receptors occur more than elsewhere. As discussed in earlier chapters, these parts of the brain are involved in sustained attention, impulse control, and the other executive functions that provide us with self-regulation. Studies clearly show this drug to be effective in reducing ADHD symptoms in children, although not to the same degree as are the stimulants. There is also good evidence for the safety of the medication when used with children who have ADHD. For more information on Intuniv, visit www.webmd.com/drugs/2/drug-152956/intuniv-er-oral/details.

As with atomoxetine, evidence indicates that the drug not only improves the symptoms of ADHD but also reduces oppositional, defiant, and aggressive behavior, anxiety, and even nervous tics and the other symptoms of Tourette syndrome.

As to side effects, guanfacine XR is quite different from the stimulants. For instance, it is unlikely to result in insomnia or difficulties falling asleep in the evening and may even promote earlier sleep onset because of its

association with increased drowsiness or sleepiness if taken at bedtime. It also does not appear to exacerbate motor or vocal tics in children who have tic disorders and may even reduce them, which is why guanfacine (Tenex) has been used to treat tic disorders or Tourette syndrome.

The most common side effects of this medication are feelings of lightheadedness or dizziness because of the mild reductions that can occur in heart rate and blood pressure. The drug is also usually associated with increased sleepiness or sedation, particularly during the first few weeks of use of the medication.

The most serious side effects are rare, but include fainting, blurred vision, skin rash, and significant reductions in heart rate and blood pressure. Other side effects include dry mouth, fatigue, weakness, headache, irritability, stomachache, loss of appetite, gas pains, nausea, vomiting, constipation or diarrhea, and nasal congestion. Fewer than 10% of patients treated with this medication require the medicine stopped because of significant side effects. Research has now followed treated cases for several years and supports the longer term efficacy, safety, and tolerability of this medicine for the treatment of childhood ADHD.

Clinical Tips

- ✓ This medicine should not be used in children who may already have difficulties with low blood pressure or heart functioning.
- ✓ Children taking guanfacine XR should be encouraged to drink plenty of water, as these symptoms can be exacerbated by dehydration or exposure to foods and beverages that have some diuretic effects, such as caffeine and alcohol.
- ✓ Parents should be warned to call the prescribing doctor immediately if any of the serious side effects listed above occur.
- ✓ Parents should be warned as well not to cease use of this medication with their child abruptly, as there is the rare potential to cause serious problems with the child's blood pressure and heart functioning by doing so.

Clonidine XR

Another type of medicine shown to have some benefit for children with

ADHD is clonidine, which is also frequently used to treat high blood pressure in adults. (Clonidine is marketed under the trade name Catapres, but it is usually sold and referred to by its generic name.) Clonidine is now approved for use in ADHD in a new XR preparation (Kapvay). It is like guanfacine XR (Intuniv). The fact that both medications can produce changes in behavior and mood make them of some benefit to children with ADHD who have problems with or get no beneficial effects from the stimulants or with atomoxetine or viloxazine. These two antihypertensive drugs differ in that guanfacine produces effects much less adverse on heart functioning and blood pressure than does clonidine and so carries less risk for side effects (fainting, dizziness, nausea) that may be related to them. Guanfacine XR and clonidine XR are also sustained longer in the bloodstream and so require fewer doses during the day, as the XR (extended release) implies. For these reasons, if an antihypertensive medication is to be considered for use with a child with ADHD, then guanfacine XR or clonidine XR would be the preferred choice over an older tricyclic antidepressant, as noted earlier.

When used in children with ADHD, clonidine XR may reduce the motor hyperactivity and impulsiveness seen with the disorder. It may also increase a child's cooperativeness with tasks and directions and increase the child's tolerance for frustration. Research suggests that clonidine may not be as effective as the stimulants in improving such a child's sustained attention or reducing distractibility. However, it may be as effective as the stimulants in reducing aggressive and impulsive behavior or the tendency to become overaroused very quickly. This medication may be best suited for those children with ADHD who are highly oppositional or defiant or who have CD.

The recommendations contained in this chapter apply to children and teens with ADHD. Use of these medications with adults with ADHD may involve somewhat different considerations and recommendations.

Making Medication Decisions and Addressing Special Medication Issues

Decisions about whether to prescribe medication for a child or teenager with ADHD and, if so, which medications to use are obviously complex. [Chapter 9](#) provided details on the mechanisms by which the stimulants and nonstimulants operate in ADHD and the benefits and side effects they may have. This information alone may help you with treatment planning for individual patients. In this chapter, I offer guidelines for addressing special issues and choosing between the stimulants and nonstimulants.

Considerations in Choosing Stimulants

Clinicians will have to consider many factors in making this decision. The stimulant medications are the psychiatric medications most often employed with children or adolescents with ADHD, especially in cases in which inattentive, hyperactive, or impulsive behavior and executive functioning are sufficiently severe to create problems with school or social adjustment. About 2–4% of the school-age population may be using stimulants for behavior management. Much is known about these medications, so you can enter this decision-making process confident that we know more about these forms of treatment for ADHD than any other.

However, parents will still harbor myths and misconceptions due to misinformation from incomplete and unscientific messages perpetuated in the media or passed around anecdotally. Let's dispense with these first so that you and your patients and their parents can make informed and collaborative decisions about medication.

Addressing Parents' Misconceptions about Stimulants

Clinicians can expect patients to have some misconceptions about these drugs that need to be addressed before this treatment modality is undertaken.

Myth 1: Stimulant drugs are dangerous and should not be taken by anyone, especially children

During the 1980s and again in the mid- to late 1990s, an inaccurate and regrettably successful media propaganda campaign against the use of stimulants, particularly Ritalin (methylphenidate), with children was waged by a fringe religious group, causing a dramatic rise in media coverage of this medication. The later 1990s campaign was fueled by the release by the Drug Enforcement Administration of misleading, alarmist, and biased information

about stimulant medication abuse in the United States as part of an effort by the fringe group to prevent Ritalin from being reclassified as a nonaddictive drug—a change that would have made prescribing this medication more convenient for physicians. As a result, the use of these medications for children with ADHD continues to be controversial in the public’s mind, although there is absolutely no controversy among the scientific community as to the safety and effectiveness of these medications.

Unfounded fear of these drugs is unfortunately perpetuated by a few physicians who require that parents sign a consent form indicating that they have been informed about the medicines and their side effects and have agreed to have their child placed on one of them for treatment of the child’s ADHD. A few doctors feel the need to protect themselves from liability by having patients sign consent forms to go on a trial of a stimulant. Fortunately, this practice has declined substantially in the last decades, and so clients may never be asked to sign such a form these days.

Myth 2: Stimulants make people “high,” as illegal drugs do, and are addictive

Some believe that people who take stimulants often have a sense of elevated mood, euphoria, or excessive well-being. This is true only if people crush the drug and inhale it nasally as a powder, inject it into a blood vessel, or take exceptionally high doses. Euphoria in people taking the prescribed forms of these medications by mouth is exceedingly rare. Some people do describe feeling “funny,” “different,” tense, irritable, or, on rare occasions, dizzy. Others become a little bland in their moods, and a few even report feelings of sadness or just being emotionally sensitive. These mood changes occur a few hours after the medicine is taken and occur more often among people treated with higher doses. In most cases, these changes are very minor, if they occur at all.

Parents or adults with ADHD are often also quite concerned about the risk of addiction to stimulants and about an increased risk of abusing other

drugs when the children become teenagers or later in adulthood. There are no reported findings in research of addiction or serious drug dependence to date with these medications when taken orally as prescribed. And the many studies that have examined whether children on these drugs are more likely than those not taking them to abuse other substances as teenagers show that they are not. Indeed, many studies found that taking stimulants during childhood did not predispose children with ADHD to an increased risk of substance use or abuse as teenagers. In fact, some research found that adolescents with ADHD who had remained on their medication during the teen years had a significantly lower likelihood of substance use or abuse than did children with ADHD who were not taking medications during adolescence. Other studies since these have continued to support these results. Thus the scientific literature to date should reassure parents that they are not predisposing their children to the potential for later substance use or abuse by taking stimulants for the management of ADHD. Parents should know that the most important factors in determining a child's risk for adolescent substance use or abuse are (1) early onset of conduct disorder or antisocial behavior in the child, (2) poor monitoring by parents of the child's or teen's whereabouts in the community, (3) the affiliation of the child or teen with other teens who are using or abusing illegal substances, and (4) the degree to which the parents may also be using alcohol, tobacco products, or illegal substances.

Myth 3: Stimulant medications stunt children's growth

Some studies in the early 1970s seemed to suggest that children taking these medicines might be stunted in their height and weight gain. More recent and better studies have shown that this is not as much of a problem as was once thought. A child's eventual adult height or skeletal size is not likely to be affected by taking the medicine, although recent studies suggest that in the first year or two of taking the medicine the child may fail to grow by 1 centimeter on average. The effects on a child's weight are also likely to be

minimal, resulting in a failure to gain 1 or 2 pounds during the initial year of treatment. A child will not get shorter or smaller in size, but he may not grow quite as much as he would have if he were not taking the medicine. Even so, no effects on height or weight are typically evident by the third or later years of treatment. Even children who were delayed in growing catch up with their predicted height and weight by adolescence and certainly by young adulthood. So there is no evidence of a lasting effect of these medicines on children's growth to adulthood. Keep in mind that children respond very differently to these medicines, some experiencing no weight change or failure to gain height and others not gaining more than just a few pounds. A child's growth should be followed by the child's physician to make sure that any weight loss or failure to gain height is not serious.

The initial belief in the 1970s that stimulants might substantially stunt the growth of children with ADHD led to the common practice by physicians of recommending that children take these medications only for school days and stop taking them on weekends, on school holidays, and during summer vacations (known as "drug holidays"). Because we now know that the risk of growth problems arising from these medications is much less than was originally believed, it is not necessary that all children taking stimulants have such drug holidays. Many can continue to take medication throughout the weekends and summers. They will derive benefits from doing so in their relations with peers; their participation in organized clubs, sports, and summer programs; and their general behavior at home. They will also have a reduced likelihood of having accidental injuries, and adolescents who drive while taking them will have a reduced risk for crashes. Therefore, they have a reduced likelihood of accidental death. Parents whose children experience significant behavioral problems during these and other weekend and summer activities and whose children are not having growth problems from the medication should discuss with the children's physicians the possible value of continuing the children's stimulant medication during these periods.

Myth 4: Stimulants do not result in lasting benefits to a child's

academic achievement

The argument that stimulants have no lasting positive effects on academic achievement is a misleading one, concocted as part of broader efforts to dissuade parents from considering the use of stimulants for their children with ADHD. If one takes a simplistic view of the term *academic achievement* and expects stimulants to directly and immediately increase the amount of academic knowledge and skill in a school subject that a child acquires, then of course the stimulants will disappoint in the short run. The pills do not contain any knowledge that is automatically placed in a child's brain when consumed. A child with ADHD who does not know the multiplication tables today, while not taking any medication, will not automatically know them tomorrow after taking a dose of stimulant medication. To expect this kind of change would be silly and demonstrates the flaws in this criticism of stimulants.

What the stimulants do is help the child with ADHD show what she knows during performance of school assignments by improving the child's attention span, concentration, resistance to distraction, and thoughtful, reflective behavior. They also make the child more available to learn what is being taught in school by reducing the child's off-task, disruptive, and otherwise inattentive behavior and improving their self-regulation. Given these gains, several years of taking medication does result in the child having more academic knowledge than she would have had without medication.

If we view the term *academic achievement* more broadly—as how well the child is behaving at school, getting along with peers, following classroom rules and teacher directions, completing assignments, and completing them accurately and so getting better grades—the evidence is overwhelming that the stimulant medications produce significant improvements in these areas of school functioning. Even if the stimulants do not increase a child's academic knowledge, the fact that they result in improvements in many other areas of school functioning is sufficient justification for parents to consider the possible use of these medications with their children. Such changes can not

only boost self-confidence and self-esteem in the classroom setting but can also make the child more likable to the peer group and therefore give them more opportunities to make or keep classmates as friends. They can also reduce the amount of censure, punishment, and rejection the child experiences at school from both peers and teachers and may well prevent the child from needing to be retained in grade or placed in formal special education classes due to substandard academic achievement. For all those reasons, the improvements in school adjustment and success that result from the stimulants are frequently the most common reasons for prescribing these medications for children with ADHD.

Myth 5: A child who takes stimulants will never be able to serve in the military

My colleague Dr. William Hathaway, now at Regents University of Virginia, interviewed the surgeon general for each branch of the military and learned that a childhood history of stimulant use alone would not prevent a young man or woman from enlisting in the military. Typically, those with ADHD are permitted to enlist if they meet all other eligibility criteria. What might lead to disqualification from military service is use of medication for any psychiatric disorder during the last few years prior to enlistment, because that would indicate an ongoing mental disorder serious enough to require medical treatment. If someone taking an ADHD medication goes off of it for the required 1- to 3-year no-treatment period (depending on the branch of the military), they may be able to enlist.

Myth 6: Stimulants cause sudden death in children and adults

From time to time, you may hear reports in the popular media that a child or adult may have died suddenly while taking one of the stimulants used to treat ADHD. Yet every time such deaths are further investigated by experts on the matter, as well as by the Food and Drug Administration, no link can be made between the sudden death and the medication. People need to keep in mind

in trying to understand these sorts of news reports that up to 7 people in every 100,000 will die suddenly each year, often related to problems with their hearts. Thus, if 500,000 people are taking a particular stimulant drug, such as Adderall XR, up to 35 of them might die each year from sudden death—but these deaths have nothing to do with taking this medication.

Late in 2011, the two largest studies of this issue ever conducted were published in scientific journals and included hundreds of thousands of patients treated with these medications over long spans of time. The one involving children published in the *New England Journal of Medicine* by Dr. William Cooper and colleagues (Cooper et al., 2011) used more than 1.2 million children and young adults with ADHD taking stimulants. Both studies concluded that there was no evidence of any significant association between taking stimulant medications and any serious cardiovascular events, such as sudden death, heart attack, or stroke. Although it is important to identify any risk of sudden death (or other serious side effects) that a drug may cause, it is just as important not to leap to false conclusions about a medication causing such events when these events occur at the same rate in the general population without use of the medication. Falsely blaming drugs for adverse events that they actually do not cause can lead to banning drugs that have proven helpful in treating thousands of cases of ADHD, thereby unnecessarily depriving people of a useful treatment.

Guidelines for Making Medication Decisions

Unfortunately, there is no foolproof way to predict who will do well on stimulant medication. So far, the most helpful criterion we have is the degree of inattention and impulsiveness. The more severe these symptoms are, the better a client is likely to respond to the medicine. We have also learned that the more anxious a client is, the less likely they will be to have a positive reaction to the medicine. But even that predictor is controversial, as some studies have now shown that people with ADHD and anxiety disorders do just as well on stimulant medication as those who do not have an anxiety

disorder.

The evidence currently is mixed. And, although based on just a single study (Froehlich et al., 2018), it seems that the greater the symptoms of cognitive disengagement hypoactivity syndrome (CDHS; formerly sluggish cognitive tempo) manifested in a child or teen with ADHD are, the less positive the response to the stimulant methylphenidate will be. Similar research has yet to be done with the amphetamine stimulants. For that reason, I recommend that physicians treating clients who have ADHD and either anxiety or CDHS start with lower doses and adjust those doses upward more gradually than usual while having parents or patients monitor both the ADHD symptoms and those of anxiety more carefully, perhaps with a rating scale of those symptoms completed periodically. Some studies have also found that the quality of the relationship between a parent and the child may predict the child's drug response: the better the parent-child relationship, the greater the response to medication. It may be that parents who are more appreciative and rewarding of the behavior changes brought about by the stimulants produce further gains in their children from the medicine. Of course, it could also be that better parent-child relations are just a marker for the child having milder ADHD, or lack comorbidity, such as for ODD, which may explain why those children may have done better on the medication.

Clinical Tips

Here are some issues to consider in making a decision about which type of medication to use with someone with ADHD. You will also find these set forth on [Form 10](#) in [Appendix A](#), which you can reproduce and complete for each client with ADHD for whom you may be considering recommending medication.

- ✓ *Has the patient had adequate physical and psychological evaluations?* Medications should never be prescribed if the client has not been directly examined in a thorough manner.
- ✓ *How old is the child?* Medication treatment is somewhat less effective or leads to somewhat more frequent side effects among children 2–4 years of age than those 5 years and older. This does not mean such medications cannot be tried in this preschool age group, only that it be done more conservatively, with an eye out for these potentially greater problems.
- ✓ *Have other therapies been used?* If this is a child's initial contact with a

professional and the child's ADHD is mild and not complicated by another disorder, the prescription of medication might be postponed until other interventions (e.g., parent training in child management skills) have been attempted. Alternatively, when the child's behavior presents a moderate to severe problem or the family cannot participate in child management training, medication may be the most viable initial treatment.

- ✓ *How severe is the child's current misbehavior?* In some cases, the child's behavior is so unmanageable or distressing that medication may prove the fastest and most effective manner of dealing with the crisis until other forms of treatment can begin. Once progress is made with other therapies, some effort can be made to reduce or terminate the medication, but this is not always possible.
- ✓ *Can the patient or family afford the medication and associated costs (e.g., follow-up visits)?*
- ✓ *Can parents adequately supervise the use of the medications and guard against their abuse?*
- ✓ *What is the parents' attitude toward medication?* If they are simply "antidrug," don't try to pressure them into agreeing to this treatment, because they probably won't be able to comply wholeheartedly with the regimen. Encourage them to seriously scrutinize their own opinions to ensure that they are based on balanced, unbiased sources of information about the pros and cons of taking stimulant medications and not just from the popular media, which often sensationalize stories about these medications. Encourage them to read more about the medications at reliable websites, such as www.help4adhd.org, www.nlm.nih.gov, www.aap.org, or www.aacap.org, and to review other resources and videos listed at the end of this book (see [Handout 16](#), [Appendix A](#)) to be sure their opinions are well informed before they make any blanket decisions.
- ✓ *Is there a delinquent or drug-abusing family member in the household?* In this case, stimulant medication should not be prescribed, since there is a high risk for its illegal use or sale.
- ✓ *Does the patient have any history of psychosis or thought disorder?* If so, the stimulants are not indicated, because they may worsen such difficulties.
- ✓ *Is the patient highly anxious, fearful, or more likely to complain of bodily symptoms?* Such people might be less likely to respond positively to stimulant medications, though this is arguable at this time. As I recommended above, in these cases, if stimulant medications are to be used, then physicians should simply start with lower doses, go more slowly (titration), and monitor the client more closely for potential side effects. Alternatively, consider using one of the nonstimulants discussed that do not have this potential to worsen anxiety or pose other side effects and may even treat the anxiety symptoms.
- ✓ *Does the physician have the time to monitor medication properly?* In addition to an initial evaluation of the drug's effectiveness with a client for establishing the optimal dosage, the physician needs to see the client periodically to monitor their response and side effects. Experts recommend that a person taking stimulants be seen by the physician every 3–6 months for this monitoring.
- ✓ *How does the client feel about medication and its alternatives?* With older children and adolescents, it is important that the use of medication be discussed and the reasons for its use fully explained. In cases in which children are "antidrug" or oppositional, they may resist efforts to use it, such as refusing to swallow the pill.

If that is the case, have the child or teen discuss their concerns with the physician so they can be reassured that many of the concerns are either unfounded or possibly exaggerated.

As you have undoubtedly discerned by now, *a diagnosis of ADHD should not constitute an automatic knee-jerk recommendation for stimulant medication treatment.* Sometimes nonstimulants are the better choice for a starting medication.

Additional Medication Issues to Consider

Issues in the Transition from Childhood to Adolescence or Young Adulthood

The following issues may require that clinicians revisit the type of medication or other therapies in use with a child or young adolescent with ADHD that may deserve reconsideration and adjustment as that child develops into adolescence or emerging adulthood.

- A child's increasing size may mean need to adjust medication doses to sustain therapeutic response.
- Greater time away from home, longer periods in school and work, and more activities in the evening hours require extended-release or 24/7 medications if good clinical coverage of the disorder and its risks are to be achieved.
- Greater opportunities for impairment arise and do so in more major life activities (e.g., driving). This increases risks and the seriousness of consequences in each domain, all of which argue for 24/7 medication coverage and the addition of other psychosocial and educational accommodations and therapies.
- Greater risk for young pregnancy requires closer clinical monitoring and a need to discuss contraception (with parental permission); there may be need to cease medication treatment if it occurs.
- Opportunity to drive a motor vehicle creates markedly increased risks for crashes and injuries/fatalities, necessitating medication management and other accommodations concerning driving.
- Limited acceptance or denial of a disorder can lead to poorer compliance and even resistance to treatments. You may need to shift to collaborative problem solving involving both parents *and* the teen

rather than an authoritarian “do as I say” approach.

- Greater responsibilities for self-organization and time management may result in a need for increased medication doses or starting medications if they have not previously been used.
- Greater risk for substance experimentation, greater exposure to deviant peers or those using substances, and greater risk for antisocial activities all pose greater risks for abuse and diversion of abusable ADHD medications. This requires increased monitoring of medications or switching to less abusable forms of stimulant delivery systems or to a nonstimulant.

Taking ADHD Medications during Pregnancy

Although this issue comes up more often with adults, the fact that ADHD brings with it an increased risk of early pregnancy means that clinicians need to prepare for pregnancy in adolescents. There is little evidence concerning the effects of any ADHD medications on pregnant mothers or their babies. A recent meta-analysis on the issue found no evidence of teratogenic effects but also warned that the literature was too limited to offer any definitive conclusions (see Li et al., 2020). That said, the drugs may need to be taken during pregnancy because the risks to the mother of being off medication while having ADHD may be greater than the risks identified to date for her or the fetus from taking the medication. For instance, unmedicated women with ADHD are more at risk for traffic violations and car crashes, risky sexual behavior and concomitant sexually transmitted disease, suicide, disrupted parenting, marital or cohabiting stress, sexual victimization or intimate partner violence, and accidental injuries, among other health risks discussed in [Chapters 2](#) and [5](#). Of course, at this time all pharmaceutical companies recommend that women discontinue their ADHD medications should they become pregnant, but that has as much to do with protecting the company from liability than it does in the risk–benefit calculus that must be made by a

clinician. So the woman and her doctor must weigh the disadvantages of stopping medication because it will result in an increase in their ADHD symptoms and all the attendant risks that go with that unmanaged ADHD.

Tolerance to Medication

Actual physical tolerance seems unlikely with the current ADHD medications. But some individuals report that their medication seems less effective about 3–6 months after starting their treatment. This usually requires adjusting the dose or, sometimes, changing to a different delivery system or even a different medication. Clinically, we sometimes see people complaining that their medicine is not working as well; however, further information in these cases shows them going through unusually stressful or demanding periods in their lives that may exacerbate their ADHD symptoms and make it more difficult for their usual dose to provide adequate treatment. Temporary dose changes or addressing the source of the stress may be needed at these times.

Generic versus Brand-Name Medicines

The generic medications appear not to be manufactured with the same degree of rigor as the brand-name medications. The generics have been associated with numerous clinician and patient reports of greater variability in controlling the ADHD symptoms on a day-to-day basis or have been reported to produce less success overall in managing those symptoms. Should that occur in a case where a patient's insurance plan requires the use of the generic version first, physicians can request a transfer to the brand-name medicine.

Addressing Medication Noncompliance

One of the greatest difficulties with ADHD medications is not that they do not work; clearly, they do. It is that people with ADHD are less and less likely

to stay on them over the first 6 months or next few years of being treated. This can be hard for some clinicians to understand. After all, if medications *are* effective, then why wouldn't someone want to remain on them to get the most benefits from the treatment plan? There are other issues that cause noncompliance with medication even if it is effective at managing a disorder. Also, this nonadherence to medical advice is not just a problem in the field of ADHD. It can be seen across most of medicine when dealing with chronic conditions, including high blood pressure, high cholesterol, diabetes, epilepsy, and others. People simply don't always do what is best for them for various reasons, especially taking medications for chronic conditions.

The first thing you can do to facilitate compliance (assuming the medication is helping to manage the symptoms of ADHD) is to tell the parents (or the adolescent, as appropriate) often how much improvement you have noticed in the client's symptoms and functioning since they started taking the medication. Sometimes parents of children with ADHD are less aware of how well the medication is working than are those around them who see them frequently, such as teachers. So be sure to let them know of any positive signs you see that the medication may be helping them to deal with ADHD and the impairments in life activities those may be causing. If a parent still seems uncertain about having a child use the medication, then consider some of the following reasons for which those with ADHD may cease their medication even if it is effective. I also suggest some things you can do to hopefully address these issues.

Noncompliance Can Be Due to ADHD

Having ADHD can further contribute to the more typical problems with adhering to medical advice. The reason is that ADHD creates problems with self-regulation, which are the very mental abilities (the executive functions) we use to do what is best for us over the long term. It makes perfect sense that people who have a disorder of self-control have difficulty properly controlling the management of their medicine. ADHD involves the following deficits:

1. *Poor time management.* Someone with ADHD may not take medications in a timely and consistent manner, may miss appointments with physicians to get refills, might fail to get to the pharmacy on time to get the refill before it closes, may miss the deadline to file for a renewal if they use a mail-order prescription service, and so forth.
2. *Poor working memory, self-organization, and problem solving.* This can lead an adolescent with ADHD to sometimes forget to take the medications. A parent with ADHD may fail to have their child with ADHD take medication as prescribed, to refill them when needed, or to deal with the problems that can be posed by insurance companies or others that are covering part or all of the medication costs, much less even make and get to the doctor's appointment to get a refill on the prescription or to the pharmacy to fill it.
3. *Deficient self-restraint.* This deficit often leads adolescents with ADHD (or parents with ADHD) to impulsively quit using the medication (or stop their child's medication) if there are annoying or unpleasant side effects, if the cost doesn't seem worth the benefits to them, if they fear they or their child may be stigmatized if it is revealed to others that they take such medication, or if someone told them that the medications are dangerous and they can get by with natural remedies or healthier food, for instance.
4. *Low self-motivation.* This can lead the teen or adult with ADHD, or a parent of a child with ADHD, to make all the preceding errors. They also may not even bother trying to make regular doctor's appointments, take medication regularly, refill prescriptions, and so forth—all of which take not only time but also extra effort.
5. *Poor emotion regulation.* Many adults or teens with ADHD have this problem. If so, it can lead them to become angry and quit the medical system, to get into arguments with family members who may prompt

them too much about taking the medicine, about getting appropriate dosage adjustments, about having patience while the medications first begin to be taken, and so forth.

6. *Diminished self-awareness.* Many adults or teens with ADHD are not as aware of the positive reductions in their symptoms and of their better functioning as those around them are.
7. *Positive illusory bias.* This refers to the tendency to view problems and deficits as being not as bad as others see them or as evidence proves them to be, or as not existing at all. This can lead an adolescent or adult with ADHD to simply not see the problem area in the first place or to underappreciate its seriousness and thus refuse or discontinue medication.

Another problem is that many of these medications, especially the stimulants, remain effective for only 3–12 hours, depending on the type of medication and which delivery system is used (pills, pellets, pump, etc.; see [Chapter 9](#)). This means that there will be times, especially in the early mornings before the medication is taken or at night when it has worn off, that the medicine is not working at all because it is largely out of the bloodstream. Here, again, the problems with ADHD symptoms and executive deficits can interfere with compliance with medical advice by the adolescent with ADHD or a parent with the same disorder.

Clinical Tips

- ✓ Go back and review some of those treatment framework recommendations I made in [Chapter 6](#). You can use these ideas to help your client cope with some of the executive deficits related to working memory, time management, organization, and so forth. Those suggestions might be useful when applied to helping the child or teen to remember to take medications, keep doctor's appointments, deal with pharmacies, and so forth.
- ✓ It can help to put the pills in a pill organizer that shows days of the week (available at any pharmacy). Then try suggesting that the child, teen, or parent place this container right beside the bathroom sink where they go every morning. Putting it right in front of the adolescent while at the sink might help them remember to take

the pills. However, they still may need reminding each week to refill the organizer.

- ✓ If the client's parent has ADHD, having the parent write down appointments in the calendar or schedule on their own smartphone (even doing so during their appointment with you) may help with appointment keeping.
- ✓ To aid with self-awareness and positive illusory bias, talk with your client periodically about the benefits of medication you may be seeing both in their behavior and in the results (better school performance, better work participation, more responsible at home, better management of money, etc.). Encourage others who care about them to do the same. This is so the client gets someone else's perspective and does not base the decision to stay on or go off medication on their own subjective view. Just as with losing weight on a diet, there is nothing like hearing from others how much you have improved to keep someone motivated to stay in treatment. It all depends on just which of the ADHD/executive symptoms are contributing most to the problem of medication adherence to determine what one might do to accommodate them.

There can be several other reasons a child or teen may not comply with taking recommended medications besides ADHD. Those reasons can tell you about how you may be able to help your client stick with a medication treatment plan. (The objections are phrased as if they are coming directly from the child or teen, but keep in mind that it could be the parent talking about a child or teenager who is being treated.)

I really don't have ADHD, so why am I taking these medications?

This problem goes back to the one of not accepting the diagnosis, which I have discussed in earlier chapters, and which often comes up with teenagers. So you may need to go back and reread my suggestions about how to help deal with denial.

I don't like the idea of taking "drugs."

Unfortunately, the popular media have contributed to this perception that ADHD medications are the same as taking abusable "drugs," like an addict. Consequently, there is an unnecessary stigma and misperception attached to these medications that may not be the case with medications used for other

medical conditions, such as high cholesterol. Yes, as I said in the [Chapter 9](#), the stimulant medications do have some small abuse potential, but they are not being prescribed to make someone a drug addict, and they are not addictive when taken as prescribed. They are also not increasing any future risk of being dependent on or abusing these or any other drugs.

Let's also realize that a large segment of our society wishes to be on presumably healthier and more natural or "organic" diets or adopt vegetarian or vegan approaches to nutrition. Taking medications is often seen as contradictory to these and other "healthy" approaches to nutrition specifically and lifestyle more generally. To counteract such views in your client, you can talk about the fact that all food involves chemistry that affects the body. Some natural chemicals are deadly, especially if taken in large quantities. Thus the distinction between natural chemicals as being healthier for you than artificial chemicals does not really hold up on close examination. If your client drinks coffee or uses alcohol, these are all chemicals that are natural but that can be harmful when used to excess. They are often used for the changes they create in our mental functioning and not just our physical functioning. You can also discuss the fact that if your client had diabetes or epilepsy, they would not likely be against using medications to treat these life-debilitating or even life-threatening conditions. ADHD is no different. It is both debilitating and potentially life threatening (accidents, injuries, poor health, cardiovascular disease, etc.) if not treated consistently and persistently.

Also, try to show a little understanding and empathy toward your client about taking medicine. Tell them that you realize that no one really likes to take medications for a chronic problem, especially for managing behavior rather than physical functioning. Just as I don't like taking medication routinely to reduce my high cholesterol and others don't like taking medications for high blood pressure, your client may not like the idea of using medicines chronically. Moreover, this example can be used to educate your client that many, many people are taking various medications over the long term for chronic medical as well as psychiatric problems (think of arthritis, pain, headache, as well as vitamins and nutritional supplements such

fish oils, ginkgo biloba, garlic, etc.). Therefore, your client is not alone in needing to do so.

If your client's resistance to taking the medications stems from other concerns, such as subscribing to the myths discussed earlier in this chapter and in [Chapter 2](#), or even resisting the diagnosis, as discussed in [Chapter 2](#), you can assuage those fears with what you know. You can also back up your opinions by directing clients or parents to books on ADHD that have chapters on these medications, such as my book *Taking Charge of ADHD* (Barkley, 2020) and those in the [Bibliography](#) or in [Handout 16](#) in [Appendix A](#). You can also send your client to reputable websites on ADHD that are listed in [Handout 16](#), [Appendix A](#), and so refute these misconceptions.

I am doing well now, so I don't need the medicine any longer.

This is a rather paradoxical problem that occurs with psychiatric medications, including those used for other disorders, such as bipolar disorder. When the drugs are effective, they can so reduce the patient's symptoms and so improve daily functioning that the person comes to see themselves as relatively normal. When this effect goes on for a while, the person may even come to believe that much of the improvement is a result of other efforts to manage the condition or of just trying harder, rather than of the benefits of the medication. Or an adolescent comes to think that because he is better, he never had a serious case of ADHD. Because the medication has reduced the very need to take it (serious symptoms), those symptoms no longer exist to give the client the motivation to have them treated. Such circular thinking can lead the person to believe he doesn't need the medication any longer to function well, and so he stops. This is clearly a misunderstanding.

Fortunately for the ADHD medications, such as the stimulants in particular, the drugs do not need to be taken for long periods before an initial effect is evident (minutes) or before a downstream effect on daily functioning shows up (days) from using the medications. Most of the medicines for ADHD can also be stopped abruptly without causing harm, the exception

being the antihypertensive agents. That is because most, like the stimulants, wash out of the body within 24 hours anyway, so the client is having a drug-washout period almost daily.

All this means that if your client doubts the benefits of stimulant medication or the continuing need for it, then there is little harm in having them stop medication for a day or a weekend so they and you can see what happens. That is not the case for some of the nonstimulants, however, which need to be gradually discontinued for safety reasons. Be sure that your client discusses this with the prescribing physician before doing so just to be sure it is safe. Typically, within 1–3 days after quitting the stimulant medicine, a difference becomes evident and convinces the client to return to taking medication. If this does not happen, then have your client speak with the prescribing doctor about the results of this brief trial. A change in dose may be needed. Just be sure that stopping the medicine occurs at a time that won't pose undue risks to the client. Remember that being off the ADHD medicine results in a return of the risks ADHD can pose, such as accidental injury, driving problems, victimization (as in being bullied or abused), diminished social relations, and poor work performance, among others.

I don't think the medicine is doing any good.

This complaint can be a little different from the preceding one because, as the child or teen is continuing to have problematic ADHD symptoms, either the client or the parent is not impressed that the drug is helping much, if at all. That can certainly happen where the medicine is not improving symptoms or not doing so completely. If you agree that no improvements are evident, then the thing to do is to consider changing the dose or the type of medication or have your client talk with the prescribing physician. Your client or the parent could be right and this dose is not working. But that does not mean that no dose will work or that no ADHD medicine type will help. To decide that, one must try the different medicines and try higher doses.

Sometimes the improvements your client is getting from the medicine are

about as good as they are going to get on any type of medicine. If the child or teen has tried the others and still finds this to be the case, then trying the psychosocial treatments discussed in [Chapter 7](#) may be helpful when added to the medicine. In a minority of cases, combining different medicines may be the solution. These medicines each work differently in the brain, so combining them might provide wider improvements in symptom control than just one.

As I said above, children and adolescents with ADHD often have less self-awareness. That means that you, family members, and others may perceive positive benefits from the medication that go unappreciated by your client. To address that, tell your client what you see improving and what others have seen as well. Sometimes the problems that are still evident to your client may be ones that ADHD medicines cannot treat. Symptoms of depression and anxiety or other mood disorders are typically not helped by ADHD medicines. These may require separate treatments, to be discussed with the prescribing physician. The problems in functioning in some domains may also not have much to do with ADHD, such as difficulties at work or in relationships with others or in school. The fact that these have not improved from taking medication might suggest they come from some other source, such as a difficult supervisor at work, jealousy in an intimate relationship, or a learning disability or too difficult a subject affecting school performance. These and other problems in functioning can arise from many other sources besides ADHD. Discuss this possibility with your client and parents.

I am not as [creative, fun, spontaneous, vibrant, etc.] as I used to be off the medicine.

This can certainly be true, particularly for some teenagers. Lower levels of inhibition are related to higher levels of creativity; being less inhibited contributes to thinking of more unusual ways to do things or making unusual connections among our ideas. Inhibition allows us to suppress thinking of these more unusual ideas, largely because they may be distracting to the work

we may need to do and because they are not relevant. But sometimes what can seem like an irrelevant idea can be a quite useful or brilliant way of seeing something. Because ADHD medicines increase inhibition, which is largely for the better, they might just be reducing this capacity to make creative linkages across seemingly irrelevant ideas. Theoretically, that might reduce someone's creativity, although it has not yet been studied in research.

Where such reduced creativity is the case, it may be possible for the teenager to not take the medication on those days or hours of the day when focusing on creative work. Fortunately, the stimulants dissipate from the body within 24 hours, so they can be stopped and started like this typically without any significant harm occurring to that person. Parents, of course, may have misgivings about their teen's going off the medication at any time if the parents believe the child has been functioning much better with the drug benefits. Also, the same is not true for the nonstimulants.

As for being less fun and vibrant, this may also be true. Adolescents with ADHD who are not on medication are certainly more talkative, emotional (including being humorous), demonstrative, active, and sometimes sensation seeking. All of these may be seen, at least in the short term, as making the teen more fun or interesting or adventurous. You can acknowledge this while at the same time pointing out that these features of the teen's personality came with a price. These traits may have cost the adolescent jobs, friends, dates, or other social opportunities, because one person's "gregariousness" can be another person's obnoxiousness when carried on for too long. Moreover, that sensation-seeking, thrilling adventurousness could also have resulted in multiple accidents, property damage, injuries, or higher insurance premiums. You cannot stay on a thrilling vacation for more than a few days if you expect others to stay on it with you. Doing so can wear people out, pose them undue chronic stress, and cost them financially as well. These may be particular concerns for a teen's parents. So be sure your client is appreciating the entire picture of "costs" and benefits from the medication should they wish to stop it for these reasons.

I just don't like the side effects of this medicine; they are annoying.

This can certainly be true. As you read above, the side effects of the various medications, although not life threatening, can be annoying. At times, these side effects may seem to make the degree of benefits these medicines achieve not worth the cost. For instance, stimulant medicines can create insomnia, loss of appetite, headaches, and stomachaches in some people. In rare cases, irritability, sadness, nervous mannerisms or even tics, staring, or emotional blandness may arise in response to the medicine. If these or other side effects are so prominent as to cause a child or teen or a parent to question taking medication, the prescriber should be consulted right away; a change in dose (usually downward), type of delivery system (long-acting ones might be better for some people than immediate-release ones), or type of ADHD medication (a nonstimulant such as atomoxetine) may be in order.

This medicine just costs too much.

This can be the case where a child or adolescent's parent pays for most or all of the costs of the prescription, where the client is taking one of the newer patented delivery systems rather than a generic form, or where funds are so limited that even a small cost, such as a copay, can be a financial burden. It can also occur when the medicine is only partially effective and those benefits are perceived as not worth the cost. In such cases, consider generic versions of the medication (remembering that, while they may be less expensive, they may also be less effective), programs the pharmaceutical company may have for providing reduced or free medication to people in financial need, or state-sponsored programs that can provide the medication to those low enough in income to qualify. Perhaps a loved one may be able to help financially cover some of these costs or know of others willing to help do so.

Appendix A

Forms and Handouts

All of the forms, scales, and handouts in this appendix are for your private use in your clinical practice for the evaluation and management of ADHD in children and adolescents. The limited license on the copyright page grants you, as the owner of this manual, certain rights to reproduce the forms contained in this appendix and found on the book's companion website (see the [box](#) at the end of the book's table of contents).

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Handout 21. Advice on Bedtime and Sleep Routines for Children and Adolescents with ADHD

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Handout 23. Advice on Making Daily Routines Predictable for Children and Adolescents with ADHD

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Handout 26. Advice on Driving for Adolescents with ADHD

Form 8. Adolescent Driving Behavior Rating Scale—Parent Report

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Handout 31. Practical Advice for Coping with ADHD in Adulthood

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Form 11. Physician's Checklist for Parents

Form 12. Follow-Up Information for Parents

Form 13. Side Effects Rating Scale for Parents

Forms for the Evaluation of Children and Adolescents with ADHD

Instructions for Child and Adolescent Forms

The following clinical intake forms, rating scales, and interview forms are intended for use in conjunction with [Chapter 3](#) of this book. Please note that I also direct you (here and in [Chapter 3](#)) to rating scales available in other publications that may be useful adjuncts in assessments of children and adolescents.

Clinical Intake Forms

The three clinical intake forms (General Instructions for Completing the Questionnaires, Child and Family Information, and Developmental and Medical History) can be sent to parents to complete and return in advance of their child's appointment with you for their evaluation. You may wish to also include the following:

- *Child Behavior Checklist—Parent Form* (Achenbach, 2014), a broadband rating scale that can obtain a quick assessment of the major dimensions of child psychopathology, or:
- *Behavior Assessment System for Children—3* (Reynolds & Kamphaus, 2015) for the same purpose.

- *ADHD Rating Scale—5* (DuPaul, Power, Anastopoulos, & Reid, 2016) to get a quick screening for the possible existence of ADHD, specifically.
- *Barkley Sluggish Cognitive Tempo Scale—Children and Adolescents* (Barkley, 2018). Up to half of children thought to have ADHD may actually have a separate disorder of attention, formerly known as *sluggish cognitive tempo* (SCT) and now renamed *cognitive disengagement hypoactivity syndrome* (CDHS). It can overlap with cases of ADHD in up to 50% of all children. Yet, CDHS is a distinct disorder from ADHD that is frequently misdiagnosed as ADHD, inattentive presentation. Given that the risks, pattern of comorbid disorders, and response to treatment of this disorder are not the same as for ADHD, it is strongly advised that you use this screening scale to detect its possible presence.
- *Barkley Functional Impairment Scale—Children and Adolescents* (Barkley, 2012a) to obtain information on the extent to which a child is experiencing impairment (ineffective functioning) in the 15 major domains of life activity evaluated on this form.
- *Home Situations Questionnaire* (HSQ; [Form 4](#) in this appendix) to assess the pervasiveness of child behavior problems across 16 different home and public situations. This scale helps identify those situations that are most problematic for the child, which can help you plan treatment—for example, behavioral parent training.

You may also wish to include in this packet [Handout 2](#), “How to Prepare for Your Child’s Evaluation,” assuming that the information corresponds to the manner in which you are likely to conduct your evaluations of children and teenagers.

I also recommend that you send the teacher versions of the aforementioned rating scales (Child Behavior Checklist—Teacher Report Form or Behavioral Assessment System for Children—3 Teacher Form), along with the teacher version of the ADHD–5 Rating Scale, and the School

Situations Questionnaire (SSQ; [Form 5](#)) to the child's teacher(s). The latter, like the HSQ, provides information on the various places in school where the child is likely to be having problems and how severe those may be, both of which can be informative for planning school interventions.

On the day of the evaluation, you may wish to have the parents complete the Barkley Deficits in Executive Functioning Scale—Children and Adolescents (Barkley, 2012b) to obtain a more comprehensive assessment of this domain of daily life activity. As that manual explains, children and teens with ADHD often have serious and pervasive problems with executive functioning and self-regulation that require treatment. The scale provides information on time management, self-organization, self-restraint, self-motivation, and the self-regulation of emotion. Norms are provided in the manual, along with information on the reliability and validity of the scale.

Clinical Interview—Parent Report Form

The parental interview form contains questions pertaining to the child's reason for referral, to their developmental, medical, social, and educational history, and to the essential core symptoms of most of the major childhood mental disorders likely to be seen in the evaluation of children and adolescents for ADHD. The precise DSM-5 diagnostic criteria for each disorder are *not* provided here (see American Psychiatric Association, 2013). Instead, I have set forth questions pertaining to the core nature of each disorder. If a parent endorses those items as being present, then you should open your copy of DSM-5 and review the precise criteria for that particular disorder (page numbers for the criteria for each disorder in DSM-5 are provided here for ready reference). If the parent does not endorse the essential symptoms for a disorder, then there is no need to review the full set of criteria for that disorder with the parent.

Scoring the Home and School Situations Questionnaires

The HSQ and SSQ evaluate how pervasive a child's behavioral problems are across multiple home and school situations. On the HSQ, parents rate their child's behavior problems across 16 different home and public situations. On the SSQ, teachers rate the behavioral problems children may be having across 12 different school situations. Both scales are scored the same way to yield two separate scores. The first is the number of problem settings, calculated simply by counting the number of items answered "yes." The second is the mean severity score, calculated by adding the numbers circled beside the items and then dividing by the number of "yes" answers.

Handout 1 General Instructions for Completing the Questionnaires

As part of processing your request for an evaluation of your child at our clinic, we must ask you to complete the enclosed forms about your child and your family. We greatly appreciate your willingness to complete these forms. Your answers will give us a much better understanding of your child's behavior at home and your family circumstances. In completing these forms, please follow these instructions as closely as possible:

1. All forms in this packet should be completed by the parent who has the primary responsibility for caring for this child. Where both parents reside with the child, this is to be the parent who spends the greatest amount of time with the child.
2. If a second parent wishes to complete a second packet of information about this child, he or she may do so independently by requesting a second set of these forms. He or she may call our administrative assistant, _____ at _____ (phone), and the packet will be sent out promptly.
3. If your child is already taking medication for assistance with his or her behavior management (such as Concerta) or for any emotional difficulties (such as an antidepressant), we ask that you complete the questionnaires about your child's behavior *based on how your child behaves when he or she is OFF this medication*. It is very likely that you occasionally observe your child's behavior at periods when he or she is off of this medication, and we want you to use those time periods as the basis for answering these questions about behavior. In this way, we can get a clearer idea of the true nature of your child's difficulties without the alterations produced by any medication treatments. However, some parents whose children have been on medication for a long time may not be able to give us this information. In that case, just complete the questionnaires based on your child's behavior, but check the third blank line below to let us know that you based your judgments on your child's behavior when he/she was on medication. Check one of the blanks below to let us know for certain on what basis you judged your child's behavior in answering our behavior questionnaires:

___ My child currently does *not* take any medication for behavior problems. My answers are based on my child's behavior while he or she is off of medication.

___ My child *is currently taking medication* for behavior problems. However, my answers are based on my child's behavior while he or she is *OFF* of this medication.

___ My child *is currently taking medication* for behavior problems. My answers are based on my child's behavior while he or she is *ON* this medication.

If your child is currently taking medication for behavioral or emotional difficulties, please list these medications below:

Thank you for completing these forms and returning them promptly to us in the enclosed envelope.

PLEASE RETURN THIS FORM ALONG WITH THE COMPLETED QUESTIONNAIRES.

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Form 1

Child and Family Information

Child's name _____ **Date of birth** _____ **Age** _____

Address _____
(Street) (City) (State) (ZIP)

Home phone (_____) _____ Cell/work phone (_____) _____ Dad / Mom
(Circle one)

Child's school _____ Teacher's name _____

School address _____
(Street) (City) (State) (ZIP)

School phone (_____) _____ Child's grade _____

Is child in special education? Yes No If so, what type? _____

Father's name _____ Age _____ Education _____
(Years)

Father's place of employment _____

Type of employment _____ Annual salary _____

Mother's name _____ Age _____ Education _____
(Years)

Mother's place of employment _____

Type of employment _____ Annual salary _____

Is child adopted? Yes No If yes, age when adopted _____

Are parents married? Yes No Separated? Yes No Divorced? Yes No

Child's physician _____

Physician's address _____
(Street) (City) (State) (ZIP)

Physician's telephone number (_____) _____

Please list all other children in the family:

Name	Age	School grade
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

[Follow for extended description](#)

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table of contents).

Form 2	Developmental and Medical History
---------------	--

Pregnancy and Delivery

- A. Length of pregnancy (e.g., full term, 40 weeks, 32 weeks) _____
- B. Length of delivery (number of hours from initial labor pains to birth) _____
- C. Mother's age when child was born _____
- D. Child's birth weight _____
- E. Did any of the following conditions occur during pregnancy or delivery?

1. Bleeding	No Yes
2. Excessive weight gain (more than 30 pounds)	No Yes
3. Toxemia/preeclampsia	No Yes
4. Rh factor incompatibility	No Yes
5. Frequent nausea or vomiting	No Yes
6. Serious illness or injury	No Yes
7. Took prescription medications	No Yes
a. If yes, name of medication _____	
8. Took illegal drugs	No Yes
9. Used alcoholic beverage	No Yes
a. If yes, approximate number of drinks per week _____	
10. Smoked cigarettes	No Yes

a. If yes, approximate number of cigarettes per day
(e.g., 1/2 pack) _____

11. Medication given to ease labor pains No Yes

a. If yes, name of medication

12. Delivery was induced No Yes

13. Forceps were used during delivery No Yes

14. Breech delivery No Yes

15. Cesarean section delivery No Yes

16. Other problems—please describe No Yes

F. Did any of the following conditions affect your child during delivery or within the first few days after birth?

1. Injured during delivery No Yes

2. Cardiopulmonary distress during delivery No Yes

3. Delivered with cord around neck No Yes

4. Had trouble breathing following delivery No Yes

5. Needed oxygen No Yes

6. Was cyanotic, turned blue No Yes

7. Was jaundiced, turned yellow No Yes

1. Had an infection No Yes

9. Had seizures No Yes

10. Was given medications No Yes

- | | |
|--------------------------------------|--------|
| 11. Born with a congenital defect | No Yes |
| 12. Was in hospital more than 7 days | No Yes |

Infant Health and Temperament

A. During the first 12 months, was your child:

- | | |
|------------------------------------|--------|
| 1. Difficult to feed | No Yes |
| 2. Difficult to get to sleep | No Yes |
| 3. Colicky | No Yes |
| 4. Difficult to put on a schedule | No Yes |
| 5. Alert | No Yes |
| 6. Cheerful | No Yes |
| 7. Affectionate | No Yes |
| 8. Sociable | No Yes |
| 9. Easy to comfort | No Yes |
| 10. Difficult to keep busy | No Yes |
| 11. Overactive, in constant motion | No Yes |
| 12. Very stubborn, challenging | No Yes |

Early Developmental Milestones

A. At what age did your child first accomplish the following:

- | | |
|--|-------|
| 1. Sitting without help | _____ |
| 2. Crawling | _____ |
| 3. Walking alone, without assistance | _____ |
| 4. Using single words (e.g., "mama," "dada," "ball") | _____ |

- 5. Putting two or more words together (e.g., "mama up") _____
- 6. Bowel training, day and night _____
- 7. Bladder training, day and night _____

Health History

- A. Date of child's last physical exam _____
- 3. At any time has your child had the following:

1. Asthma	Never	Past	Present
2. Allergies	Never	Past	Present
3. Diabetes, arthritis, or other chronic illnesses	Never	Past	Present
4. Epilepsy or seizure disorder	Never	Past	Present
5. Febrile seizures	Never	Past	Present
6. Chickenpox or other common childhood illnesses	Never	Past	Present
7. Heart or blood pressure problems	Never	Past	Present
8. High fevers (> 103°)	Never	Past	Present
9. Broken bones	Never	Past	Present
10. Severe cuts requiring stitches	Never	Past	Present
11. Head injury with loss of consciousness	Never	Past	Present
12. Lead poisoning	Never	Past	Present
13. Surgery	Never	Past	Present
14. Lengthy hospitalization	Never	Past	Present
15. Speech or language problems	Never	Past	Present
16. Chronic ear infections	Never	Past	Present

17. Hearing difficulties	Never	Past	Present
18. Eye or vision problems	Never	Past	Present
19. Fine motor/handwriting problems	Never	Past	Present
20. Gross motor difficulties, clumsiness	Never	Past	Present
21. Appetite problems (overeating or undereating)	Never	Past	Present
22. Sleep problems (falling asleep, staying asleep)	Never	Past	Present
23. Soiling problems	Never	Past	Present
24. Wetting problems	Never	Past	Present
25. Other health difficulties—please describe			

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Handout 2 How to Prepare for Your Child's Evaluation

Taking your child to a mental health professional for an evaluation is a major decision for any parent. Many parents do not know what to expect from such an evaluation and what they can do to be well prepared for it. That is why we are sending this pamphlet to you. It will give you some idea of how to prepare for your child's evaluation so that the time you spend with the professional can be used to its maximum advantage.

Getting Ready

In deciding to seek our professional help, consider what your concerns are at the moment. Typically, these concerns reflect problems with your child's behavioral, emotional, family, school, or social adjustment. While waiting for the appointment date, take time to sit down with a sheet of paper and make up a list of answers to the following questions in areas that may be of concern to you. This can help clarify your thoughts about your child's difficulties. It can also make the evaluation proceed more smoothly and quickly, perhaps even saving time (and money) in the process (professionals usually charge by the quarter-hour for their time). Here are the areas to consider:

1. What most concerns you now about your child? Don't go into a long explanation, just list the major problem areas. It helps to identify first whether they are mainly problems at home, in school, in the neighborhood or community, or with other children, or all of these. Use these areas as headings on your list. In order to help a professional help you, it is important that you get down to specifics. What precisely is it that you are concerned about with your child in these areas? Under the heading of "Home Problems," jot down those problem behaviors that you think are inappropriate for your child's age. That is, these problems seem to occur more often or to a degree that is beyond what you think to be typical of children at this age. Even if you do not think they are deviant for your child's age, if you are concerned about them anyway, write them down but indicate this fact next to that item. Now do the same for "School Problems" and the remainder of these problem headings ("Neighborhood," "Peers," and other problem areas). Save this list to take with you to your appointment with the professional.
2. On the back of that sheet of paper, or on a new sheet if that one is full, write down the following major headings and list anything that comes to mind that your child has difficulties with that might indicate a problem: "Health" (chronic or recurring medical problems), "Intelligence or Mental Development," "Motor Development and Coordination," "Problems with Senses" (such as eyesight, hearing), "Academic Learning Abilities" (such as reading, math), "Anxiety or Fears," "Depression," "Aggression toward Others," "Hyperactivity," "Poor Attention," and "Antisocial Behavior" (such as lying, stealing, setting fires, running away from home). You may

already have listed some of these in Item 1, but it can help to reorganize them into these new categories for your child's professional evaluation.

3. Some parents may have concerns that they are embarrassed to raise with professionals. These often involve family problems that the parents believe may be contributing to their child's behavioral or emotional problems but which they are reluctant to divulge to others. Such problems as alcoholism or substance abuse in one of the parents, marital problems that create frequent conflicts between the parents and may spill over into mistreatment of the child, episodes of excessive disciplining or physical punishment that may indicate abuse, and suspected sexual abuse of the child are just some of the many areas parents may be hesitant to divulge to a professional who is a stranger to them. But parents should realize that these are extremely important matters for the mental health professional to understand and take into consideration in attempting to diagnose and treat children. If this information is withheld, then there will be an increased possibility of mistakes in diagnosis, the formulation of the important issues in the case, and treatment planning, because the professional is being intentionally kept in the dark about matters that have a direct bearing on a complete understanding of the case.
4. If at all possible, speak with your child's teacher(s) and write down what they tell you they are most concerned about with your child's school adjustment. Again, save this list to take with you to your child's professional appointment.
5. Now take one more sheet of paper and make a list of any problems you think are occurring in your family besides those of your child. Use the following headings if it will help: "Personal" (things you think are troubling you about yourself), "Marital," "Money," "Relatives," "Your/Your Spouse's Job," "Siblings," and "Health." Take this list with you to your appointment.

These lists are similar to the areas most likely to be covered in your interview with the professional. Keep the lists handy and add to them as you think of items before the date of your professional appointment. These lists should help to focus the evaluation quickly on the most important areas of concern that you have about your child and your family. They will also probably help speed up the evaluation and keep things on track. Making these lists will likely also help you clarify your own thinking about your current situation and your child's problems. Finally, these lists will help to maximize the usefulness of the evaluation for you and your child. This will also result in the professional having greater respect and appreciation for you, a consumer who has come in well prepared for the evaluation.

The Evaluation

The clinical interview with you, the parents (and to a lesser extent with your child), is probably the most important component of a comprehensive professional evaluation of your child. Other important elements are your completed behavior questionnaires about your child, an interview with your child's teacher(s), and similar behavior questionnaires about the child completed by his or her teacher(s).

What Information Will We Need from You to Do the Evaluation?

Plenty! Before professionals can identify or diagnose a child as having behavioral, emotional, or learning problems, they must collect a great deal of information about the child and family, sift through this information looking for the presence of any psychological disorders, determine how serious the problems are likely to be, rule out or rule in other disorders or problems the child might have, and consider what resources are available in your area to deal with these problems. If your child also needs educational or psychological testing for any learning or developmental problems he or she may be having besides the behavior problems, this issue will be discussed with you on the day of your appointment, and you will be referred to another psychologist or educational specialist for this additional evaluation. You can expect our evaluation to run an average of 2.5–4 hours.

What Else Is Needed to Complete the Evaluation?

Many times our professionals need information from others who know your child in addition to the information you will give us. You may be asked to (1) give your permission for the professional to obtain the reports of previous evaluations that your child may have been given; (2) permit the professional to contact your child's treating physician for further information on health status and medication treatment, if any; (3) provide the results of the most recent educational evaluation from your child's school; (4) initiate one of these school evaluations if one was not already done and if one of your concerns is your child's school adjustment; (5) complete the packet of behavior questionnaires about your child that should have been sent to you earlier by mail; (6) return these forms before the appointment date; (7) give your permission to have your child's teacher(s) complete similar behavior questionnaires, which will be mailed to them; and (8) give permission for the professional to obtain any information from social service agencies that already may be involved in providing services to your child.

There is rarely any reason for you to deny our professionals your permission to obtain this information from others or for you to refuse to institute the procedures requested of you. However, on rare occasions, you may wish an unbiased second opinion about your child's problems. This may happen if you have already had an evaluation by the school or another professional with which you strongly disagree. In such cases, you may wish to tell us not to obtain the records from the other professional or from any school evaluation. Should you do so, please explain why you are withholding your permission for the release of these particular sources of information so that we have a clearer grasp of the issues involved in your request for this new evaluation with us. However, in most cases you should not deny our professionals access to the information that can be provided by your child's teachers, even if you disagree with those teachers. Preventing professionals from speaking with your child's teachers greatly diminishes the ability of those professionals to understand your child. It precludes their getting information from the second most important caregiver in your child's current situation. If you disagree with what a teacher may say, explain this to the professionals before they contact the school so they can keep this disagreement in mind as they speak with the teacher.

What Happens on the Day of the Appointment?

Several things. You are going to be interviewed for about 1–2 hours about your child, and your child most likely will be interviewed as well. It is the interview with you that is most important. You probably are going to be asked to complete some behavior questionnaires as well, if you were not sent any to complete before the appointment. Your child may also be tested if there are issues to be answered about his or her intelligence, language and academic skills, or other mental abilities (e.g., memory, motor skills).

The Parent Interview

The interview with you, the parent, is an indispensable part of the evaluation of your child. No adult is more likely to have the wealth of knowledge about, the history of interactions with, or simply the time spent with your child than you. Whenever possible, both parents should attend the interview, as they each have a somewhat unique perspective on the child's problems. If employment or other reasons preclude one parent from attending, the other parent should speak with the partner the day before the evaluation and write down that parent's concerns and opinions about the child to take into the evaluation the next day. It is usually not necessary that brothers and sisters attend this first evaluation. In some cases, the professional may request that these siblings attend a second meeting if the professional feels it is necessary to get the siblings' view of particular family conflicts or problems the siblings are having with the child being evaluated.

The interview with you serves several purposes. First, it establishes an important relationship between you and the professional and even between the child and the professional, which will be helpful and put you at ease with the rest of the evaluation. Second, the interview provides an important source of invaluable information about your child and family. In particular, it gives the professional your view of your child's apparent problems and narrows the focus of later stages of the evaluation. This is your chance to get your concerns about your child out in the open with a knowledgeable professional. Don't be shy, coy, or unforthcoming. The more information you can provide the professional, the better appreciation he or she will have of your child's problems and the more accurate the diagnosis is likely to be. Use the lists that you constructed while waiting for the appointment date so you don't forget anything you wanted to discuss. Third, the interview can often reveal just how much distress the child's problems are causing you and your family. It also gives the professional some sense of your own well-being as a parent. Fourth, the interview may begin to reveal significant information about your relationship with your child that could be important in pinpointing some potential contributors to your child's problem. But two of the most important purposes of this evaluation are to determine a diagnosis of your child's problem(s) and to provide you with reasonable treatment recommendations.

The professional is likely to take notes throughout the conversation with you. He or she will also jot down observations of you and how your child is doing while you both are in the clinic. Although these notes from observing you and your child may be helpful in raising certain ideas about your child's problems that can be discussed with you later, they will not be overly emphasized by our professionals. Behavior in the office, particular that of your child, is often not very helpful in telling us how your child is likely to behave at home or in school. In general, research with children having behavior problems has shown that many are likely to behave normally during this evaluation. Such normal behavior will not be interpreted by our professionals as indicating that your child has no problems. However, if your child displays a lot of inattentive, hyperactive, or defiant behavior during the evaluation, this may be more informative, as such behavior is unusual for normal children and could indicate your child would have similar problems in school.

Some of our professionals like to have your child present during the interview with you. In part, this is to give them some idea of how you and your child get along with each other. This is fine so long as your child is not likely to be upset by the nature of the questions about your child and your answers. Some parents do not feel comfortable with this situation because they do not want to talk about the child's problems in front of him or her, at least not yet. If you feel that having your child present during the interview would make you inhibited and less candid

about your opinions and concerns, then simply advise the professionals of your feelings on the matter when you first meet with them the day of the evaluation. It should not be a problem for us to handle things your way.

Information About Your Child

The interview will probably begin with an explanation of the procedures to be undertaken as part of this evaluation and the time it is expected to take. If it has not been discussed already, the estimated cost of the evaluation and the manner in which the fee is to be handled (e.g., insurance, self-pay) should be discussed with you. Our professionals may point out to you at this time that although most of what you say is confidential (they cannot tell anyone else about what you have said without your permission), laws may place limits on this privilege. These limits are about reports of child neglect or abuse. If you mention such information to the professional, he or she may be required by law to report this information to the state, usually the Department of Social Services. The clinician will tell you about such limits on the day of your evaluation.

The interview will probably proceed to a discussion of your concerns about your child. You can refer to the notes that you made before the appointment. You will probably be asked to give some specific examples of your child's behavior that illustrate why you are concerned about it. For instance, if you say that you are worried that your child is too impulsive, you may be asked to give some examples of your child's impulsive behavior. This is done not to challenge your opinion but to help the interviewer see how you arrived at that opinion. Give as much information as you can when asked. You may also be asked how you are presently trying to manage your child's behavior problems and whether your spouse is using a different approach. It is common for behavior problem children to be somewhat better behaved for their fathers than mothers. It is all right to describe such differences as they do not mean you or your spouse are doing anything wrong or are causing the problems with your child.

You are going to be questioned about when you first noticed your child's problems and how long each of the major problem areas has been occurring. Try to be as specific as your memory will permit. Again, taking some notes about this before the appointment may help you to remember this information better when you are asked. This naturally leads to questions about the types of previous professional assistance you may have obtained and whether it is possible for the interviewer to contact these other professionals for further details about your child and your family. Our professionals like to ask parents what they believe has led their child to develop these problems. If you have an opinion on what caused your child's problems, please offer it, but don't be afraid simply to say that you don't know. The professional is just looking to see if you can provide any additional insight about the cause of your child's difficulties. Remember, we as professionals do not know the exact causes of all children's behavior problems, although we have much information that can be of help to us in narrowing down these possibilities. Sometimes it simply is not possible to say for sure why certain children behave the way they do. Don't feel as though you have to come up with a better explanation for your child's behavior.

If you completed behavior rating forms before the appointment and returned them, the professional may want to review some of your answers with you now, especially those that he or she may have found unclear. If the professional does not go over your answers with you, you may want to ask *the professional* if he or she has any questions about your answers on those forms. You may also be asked about some answers on the forms that were sent to your child's teacher(s). If you are curious, you may ask to see the teacher's answers on these

forms. It is your right to see what the teacher has said. Ask the professional to explain anything about these forms and their answers that is confusing to you.

The professional will also talk with you about any problems your child has within a number of different developmental domains. We customarily ask parents about their children's development so far in their physical health, sensory and motor abilities, language, thinking, intellect, academic achievement, self-help skills such as dressing and bathing, social behavior, emotional problems, and family relationships. You will probably be asked about similar things. Many professionals will also review with you a variety of behavior problems or symptoms of other psychiatric problems to see if your child also may be having these difficulties. Simply be truthful and indicate whether these other symptoms are present and to what degree.

Because our professionals are trying to evaluate your child's problems, they are likely to spend most or all of the time with you trying to identify the areas of concern you have about your child. This is fine. But our professionals also want to ask you about any strengths your child has in any of the areas discussed above or in particular hobbies, sports, or school subjects. If the professional does not ask you, then mention some yourself to give a more complete and balanced picture of your child to the professional. We also like to take an opportunity to ask parents about possible special interests, privileges, and rewards that your child enjoys. We can typically use this information later if we have to set up a reward program for your child as part of our behavior management training with parents.

At some point in the interview, the professional may review your child's developmental and medical history with you. You will have completed a form about this for us before the appointment, but we may want to review your answers with you as part of the interview.

It is essential that the professional discuss with you your child's school history. Many children referred to us have difficulties adjusting to the demands of school. You are likely to be asked about the age at which your child began kindergarten, what school your child attended, and how well your child progressed through early and subsequent grades and schools. You probably will be questioned about the types of special educational evaluations and placements your child has received, if any, and whether your child had a team evaluation conducted by the school. If one has not been done, you may be asked to initiate one in case your child has school problems that make him or her eligible for any formal special educational services. You are also going to be asked about what specific concerns your child's teacher(s) have raised about school performance, both now and in the past. Be sure to tell the professional if your child has repeated a grade or has been suspended or expelled. We also like to question parents about the nature of the relationship they presently have with the school staff working with their child. Is it friendly and supportive or filled with conflict? Has communication been open and reasonably clear or limited and hostile? Answers to these questions greatly help us in preparing for later contacts with the school staff if these are needed. If the professional forgets to ask about these issues, you may want to raise the topic yourself to give the professional a clearer picture of your past relations with the school staff.

You may be asked to give written permission for the professional to contact your child's school, if permission was not obtained previously from you. You should consent to give permission under most circumstances, as it is very hard for a professional to evaluate your child's problems fully without access to the school's information. If you do not want to give consent, be sure to give the professionals a clear explanation as to why you do not, so they do not misjudge you as being unreasonably hostile to them or to the school.

Information About You and Your Family

Professionals know that many families of behavior problem children are under more stress than other families and that the parents may be having more personal problems than most parents whose children do not have behavior problems. Do not be offended if you are asked such personal questions. Information about you and your family can be of great assistance to the professional in helping to understand your child's problems better and develop more useful treatment recommendations for you. It may also indicate to the interviewer that you may need some additional help for your own or your family's other problems. You will probably be asked about your own background, education, and occupation as well as those of your spouse. The professional may ask if you or your spouse have had any psychiatric, learning, developmental, or chronic medical problems. During such evaluations, parents are also typically asked whether they are having marital problems and what the nature of these might be. All of these personal questions are routine and important, so please answer as honestly as you can. We also will ask you about other children in the immediate family and any psychological, educational, developmental, or other problems these siblings may be having.

Before the interview with you is over, take a minute to review the notes that you brought with you to see if all of your concerns have been covered with the professional you are seeing. Share with the professional any further information on these notes or anything else you feel might be helpful in better understanding your child and your family. Your candor and openness will be respected and appreciated by our professional staff.

The Child Interview

Depending on your child's age and intelligence, some time during the evaluation will be spent by the professional in interviewing your child and making informal observations of your child's appearance, behavior, and developmental skills. This interview serves much the same purposes as the interview with you. However, you should not place too much emphasis on the information we obtain in this interview. Such informal observations of your child's conduct during the interview may not be typical of your child's behavior at home or school, as mentioned earlier. Our professionals will not make the mistake of placing too much weight on the observations of your child in our clinic. Do not be surprised to find that your child is well behaved during this evaluation, and do not worry about it.

Your child is probably going to be asked a lot of general questions, touching on the following:

1. What is your child's awareness of why he or she is visiting the interviewer today and what have the parents told the child about the reason for the visit?
2. What are the child's favorite hobbies, television shows, sports, or pets?
3. Where does the child attend school, who are his or her teachers, what types of subjects does he or she take in school, and which subjects does he or she like most? If the child is doing poorly in a subject, what reasons does the child give to explain any such difficulties?
4. Does the child see him- or herself as having any behavior problems in the classroom? What types of discipline does the child get from the teacher(s) for any such misconduct?

5. How does the child think he or she is perceived by other children at school?
6. What are your child's perceptions of any of the problems that you have reported to the professional?
7. What would your child like to see changed or improved at home or at school?
8. Does your child see him- or herself as having any behavioral problems? If so, what does he or she think causes this pattern of behavior and why?

Our professionals are aware that children are notorious for underreporting their difficulties and are likely to do so in this part of the interview. Thus, the professional will not use your child's answers in determining whether he or she actually has a behavioral, learning, or emotional disorder.

Some of our professionals find it helpful during this interview, particularly with young children, to let them play, draw, or simply wander about the office. Others may ask them a series of incomplete sentences, letting the children fill in the blanks with their own answers. This approach can be a less direct way of finding out children's feelings about themselves and other features of their lives.

The Teacher Interview

Although it is not necessarily conducted on the same day, the teacher interview is an essential part of your child's evaluation. Next to parents, few other adults will have spent more time with your child than his or her teachers, particularly if the child is of elementary school age. The opinions the teachers hold of the children are a critical part of the evaluation of any child and will be obtained by our professionals in most cases. In all but the most unusual circumstances, you should consent to this exchange of information, as it is in the best interest of your child's evaluation. This interview will likely be done by telephone.

The teachers most likely will be questioned about your child's current academic and behavioral problems. Relations with classmates also may be covered during this discussion. How your child acts in various school situations, especially where academic work has to be done, will likely be covered. We also like to ask teachers about situations that involve limited or no supervision, such as during recess, lunch, or special assemblies; while in hallways or bathrooms; or on the bus. The professional should also find out what the teachers are currently doing to manage the child's problems. Your child's performance in each academic subject should be briefly discussed. The professional may ask if your child has received a multidisciplinary team evaluation as part of the child's rights under state laws. If not, the professional may question the teacher as to whether one should be initiated in case special educational resources are going to be needed to help your child.

Summary

Interviews with you and your child and contact with your child's teachers form an indispensable part of our evaluation of your child. These interviews provide a wealth of information that is useful to making a diagnosis and planning treatments for your child that simply cannot be obtained by any other means. Throughout these interviews, sufficient time must be taken by the professional to explore the necessary topics with each person to obtain

as thorough a picture of your child as needed. A 20-minute initial interview will simply not suffice! The average length of time devoted to interviewing alone is often 1–2 hours, not including any psychological testing of the child. It will also be important for the professional to obtain parent and teacher behavior rating scales of your child's behavior. Some children will also require academic or psychological testing to rule out other developmental or learning disabilities, but these will not be done on the day of your evaluation. If they are needed, you will be told by your professional as to why testing is needed and where it can be obtained.

We hope you have found this pamphlet useful in preparing for your child's evaluation with our professional staff.

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Form 3 Clinical Interview for Children— Parent Report

Child's name _____ Informant

Informant's relationship to child: [*Circle one*] Mother Father Other

Record/chart # _____ Examiner Date

Child's date of birth _____ Age: Years _____ Months

Referral source _____ (e.g., school, physician,
etc.)

Does referring person wish a copy of the report from this evaluation? Yes No

Clinical Diagnoses: [*To be filled in after evaluation is completed*]

1. _____ 2. _____ 3. _____

Clinical Recommendations: [*To be briefly listed after evaluation is completed*]

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

Legal Disclosures

[Examiner: At the start of the interview, be certain to review any necessary legal disclosures pertinent to your state, county, or other geographic region. For instance, in Virginia, we advise parents of the following four issues:

- 1. Any disclosure of information that indicates a suspicion of child abuse must be reported to state authorities (Department of Social Services).*
- 2. Any disclosure of threats of harm to oneself, as in a specific suicide threat, will result in immediate referral to an emergency mental health unit.*
- 3. Any disclosure of specific threats to specific individuals will result in notification of those individuals concerning the threat.*
- 4. Although the mental health records are confidential, they may be subpoenaed by a judge's order and must be provided to the court if so ordered.*

Take time now to cover any such issues with the family before proceeding to the remainder of this interview.]

Family Composition

Is this child: ___ Your biological child ___ Adopted ___ Foster child

With which parent does the child live? ___ Both ___ Mother only ___ Father only

___ Neither parent; child lives with ___ Grandparent ___ In foster care

Do you have legal custody of this child? ___ Yes ___ No *[Examiner: If No, determine whether or not it is legally advisable or permissible to proceed with this evaluation.]*

Does any other adult live in the home? ___ Yes ___ No If so, who is it? _____

How many children are in the family? _____ How many are still at home?

Parental Concerns about Child—Reasons for Evaluation

What are you most concerned about regarding your child that led you to request this evaluation? *[Organize parent's responses under major headings below. Query parents about (1) the specific details of each concern, (2) when it began, (3) how often it occurs or how severe it is, and (4) what they have tried to do so far to deal with it.]*

Home behavior management problems:

Home emotional reaction problems:

Developmental delays: *[If present, consider reviewing with parents the diagnostic criteria for Mental Retardation or other specific developmental disorders such as learning disorders.]*

School behavior management problems:

School work performance or learning problems:

School emotional reaction problems:

Social interaction problems with peers:

Behavior in the community (outside of home and school):

Other concerns:

Why have you decided to seek this evaluation of your child at this time?

What type of assistance or treatment recommendations do you hope to receive from this evaluation?

Now that you have told me what your main concerns about your child are that bring you here today and what you hope to gain from the evaluation, I need to go over a number of different topics with you about your child. This needs to be done to be sure that I get as comprehensive a picture of your child's psychological adjustment as possible. I am going to ask you about a number of important developmental areas for any child. You should tell me if you have noticed anything unusual, abnormal, atypical, or even bizarre about your child's functioning in any of these areas. Let's begin with your child's:

Sensory development (impairments in vision, hearing, sense of touch or smell; abnormal reactions to sensory stimulation; hallucinations, etc.):

Motor development (coordination, gait, balance, posture, movements, gestures, tics, nervous habits or mannerisms, etc.):

Language development (delays, comprehension problems, speech difficulties):

Emotional development (overreactions, mood swings, extreme or unpredictable moods, peculiar or odd emotions, unusual fears or anxieties, etc.):

Thinking (odd ideas, bizarre preoccupations or fixations, unusual fantasies, speaks in incomplete or incoherent thoughts, delusions):

Social behavior (aggressive, rejected, bullies others, withdrawn, shy, anxious around others, mute when with others, aloof from others or shows no desire for friends/playmates, etc.):

Intelligence/academic skills (delays in general mental development; problems with memory; or specific delays in reading, math, spelling, handwriting, or other academic skill areas):

Review of DSM-5 Childhood Disorders

Now I need to ask you a number of very specific questions about a variety of behavioral, social, and emotional problems with which children sometimes have difficulties. As I ask you about these things, keep in mind that some of these things are not bad or abnormal and may be seen sometimes in healthy, typical children. I want you to tell me if your child does any of these things to a degree that you would consider inappropriate for someone of your child's age, sex, and ethnic background.

[Examiner: Place a check mark, X, or write Yes on the line to the right next to each item that the parent endorses as occurring often in the child.]

Inattention, Impulsivity, and Hyperactivity Problems

I am now going to ask you some very specific questions about your child's ability to pay attention to tasks, resist being distracted, control impulses, and control activity level so it is appropriate to the situation. I want you to consider whether any of these things has occurred during the past 6 months. For each of them, please tell me if your child showed this behavior often or, as I said, to a degree that was inappropriate.

1. Often easily distracted; cannot concentrate on or persist at things _____
2. Often forgetful or poorly organized _____

3. Often impulsive in the things the child says or does; seems impatient _____
4. Often talks too much; runs around too much, or can't sit still _____

[Examiner: If the parent endorses several of these symptoms, please review with the parent the explicit diagnostic criteria for attention-deficit/hyperactivity disorder on pages 59–60 of the Diagnostic and Statistical Manual for Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013). If not, then move on to the next disorder.]

Defiant and Noncompliant Behavior

Now I want to ask you some very specific questions about your child's behavior and whether the child is difficult to manage and doesn't listen to you or do as you ask. Again, I want you to consider whether any of these things has occurred during the past 6 months. And again, please tell me if your child showed this behavior often or more frequently than was appropriate.

1. Often fails to comply with your requests _____
2. Often argues with you or defies you when asked to do something _____
3. Has lost their temper, was angry, or resentful often _____

[Examiner: If the parent endorsed several of these symptoms, please review with the parent the explicit diagnostic criteria for oppositional defiant disorder on page 462 of the Diagnostic and Statistical Manual for Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013). If not, then move on to the next disorder.]

Conduct Problems and Antisocial Behavior

Let me ask you now about any problems your child may have in following important rules. Again, please think about the last 6 months and whether you saw any of these as happening often or more frequently than would be appropriate.

1. Has bullied others, started physical fights, or used a weapon _____
2. Has been cruel to animals, to others, or stolen from someone _____
3. Has intentionally set fires or destroyed property _____
4. Has lied often to get things the child wants or to avoid trouble _____
5. Has stayed away from home overnight without permission, run away from home, or skipped school without permission _____

[Examiner: If the parent endorsed one or more of these symptoms, please review with the parent the explicit diagnostic criteria for conduct disorder on pages 469–471 of the Diagnostic and Statistical Manual for Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013). If not, then move on to the next disorder.]

Specific Learning, Communication, and Coordination Disorders

Let's talk now about how well your child is able to learn in school, use language, or coordinate

motor actions. During the last 6 months, has your child experienced any significant problems with:

1. Reading at grade level or appropriate for the child's age ____
2. Spelling at grade level or appropriate for the child's age ____
3. Doing math or arithmetic at grade level or appropriate for the child's age ____
4. Printing, handwriting, or written expression ____
5. Speaking or expressive language ability ____
6. Understanding what others say or their receptive language ____
7. Motor coordination, balance, walking, standing, or movement ____

[Examiner: If the parent endorsed any of these problems, please review with the parent the explicit diagnostic criteria for the type of disorder they endorsed from among the specific learning (pp. 66–67), language (pp. 42–48), and coordination disorders (pp. 74–75) in the Diagnostic and Statistical Manual for Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013). If not, then move on to the next disorder.]

Autism Spectrum Disorder

Now I want you to think about your child's development going back to when the child was at least 2 years of age or so and any time since then. Did you notice any persistent problems with the following areas of your child's development?

1. Showed a persistent absence of speech or nonverbal communication ____
2. Showed little or no interest in interacting with others ____
3. Did not seem to understand how to develop or maintain relationships ____
4. Showed repetitive motor movements that seemed purposeless, such as spinning, twirling, flapping their hands, walking on their toes a lot, or had odd postures ____
5. Showed an abnormal fixation with or interest in certain objects or interests, such as spinning fans, wheels, carousels, etc., or with electronic devices such as smoke detectors, doorbells, or mechanical devices ____
6. Seemed unusually sensitive to loud noises, textures, lights, or touch ____

[Examiner: If the parent endorsed any of these problems, please review with the parent the explicit diagnostic criteria for autism spectrum disorders (pp. 50–51) in the Diagnostic and Statistical Manual for Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013). If not, then move on to the next disorder.]

Anxiety Disorders

All right, let's move on to some other problems that children can have with their emotions. Again, please think about the last 6 months and if you saw any of these as happening often or more frequently or to a degree that would not be appropriate.

1. Is your child markedly afraid of some specific object or situation? ____

- a. If so, what would that be? _____
2. Does your child consistently fail to speak around others or in certain social situations even though they might be able to speak and do so at home? _____
3. Is your child unusually afraid to separate from you or someone else who is close to them, afraid to go out of the home, or afraid when you or someone they are close to has to leave them? _____
 - a. If so, please explain what that fear involves: _____
4. Is your child unnaturally afraid to go into social situations for fear that others will be watching them or judging them? _____
5. Does your child seem to worry about many things in general, seem apprehensive or anxious about things going wrong most of the time? _____
 - a. If so, is that worry or fear associated with being easily fatigued, unusually restless, unable to concentrate, being irritable, being unusually tense, or not being able to sleep? _____

[Examiner: If the parent endorsed any of these problems, please review with the parent the explicit diagnostic criteria for the type of disorder they endorsed from among simple phobias (pp. 197–198), selective mutism (p. 195), separation anxiety disorder (pp. 190–191), social anxiety disorder (pp. 202–203), and generalized anxiety disorders (p. 222), depending on the items above that they endorsed, that appear in the Diagnostic and Statistical Manual for Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013). If not, then move on to the next disorder.]

Mood Disorders

Now I want to ask you about another area of emotional problems besides fear or anxiety that children might have. We refer to this as their mood or emotional state most of the time. Once more, please think about whether or not your child shows these moods or behaviors more often or more than is appropriate for the child's age. During the past year, has your child:

1. Shown severe temper outbursts, either physically or verbally, that are well beyond what is appropriate to that situation? This might include physical aggression or destroying objects or property.
2. When not showing such outbursts, is your child unusually irritable or angry? _____

[Examiner: If the parent endorsed any of these problems, please review with the parent the explicit diagnostic criteria for disruptive mood dysregulation disorder (p. 156) in the Diagnostic and Statistical Manual for Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013). If not, then move on to the next set of questions.]

OK, now I want to know if your child has shown any of these problems for a period of *at least 2 weeks* and occurring much of the time during that period. Has your child:

1. Been depressed, felt sad or hopeless, or even tearful for 2 weeks or more? _____
2. Shown a significant decline in interest or pleasure in activities or things the child used

to enjoy doing? _____

3. Has your child also shown significant loss of weight; had trouble sleeping, unusual fatigue, or feelings of worthlessness; been unable to concentrate; or had thoughts of suicide? _____

[Examiner: If the parent endorsed any of these problems, please review with the parent the explicit diagnostic criteria for major depressive disorder (pp. 160–161) or persistent depressive disorder (pp. 168–169) in the Diagnostic and Statistical Manual for Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013). If not, then move on to the next set of questions.]

Now I want to explore another type of mood problem that children or teens can have. In this case, I want to know if the child has shown any of these behaviors for at least 4 days and nearly every day during that time. Has your child ever shown for 4 days or more:

1. Persistent, expansive, unusually elevated or irritable mood? _____
 - a. If so, did the child make statements that seemed very grandiose or in which the child claimed to have abilities that were well beyond what this or most other children have? _____
 - b. Did the child seem to have an exceedingly inflated sense of self-esteem? _____
 - c. Was the child incredibly talkative or had racing thoughts more than usual? _____
 - d. Did the child not seem to need much if any sleep yet still seemed rested? _____

[Examiner: If the parent endorsed any of these problems, please review with the parent the explicit diagnostic criteria for bipolar disorder type I (pp. 123–125) or bipolar disorder type II (pp. 132–134) in the Diagnostic and Statistical Manual for Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013). If not, then move on to the next set of questions.]

Now I'd like to ask you about any unusual movements or odd noises or gestures that your child may make:

1. Has your child shown any abrupt and repetitive muscle movements? _____
 - a. For example, forced blinking, squinting, wrinkling up of their face, head turning, or arm or leg movements?
2. Has the child made any repetitive odd noises, such as sniffing without needing to, snorting, grunting, loud exhaling, screeching, or making barking sounds? _____

[Examiner: If the parent endorsed either of these problems, please review with the parent the explicit diagnostic criteria for tic disorders or Tourette syndrome (p. 81) in the Diagnostic and Statistical Manual for Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013).]

Finally, I'd like to ask if your child has:

1. Experienced any traumatic events, such as witnessed a death, or saw or experienced a serious injury or sexual violence? _____
2. If not, have they witnessed such events happening to others, or learned that a close family member or close friend had experienced such a traumatic event? _____

[Examiner: If the parent endorsed any of these problems, please review with them the explicit diagnostic criteria for posttraumatic stress disorder (pp. 271–272) in the Diagnostic and Statistical Manual for Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013). If not, then move on to the next set of questions.]

Review of Executive Functioning

[Examiner: If you did not obtain a rating scale of executive function deficits concerning this child, I strongly encourage you to obtain at least some information concerning the five major domains of executive functioning in daily life. You can do that using these interview questions from my Barkley Deficits in Executive Functioning Scale—Children and Adolescents (BDEFS-CA) rating scale and manual (Barkley, 2012). This brief interview contains the four highest loading questions from each domain of executive function in daily life: time management, self-organization and problem solving, self-restraint, self-motivation, and self-regulation of emotion.]

I would like to ask you a number of questions about your child’s behavior during the past 6 months. For each behavior I ask you about, I want to know if it occurs *often* or *very often*.

[Examiner: Place a check mark (✓) in the box after each item indicating the answer of the person being interviewed. Each item is simply answered Yes or No.]

Interview questions:	No, this does not occur often	Yes, this occurs often or very often
EF1. Procrastinates or puts off doing things until the last minute	_____	_____
EF2. Has a poor sense of time	_____	_____
EF3. Wastes or doesn’t manage time well	_____	_____
EF4. Has trouble planning ahead or preparing for upcoming events	_____	_____
EF5. Has trouble explaining ideas as well or as quickly as others	_____	_____
EF6. Has difficulty explaining things in their proper order or sequence	_____	_____
EF7. Can’t seem to get to the point of explanations	_____	_____
EF8. Doesn’t seem to process information quickly or accurately	_____	_____
EF9. Makes impulsive comments	_____	_____

- | | | |
|---|-------|-------|
| EF10. Likely to do things without considering the consequences for doing them | _____ | _____ |
| EF11. Acts without thinking things over | _____ | _____ |
| EF12. Doesn't stop and talk things over with themselves before deciding to do something | _____ | _____ |
| EF13. Takes short cuts in chores, schoolwork, or other assignments and does not do all that they are supposed to do | _____ | _____ |
| EF14. Does not put much effort into chores, schoolwork, or other assignments | _____ | _____ |
| EF15. Seems lazy or unmotivated | _____ | _____ |
| EF16. Is inconsistent in the quality or quantity of work performance | _____ | _____ |
| EF17. Has trouble self-calming once emotionally upset | _____ | _____ |
| EF18. Is not able to be reasonable once emotional | _____ | _____ |
| EF19. Cannot seem to distract themselves from whatever is upsetting them emotionally to help calm down; can't refocus their mind to a more positive framework | _____ | _____ |
| EF20. Not able to rechannel or redirect emotions into more positive ways or outlets when upset | _____ | _____ |

Office Use Only: **Interview Score**

EF Symptom Count _____

From *Barkley Deficits in Executive Functioning Scale—Children and Adolescents* (Barkley, 2012, pp. 40–42). Copyright © 2012 The Guilford Press. Reprinted with permission.

[*Examiner: The number of symptoms on this interview that would place a child above the +1.5 SD cutoff (93rd percentile) and thus be clinically meaningful (or deviant) as derived from the scale manual are: males ages 6–11 = 12; males ages 12–17 = 14; females ages 6–11 = 9; females ages 12–17 = 10.*]

Parent Management Methods

Now let's move on and talk about how you have tried to manage your child's behavior, especially when it was a problem for you. When your child is disruptive or misbehaves, what steps are you likely to take to deal with the problem?

If these methods do not work and the problem behavior continues, what are you likely to do then to cope with your child's misbehavior?

Child's Evaluation and Treatment History

Has your child ever been evaluated previously for developmental, behavioral, or learning problems? [*Circle one*] Yes No

If so, who provided the evaluation, what type of evaluation did the child have, and what were you told about your child regarding the results of any evaluations?

Has your child ever received any psychiatric or psychological treatment? [*Circle one*] Yes
No

If so, what type of treatment did they receive and how long did the treatment last?

Who provided this treatment to your child? _____

Has your child ever received any medication for their behavior or emotional problems? [*Circle one*] Yes No

If so, what type of medication did they take, at what dose, and for how long?

School History

[*Examiner: For each grade the child has been in, beginning with preschool, ask the parents which school the child attended and whether the child had any behavioral or learning problems that year, and if so, briefly note their nature below.*]

Siblings	Bro	Bro	Sis	Sis	Total
Problems with aggressiveness, defiance, and oppositional behavior as a child					
Problems with attention, activity, and impulse control as a child					
Learning disabilities					
Failed to graduate from high school					
Intellectual disability					
Psychosis or schizophrenia					
Depression for more than 2 weeks					
Anxiety disorder that impaired adjustment					
Tourette or other tics					
Alcohol abuse					
Substance abuse					
Antisocial behavior (assaults, thefts, etc.)					
Arrests					
Physical abuse					
Sexual abuse					

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Form 5 School Situations Questionnaire

Child's name _____ Date _____

Name of person completing this form _____

Instructions: Does this child present any problems with compliance to instructions, commands, or rules for you in any of the following situations? If so, please circle next to the situation and then rate how severe the problem is for you using the adjacent 1–9 scale, ranging from mild to severe. If this child does not present a problem in a given situation, circle *No* and go on to the next item on the form.

<i>Situations</i>	<i>Yes/No</i>		<i>If yes, how severe?</i>								
			<i>Mild</i>						<i>Severe</i>		
When arriving at school	Yes	No	1	2	3	4	5	6	7	8	9
During individual desk work	Yes	No	1	2	3	4	5	6	7	8	9
During small-group activities	Yes	No	1	2	3	4	5	6	7	8	9
During free playtime in class	Yes	No	1	2	3	4	5	6	7	8	9
During class lectures	Yes	No	1	2	3	4	5	6	7	8	9
At recess	Yes	No	1	2	3	4	5	6	7	8	9
At lunch	Yes	No	1	2	3	4	5	6	7	8	9
In the hallways	Yes	No	1	2	3	4	5	6	7	8	9
In the bathroom	Yes	No	1	2	3	4	5	6	7	8	9
On field trips	Yes	No	1	2	3	4	5	6	7	8	9
During special assemblies	Yes	No	1	2	3	4	5	6	7	8	9
On the bus	Yes	No	1	2	3	4	5	6	7	8	9

_____ FOR OFFICE USE ONLY _____

Total number of problem settings _____ Mean severity score _____

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Form 6	Adolescent Driving History Survey
---------------	--

Name _____ Date _____

Instructions: Please answer the following questions to the best of your recollection.

Do you currently have a driver's license? (Circle one) Yes No

How long have you been driving? (in years) _____

How many miles do you drive in an average week? (approximately) _____

How many times have you:

Had your license revoked or suspended? _____

Driven without a valid license? _____

Been in an accident or crash while you were driving? (includes minor "fender benders") _____

Been determined to be at fault in an accident? _____

Struck a pedestrian or cyclist while driving? _____

Received a speeding ticket? _____

Been cited for failing to stop at a stop signal or sign? _____

Been cited for reckless driving? _____

Been cited for driving while intoxicated? Received a parking ticket? _____

In total, how many driving citations have you received to date? _____

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Form 7	Adolescent Driving Behavior Rating Scale—Self-Report
---------------	---

Name _____ Date _____

Instructions: For each item below, please circle the number next to each item that represents how frequently you believe that you use each driving skill during your typical driving performance.

<i>Items:</i>	<i>Not at all or rarely</i>	<i>Sometimes</i>	<i>Often</i>	<i>Very often</i>
1. Prior to starting the car, I check all mirrors, adjust the seat (when necessary), and put on the seat belt.	1	2	3	4
2. When moving into traffic, I check oncoming traffic, wait my turn, and accelerate properly.	1	2	3	4
3. I use directional (turn) signals prior to making a turn or changing lanes.	1	2	3	4
4. I turn around and check directly through the rear windshield for any obstacles or people in my way before backing up.	1	2	3	4
5. I look directly through the left or right passenger side windows to check my “blind” spots before changing lanes.	1	2	3	4
6. I drive at a rate of speed that is within the posted speed limits.	1	2	3	4
7. I drive within the marked lane on a highway, and stay on my side of the road on two-lane roads.	1	2	3	4
8. I avoid driving in the breakdown lanes or on road shoulders unnecessarily.	1	2	3	4
9. I yield the right of way to other drivers at intersections and traffic rotaries.	1	2	3	4
10. I react quickly and properly to brake lights when activated on vehicles ahead.	1	2	3	4
11. I watch ahead of cars in front of me for obstacles that may be in the road.	1	2	3	4
12. I observe and respond appropriately to traffic signals (e.g., stop if possible at yellow, stop on	1	2	3	4

red).

13. I adjust speed to bad weather conditions affecting traffic and the roadway.	1	2	3	4
14. I drive at an appropriate distance from vehicles ahead of me (at least one car length for each 10 miles per hour of speed).	1	2	3	4
15. I brake smoothly to a stop at marked intersections as required.	1	2	3	4
16. I maintain two hands on the steering wheel while driving.	1	2	3	4
17. I drive slowly at an appropriate speed when backing up (in reverse gear).	1	2	3	4
18. I notice and obey posted traffic signs (stop, yield, school zones, merge, etc.).	1	2	3	4
19. I follow posted route markers (I do not get lost while driving).	1	2	3	4
20. When parking, I slow to a safe speed and park within the designated space.	1	2	3	4
21. I maintain attention (eye contact) toward traffic and the road ahead of me while driving.	1	2	3	4
22. I keep the volume of music or other audio low enough to hear sirens or other cars' horns.	1	2	3	4
23. I make sure that passengers riding with me wear their seat belts.	1	2	3	4
24. I refer to GPS before driving through a new area or city.	1	2	3	4
25. I slow down and move away from maintenance or construction crews working on or near the roadway.	1	2	3	4
26. Before entering any intersection, I check approaching traffic for safe entry.	1	2	3	4

Please circle the number below that best describes your overall driving performance:

- 1 Poor
- 2 3 Below average
- 4 5 6 Average/satisfactory
- 7 8 Above average
- 9
- 10 Excellent

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Forms for Counseling Parents of Children and Adolescents with ADHD

Instructions for Forms Useful for Counseling Parents of Children and Adolescents with ADHD

There are many handouts in this section that can be useful for you to use while counseling parents of children and teens with ADHD. I envision that it might be best to have a matrix of small mailbox-like cubbies (cubicles) as might be found in a department mailroom or an upright file folder rack with many slots. Or you could simply dedicate a drawer of a file cabinet for folders labeled with each handout. Then photocopy a number of them for 1–2 months' worth of clients that you may see and place them in each folder. That way you have them immediately available to hand out to clients as you provide counseling to them about ADHD and various aspects of managing its impairments during your feedback session after your evaluation or throughout your counseling of them.

Most of the handouts are self-explanatory, such as the group of ADHD Fact Sheets ([Handouts 3–14](#)) or the Resources and Support Services for parents ([Handout 16](#)), which contains lists of various trade books and even some professional books, websites, associations for ADHD, and so forth, that your clients may find informative.

If you prefer a more detailed review of ADHD for yourself as a clinical professional, the *World Federation of ADHD Guide* (Rohde, Buitelaar,

Gerlach, & Faraone, 2019) can be found at my website, www.russellbarkley.org (see also [Handouts 3–14](#)), or that of the federation (www.adhd-federation.org; see [Handout 16](#)). There is also an expert white paper summary of ADHD and its policy implications by Young, Fitzgerald, and Postma (2013) at my website that is still quite current in its conclusions and advice.

Next are handouts that parents may find helpful in advising them about general home management principles and advice on children's health and lifestyles, along with useful resources related to each topic, how to set up a home reward (token or point) system, how to use a daily school behavior report card, a list of classroom accommodations and management methods for parents to share with teachers, and advice on managing siblings of children with ADHD. These can be found with more detailed explanations for parents in my book *Taking Charge of ADHD: The Complete Authoritative Guide for Parents* (Barkley, 2020). More advice on the best principles for managing child and adolescent ADHD can be found in my latest book, *12 Principles for Raising a Child with ADHD* (2021).

Following those handouts, you will find others more specific to counseling adults with ADHD. Not all of the parents of the children and adolescents you are assessing and treating will have ADHD. But those who do may welcome very basic, commonsense strategies for coping with and compensating for the myriad difficulties adult ADHD poses in home, school, and work life ([Handout 31](#)). [Handout 32](#) offers some specific suggestions for parenting when the parent has ADHD.

Fact Sheets on ADHD in Children and Adolescents

The following fact sheets can be offered as relevant to provide parents concise summaries of the symptoms, associated cognitive deficits, demographics, causes of ADHD, and more, drawn from my other books and numerous research studies.

I have arranged the Fact Sheets in the order in which they may be most useful during diagnosis and treatment. For example, many parents find that they understand much more clearly why their child has extra trouble with ADHD symptoms during particular situations and in particular environments once they understand the executive function and self-regulation basis of ADHD, so the EF-SR explanation is presented directly before the list of problem situations/environments.

Handout 3 What Is ADHD?

- ✓ ADHD is a *neurodevelopmental* condition: It occurs largely from neurological and genetic causes that result in a delay in the development of specific mental abilities.

- ✓ Problems with those mental abilities fall into two dimensions:
 - *Inattention*
 - *Hyperactive–impulsive* symptoms

- ✓ The following are true of ADHD:
 - It is not your child's choice or of your child's making.
 - It is part of the child's psychological and physical nature.
 - It becomes evident during childhood (before age 16 in 98% of cases).
 - It is likely to affect your child in many different but not in all situations and environments.
 - It is likely to persist over childhood and adolescence and often into adulthood.

- ✓ ADHD symptoms represent the extreme end of a continuum of normal or typical human ability in the dimensions of inattention and hyperactivity–impulsivity. To be diagnosed with ADHD, children and teens must experience symptoms as follows:
 - More often and more severely than is typical for others of their age
 - For at least 6 months
 - In two or more settings (home, school, work, community)
 - That lead to impaired functioning in major life activities, such as social (family, peers, community), academic, or occupational activities

- ✓ ADHD is considered a disorder *because* it impairs abilities universal to human beings and causes harm, negatively affecting health, lifespan, and daily functioning in many domains of life.

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Handout 4 The Symptoms of ADHD

These are the symptoms you are most likely to see in your child or teenager with ADHD:

Inattention

- ✓ Fails to give close attention to details
- ✓ Makes careless mistakes
- ✓ Cannot sustain attention to tasks or activities
- ✓ Doesn't seem to listen well
- ✓ Doesn't follow through on instructions
- ✓ Fails to finish work
- ✓ Cannot organize activities well
- ✓ Avoids or seems reluctant to do things requiring sustained effort
- ✓ Loses things necessary to complete tasks or activities
- ✓ Is easily distracted
- ✓ Forgets things

Hyperactivity–Impulsivity

- ✓ Fidgets with hands or feet or squirms in seat
- ✓ Leaves seat when expected to remain seated
- ✓ Runs about or climbs on things where inappropriate to do so
- ✓ Is unable to play quietly
- ✓ Often seems to be “on the go” or “driven by a motor”
- ✓ Talks too much
- ✓ Blurts out answers prematurely
- ✓ Cannot wait
- ✓ Interrupts or intrudes on others' activities

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Handout 5 Who Has ADHD?

- ✓ 3–8% of children (average 5.3% worldwide) and 4–7% of adolescents have ADHD. This means that 3.7–5.9 million school-age children in the United States alone have ADHD. There could easily be one or two children in your child's classroom in the United States who have ADHD.
- ✓ The ratio of males to females with ADHD is 3–4 to 1 in children and 2–2.5 to 1 in adolescents (and nearly 1.5 to 1 in adults).
- ✓ The disorder has been identified in every country, ethnic group, and culture in which it has been studied.
- ✓ There is no evidence of significant or meaningful differences in prevalence or in the nature of the disorder across ethnic groups.
- ✓ 10–34% of those diagnosed as children or adolescents no longer meet all criteria (particularly those in the hyperactivity dimension) for the diagnosis as adults.

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Handout 6 ADHD Is a Disorder of Executive Function and Self-Regulation

For the purpose of diagnosis, ADHD is considered a disorder involving inattention and hyperactivity–impulsivity. These two problems do describe what you may see in your child— inability to concentrate and stick to tasks, trouble with sitting still in the classroom, and a lot of acting without thinking. But these two dimensions don't capture what is at the root of ADHD. ADHD is more accurately defined as problems with self-regulating (what you might think of as self-control) through the use of the brain's executive functions. When you understand that the development of certain mental abilities that allow us to function successfully at home, at school, with friends, and at work—often called executive functions—has been delayed in your child, it's a lot easier to see why your child's behaviors may leave you asking "What were you thinking?" or "Why can't you just stick with the assignment and get your homework done?" Knowing that your child has difficulty planning and following through to reach goals others expect the child to reach, as well as those the child has set, can help you predict where problems will arise that require your support and compassion for this disorder that your child did not ask to have. And they can help you help your child overcome the deficits of ADHD.

So it's helpful to view ADHD symptoms as involving deficits in these executive functions:

- *Goal-directed persistence (inattention) and resistance to distraction:* Children and teens with ADHD have trouble getting things done over time, in time, and on time that involve delayed or future events. They pay attention to what is happening now just fine, but not to what they need to be doing to be ready for what is coming next or what they have been assigned to do. Even if they try to persist with working toward tasks or goals, they are more likely than others to react to distractions—not just irrelevant things occurring around them, but also irrelevant ideas occurring in their minds.
- *Working memory:* A large part of the inattentiveness you can see in your child or teen comes from the inability to hold in mind what goal the child has chosen or been assigned, what that involves, and monitoring when it has been accomplished. This reflects a deficiency in working memory, which is *remembering what to do*. Memory for facts, knowledge, or information is not the problem so much as remembering what is to be done and persisting at it until it is done. Even if those with ADHD try to hold such information in mind to guide their behavior toward a goal or task, such as instructions or assignments, any distractions will disrupt and degrade this special type of memory. The mental chalkboard of working memory is wiped clean by the distraction, and so the child is now off doing something other than what they are supposed to be doing. Having reacted to a distraction, the child is now far less likely to return to the original task and get it done. Remember, children or teens with ADHD are less likely than others to remember what they were supposed to be doing.
- *Inhibition:* Being able to inhibit actions that are inappropriate for a certain time or place is an important part of self-regulation. Children and teens with ADHD seem to impulsively do or say whatever pops into their heads without first thinking "Is this a good idea?" and not acting on the thought if the answer is no. They will also opt for immediate rewards when they become available, ignoring the greater value of larger rewards that could be earned

later. Besides their impulsive decision making, they tend to move around, touch things, and otherwise show too much motor activity (the hyperactivity). They also tend to talk too much. Finally, they are more likely to display their emotional reactions and do it more quickly than others of their age. Once emotion is triggered, they have a hard time with the task of self-regulating to moderate it.

- *Planning and problem solving*: Every day, we face obstacles and need to come up with options for overcoming them; then we have to create a plan to get us there. Planning and problem solving are among the executive functions that develop more slowly in those with ADHD. Your child may struggle with mental arithmetic and oral and written reports at school, as well as resolving conflicts with friends and fitting in chores, homework, and fun when time is short. Awareness and management of time is, in fact, a major problem for children and adolescents with ADHD.

The aforementioned cognitive deficits will then disrupt the student's executive functioning in daily school activities. Therefore, deficient executive functioning in daily life will be evident in problems with the following:

- *Self-restraint*—deficient behavioral inhibition, limited self-control, poor delay of gratification, and difficulties subordinating one's immediate interests and desires to those of others.
- *Self-management to time*—poor time management and organization across time to achieve one's goals or accomplish assigned tasks.
- *Self-motivation*—an inability to activate and sustain motivation to relatively boring, tedious, effortful, or lengthy tasks in which there is no intrinsic interest or immediate payoff.
- *Self-organization and problem solving*—difficulty with organizing one's personal space, desk, locker, academic materials, and so forth, so as to accomplish work efficiently and effectively. Forgetfulness of what is to be done or what was assigned will be commonplace. As noted earlier, there will also be deficits evident in tasks that require working memory and thoughtful problem solving.
- *Self-regulation of emotions*—difficulty with inhibiting the expression of impulsive emotions in reaction to emotionally provocative events. This is evident in the student being easily excitable, prone to both positive and negative emotional outbursts, and greater-than-typical impatience, frustration, anger, hostility, and reactive aggression.

The vast majority of children and adolescents with ADHD fall into the bottom 7% of the population in each major area of executive functioning in daily life. This is in part due to the fact that research has shown that their *executive age* is 20–45% below their *chronological age*. On average, you should assume that your child is, in terms of executive functions, 30% younger than the child's chronological age. That means, for example, that a 10-year-old with ADHD can be expected to have the mental abilities described here of a typical 7-year-old. If the world around these children and adolescents expects them to perform like others of their chronological age, of course they are going to disappoint—and end up demoralized themselves.

And although symptoms (particularly hyperactivity) may diminish toward adulthood, how impaired by ADHD your child is in daily life can actually increase with age. That's because teenagers and young adults are participating in more and more domains than they participated in during childhood (sex, driving, work, managing money, cohabiting with a partner, raising children, etc.), all of which require strong executive functioning.

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Handout 7 What Makes Your Child's Symptoms Worse?

In general, symptoms of ADHD may often be worse in settings or tasks that demand executive functioning and self-regulation, including those with the following characteristics:

- Are boring or uninteresting
- Involve significantly delayed consequences or infrequent feedback
- Require working independently of others
- Lack supervision
- Involve groups of children
- Are highly familiar (and thus usually less interesting)
- Involve parents rather than strangers or less familiar adults
- Include parents or supervisors who talk and reason too much but rarely act to control misbehavior
- Require waiting
- Occur late in the afternoon or evening (due to fatigue in self-control)
- Place substantial restrictions on movement (such as classroom desk work)

The converse is also true: Your child may function better in situations that involve fun activities, highly stimulating or interesting tasks (such as video games), lots of movement (gym, recess, sports, etc.), frequent rewards or feedback, close supervision, working in small teams with peers rather than independently, working one-on-one with an adult, highly novel settings, and situations in which supervisors speak briefly but back up their rules with consequences and in which there is little or no pressure to wait for things.

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Handout 8 School Problems Associated with ADHD

The symptoms of ADHD, along with its numerous deficits associated with poor self-regulation and executive functioning, virtually guarantee that a child or adolescent with ADHD will have problems in school. These problems can seem so diverse that it is hard to imagine they could all be the result of your child or teenager having ADHD. But most of them are. Some school problems are also the result of a specific learning disability, but much of the time, the problems that your child's teachers may be complaining about are the result of ADHD:

- Excessive daydreaming while working in the classroom and on homework
- Repeatedly being distracted by what classmates are doing
- Having trouble doing work at a desk
- Problems with group projects
- Behavior problems during assemblies and field trips
- Forgetting school and classroom rules
- Interfering with classmates' school performance
- Procrastinating on in-class projects and homework assignments
- Turning in assignments late
- Poor performance on tests
- Letting assignments go until the last minute, when they are done in a rush and so usually done poorly
- Losing homework or forgetting to take completed assignments back to school the next day
- Disrupting the class with overactivity and impulsiveness
- Excessive walking or running about the classroom
- Fidgeting and other restless movements while seated
- Inappropriate touching or interacting with classroom materials
- Excessive talking or interrupting others and speaking too loudly
- Teasing or even bullying classmates
- Being bullied (especially for children who are smaller than typical for their age or more anxious and withdrawn than most students)
- Impatience with waiting for scheduled events
- Problems with sharing toys and materials
- Low frustration tolerance
- Angry and possibly aggressive reactions to classmates' provocation
- Poor handwriting and sloppy written work
- Lack of coordination that can result in destruction of property or accidental injuries, as well as difficulties in physical education

- Highly disorganized desks, lockers, coatroom materials, backpacks
- Poor reading comprehension
- Poor recall of material from teacher lectures or videos
- Low self-awareness about problems with academics, classroom behavior, and relationships with other students

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Handout 9 What Causes ADHD?

ADHD is *not* caused by social factors such as parenting. It is known as a neurodevelopmental disorder because its chief causes exist in genetics and neurology. Here are fast facts on the causes of ADHD.

Genetics

ADHD is a highly inherited disorder:

- Having a parent with ADHD makes a child 6–8 times more likely to have the disorder (35–54%) than other children.
- Biological siblings of a child with ADHD are 3–5 times more likely to have the condition (25–35%).
- The biological mother of a child with ADHD is 3–4 times more likely to have ADHD. The biological father is 5–6 times more likely to have it.
- The identical twin of a child with ADHD is 75–90% more likely to have it, too. These statistics clearly show the genetic (heritable) nature of ADHD.
- As much as 80% of the differences among people in their degree of ADHD symptoms is due to differences in their genetic makeup.
- As many as 25–44 genes may be involved in causing ADHD. But how many and which ones of those risk genes are involved in causing an individual case of ADHD varies.
- Genetics may also explain why some children and adolescents have ADHD along with another psychiatric disorder: Some of the risk genes for ADHD have been found in children with reading disorders, autistic spectrum disorders, and bipolar disorder, whereas other genes are evident in those with oppositional defiant disorder, conduct disorder, and even nicotine dependence and alcoholism.
- Parents and siblings of a child with ADHD may be more likely to have milder forms of the symptoms or traits of the disorder, even if they don't meet all of the requirements for receiving a diagnosis of it.

Neurology

Hundreds of research studies show that ADHD is largely a neurologically caused

disorder:

- At least five or six brain regions are reliably linked to the disorder, including the regions in which the executive functions develop and reside.
- In general, the brains of children and adolescents with ADHD are about 3–10% smaller globally in surface gray matter (the material on the outside layer of the brain). But the five specific brain regions involved in ADHD appear to be even smaller—about 15–30% smaller than normal for age.
- Developmental research finds the brain to be 2–3 years delayed in its development in these regions, especially the prefrontal lobes, and to be 10–30% less active than in typical comparison cases.
- Other factors, such as smoking and consumption of alcohol by the mother during pregnancy, exposure to lead and other toxins, and prematurity/low birth weight, can also be involved in causing ADHD by interfering with brain growth and functioning, especially in the ADHD-related brain regions.

What Does *Not* Cause ADHD

Despite numerous claims to the contrary, no scientific research has found that any of the following cause ADHD:

- Social factors, such as parenting or educational environment
- Dietary substances, such as sugar or food preservatives and additives
- Excessive TV watching, computer use, or video game playing

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Handout 10 Treatments for ADHD

ADHD is similar to diabetes: It requires a combination of treatments used on a near daily basis to manage the symptoms. Like diabetes, ADHD cannot be cured. But effective treatments contain the symptoms, which can reduce the risks for your child with ADHD and increase the child's ability to function effectively and live a nearly normal life.

The five components of the ideal treatment package for managing ADHD follow:

1. Counseling clients and families to create a better understanding of ADHD
2. Acceptance of the disorder, compassion for the person affected, a willingness to help, and forgiveness of the person affected for the problems the disorder may create for others
3. Efforts to modify the behavior of both the affected person and any caregivers
4. Making changes to the environment to reduce impairments (accommodations)
5. Using medication(s) for management of ADHD and any comorbid disorders, where needed

The following treatments have substantial scientific evidence that they are effective at managing ADHD and/or its associated problems:

- Counseling parents about the nature of their child's disorder and the range of effective treatments for it
- Training parents in child behavior management methods
- Helping parents and adolescents with school homework organization and completion
- FDA-approved ADHD medications: stimulants, nonstimulants, and antihypertensive medicines reformulated for use with ADHD. These come in short-acting (3–5 hours) and long-acting versions (8–12 or more hours).
- Behavior management methods for use in school by teachers
- Special education services, as needed
- Routine and frequent physical exercise to help children cope with stress and temporarily reduce symptoms of ADHD
- Possibly, mindfulness meditation-based strategies for reducing stress and improving daily functioning

Evidence in research is lacking or does not support the following treatments:

- Dietary supplements
- Restrictive elimination diets
- Alternative medicines or health food remedies
- Long-term psychotherapy or psychoanalysis
- Play therapy, social skills training for children
- EEG neurofeedback
- Cognitive training games
- Sensory-integration training
- Chiropractic treatments such as scalp massage
- Acupuncture
- Yoga
- Transcranial magnetic stimulation

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Handout 11 ADHD Is *Not* a Gift

Despite the fact that none of the thousands of scientific articles published on ADHD has found the disorder to confer some special advantage, talent, ability, or other trait in comparison with typical people, such claims continue to be made. By all means, celebrate your child's success in coping with ADHD and surmounting some of the obstacles it poses. But meanwhile, stay fully aware of the increased risks your child may face in most domains of life. ADHD can pose serious problems for people when it goes untreated. These include the following:

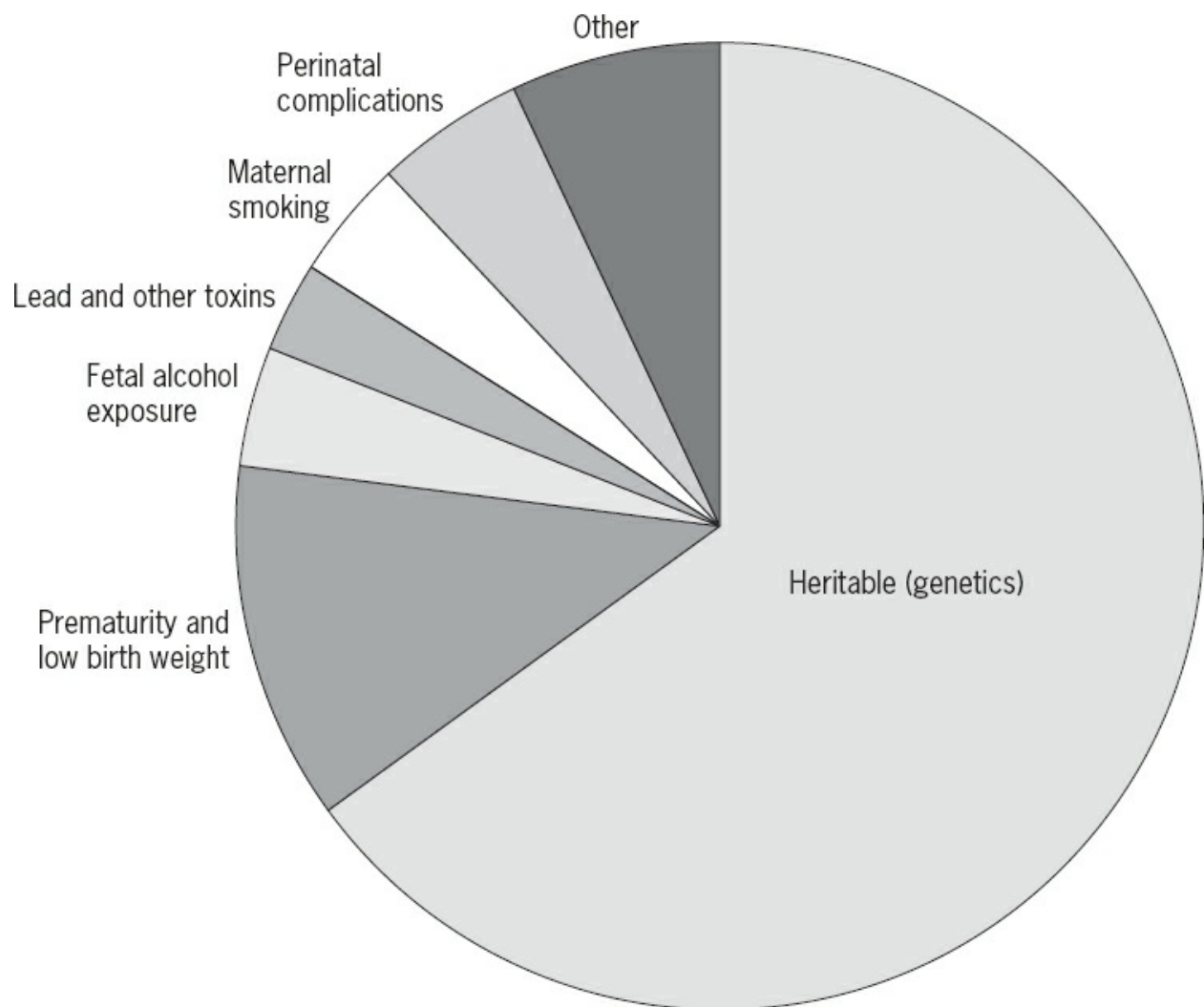
- Developing one or two other mental or neurodevelopmental disorders. Over 80% of children and adults who are seen in mental health clinics will have a second disorder, and over 50% will have two other disorders besides their ADHD. It can lead to poorer general health, more injuries, shorter life expectancy, and higher risk of early mortality.
- Riskier driving, more crashes, more tickets.
- Lower income, savings, and credit ratings; higher debt.
- Poorer relationships and disrupted parenting and family functioning.
- Lower educational achievement.
- More unemployment, lower earnings, less skilled work level.

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Handout 12 Summary of the Likely Causes of ADHD

ADHD risk genes can interact with these other causes to further increase risk for the disorder.

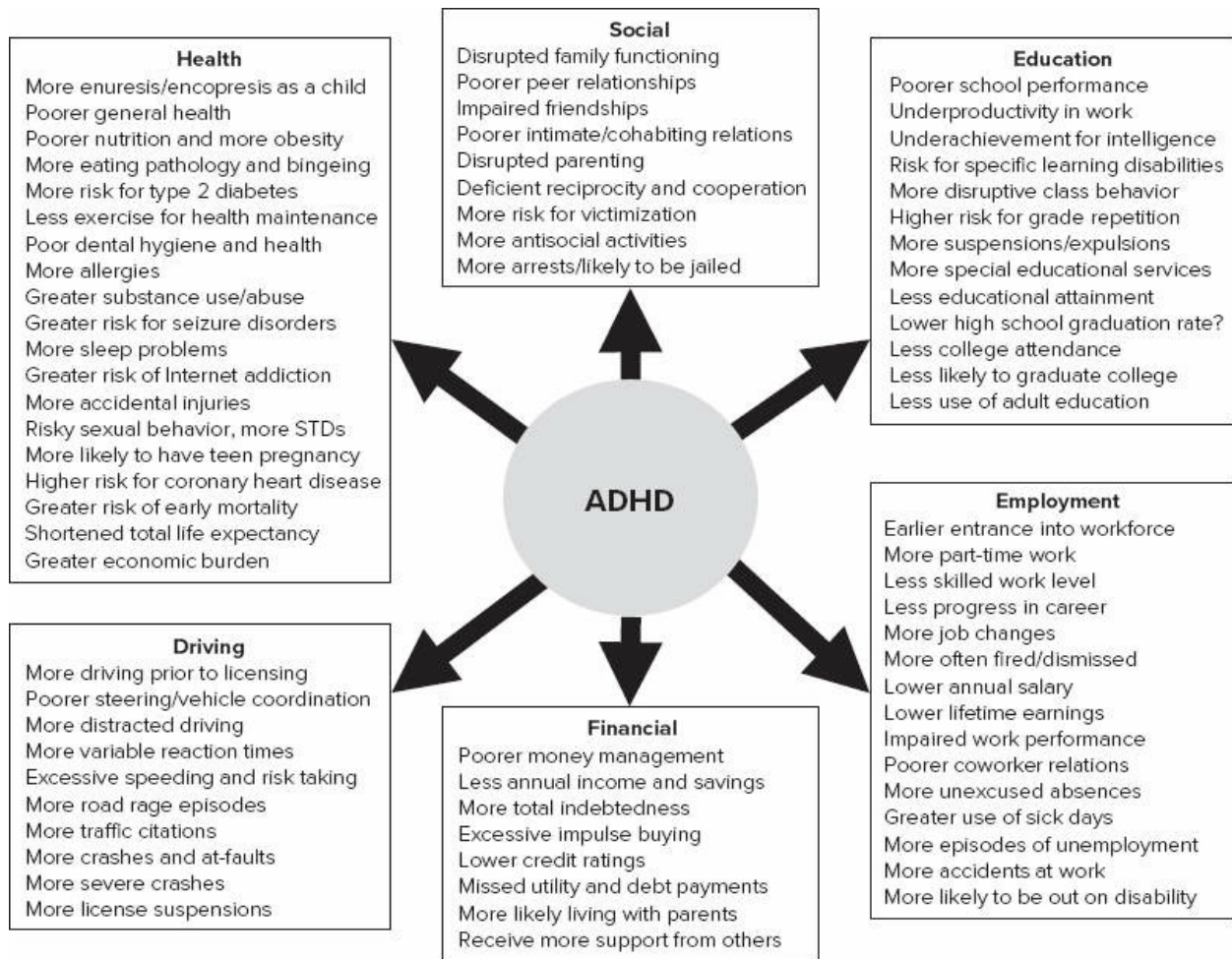
Some ADHD is due to new genetic mutations occurring in the child but not the parent.



[Follow for extended description](#)

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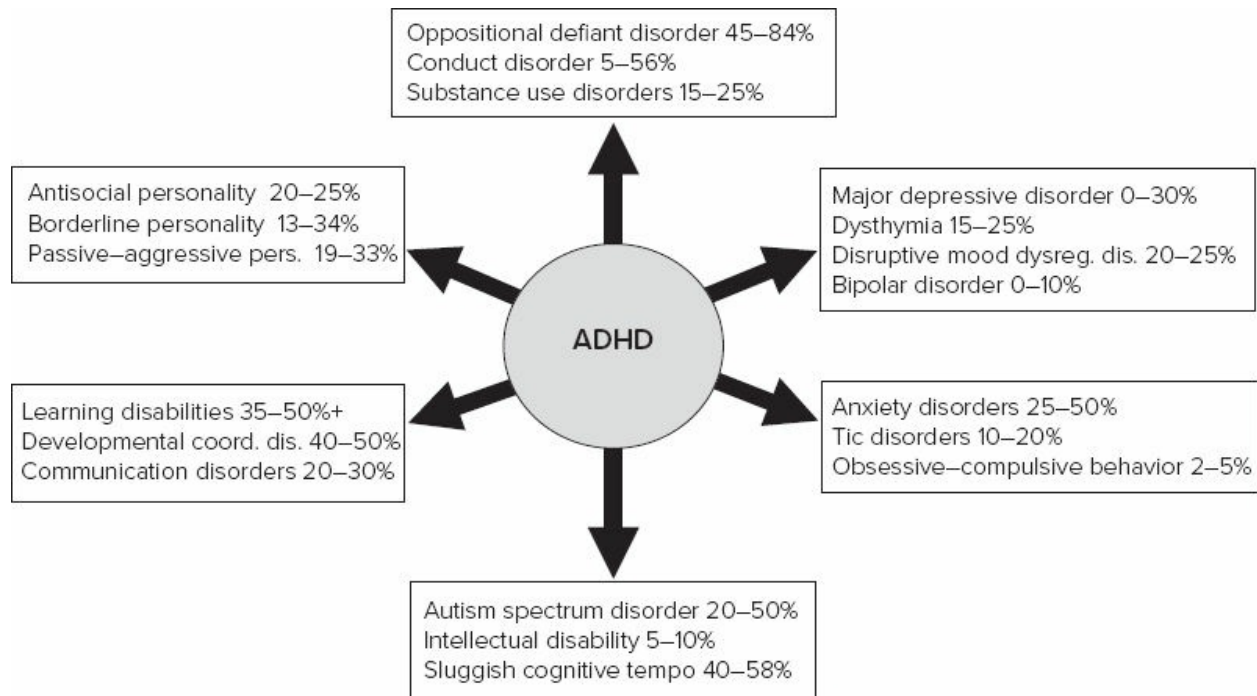
Handout 13 Impairments Linked to ADHD



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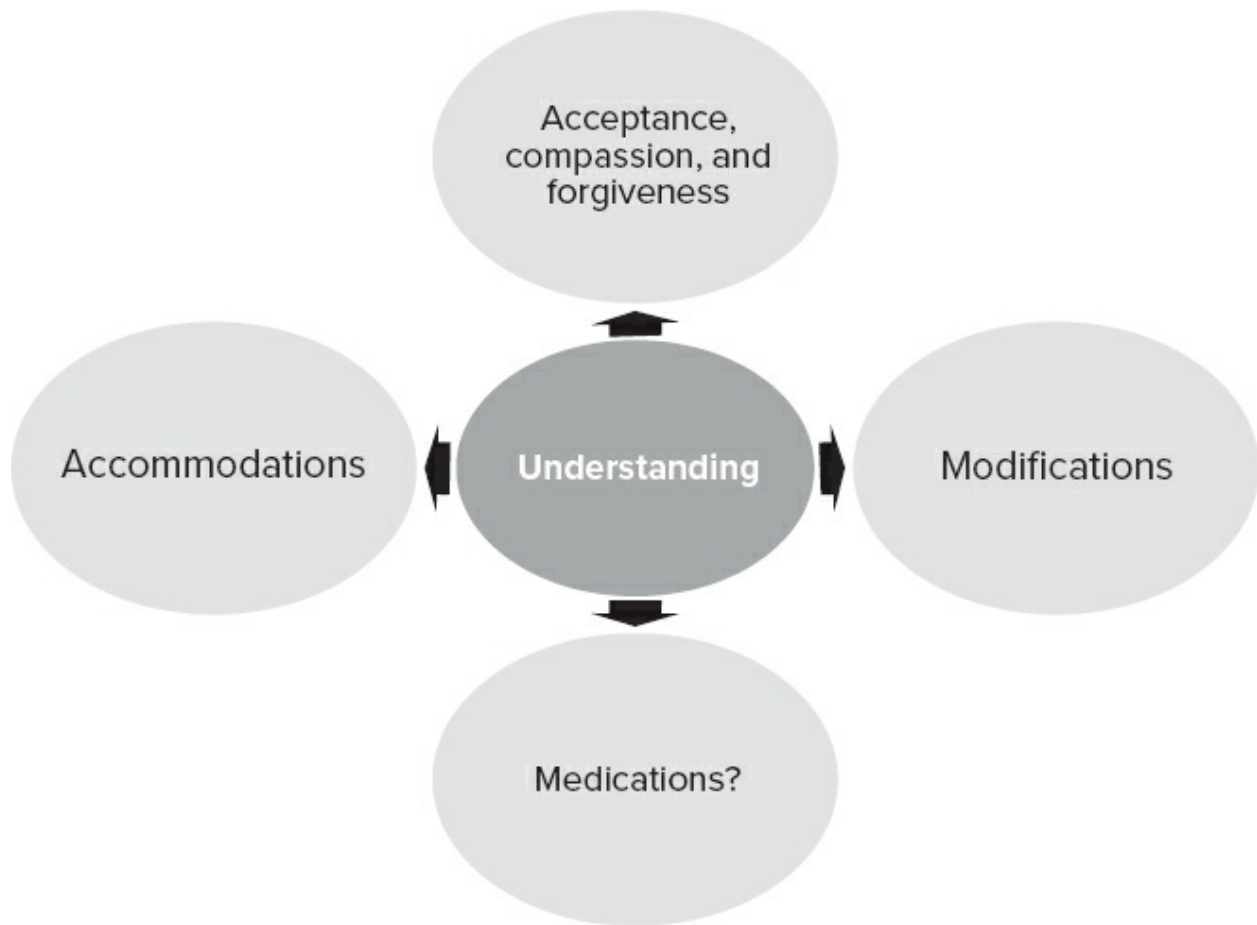
Handout 14 Comorbid Disorders in ADHD



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Handout 15 The Ideal Treatment Package for ADHD



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Handout 16 Resources and Support Services for Parents of Children and Adolescents with ADHD

Books for Parents (and Teachers)

- American Academy of Pediatrics. (2011). *ADHD: What every parent needs to know*. Elk Grove, IL: Author.
- Ashley, S. (2005). *The ADD and ADHD answer book: Professional answers to 275 of the top questions parents ask*. Naperville, IL: Sourcebooks.
- Barkley, R. A. (2016). *Managing ADHD in school*. Eau Claire, WI: Premier Educational Seminars.
- Barkley, R. A. (2020). *Taking charge of ADHD: The complete authoritative guide for parents* (5th ed.). New York: Guilford Press.
- Barkley, R. A. (2020). *The 12 principles for raising a child or teen with ADHD*. New York: Guilford Press.
- Barkley, R. A., & Benton, C. M. (2013). *Your defiant child: Eight steps to better behavior* (2nd ed.). New York: Guilford Press.
- Barkley, R. A., Robin, A. R., & Benton, C. (2013). *Your defiant teen: 10 steps to resolve conflict and rebuild your relationship* (2nd ed.). New York: Guilford Press.
- Brown, T. E. (2013). *A new understanding of ADHD in children and adults: Executive function impairments*. New York: Routledge.
- Brown, T. E. (2014). *Smart but stuck: Emotions in teens and adults with ADHD*. San Francisco: Jossey-Bass.
- Brown, T. E. (2017). *Outside the box: Rethinking ADD/ADHD in children and adults: A practical guide*. Washington, DC: American Psychiatric Association.
- Children and Adults with Attention-Deficit/Hyperactivity Disorder. (2006). *The new CHADD information and resource guide to AD/HD*. Landover, MD: Author.
- Cooper-Kahn, J., & Dietzel, L. (2008). *Late, lost, and unprepared: A parents' guide to helping children with executive functioning*. Bethesda, MD: Woodbine House.
- Dawson, P., & Guare, R. (2008). *Smart but scattered: The revolutionary executive skills approach to helping kids reach their potential*. New York: Guilford Press.
- Dendy, C. A. Z. (2017). *Teenagers with ADD and ADHD and executive function deficits: A guide for parents and professionals*. Bethesda, MD: Woodbine House.
- Forgatch, M., & Patterson, G. R. (2005). *Parents and adolescents living together: Part I. The basics* (2nd ed.). Champaign, IL: Research Press.
- Forgatch, M., & Patterson, G. R. (2005). *Parents and adolescents living together: Part II. Family problem solving* (2nd ed.). Champaign, IL: Research Press.
- Fowler, M. C. (2000). *Maybe you know my kid: A parent's guide to identifying, understanding,*

- and helping your child with attention-deficit hyperactivity disorder* (3rd ed.). New York: Broadway Books.
- Fowler, M. C. (2001). *Maybe you know my teen: A parent's guide to adolescents with attention-deficit hyperactivity disorder*. New York: Broadway Books.
- Fowler, M. C. (2006). *CHADD educators manual* (2nd ed.). Landover, MD: CHADD.
- Fowler, M. C. (2007). *20 questions to ask if your child has ADHD*. Franklin Lakes, NJ: Career Books.
- Gallagher, R., Abikoff, H. B., & Spira, E. G. (2014). *Organizational skills training for children with ADHD: An empirically supported treatment*. New York: Guilford Press.
- Gallagher, R., Spira, E. G., & Rosenblatt, J. L. (2018). *The organized child: An effective program to maximize your kid's potential—in school and in life*. New York: Guilford Press.
- Goldrich, C., & Rothschild, B. (2015). *Eight keys to parenting children with ADHD*. New York: Norton.
- Grossberg, B. N. (2015). *Focused: ADHD and ADD parenting strategies for children with attention deficit disorder*. San Antonio, TX: Althea.
- Guare, R., Dawson, P., & Guare, C. (2013). *Smart but scattered teens: The "executive skills" program for helping teens reach their potential*. New York: Guilford Press.
- Guyer, B. P. (2000). *ADHD: Achieving success in school and in life*. Boston: Allyn & Bacon.
- Hallowell, E. M., & Jensen, P. S. (2010). *Superparenting for ADD: An innovative approach to raising your distracted child*. New York: Ballantine Books.
- Hanna, M. (2006). *Making the connection: A parent's guide to medication in AD/HD*. Washington, DC: Ladner-Drysdale.
- Hinshaw, S. P., & Scheffler, R. M. (2014). *The ADHD explosion: Myths, medication, money, and today's push for performance*. New York: Oxford University Press.
- Iseman, J. S., Silverman, S. M., & Jeweler, S. (2010). *101 school success tools for students with ADHD*. Waco, TX: Prufrock Press.
- Kutscher, M. (2002). *ADHD Book: Living right now!* White Plains, NY: Neurology Press.
- Kutscher, M. (2009). *ADHD: Living without brakes*. Philadelphia: Jessica Kingsley.
- Langberg, J. M. (2011). *Homework, organization, and planning skills (HOPS) interventions*. Bethesda, MD: National Association of School Psychologists.
- Meltzer, L. (2010). *Promoting executive function in the classroom*. New York: Guilford Press.
- Miller, J. G., & Miller, K. G. (2016). *Raising accountable kids: How to be an outstanding parent using the power of personal accountability*. New York: TarcherParigee.
- Monastra, V. J. (2014). *Parenting children with ADHD: 10 lessons that medicine cannot teach*. Washington, DC: American Psychological Association.
- Nadeau, K. G., Littman, E. B., & Quinn, P. O. (2015). *Understanding girls with AD/HD*. Silver Spring, MD: Advantage Books.
- Nigg, J. T. (2017). *Getting ahead of ADHD: What next-generation science says about treatments that work—and how you can make them work for your child*. New York: Guilford Press.
- Pfiffner, L. (2011) *All about ADHD: The complete practical guide for classroom teachers*. New York: Teaching Resources.
- Richey, M. A., & Forgan, J. W. (2012). *Raising boys with ADHD: Secrets for parenting*

- healthy, happy sons*. New York: Prufrock.
- Richfield, S. (2008). *Parent coaching cards: Social and emotional tools for children*. Available from Parent Coaching Cards, Inc., P. O. Box 573, Plymouth Meeting, PA 19462; www.parentcoachcards.com.
- Rief, S. (2015). *The ADHD book of lists: A practical guide for helping children and teens with attention deficit disorders*. New York: Wiley.
- Rief, S. F. (2016). *How to reach and teach children with ADD/ADHD: Practice techniques, strategies, and interventions* (3rd ed.). San Francisco: Jossey-Bass.
- Rohde, L. A., Buitelaar, J. K., Gerlach, M., & Faraone, S. V. (Eds.). (2019). *The World Federation of ADHD guide*. Sao Paulo, Brazil: World Federation of ADHD.
- Saline, S., & Markham, L. (2018). *What your ADHD child wishes you knew: Working together to empower kids for success in school and life*. New York: TarcherParigee.
- Sarkis, S. M. (2008). *Making the grade with ADD: A student's guide to succeeding in college with attention deficit disorder*. Oakland, CA: New Harbinger.
- Sarkis, S. M., & Klein, K. (2009). *ADD and your money*. Oakland, CA: New Harbinger.
- Silverman, S. M., Iseman, J. S., & Jeweler, S. (2009). *School success for kids with ADHD*. Waco, TX: Prufrock Press.
- Taylor, T. (2019). *Parenting ADHD with wisdom and grace*. Overland Park, KS: Forward Press.
- Taylor-Klaus, E., & Dempster, D. (2016). *Parenting ADHD now!: Easy intervention strategies to empower kids with ADHD*. San Antonio, TX: Althea.
- Tuckman, A. (2009). *More attention, less deficit: Success strategies for adults with ADHD*. Plantation, FL: Specialty Press.
- Wilens, T. E., & Hammerness, P. G. (2016). *Straight talk about psychiatric medications for kids* (4th ed.). New York: Guilford Press.
- Young, S., Fitzgerald, M., & Postma, M. J. (2013). *ADHD: Making the invisible visible* [White paper]. Brussels, Belgium.

Books for Kids about ADHD

- Corman, C., & Trevino, E. (1995). *Eukee the jumpy jumpy elephant*. Plantation, FL: Specialty Press.
- Dendy, C. A. Z., & Zeigler, A. (2003). *A bird's-eye view of life with ADD and ADHD: Advice from young survivors* (2nd ed.). Available from Chris A. Zeigler Dendy Consulting LLC, P. O. Box 189, Cedar Bluff, AL 35959; www.chrisdendy.com.
- Galvin, M. (1995). *Otto learns about his medicine: A story about medication for children* (Rev. ed.). Washington, DC: American Psychological Association.
- Gordon, M. (1992). *I would if I could*. DeWitt, NY: Gordon Systems.
- Gordon, M. (1992). *My brother's a world class pain*. DeWitt, NY: Gordon Systems.
- Krauss, J. (2005). *Cory stories: A kid's book about living with ADHD*. Washington, DC: Magination Press.
- Moss, D. (1989). *Shelly the hyperactive turtle*. Rockville, MD: Woodbine House.
- Nadeau, K. G. (2006). *Survival guide for college students with ADD or LD*. Washington, DC: American Psychological Association.

- Nadeau, K. G. (2006). *Help4ADD@HighSchool*. Bethesda, MD: Advantage Books.
- Nadeau, K. G., & Dixon, E. B. (2004). *Learning to slow down and pay attention: A book for kids about ADHD*. Washington, DC: Magination Press.
- Parker, R. (1992). *Making the grade*. Plantation, FL: Specialty Press.
- Quinn, P. (1994). *ADD and the college student*. Washington, DC: American Psychological Association.
- Quinn, P., & Stern, J. (1991). *Putting on the brakes: Young people's guide to understanding attention deficit hyperactivity disorder*. Washington, DC: American Psychological Association.
- Shapiro, L. E. (2010). *The ADHD workbook for kids*. Oakland, CA: Instant Help Books.
- Taylor, J. T. (2006). *Survival guide for kids with ADD or ADHD*. Minneapolis, MN: Free Spirit.

Periodicals

- ADDA E-News*, ADDA, P. O. Box 7557, Wilmington, DE 19083-9997; (800) 939-1019; www.add.org. —The newsletter for ADDA members.
- Additude: The Happy Healthy Lifestyle Magazine for People with ADD* (online and print periodical), 39 West 37th Street, 15th floor, New York, NY 10018; (888) 762-8475; www.additudemag.com. —A highly informative and reasonably accurate magazine and website for obtaining information about ADHD. The graphics at the website are excellent, and it is easy to explore. The information each issue provides is quite current. Many different topics are covered. A subscription (either online or in print) is required to obtain the full content of each issue. Although the magazine's content appears to be scientifically based in many respects, this is not to be taken as an endorsement of those advertising in either the print or online versions of this periodical.
- ADDvice for ADD-Friendly Living*, The National Center for Girls and Women with ADHD, 3268 Arcadia Place NW, Washington, DC 20015; <http://ncgiadd.org>. —An innovative new monthly e-newsletter focusing on women and girls with ADHD.
- The ADHD Report*, edited by R. A. Barkley, The Guilford Press, 370 7th Avenue, New York, NY 10001; (800) 365-7006; www.guilford.com. —The only newsletter specifically dedicated to practicing clinicians who want to remain current on the extensive and rapidly changing scientific and clinical literature on ADHD. Parents of children with ADHD, as well as adults with ADHD, may also find the contents useful for staying current on controversial issues and research reports as well.
- Attention! Magazine*, CHADD National Headquarters, 8181 Professional Place, Suite 150, Landover, MD 20785; (800) 233-4050; www.chadd.org. —A flashy, entertaining, and informative magazine on ADHD created by the largest national support organization for ADHD (CHADD) and dedicated to keeping parents (as well as adults with ADHD) informed about the numerous issues related to ADHD.
- CHADD Newsletter*, CHADD National Headquarters, 8181 Professional Place, Suite 150, Landover, MD 20785; (800) 233-4050; www.chadd.org. —A newsletter for parents of children with ADHD and adults with ADHD who are members of CHADD.

Suppliers

ADD Warehouse
300 Northwest 70th Avenue, Suite 102
Plantation, FL 33317
(800) 233-9273
www.addwarehouse.com

Childsworld Childsplay
P. O. Box 1246
Wilkes-Barres, PA 18703-1246
(800) 962-1141
<https://childsworld.com>

Support Services

A large number of parent and adult support associations for ADHD exist throughout the United States and the world. In addition, there are a number of smaller local or regional groups. Because the contacts for these groups change so frequently, it is best to start by contacting one of the national organizations, which maintain current records of all the various support groups. They will be glad to refer you to the group closest to your home. Despite efforts to keep this list up to date, please be aware that some sites may have been discontinued or addresses may have changed.

Major Associations

The largest national association is **Children and Adults with Attention-Deficit/Hyperactivity Disorder (CHADD)**, which has more than 500 affiliated support associations from almost every state and province. To find the support group nearest you, visit CHADD's website:

- www.chadd.org or www.help4adhd.org

Another national parent support association is the **Attention Deficit Disorder Association (ADDA)**. Visit ADDA's website:

- www.add.org

ADHD-Europe is a joint effort among national and regional ADHD organizations in Europe to promote the dissemination of information and support to those who live or are in contact with persons who have ADHD. The organization advocates with the European institutions and community for its members on the topic of ADHD, with a view to affecting policy and improving existing legislation on issues connected to ADHD. More information can be found at their website:

- www.adhdeurope.eu

The national support group for ADHD in Canada is the **Centre for ADHD Awareness, Canada (CADDAC)**:

- www.caddac.ca

Some support groups serving the United Kingdom and Europe should also be mentioned here. **ADDers** is a group that promotes awareness of ADHD in both children and adults with practical suggestions for families in the United Kingdom and elsewhere:

- www.adders.org

Newsletters on ADHD can be obtained from CHADD and ADDA, as well as from several other sources. See the Periodicals section of this form for a list of newsletters.

Other Helpful Organizations

As noted early in this book, it's important to exercise caution when seeking information and advice about ADHD online. The quality of offerings on bulletin boards, chat rooms, and even many websites (especially commercial ones) varies considerably. I have found the following sites to be reliable and science-based.

ADHD Information Services (ADDISS) provides information, support, and training resources on ADHD in the United Kingdom:

- www.addiss.co.uk

The **World Federation of ADHD** has brought some of the separate organizations above together to work in promoting ADHD awareness worldwide. Its website is:

- www.adhd-federation.org

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Handout 17 18 Great Ideas for Managing Children or Adolescents with ADHD

1. Reduce time delays and externalize time.
 - Keep waiting times to a minimum if possible.
 - Use timers, clocks, counters, or other devices that show time as something physical whenever there are time limits to completing tasks.
2. Externalize important information.
 - Post reminders, cues, prompts, and other key pieces of information at critical points in the environment to remind the child or teen of what must be done.
3. Externalize motivation (think “win/win”).
 - Use token systems, reward programs, privileges, or other reinforcers to help motivate the child or teen with ADHD.
4. Externalize problem solving.
 - Try to reduce mental problems to physical ones or manual tasks, where the pieces of the problem can be manually manipulated to find solutions or invent new ideas.
5. Use immediate feedback.
 - Act quickly after a behavior to provide more immediate positive or negative feedback.
6. Increase frequency of consequences.
 - Give more feedback and consequences for behavior more often than is necessary for a child or teen who does not have ADHD.
7. Increase accountability to others.
 - Make the child or teen publicly accountable to someone several times across the day (or task or setting) when things need to get done.
8. Use more salient and artificial rewards.

- Children and teens with ADHD need more powerful incentives to motivate them to do what others do with little external motivation from others.
 - You may need to use food, toys, privileges, tokens, money, or other material (artificial) rewards to help motivate them to work.
9. Change rewards periodically.
- People with ADHD seem to get bored more easily with certain rewards, so you may need to find new ones periodically to keep the program interesting.
10. Touch more, talk less.
- When you must give an instruction, approval, or reprimand:
 - Go to the child or teen.
 - Touch him/her on the hand, forearm, or shoulder.
 - Look him/her in the eye.
 - Briefly (!) state your business.
 - Then encourage the child or teen to restate what you just said.
11. Act, don't yak.
- Provide more immediate consequences to deal with both good and poor behavior, rather than "talking the issue to death" by nagging, nattering, or lengthy moralizing about the problem.
12. Negotiate rather than dictate.
- Follow these six steps to effective problem negotiation:
 - Define the problem: Write it down, and keep family members on task.
 - Generate a list of all possible solutions. No criticisms are permitted at this stage.
 - After all solutions are listed, briefly let each person critique each possibility.
 - Select the most agreeable option.
 - Make this a behavior contract (all family members sign it).
 - Establish penalties for breaking the contract.
13. Keep your sense of humor.
- Find the humor, irony, levity, or comical things that happen in daily life with children or teenagers, and laugh with your child or teen about these things.

14. Use rewards before punishment.
 - Want to change a behavior problem?
 - Identify the positive or prosocial behavior you want to replace the problem behavior.
 - Strongly reward (praise, approve) the new behavior every time you see it.
 - After 1 week of doing so, use a mild punishment (a time out, or loss of a token or privilege) when the alternative problem behavior occurs.

15. Anticipate problem settings (especially for younger children), and make a transition plan:
 - Before starting a new activity or task or entering a new place, stop!
 - Review two or three rules the child needs to obey.
 - Have the child repeat these rules back.
 - Establish an incentive or reward.
 - Establish the punishment to be used.
 - Give the child something active to do in the task or the new place.
 - Start the task (or enter the new place), and then follow your plan.
 - Reward throughout the task or activity.

16. Keep a sense of priorities.
 - As one popular book says, “Don’t sweat the small stuff.” Much of what we ask children or teenagers to do is pretty mundane, boring, unimportant stuff in the larger scheme of their development.
 - Focus your efforts on the important activities or tasks that matter most in the long run (school, peer relations, etc.), and not so much on the smaller, less significant tasks (cleaning up, picking up, etc.) that contribute little to long-term development.

17. Maintain a disability perspective.
 - ADHD is a neurogenetic disorder; your child or teen did not choose to be this way.

18. Practice forgiveness (of your child or teen, of yourself, and of others who may misunderstand your child’s/teen’s behavior).

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Advice about Health and Lifestyle for Children and Adolescents with ADHD

In these handouts for parents, I list a variety of topics related to the health risks that can co-occur with ADHD in children and adolescents and render some advice as to how a parent might try to address them. I also list some resources you may find useful, such as books or especially websites on the Internet that also tackle these issues. Most of these issues and my recommendations are discussed in more detail in my book, *Taking Charge of ADHD: The Complete Authoritative Guide for Parents* (Barkley, 2020).

Handout 18 Advice about Nutrition for Children and Adolescents with ADHD

One of the most obvious and easiest things to pay attention to is the food you bring into the house and make available to your children. Getting a child with ADHD to eat only healthy food, of course, can be another matter, but you can still realistically make a positive difference. Here are some ideas:

- Replace high-carb and other junk food with healthier alternatives: meat, eggs, dairy, berries or other fruit, nuts, peanut butter, green vegetables, and substitute some whole grains for white breads, pastries and doughnuts, white or light-colored (starchy) veggies, French fries, pasta, pizza, chips, cereals (especially sugared ones), cakes, pies, candy, and foods and beverages containing sugar (sodas, fruit juices such as orange and apple juice, juice boxes or packets high in sugar, etc.).
- Make “fun,” comfort, and filling foods a small part of your child’s diet.
- Ask if your child’s doctor thinks it’s worth testing your child for iron, vitamin D, and omega-3 deficiencies, which children with ADHD may have, and supplementing as needed.
- Keep junk food out of the house until your new food plan is in place, and then periodically provide some of these foods as rewards or special treats. Or post a family rule on the refrigerator that no one is to take food between meals without parental permission.
- Establish—and stick to—regular mealtimes.

For more great ideas to improve your child’s nutrition, check out the following:

Mayo Clinic—Healthy Lifestyle—Children’s Health:

- www.mayoclinic.org/healthy-lifestyle/childrens-health/in-depth/nutrition-for-kids/art-20049335

HealthyChildren.org:

- www.healthychildren.org/English/healthy-living/nutrition/Pages/Childhood-Nutrition.aspx

FamilyDoctor.org:

- <https://familydoctor.org/nutrition-tips-for-kids>

MedlinePlus—U.S. National Library of Medicine:

- <https://medlineplus.gov/childnutrition.html>

Stanford Children’s Health:

- www.stanfordchildrens.org/en/topic/default?id=school-aged-child-nutrition-90-P02280

Precision Nutrition:

- www.precisionnutrition.com/all-about-nutrition-for-kids

HelpGuide:

- www.helpguide.org/articles/healthy-eating/healthy-food-for-kids.htm

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Handout 19 Advice about Exercise for Children and Adolescents with ADHD

Children with ADHD benefit from frequent prolonged exercise in more ways than other groups of children. Try these ideas:

- Get your child involved in physical activity your child enjoys. Kids with ADHD get bored easily, so be sure you know whether your child prefers good old physical free play outside your home, organized team sports, more individualized sports and activities, or informal at-home exercise.
- Aim for at least 30 minutes of exercise three to five times per week.
- In more structured settings, such as classrooms or club activities, see if your child can be allowed to move a little, such as by squeezing a tennis or rubber ball.
- Promote outdoor physical play with other children during free time at home.

Some good websites to get more information are listed below:

KidsHealth:

- <https://kidshealth.org/en/parents/exercise.html>

Medline Plus—U.S. Library of Medicine:

- <https://medlineplus.gov/exerciseforchildren.html>

American Council for Exercise:

- www.acefitness.org/education-and-resources/lifestyle/blog/6441/top-10-reasons-children-should-exercise

Mayo Clinic:

- www.mayoclinic.org/healthy-lifestyle/fitness/expert-answers/kids-and-exercise/faq-20058336

WebMD:

- www.webmd.com/parenting/raising-fit-kids/move/features/how-much-exercise#1

Parents:

- www.parents.com/fun/sports/exercise/10-benefits-of-physical-activity

Care.com:

- www.care.com/c/why-kids-need-exercise-guide-to-childrens-exercise

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Handout 20 Advice about Screen Time and Internet Gaming for Children and Adolescents with ADHD

There is good justification for monitoring your child's screen time activities more closely and placing limits on daily access to them. Here are some suggestions:

- Use screen time in a behavior modification program designed to increase good behavior, compliance, chore performance, and completion of schoolwork.
- Monitor and limit access to and time spent on screens.
- Consider downloading apps that provide parental controls over screen time and keep passwords private.
- Monitor what your child is doing during screen time by using apps that track your child's online activities and checking their browsing history periodically.
- Limit access to games or other apps involving violence or aggression. Given that children and teens with ADHD are far more likely to act aggressively in real life, especially when emotionally provoked and frustrated, you, more than other parents, really must restrict access to such games by your child or teen with ADHD.
- Set a good example by both limiting your own screen time and playing games or using digital technology together with your child so you can discuss what is being viewed and explain any unusual or potentially frightening events or content.
- Limit access by creating a basket, shelf, or bin that is the "parking lot" for electronic games, tablets, or other devices when they are not in use.

For more information about screen time and limiting it for children, see the websites listed below:

Mayo Clinic:

- www.mayoclinic.org/healthy-lifestyle/childrens-health/in-depth/screen-time/art-20047952

Very Well Family:

- www.verywellfamily.com/tips-for-limiting-electronics-and-screen-time-for-kids-1094870

Positive Discipline:

- www.positivediscipline.com/articles/limit-screen-time

Today's Parent:

- www.todaysparent.com/family/parenting/parent-tested-systems-you-can-use-to-limit-screen-time

Priceless Parenting:

- www.pricelessparenting.com/documents/limitingscreentime

[RaisingChildren.net.au](https://raisingchildren.net.au):

- <https://raisingchildren.net.au/toddlers/play-learning/screen-time-media/screen-time>

Active for Life:

- <https://activeforlife.com/tips-for-managing-kids-screen-time>

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Handout 21 Advice on Bedtime and Sleep Routines for Children and Adolescents with ADHD

If your child or teen is taking a stimulant medication and suffering from insomnia, discuss with your child's doctor whether the medication may be the culprit. Up to 50% of children taking stimulants have this side effect. If your child is among them, your physician and you might try the following:

- Give your child the medication earlier in the morning.
- Reduce the dose (knowing there's a risk that the medicine won't control your child's ADHD symptoms as well).
- Switch to the new stimulant delivery system Jornay PM, which is taken at 9 P.M. the night before but does not activate until 6 A.M. or so the next morning. Be aware, however, that this is not a surefire solution, as more children on this version of a stimulant did have insomnia as a side effect than did children in a study who were taking a placebo.
- Switch to a nonstimulant medication, such as atomoxetine (Strattera) or guanfacine extended release (Intuniv XR). In fact, if you give these medicines in a split dose with half in the morning and half at bedtime, your child may fall asleep more quickly than usual.
- If the insomnia is fairly serious, physicians may sometimes recommend giving a sleep-inducing medication at bedtime.

If your child is among the 40% or more of children and youth with ADHD whose sleeping problems are not related to an ADHD stimulant medication, here are some things to consider trying:

- Start by knowing that the American Academy of Pediatrics recommends the following sleep amounts for various age groups: toddlers 1–2 years, 11–14 hours; preschoolers 3–5 years, 11–13 hours; grade schoolers 6–12 years, 9–12 hours; and teenagers 13–18 years, 8–10 hours.
- Eliminate access to screen time on smart or gaming devices within 1 hour of bedtime.
- Remove all screen technology, computers, and video games from your child's room.
- Be sure you have established and *consistently* follow a bedtime routine (one for school nights, a slightly later one for weekend nights).
- Be sure your child does not get caffeine-containing substances close to bedtime.
- Children with ADHD have a great deal of trouble transitioning from high-stimulation (such as gaming) to low- or no-stimulation activities, so start your bedtime preparation ritual 60–90 minutes before your child's actual bedtime, allow no access to technology screens or video games at that point, and spend about 20 minutes or so on a quieter activity such as card playing or playing with toys or an old-school board game that is not so stimulating or exciting as a video game. Then go through the routine for getting

ready for bed.

Research shows that employing even simple steps to create a routine around bedtime that is consistently implemented at the same time each evening can go a long way toward improving the sleep of children and teens with ADHD. For more information, visit the websites listed below.

Psychology Today:

- www.psychologytoday.com/us/blog/dont-worry-mom/201310/8-tips-improve-your-childs-sleep

Lully:

- www.lullysleep.com/blogs/resource-center/29957697-how-to-improve-your-child-s-sleep

RaisingChildren.net.au:

- <https://raisingchildren.net.au/toddlers/sleep/better-sleep-settling/sleep-better-tips>

WebMD:

- www.webmd.com/parenting/raising-fit-kids/recharge/features/kids-sleep-tips#1

HealthyChildren.org:

- www.healthychildren.org/English/healthy-living/sleep/Pages/Healthy-Sleep-Habits-How-Many-Hours-Does-Your-Child-Need.aspx

Today's Parent:

- www.todayparent.com/kids/kids-sleep

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Handout 22 Advice about Dental Hygiene for Children and Adolescents with ADHD

Here are some ideas for preventing dental problems:

- Reduce your child's consumption of sugary foods and beverages.
- Make tooth brushing a consistent morning and evening routine.
- Teach your child to "brush with a plan," from top left to lower right, both the front and back of teeth, and consider an electric toothbrush.
- Become religious about booking your child for dental checkups and cleanings.

For further information on maintaining proper dental hygiene for kids, visit the websites below:

FamilyDoctor.org:

- <https://familydoctor.org/dental-hygiene-how-to-care-for-your-childs-teeth>

HealthyChildren.org:

- <https://www.healthychildren.org/English/healthy-living/oral-health/Pages/Teething-and-Dental-Hygiene.aspx>

DentalCare.com:

- www.dentalcare.com/en-us/patient-education/patient-materials/dental-care-for-children

Centers for Disease Control and Prevention:

- www.cdc.gov/oralhealth/basics/childrens-oral-health/index.html

American Dental Association MouthHealthy:

- www.mouthhealthy.org/en/babies-and-kids

WebMD:

- www.webmd.com/oral-health/dental-health-for-kids#1

KidsHealth:

- <https://kidshealth.org/en/parents/healthy.html>

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Handout 23 Advice on Making Daily Routines Predictable for Children and Adolescents with ADHD

Children and adolescents with ADHD benefit even more than typical children from consistent and predictable daily routines—mealtimes, bath times, bedtimes, homework times, chore times, and playtimes. It is so easy for the households of children or adolescents with ADHD to become disorganized, chaotic, stressful, jumbled messes because of the poorly regulated child with the disorder, especially if either parent has the same disorder.

One way to rein in the disorder and keep the routines in place is to make up a chart that shows the list of these common daily routines and about what time each day you intend to implement and enforce them with your family. Post it on your refrigerator or some other highly visible space where all family members are likely to see it often. Write down not just when this will occur, but how long each activity is to take, and any recurring routine steps or rules that apply.

For more information on developing family routines, see the websites listed below:

RaisingChildren.net.au:

- <https://raisingchildren.net.au/grown-ups/family-life/routines-rituals-relationships/family-routines>

HealthyChildren.org:

- www.healthychildren.org/English/family-life/family-dynamics/Pages/The-Importance-of-Family-Routines.aspx

Centers for Disease Control and Prevention:

- www.cdc.gov/parents/essentials/structure/buildingblocks-family.html

Huffington Post:

- www.huffpost.com/entry/why-family-routines-matter-and-how-to-improve-them_b_58e3aa62e4b02ef7e0e6e0bd

Help and Hope:

- www.helpandhope.org/Parenting_tips/articles/family-routines.asp

Super Nanny:

- www.supernanny.co.uk/Advice/-/Parenting-Skills/-/Routine-and-Teamwork/Family-Routine.aspx

Healthy Families BC:

- www.healthyfamiliesbc.ca/home/articles/family-routines-children

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Handout 24 Advice on Monitoring Your Child with ADHD

Your child is far more likely than typical children to have accidental injuries and to end up in the emergency room or hospital as a result. Much research has shown that ADHD medication helps, but so does diligently monitoring your child inside and outside of the home. Taking these steps is worthwhile for your child's safety.

- Whenever your child is playing or working outside of your immediate view in the same setting, set a timer for 10- to 15-minute intervals—or, even better, for different, random (but still short) intervals to keep your child guessing when you will drop in—and check.
- Get help with supervising from grandparents, other relatives, or paid sitters when you have to keep your attention on something else.
- When your child is visiting another to play, ask other parents to please look in on the kids more often than their own child might require.

For more information on monitoring your children's activities, see the websites listed below.

Psych Central:

- <https://psychcentral.com/lib/controlling-screen-time-for-children-with-adhd>

SCAN of Northern Virginia:

- www.scanva.org/parent-resource-post/monitoring-your-child

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Handout 25 Advice about Sex and Adolescents with ADHD

Studies find that adolescents with ADHD engage in a riskier pattern of sexual behavior and activity than do typical teens. Teens with ADHD are 10 times more likely to get pregnant or, if male, to get their girlfriends pregnant (38 vs. 4%). They have 4 times the rate of sexually transmitted diseases (17 vs. 4%). They are more likely to have their offspring placed for adoption or given to their parents to raise. Recent studies of girls with ADHD followed to adulthood showed that they were far more likely than other girls to get into sexually compromising situations and to be victimized or assaulted sexually than typical girls of the same age. Why? Because they are more than 30% behind their chronological age in their self-regulation! Here are some suggestions for handling the sensitive issue of sex:

- Be sure to have “that discussion” with your teens as soon as you notice they are maturing sexually and likely to move on to sexual activities.
- Discuss contraceptive methods with your teen and even involve their pediatrician in that discussion.
- Placing the teen on medication or ensuring they continue on it through this phase of life is another tack you can take to try to reduce the impulsivity and improve the self-regulation your teen with ADHD will need when faced with tempting sexually laden situations.
- Consider prohibiting dating until the teen is 18 and encourage group “dating,” even involving a parent as chaperone in these group outings.
- Monitor incredibly closely who your teen’s friends are and how they act when together, even on social media. If ever there was a reason for the parent of a teen with ADHD to be more closely monitoring digital media usage by a teen, the issue of sex and sexual exploitation or victimization is *numero uno*.
- Encourage parents of teens your child is hanging out with to do the same kind of close monitoring when the teens are at their home.
- Given that teens with ADHD are likely to experience more sexual partners across their teenage and young adult lives, you need to know that this is the single best predictor of getting the sexually transmitted disease human papillomavirus (HPV), and that HPV infection is a major cause of cervical cancer in women (and, increasingly, throat cancer in both sexes). So one option to consider is getting your teen vaccinated for HPV.

For more information about teens with ADHD and sex, visit these websites:

Additude magazine:

- www.additudemag.com/talking-about-sex-with-your-teen-with-adhd

Great Schools:

- www.greatschools.org/gk/articles/sexual-relationships-teens-with-ld-or-ad-hd

Healthline:

- www.healthline.com/health/adhd/adult-adhd-sex-life

Child Mind Institute:

- <https://childmind.org/article/adhd-in-teenagers>

Parenting ADHD and Autism:

- <https://parentingadhdandautism.com/2019/12/pap-076-adhd-teens-sex-relationships-air-tuckman>

Psychology Today:

- www.psychologytoday.com/us/blog/here-there-and-everywhere/201403/adhd-and-sex-interview-ari-tuckman

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Handout 26 Advice on Driving for Adolescents with ADHD

The typical adolescent years are the peak ages of risk for anyone driving a vehicle. And the typical cause of most crashes is driver inattention, especially at higher speeds, followed by being highly impulsive (willing to take risks others wouldn't). If your teen has ADHD, magnify those risks 2–5 times. So just what can you do when the law allows teens to learn to drive at 16 (or even 15), and your teen with ADHD wants to do so?

- Hide the keys. Even before they are eligible to drive, teens with ADHD are much more likely than are typical teens to take their parents' car out for a joyride without permission and when not supervised.
- If they are not inclined to drive just yet despite turning 16, then don't push it, even if their driving might save you the commuting time of having to drive them everywhere.
- When the teen is ready to apply for a learner's permit, establish a behavior contract with them that includes your rules that must be obeyed if the teen is to learn to drive and use your car(s). Tell your teen you will not agree to sign for a learner's application if they do not agree to and sign your contract. This contract has stated clearly in it not only your rules but also what consequences you will impose if certain rules are broken. You can find a sample contract at the end of this handout and another at this website for *ADDitude* magazine: www.additudemag.com/driving-contract-adhd-teen-driver-safety-rules/?src=embed_link.
- Keep the teen in the learner's permit period longer. Even if the local regulations say a teen has to have a learner's permit for only 3–6 months, double it.
- A great resource for teaching a teen with ADHD (or any teen) how to drive is at the website for the Children's Hospital of Philadelphia. It is loaded with lots of advice, practice guides, and other resources: <https://www.teendriversource.org>
- Periodically assess your teen's driving skills using the form in this handout. Make copies of this blank form before completing it so you can assess your teen on several occasions while he's learning to drive. You can also provide the teen with a copy of it to show the teen the "rules of the road" and keys to safe driving skills.
- If your teen takes ADHD medication, be sure they take it when driving. If the teen is driving at night when the daily medication is wearing off, get your doctor to prescribe a short-acting tablet form of the medicine so the teen can take that while driving.
- Adamantly forbid cell phone use while driving, not even the hands-free use that some cars can provide through a Bluetooth connection. There are now several

inexpensive technologies that can be placed in the car or on your teen's cell phone that prevent the phone from being used while the car is in operation.

- The increased monitoring of your child with ADHD recommended above applies to your teen when using a car. Have a sign-in and sign-out log in your kitchen. Or photocopy the log in [Form 9](#) in this appendix.
- A few studies show that people with ADHD drive better and are more attentive if the car they are operating has a manual transmission, probably because driving a standard transmission car requires more active participation and movement than an automatic transmission.
- Tell your teen never to use cruise control, which reduces participation in the act of driving and further reduces the need for movement. Unfortunately, to date there is no technology to deactivate the cruise control feature.
- Your teen or young adult with ADHD should *never* use alcohol or drugs while driving. (Yes, it's illegal to drink underage anyway, but that doesn't stop many teens from doing it.)
- A teen who breaks any of your driving rules should be grounded for a week or two (depending on the severity of the infraction) and not allowed to use the car again for that time period.
- When your teen graduates to being allowed to have other teens in the car, limit the number to just one or two, and make sure they are also good, trustworthy, mature young people. Many cars now come with driver-assisted technologies as standard. These include variable-assist power steering and distance-adjusting cruise control, lane departure warnings, and blind-spot warnings, among others. There is no research yet on whether these help drivers with ADHD through increased feedback or hurt their performance by reducing active participation while driving. So, watch your teen drive to evaluate whether they are helpful or harmful.
- It is now possible and not very expensive to have on-board driver tracking devices, such as rearview-mirror-mounted solid-state cameras that record driver behavior on video during sudden significant increases in speed or sudden braking of the vehicle. This video information is stored on a computer chip that you can take out and place in a computer to see how well the teen drove.

Some websites with good information on driving for teens with ADHD can be found below.

Understood:

- www.understood.org/en/friends-feelings/teens-tweens/risky-behavior/adhd-driving-tips

WebMD:

- www.webmd.com/add-adhd/childhood-adhd/features/teens-driving-adhd#1

Additude Magazine:

- www.additudemag.com/adhd-driving-tips

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Form 8 Adolescent Driving Behavior Rating Scale—Parent Report

Person you are rating _____ Relationship _____

Instructions: To complete the survey, please record the date and circle the number next to each item that represents how frequently you believe the driving skills listed below are used in the teen's typical driving performance. Make copies of this form that will allow you to complete the survey several times so that you can see the progress your teen is making during driver training.

	Never or rarely	Some- times	Often	Very often
1. Prior to starting the car, my teen checks all mirrors, adjusts the seat (when necessary), and puts on the seat belt	0	1	2	3
2. When moving into traffic, my teen checks oncoming traffic, waits his or her turn, and accelerates properly	0	1	2	3
3. My teen uses directional (turn) signals prior to making a turn or changing lanes	0	1	2	3
4. My teen turns around and checks directly through the rear windshield for any obstacles or people in their way before backing up	0	1	2	3
5. My teen looks directly through the left or right passenger side windows to check any "blind" spots before changing lanes	0	1	2	3
6. My teen drives at a rate of speed that is within the posted speed limits	0	1	2	3
7. My teen drives within the marked lane on a highway and stays on his or her side of the road on two-lane roads	0	1	2	3
8. My teen avoids driving in the breakdown lanes or on road shoulders unnecessarily	0	1	2	3
9. My teen yields the right of way to other drivers at intersections and traffic rotaries	0	1	2	3
10. My teen reacts quickly and properly to brake lights when activated on vehicles ahead	0	1	2	3

11. My teen watches ahead of cars in front for obstacles that may be in the road	0	1	2	3
12. My teen observes and responds appropriately to traffic signals (e.g., stop if possible at yellow, stop on red)	0	1	2	3
13. My teen adjusts speed to bad weather conditions affecting traffic and the roadway	0	1	2	3
14. My teen drives at an appropriate distance from vehicles ahead (at least one car length for each 10 miles per hour of speed)	0	1	2	3
15. My teen brakes smoothly to a stop at marked intersections as required	0	1	2	3
16. My teen keeps two hands on the steering wheel while driving	0	1	2	3
17. My teen drives slowly at an appropriate speed when backing up (in reverse gear)	0	1	2	3
18. My teen notices and obeys posted traffic signs (stop, yield, school zones, merge, etc.)	0	1	2	3
19. My teen follows posted route markers and does not get lost while driving	0	1	2	3
20. When parking, my teen slows to a safe speed and parks within the designated space	0	1	2	3
21. While driving, my teen maintains attention on traffic and eyes on the road ahead	0	1	2	3
22. My teen keeps the volume of music or other audio low enough to hear sirens or the horns of other cars	0	1	2	3
23. My teen makes sure that passengers wear their seat belts	0	1	2	3
24. My teen refers to GPS before driving through a new area or city	0	1	2	3
25. My teen slows down and moves away from maintenance or construction crews working on or near the roadway	0	1	2	3
26. Before entering any intersection, my teen checks approaching traffic for safe entry	0	1	2	3

Handout 27 Adolescent Driving Contract

This contract is entered into this day of _____, between _____, hereafter known as the New Driver and his or her parent(s), _____, who will have full control over granting the driving privileges obtained through this contract. Both parties understand and agree to the following:

- I, the New Driver, understand that I have ADHD, that it is a biological disorder, and that it affects my driving. My parent(s) and I have talked about ADHD and accept my diagnosis.
- I, the New Driver, understand that I must follow specific rules and guidelines for driving that will help to make me a safer and more responsible driver.
- I, the New Driver, agree to all the rules and guidelines of the graduated driving program and understand that each level is for a 6-month duration unless extended by my parents due to noncompliance with the rules.

The Rules for Graduated Driving Levels

Everyday Rules

- Prescribed medication taken on schedule
- Music to be kept low
- Preset radio stations
- No eating while driving
- No talking on cell phone while driving
- No other teens in the car
- Absolutely NO alcohol
- Drive posted speed limit

Level 1: 0–6 months

Everyday Rules plus daytime driving only

Level 2: 6–12 months

Everyday Rules plus extended drive time at parent's discretion

Level 3: 12–18 months

Full license—safe driving with Everyday Rules plus any other rules agreed upon with parents

- I, the New Driver, agree to abide by all the safety rules posted in the Driving Program.
- I, the New Driver, agree to provide ALL information required in the Program's Trip Log every time I drive the car.
- I, the Parent, agree to grant driving privileges if rules are complied with, but I have the right and responsibility to check on the information provided in the Trip Log by the New Driver.
- Furthermore, I, the Parent, have the right to determine noncompliance with rules and to institute appropriate consequences, which include loss of driving privileges.

Signature of New Driver _____ Date ____/____/____

Signature of Parent _____ Date ____/____/____

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Form 9 Teen Driving Log

Date: ____ / ____ / ____

Medications: (check if taken) _____ A.M. _____ P.M.

Time out _____ : _____ Odometer reading: _____

Time in _____ : _____ Odometer reading: _____

Destination and contact (give location, contact name, address, and phone)

Location and address _____

Contact name _____ Phone _____

Route/miles _____

Date: ____ / ____ / ____

Medications: (check if taken) _____ A.M. _____ P.M.

Time out _____ : _____ Odometer reading: _____

Time in _____ : _____ Odometer reading: _____

Destination and contact (give location, contact name, address, and phone)

Location and address _____

Contact name _____ Phone _____

Route/miles _____

Date: ____ / ____ / ____

Medications: (check if taken) _____ A.M. _____ P.M.

Time out _____ : _____ Odometer reading: _____

Time in _____ : _____ Odometer reading: _____

Destination and contact (give location, contact name, address, and phone)

Location and address _____

Contact name _____ Phone _____

Route/miles _____

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Advice about Child Management and Parental Coping

The following are some of the most commonly used and effective methods for managing children and teens with ADHD—and for advising parents on the management of their own ADHD, should they have the diagnosis. As with the other handouts and forms, you can photocopy these and give copies to the parents of your patients so that they have them available to use in managing their child or teen with ADHD (or themselves if they have the disorder).

Handout 28 The Home Poker Chip/Point System

When trying to manage a child with behavioral problems, it is common to find that praise is not enough to motivate the child to do chores, follow rules, or obey commands. As a result, it is necessary to set up a more powerful program to motivate the child. One such program that has been very successful with children is the Home Poker Chip Program (for children 4–7 years old) or the Home Point System (for children 8 years old and older). Your therapist will explain in detail how to set up such a program, but here are the steps to follow:

The Home Poker Chip Program

1. Find or buy a set of plastic poker chips. If the child is 4 or 5 years old, then each chip, regardless of color, represents one chip. For 6- to 8-year-olds, the colors can represent different amounts: white = 1 chip, blue = 5 chips, and red = 10 chips. If you use the colors this way, take one of each color, tape it to a small piece of cardboard, and write on each chip how many chips it is worth. Post this card somewhere so your child can easily refer to it.
2. Sit down and explain to your child that you feel he or she has not been rewarded enough for doing nice things at home and you want to change all that. You want to set up a new reward program so your child can earn privileges and special items for behaving properly. This gives a very positive tone to the program.
3. You and your child should create a bank in which he or she will keep the chips earned. Banks can be made from a shoe box, coffee can (with a dull edge on the rim), or a plastic jar or another durable container. Have some fun decorating it with your child.
4. Now, you and your child should make up a list of the privileges you want your child to earn with the poker chips. These should include not just occasional special privileges (e.g., going to movies, roller skating, buying a toy) but also the everyday privileges your child takes for granted (e.g., television, video games, special toys already in the home, riding a bike, going over to a friend's home). Your therapist will explain what types of privileges you might include on this list. Be sure to have at least 10, and preferably 15, rewards on this list.
5. Now make up a second list that will contain the jobs and chores you often ask this child to perform. These can be typical household chores such as setting the table for a meal, clearing the table after a meal, cleaning a bedroom, making a bed, emptying wastebaskets, and so forth. Also include on the list things like getting dressed for school, getting ready for bed, washing and bathing, brushing teeth, or

any other self-help tasks you give a child that normally pose a problem for you. Your therapist can help you decide what types of jobs to put on this list for your child's age group and special problems.

6. Next, for each job or chore on the list, decide how much you feel it is worth in chips. For 4- and 5-year-olds, assign from 1 to 3 chips for most tasks and perhaps 5 for really big jobs. For 6- to 8-year-olds, use a range of 1 to 10 chips, and perhaps give a larger amount for big jobs. Remember, the harder the job, the more chips you will pay.
7. Take a moment and add up approximately how many chips you think your child will earn in a typical day if he or she does most of these jobs. Then, with this number in mind, decide how many chips your child should have to pay for each of the listed rewards. We generally suggest that two-thirds of the child's daily chips should be spent on his or her typical daily privileges. This allows the child to save about one-third of the chips every day toward the purchase of some of the very special rewards on the list. Don't worry about the exact numbers to use here. Just use your judgment as to how much each reward should cost, be fair, and charge more chips for the special rewards and less for the daily ones.
8. Be sure to tell your child that he or she will have a chance to earn "bonus" chips when he or she performs a chore in a nice, prompt, and pleasant manner. You will not give these bonus chips all the time, but you should give them when your child has done a job in an especially pleasant and prompt manner.
9. Be sure to tell the child that chips will only be given for jobs that are done on the first request. If you have to repeat a command to the child, he or she will not receive any chips for doing it.
10. Finally, be sure to go out of your way this week to give chips away for any small appropriate behavior. Remember, you can reward a child even for good behaviors that are not on the list of jobs. Be alert for opportunities to reward the child.

Note: Do not take chips away this week for misbehavior!!! You can do that when your therapist tells you to, but otherwise chips are to be used ONLY as rewards this week, not taken away as punishment.

The Home Point System

1. Get a notebook and set it up like a checkbook with five columns, one each for the date, item, deposits, withdrawals, and running balance. When your child is rewarded with points, record the job under the "Item" and enter the amount as a "Deposit." Add it to the child's balance. When your child buys a privilege with his or her points, note the privilege under "Item," place this amount in the "Withdrawal" column, and deduct this amount from the "Balance." The program works just like the chip system except that points are recorded in the book instead of using poker chips.
2. Make up the lists of rewards/privileges and jobs as in the chip program just described. Be sure to give the same explanation to the child as to why the point

- system is being set up. Again, your therapist can help you with these lists.
3. When you get ready to determine how much each job should be paid in points, use larger numbers than in the chip program. We generally use a range of 5 to 25 points for most daily jobs and up to 200 points for very big jobs. Typically, you might consider paying 15 points for every 15 minutes of extended work a child has to do.
 4. Then add up how many points you feel your child will earn on an average day for doing routine jobs. Use this number to decide how much to charge for each privilege. Be sure the child has about one-third of his or her daily points free to save up for special privileges. Your therapist can help you in deciding how much to charge for each reward.
 5. Follow the same guidelines in using the point system as were given for the chip program this week. Do not fine the child any points for misbehavior and pay points to the child only if he or she listens to the first command or request. Only parents are to write in the points notebook.

Reminders

- ✓ Review the list of rewards and jobs every month or so and add new ones to each list as you deem necessary. Check with your child for new rewards he or she may want on the list.
- ✓ You can reward your child with chips or points for almost any form of good behavior. They can even be used to reward your child for not bothering or interrupting your work.
- ✓ Do not give the chips or points away before the child has done what he or she was told to do, only afterward. But be as quick as possible in rewarding the child for compliance. Don't wait to reward!
- ✓ Both parents should use the chip or point system to make it as effective as possible.
- ✓ When you give points or chips for good behavior, smile and tell the child what you like that he or she has done.

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Handout 29 Using a Daily School Behavior Report Card

A daily school behavior report card involves having the teacher send home an evaluation of your child's behavior in school that day, which you can use to give or take away rewards available at home. These cards have been shown to be effective in modifying a wide range of problems with children at school. Because they are convenient and cost-effective, and involve both the teacher(s) and parents, they are often one of the first interventions you should try if your child is exhibiting behavior problems at school. The teacher reports can consist of either a note or a more formal report card. We recommend the use of a formal behavior report card like those shown at the end of this handout. The card should list the "target" behavior(s) that are to be the focus of the program on the left-hand side of the card. Across the top are columns that correspond to each class period at school. The teacher gives a number rating reflecting how well the child did for each of these behaviors for each class period. Some examples are provided at the end of this handout.

How the Daily Report Card Works

With this system, teacher reports are typically sent home on a daily basis. As the child's behavior improves, the daily reports can be reduced to twice weekly (Wednesdays and Fridays), once weekly, or even monthly, and finally phased out altogether. A variety of daily report cards may be developed and tailored for your child. Some of the behaviors targeted for the program may include both social conduct (shares, plays well with peers, follows rules) and academic performance (completes math or reading assignments). Targeting low academic performance (poor production of work) may be especially effective. Examples of behaviors to target include completing all (or a specified portion of) work, staying in the assigned seat, following teacher directions, and playing cooperatively with others. Negative behaviors (e.g., aggression, destruction, calling out) may also be included as target behaviors to be reduced by the program. In addition to targeting class performance, homework may be included. Children sometimes have difficulty remembering to bring homework assignments home. They may also complete their homework but forget to return the completed work to school the next day. Each of these areas may be targeted in a school behavior report card program.

It is recommended that the number of target behaviors you work on be kept to about four or five. Start out by focusing on just a few behaviors you wish to change to help maximize your child's success in the program. When these behaviors are going well, you can add a few more problem behaviors as targets for change. We recommend including at least one or two positive behaviors that the child is currently doing well with, so that he or she will be able to earn some points during the beginning of the

program.

Typically, children are monitored throughout the school day. However, to be successful with problem behaviors that occur very frequently, you may want to have the child initially rated for only a portion of the school day, such as for one or two subjects or classes. As the child's behavior improves, the card can be expanded gradually to include more periods and subjects until the child is being monitored throughout the day. In cases in which the child attends several different classes taught by different teachers, the program may involve some or all of the teachers, depending on the need for help in each of the classes. When more than one teacher is included in the program, a single report card may include space for all teachers to rate the child. Alternatively, different report cards may be used for each class and organized in a notebook for the child to carry between classes. Again, the cards shown at the end of this handout can be helpful because they have columns that can be used to rate the child by the same teacher at the end of each subject or by different teachers.

The success of the program depends on a clear, consistent method for translating the teacher's reports into consequences at home. One advantage of school behavior report cards is that a wide variety of consequences can be used. At a minimum, praise and positive attention should be provided at home whenever a child does well that day at school, as shown on the report card. With many children, however, tangible rewards or token programs are often necessary. For example, a positive note home may translate into television time, a special snack, or a later bedtime. A token system in which a child earns points for positive behavior ratings and loses points for negative ratings may also be used. Both daily rewards (e.g., time with parent, special dessert, television time) and weekly rewards (e.g., movie, dinner at a restaurant, special outing) may be included in the program.

Advantages of the Daily Report Card

Overall, daily school behavior report cards can be as or even more effective than classroom-based behavior management programs, with effectiveness increased when combined with classroom-based programs. Daily reports seem particularly well suited for children because they often benefit from the more frequent feedback than is usually provided at school. These programs also give parents more frequent feedback than would normally be provided by the child. As you know, most children, when asked how their school day went, give you a one-word answer, "Fine," which may not be accurate. These report card programs also can remind parents when to reward a child's behavior and forewarn parents when behavior is becoming a problem at school and will require more intensive work. In addition, the type and quality of rewards available in the home are usually far more extensive than those available in the classroom, a factor that may be critical with children who need more powerful rewards.

Aside from these benefits, daily school report cards generally require much less time and effort from your child's teacher than do classroom-based programs. As a result, teachers who have been unable to start a classroom management program may be far more likely to cooperate with a daily report card that comes from home.

Despite the impressive success of report card programs, the effectiveness of the program depends on the teacher accurately evaluating the child's behavior. It also hinges on the fair and consistent use of consequences at home. In some cases, children may attempt to undercut the system by failing to bring home a report. They may forge a teacher's signature or fail to get a certain teacher's signature. To discourage these practices, missing notes or signatures should be treated the same way as a "bad" report (i.e., child fails to earn points or is fined by losing privileges or points). The child may even be grounded for the day (no privileges) for not bringing the card home.

Some Examples of Daily School Report Cards

Several types of school behavior report cards that rely on daily school behavior ratings are discussed here. Two examples are provided at the end of this handout. These are the cards we recommend most parents use if they want to start a school behavior report card quickly. One card is for classroom behavior, the other is for recess behavior. Use whichever card is most appropriate for the problems your child is having at school. Two sets of each card are provided so that you can make photocopies of that page and then cut the page in half to make double the number of cards.

Notice that each card contains five areas of potential behavior problems that children may experience. For the class behavior report card, columns are provided for up to seven different teachers to rate the child in these areas of behavior or for one teacher to rate the child many times across the school day. We have found that the more frequent the ratings, the more effective is the feedback for the child and the more informative the program is to you. The teacher initials the bottom of the column after rating the child's performance during that class period to ensure against forgery. If getting the correct homework assignment home is a problem for some children, the teacher can require the child to copy the homework for that class period on the back of the card before completing the ratings for that period. Then the teacher merely checks the back of the card for the child's accuracy in copying the assignment and then completes the ratings on the front of the card. For particularly negative ratings, we also encourage teachers to provide a brief explanation to you as to what resulted in that negative mark. The teachers rate the children using a 5-point system (1 = excellent, 2 = good, 3 = fair, 4 = poor, and 5 = very poor).

The child takes a new card to school each day. These can be kept at school and a new card given out each morning, or you can provide the card as your child leaves for school, whichever is most likely to be done consistently. As soon as the child returns home, you should immediately inspect the card, discuss the positive ratings first with your child, and then proceed to a neutral, businesslike (not angry!) discussion with your child about any negative marks and the reason for them. Your child should then be asked to formulate a plan for how to avoid getting a negative mark tomorrow. You are to remind your child of this plan the next morning before your child departs for school. After the child formulates the plan, you should award your child points for each positive rating on the card and deduct points for each negative mark. For instance, a young elementary school-age child may receive five chips for a 1, three chips for a 2,

and one chip for a 3, while being fined three chips for a 4 and five chips for a 5 on the card. For older children, the points might be 25, 15, 5, -15, and -25, respectively, for marks of 1 to 5 on the card. The chips or points are then added and the fines subtracted, and the child may then spend what is left of these chips on the privileges on the home reward menu.

Another daily report card program is provided for dealing with behavior problems and getting along with others during school recess periods or free time periods each day. Again, two cards are provided on the page, so that you can make photocopies of the page and cut the pages in half to double the number of cards. The card is to be completed by the teacher on recess duty during each recess or free time period. It is inspected by the class teacher when the child returns to the classroom, and then should be sent home for use, as just discussed, in a home chip/point system. The classroom teacher should also be instructed to use a "think aloud-think ahead" procedure with the child just prior to the child's going out for recess or free time. In this procedure, the teacher (1) reviews the rules for proper recess behavior with the child and notes that they are written on the card, (2) reminds the child that he or she is being watched by the teacher on recess duty, and (3) directs the child to give the card immediately to the recess monitor so the monitor can evaluate the child's behavior during recess or free time.

As these cards illustrate, virtually any child behavior can be the target for treatment using behavior report cards. If the cards shown here are not suitable for your child's behavior problems at school, then design a new card with the assistance of your therapist, using the blank cards provided at the end of this handout. They do not take long to construct and can be very helpful in improving a child's school behavior and performance.

DAILY SCHOOL BEHAVIOR REPORT CARD

Child's name _____ Date _____

Teachers:

Please rate this child's behavior today in the areas listed below. Use a separate column for each subject or class period. Use the following ratings: 1 = excellent, 2 = good, 3 = fair, 4 = poor, and 5 = very poor. Then initial the box at the bottom of your column. Add any comments about the child's behavior today on the back of this card.

Behaviors to be rated:	Class periods/subjects						
	1	2	3	4	5	6	7
Class participation							
Performance of class work							
Follows classroom rules							
Gets along well with other children							
Quality of homework, if any given							
Teacher's initials							

Place comments on back of card.

----- CUT HERE AFTER PHOTOCOPYING -----

DAILY SCHOOL BEHAVIOR REPORT CARD

Child's name _____ Date _____

Teachers:

Please rate this child's behavior today in the areas listed below. Use a separate column for each subject or class period. Use the following ratings: 1 = excellent, 2 = good, 3 = fair, 4 = poor, and 5 = very poor. Then initial the box at the bottom of your column. Add any comments about the child's behavior today on the back of this card.

Behaviors to be rated:	Class periods/subjects						
	1	2	3	4	5	6	7
Class participation							
Performance of class work							
Follows classroom rules							
Gets along well with other children							
Quality of homework, if any given							
Teacher's initials							

Place comments on back of card.

DAILY SCHOOL BEHAVIOR REPORT CARD

Child's name _____ Date _____

Teachers:

Please rate this child's behavior today in the areas listed below. Use a separate column for each subject or class period. Use the following ratings: 1 = excellent, 2 = good, 3 = fair, 4 = poor, and 5 = very poor. Then initial the box at the bottom of your column. Add any comments about the child's behavior today on the back of this card.

Behaviors to be rated:	Class periods/subjects						
	1	2	3	4	5	6	7
Teacher's initials							

Place comments on back of card.

----- CUT HERE AFTER PHOTOCOPYING -----

DAILY SCHOOL BEHAVIOR REPORT CARD

Child's name _____ Date _____

Teachers:

Please rate this child's behavior today in the areas listed below. Use a separate column for each subject or class period. Use the following ratings: 1 = excellent, 2 = good, 3 = fair, 4 = poor, and 5 = very poor. Then initial the box at the bottom of your column. Add any comments about the child's behavior today on the back of this card.

Behaviors to be rated:	Class periods/subjects						
	1	2	3	4	5	6	7
Teacher's initials							

Place comments on back of card.

DAILY RECESS AND FREE TIME BEHAVIOR REPORT CARD

Child's name _____ Date _____

Teachers:

Please rate this child's behavior today during recess or other free time periods in the areas listed below. Use a separate column for each recess/free time period. Use the following ratings: 1 = excellent, 2 = good, 3 = fair, 4 = poor, and 5 = very poor. Then initial at the bottom of the column. Add any comments on the back.

Behaviors to be rated:	Recess and free time periods				
	1	2	3	4	5
Keeps hands to self; does not push, shove					
Does not tease others; no taunting/put-downs					
Follows recess/free time rules					
Gets along well with other children					
Does not fight or hit; no kicking or punching					
Teacher's initials					

Place comments on back of card.

----- CUT HERE AFTER PHOTOCOPYING -----

DAILY RECESS AND FREE TIME BEHAVIOR REPORT CARD

Child's name _____ Date _____

Teachers:

Please rate this child's behavior today during recess or other free time periods in the areas listed below. Use a separate column for each recess/free time period. Use the following ratings: 1 = excellent, 2 = good, 3 = fair, 4 = poor, and 5 = very poor. Then initial at the bottom of the column. Add any comments on the back.

Behaviors to be rated:	Recess and free time periods				
	1	2	3	4	5
Keeps hands to self; does not push, shove					
Does not tease others; no taunting/put-downs					
Follows recess/free time rules					
Gets along well with other children					
Does not fight or hit; no kicking or punching					
Teacher's initials					

Place comments on back of card.

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Handout 30 Classroom Accommodations for Children and Adolescents with ADHD

Classroom Management: Basic Considerations

- Don't retain children in grade! Research shows that this harms, not helps. Get a treatment plan instead.
- Use first few weeks of school year to establish behavioral control.
- Decrease total workload.
- Give smaller quotas of work at a time, with frequent breaks (e.g., 5 problems at a time, not 30).
- Use traditional desk arrangement (i.e., all desks face forward to teaching area).
- Seat a child with ADHD close to teaching area, to permit more supervision and accountability.
- Target productivity (number of problems attempted) first; focus on accuracy later.
- Don't send home unfinished class work.
- Give weekly homework assignments, so that parents can plan their week accordingly.
- Reduce/eliminate homework for children in elementary grades (research does not clearly demonstrate that homework benefits kids before high school).
- If homework is given, keep to 10 minutes total \times grade level in school.
- Allow some restlessness at work area.
- Give frequent physical exercise breaks.
- Get color-coded binders and other commercial organizing systems.
- Try color-coding text, using highlighters for marking key points.
- Use participatory teaching: Give students something to do to help you while teaching.
- Have students practice skills on computers—use learning software programs to rehearse skills.
- Try laminated work slates, not impulsive answers. Each child gets a white board and marker, and when questions are asked, everyone writes the answer on his/her board and holds it up in the air. Call on someone only after *all* boards are up.
- Assign a homework "study buddy."
 - Make use of peer tutoring outside school (see below).
- Intersperse low-appeal with high-appeal activities to maintain interest level.
- Be more animated, theatrical, and dramatic when you teach (make it interesting!).
- Touch when talking to a child with ADHD (place a hand on child's hand, arm, or shoulder).

- Schedule the most difficult subjects in first periods of school day.
- Use direct instruction, programmed learning, or highly structured teaching materials.
- Have child prestate work goals (“How many problems can you do for me?”).
- Train keyboarding and use of word processor as early as possible.
- Use after-school help sessions, tutoring, books on tape, and videos to reinforce class work.
- Require continuous note taking during lectures and while reading.

Peer Tutoring

- Create and distribute scripts (work sheets).
- Teach any new concepts and skills to class.
- Provide initial instructions for work that is to be done.
- Break class into dyads (pairs).
- Have one student be the tutor and quiz the other.
- Circulate, supervise, and coach dyads.
- Alternate who plays which role (tutor vs. student) in dyad.
- Group students into new dyads weekly.
- Graph and post quiz results.

Classroom Management: Increasing Incentives

- Increase praise, approval, appreciation.
 - Be a 1-minute manager (lots of short praises throughout the day).
- Use a token or point system to organize consequences.
- Get parents to send in old games/toys to upgrade class supply.
- Get a video game donated to the class.
- Try team-based (group) rewards (four or five students per team; teams compete).
- Try a tone tape with self-rewards.
 - Create an audiotape with a variable-interval, frequent schedule of tones.
 - Tell students that when tone sounds while they are doing desk work, they are to self-evaluate and then self-reward a point if they were working when tone sounded.
- Allow access to rewards often (daily or more often).
- Keep reward-to-punishment ratio 2:1 or greater, so class remains rewarding, not punitive.
- Consider using a daily behavior report card.

Putting Rules and Time into Physical Forms

- Post rules on posters for each work period.
- Create a three-sided stop sign with class rules for young children:
 - Red = lecture, yellow = desk work, green = free play.
- Place laminated color-coded card sets on desks, with a set of rules for each subject or class activity.
- Have child restate rules at start of each activity.
- Have child use soft vocal self-instruction during work.
- Create “nag tapes” (taped encouragement from Dad or Mom with reminders of rules for on-task behavior); child can listen to these during desk work.
- Use timers, watches, taped time signals, or other devices to show how much time children have remaining for an activity.

Training Self-Awareness

- Have child record work productivity on a daily chart or graph on public display.
- Have child rate self on a daily conduct card.
- Cue child to self-monitor by saying “Turtle,” at which:
 - Child stops what he/she is doing, pulling hands and legs close together.
 - Child slowly looks about the classroom.
 - Child asks self, “What was I told to do?”
- Child returns to assigned task.
- Have child wear a tactile cueing device, the MotivAider (a vibrating small box with a built-in digital timer; available at www.amazon.com/MotivAider-Gen5-Ultimate-Desired-Behavior/dp/B08644GBXJ). Set timer to cue the child periodically to pay attention.
- Use nonverbal confidential cues for teens (e.g., tell them that if you drop a paper clip by their desk, it was no accident). For them, it’s a cue to pay attention to you.
- In severe cases, consider videotaping child in class for weekly feedback session with school psychologist.

Possible Punishment Methods

- Check with school principal on district policies about punishment!
- Personalize mild, private, direct reprimands (go to child, touch child on arm or shoulder, make a brief corrective statement).
- Immediacy is the key to discipline: Swift justice! What makes punishment work is the speed with which it is implemented following misbehavior.
- Try the “Do a task” procedure:
 - Place a desk at back of class with worksheets stacked on it.
 - When a child misbehaves, tell child what he/she did wrong and give child a number.
 - Child goes to the desk and does that number of worksheets during a time-out.

- When work is done, child places it on teacher's desk and returns to normal seat.
- Use response cost (loss of tokens or a privilege contingent on misbehavior).
- Assign moral essays: Have child write "Why I should not ... [e.g., hit other children]."
- Establish a "chill-out" location for regaining emotional control.
- Use formal time-outs in class or private room (hallway time-outs don't work).
- Use in-school suspensions for students with behavioral/emotional disorders only in severe cases.

Classroom Management: Tips for Adolescents

- Consider using medication for school days (have parents pay teens per day if need be).
- Find a "coach" or "mentor" at school who will give just 15 minutes to help a teen.
 - The coach's office is the student's "locker."
 - Schedule three 5-minute checkups across each school day: Teen goes to coach at that time for review of school day, assignment sheet, and daily behavior report card, and coach gives a motivational pep talk to get teen through to next checkup.
- Identify an "ADHD liaison" on school staff, to serve as an intermediary on issues between parents and school.
- Use daily assignment sheets for recording homework.
- Use a daily or weekly school behavior card (with possible move to self-evaluation after 2+ good weeks).
- Have teen keep extra set of books at home.
- Encourage teen to learn typing/keyboard skills.
- Tape-record important lectures for teen to listen to later when studying.
- Suggest "bucks for B's" system (good grades = \$ from parents).
- Schedule hard classes in morning hours.
- Alternate required with elective classes.
- There is no evidence that allowing extra time on timed tests helps; it's better to have a distraction-free test setting.
- Permit music during homework.
- Put written syllabus into handouts to review and study.
- Require note taking in class and while reading, to help teen pay attention.
- Have teen learn "SQ4R" system to boost reading comprehension:
 - First, survey the material and draft questions.
 - Then read, recite, write, and review after each paragraph.
- Try peer tutoring in class (see above).
- Encourage teen to "study with a buddy" after school.
- Find "fall-back" classmates (who swap phone, e-mail, and fax numbers) for lost or missed assignment sheets.
- Have teen attend after-school help sessions whenever given.

- Schedule parent–teacher review meetings with teen every 6 weeks (not at 9-week grading period).

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Handout 31 Practical Advice for Coping with ADHD in Adulthood

- Take ADHD medication for school/work days (or more often).
- Find a “coach” or “mentor” (for just 15 minutes per day).
- Meet with this person two or three times per day for 5 minutes to review your progress toward your goals that day.
- Cross-temporal accountability is the key to success.
- Identify an “ADHD liaison” at work or at college disability services, and use this person’s services frequently.
- Use a daily assignment calendar or journal—write everything (!) you need to do here, in one place, and carry it with you always.
- Use daily or weekly behavior report cards that supervisors can grade you on for frequent review of your work.
- Use word processing rather than handwriting for lengthy reports.
- Tape-record important lectures or meetings.
- Get any extra written notes, curriculum materials, or other documents to help you remember the contents of meetings and classes.
- Get notebook-organizing systems, day planners, and/or personal data assistants (check the App store for your smartphones and tablets).
- Schedule harder classes/meetings/work in morning hours, when you are fresher and more attentive.
- Alternate required but boring work or courses with enjoyable work or elective classes.
- Extra time on timed tests may not work or may not be enough; no evidence has shown to date that it helps those with ADHD. It’s better to have distraction-free test settings.
- Exercise before exams or boring classes or meetings.
- Use continuous note taking to boost concentration in dull classes or meetings.
- Wear a tactile cueing device, the MotivAider (available at www.amazon.com/MotivAider-Gen5-Ultimate-Desired-Behavior/dp/B08644GBXJ), to frequently reprompt your alertness or self-awareness and your focus on your goal.
- Learn “SQ4R” for reading comprehension of any lengthy reading to be done:
 - First, survey the material and draft questions.
 - Then read, recite, write, and review after each paragraph.
- Find a peer, fellow student, or coworker who can tutor you in difficult subjects.
- Work as part of a team with more organized people.
- Find “fall-back” coworkers or college classmates (with whom you swap phone, e-mail, and fax numbers) for when you may have lost or missed assignments, so you can get them when away from work or class.
- Attend after-class (or after-work) help sessions whenever given.

- Schedule faculty or supervisor review meetings often—every 3–6 weeks (not at the end of the grading period).
- Watch the caffeine and nicotine use—these might help your attention at first, but adults with ADHD are more prone to overuse them and become dependent on these substances.
- Try to better manage your use of other legal substances like alcohol, and avoid illegal substances entirely.
- Develop regular exercise patterns (three or more times per week) for increased attention, better health, better stress management, and so on.
- Get counseling and information about ADHD.
- Consider cognitive-behavioral therapy to help you develop more constructive self-statements.
- Get advice, assistance, and books on time management and organizing (consult specialists in this area, if available).
- Make yourself publicly accountable to others more often for personal goal-setting and self-change programs (diet, weight loss, saving money, managing finances, social conduct, etc.).
- Get vocational assessment and/or career counseling, to obtain a better fit between you and your job setting.
- Get consultation by a professional to your employer, as needed (for protections and accommodations under the Americans with Disabilities Act).
- Get marital or family counseling if needed.
- Get treatment for other disorders if needed (depression, anxiety, etc.).
- Get substance abuse treatment if needed.
- Got a problem to solve? Try the following with a sheet of paper and a pencil:
 - Six steps to effective problem solving:
 1. Define the problem: Write it down, and keep on task.
 2. Generate a list of all possible solutions. No criticisms are permitted at this stage.
 3. After all solutions are listed, briefly critique each possibility.
 4. Select the most agreeable option.
 5. Make this a behavior contract (sign it).
 6. Establish penalties for breaking the contract.

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Handout 32 Parenting If You Have ADHD

Parents of children with ADHD are 5–7 times more likely to have ADHD themselves than are the parents of typical children. Research consistently shows that having adult ADHD can have some adverse effects on parenting even typical children, but especially a child who also has ADHD. What can you do to help if you also have ADHD?

- Get your ADHD evaluated and treated. If it is moderate to severe, get on ADHD medication. You cannot raise your children as well as you would wish to do if you are out of control of your own ADHD.
- Get your children evaluated for possible ADHD and related disorders and get those treated if you have not yet done so professionally.
- Take a behavioral parent training class at a nearby mental health clinic, medical school, university, hospital, or county mental health center. Parents with ADHD do not do well in these classes if their own ADHD is not being treated, so treat your own ADHD first before starting in one of these classes.
- Have the parent who doesn't have ADHD handle school homework, especially if your ADHD is untreated. Most parents are not good tutors to their children, so you can bet that one with ADHD will not be as good at it, either.
- Alternate child-care nights—each parent takes turns managing the children every other night, especially if a child has ADHD—so that no parent carries the entire or most of the burden of supervising and caring for the children throughout the day or after school.
- Let the parent without ADHD handle time-sensitive events related to the children, such as medical and school appointments or deadlines for school projects. The parent with ADHD can make up for it by taking on tasks that are not time sensitive (doing the laundry, housecleaning, home and car maintenance, yard care, bathing the children, reading bedtime stories, etc.).
- Put yourself in time-out (a quiet room) if you are feeling overwhelmed or stressed by your child.
- Discuss with your partner major child disciplinary actions you want to take *before* (!) implementing them so that you avoid impulsively and perhaps excessively disciplining your children due to your ADHD-related symptoms.
- Have the adult without ADHD drive the kids to their activities whenever possible (unless the parent with ADHD is on medication).
- If you are responsible for your children's supervision after school, on a weekend, summer vacation, or any other time they are home or in the yard, set an external timer to frequent intervals, such as every 15–30 minutes, to remind you to stop what you are doing and monitor your children's activities/whereabouts, particularly your child with ADHD.
- Build in weekly respites from your kids. Find some hobby, activity, club, organization, project, or just recreational activity that you love, that renews you emotionally, that destresses you or in other ways gives you time to recharge your parental batteries.

For more information on parenting children when you have adult ADHD, see the following

resources:

Additude Magazine:

- www.additudemag.com/parenting-moms-with-adhd-advice-help

ADHD Roller Coaster (from my friend and colleague Gina Pera):

- <https://adhdrollercoaster.org/adhd-and-relationships/how-does-adult-adhd-affect-parenting>

Psychology Today:

- www.psychologytoday.com/us/blog/when-your-adult-child-breaks-your-heart/201408/study-shows-adhd-treatment-improves-parenting

Very Well Mind:

- www.verywellmind.com/tips-for-parents-with-adult-add-20519

WebMD:

- www.webmd.com/add-adhd/parenting-when-you-have-adhd#1

Hartgrove Behavioral Health System:

- www.hartgrovehospital.com/im-parent-im-one-adhd-cope

Child Mind Institute:

- <https://childmind.org/article/help-for-parents-with-adhd>

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Forms for Use during Medication Treatment

Form 10 Thinking about Medications for ADHD

Patient name _____ Date _____

Instructions: The availability of an effective nonstimulant medication approved by the U.S. Food and Drug Administration for the clinical management of ADHD symptoms poses a decision-making dilemma for clinicians. The checklist below provides a clinical guide to aid clinicians in progressing through these 17 issues that may influence the decision to employ a stimulant (e.g., methylphenidate, amphetamine) or nonstimulant medication (e.g., atomoxetine). As a general guideline, it must be tailored to the unique aspects of each clinical case and does not rule out the possibility that maximum clinical benefit may be derived from a combination of these medications. After you consider each issue, place a ✓ in the box in the Yes or No column for that issue. The more Yes boxes you check, the more you may wish to consider a nonstimulant. The fewer Yes boxes you check, the more a stimulant may be indicated. Then file this form in the patient's chart to document that you have given thought to such issues about this patient.

Yes ✓ No ✓ Issue to consider

1. Has the patient had a prior adverse or poor response to stimulants?

2. Has the patient never had a prior adverse or poor response to a noradrenergic agent?

3. Is an immediate medication response *not* required for urgent management of the patient's ADHD?

4. Does the patient have problems with anxiety or depression besides his/her ADHD?

5. Does the patient have Tourette syndrome or another tic disorder?

6. Does the patient experience bedwetting (enuresis)?

7. Does the patient have significant insomnia or problems falling asleep?

8. Does the patient have significant problems with misbehavior in the early morning?

9. Does the patient or parent express concern over using a Schedule II stimulant (possibly due to adverse publicity or abuse potential of the stimulants)?

10. Will the patient encounter conflict or hostility from family members if a stimulant is prescribed?

11. Is there concern by the clinician, patient, or parent regarding the more complex logistics of using a stimulant (more frequent office visits, closer monitoring, and associated increased medical costs)?

12. Is the patient a high school or college student for whom recreational misuse, theft, or diversion may be a potential problem?

13. Does the patient have a prior history of drug abuse?

14. Does anyone living with the patient, such as an immediate family member, have such a history?

15. Has the patient suffered significant insomnia from taking a stimulant?

16. Has the patient experienced significant morning behavioral problems while taking a stimulant?

17. Has the patient experienced blunting of affect or abnormal restriction of emotional expression (blandness) on a stimulant?

Totals: Total count of Yes and No boxes checked

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Form 11 Physician's Checklist for Parents

Name _____ Date of birth _____ Age _____ Sex: M ___ F ___

Date of evaluation _____ Relationship _____

Instructions: This checklist of questions should be reviewed monthly with parents of children taking stimulant drugs.

.. What dose have you been regularly giving to this child over the past month?

Medication _____ Dose _____

!. Have you noticed any of the following side effects this month?

- Loss of appetite/weight
- Insomnia
- Irritability in late morning or late afternoon
- Unusual crying
- Tics or nervous habits
- Headache/stomachache
- Sadness
- Rashes
- Dizziness
- Dark circles under eyes
- Fearfulness
- Social withdrawal
- Drowsiness
- Anxiety

}. If so, please describe how often and when the side effects occurred.

- h. Have you spoken with the child's teacher lately? How is the child performing in class?

- i. Did your child complain about taking the medication or avoid its use?

- j. Does the drug seem to be helping the child as much this month as it did last month? If not, what seems to have changed?

- k. When was your child last examined by the doctor? (If more than 1 year ago, schedule the child for a clinic visit and exam.)

- l. Have there been problems in giving the child medication at school?

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<h1 style="margin: 0;">Form 12 Follow-Up Information for Parents</h1>
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Name _____ Date of birth _____ Age _____ Sex: M ___ F ___

Medication _____

Parents' attitudes about medication _____

Teacher's attitude about medication _____

Child's attitude about medication _____

Problems _____

History

Target symptoms	Improved	No change	Worse
Hyperactivity—motor restlessness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attention span	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distractibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Finishing tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Impulse control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Frustration tolerance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accepting limits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Peer relations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Side effects	Improved	No change	Worse
Appetite	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Elimination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weepiness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drowsiness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mouth dryness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Abdominal complaints

Others:

Physical examination

Height _____

Weight _____

B.P. _____

P. _____

Positive findings _____

WBC _____ Other lab tests _____ Date done _____

Impression

Rx _____

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<h1 style="margin: 0;">Form 13 Side Effects Rating Scale for Parents</h1>
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Child's name _____ Date _____

Person completing this form _____

Instructions: Please rate each behavior from 0 (absent) to 9 (serious). Circle only one number beside each item. A 0 means that you have not seen the behavior in this child during the past week, and a 9 means that you have noticed it and believe it to be either very serious or occur very frequently.

Behavior	Absent										Serious									
Insomnia or trouble sleeping	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Nightmares	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Stares a lot or daydreams	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Talks less with others	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Uninterested in others	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Decreased appetite	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Irritable	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Stomachaches	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Headaches	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Drowsiness	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Sad/unhappy	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Prone to crying	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Anxious	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Bites fingernails	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Euphoric/unusually happy	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Dizziness	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Tics or nervous movements	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9

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Appendix B

ADHD's Impact on Health

ADHD is associated with increases in the following health problems:

Upper respiratory infections (39–44%), asthma (22% or 2 times greater risk), otitis media, allergies such as rhinitis, and allergy-related skin disorders such as eczema or acne (2.5 times greater risk) in children with ADHD.

Nonspecific lung, cardiovascular, and other chronic diseases in adults with ADHD.

Poorer dental hygiene and greater risk for diseased, missing, filed, or traumatically injured teeth, gum disease, and bruxism in children with ADHD.

Greater substance use, misuse, dependence, and abuse such that 20–30% of teens and adults with ADHD may qualify for a substance use disorder diagnosis (see [Chapter 4](#)).

Obesity. Although not evident in studies done 20–50 years ago, within the past 10 years, numerous studies have found that teens and adults with ADHD are more likely to be overweight (by body mass index [BMI]). In

childhood, the risk is smaller (10 vs. 7%), but it increases with age to make obesity 1.5–3 times more likely by adulthood. A meta-analysis by Cortese and colleagues (2016) of studies on this topic found that up to 28% of adults were obese (vs. 16% for typical adults). This was replicated in a subsequent meta-analysis by Nigg, Lewis, Edinger, and Falk (2012) using even more studies. Longitudinal studies find that this risk, although small in childhood, increases over development such that by mid- to late adolescence, differences in BMI are emerging, if not full, criteria for obesity. By adulthood, the difference in risk from typical adults is much clearer. This growing evidence of obesity in more recent generations may be linked to the greater availability of junk food than was the case in earlier decades. It is chiefly the executive function of disinhibition or poor self-restraint in ADHD that increases these risks, possibly reflecting an interaction of trait by availability of junk food that underlies the growing risk for obesity with age. That is, more impulsive individuals, when faced with available junk food, are more likely to consume it than are less impulsive individuals faced with the same choices. There is also a shared genetic risk between ADHD and increased BMI and obesity, as Demontis and colleagues (2018) found. People who are obese enough to seek treatment for it, as well as those refractory to initial treatment, are also significantly more likely to have ADHD (30–40% vs. 5% base rate of ADHD in adults).

Eating pathology. Females with ADHD, especially in late adolescence, are 3.6 times more likely than females without ADHD to suffer from eating pathology, specifically impulsive eating and binge eating, and 5.6 times more likely to have bulimia, such that 15–20% qualify for a diagnosis of an eating disorder. Again, it is primarily the hyperactive–impulsive symptom dimension of ADHD and the larger domain of poor behavioral inhibition and self-regulation that increases these risks. Conversely, women in treatment for binge-eating disorder or bulimia are 4 times more likely to have adult ADHD. Patients with eating pathology and ADHD are likely to

have more severe eating problems and to be less responsive to efforts at self-change or interventions for weight control than are patients who do not have ADHD.

Enuresis and *encopresis*, which are more common in children with ADHD than in typically developing children (2–5 times and 5 times more, respectively). This risk appears to be greater in children who also have comorbid oppositional defiant disorder (ODD). Yet these difficulties affect only a minority of children with ADHD.

Seizure disorders (2.5–4 times), which are also more likely in children with ADHD. There is a two-way relationship between ADHD and seizure disorders or epilepsy in which the presence of one condition increases the risk for the other by 2.5 times over the population risk for either condition. More children with ADHD manifest increased frontotemporal theta band activity on electroencephalogram (EEG), thought to indicate reduced brain arousal or responsiveness to stimulation.

Sleeping problems. These are more than twice as common in people with ADHD (52–70%) as compared with typical peers (21–27%). The sleep problems are diverse, including resistance to bedtime routines, insomnia or problems with sleep onset, frequent night waking, noisy sleep and breathing difficulties while sleeping (such as snoring, sleep apnea, or airflow obstruction), restless sleeping, and even restless leg syndrome, inefficient sleep, shorter sleep time, both early wakening and difficulties with awakening, and, consequently, greater daytime sleepiness and inattention. The presence of anxiety or depression or autism spectrum disorder (ASD) with ADHD may further increase the risk for these sleeping difficulties. These sleeping problems may be more associated with the severity of the executive function of poor inhibition dimension than with the other executive functions, but reduced sleep and daytime tiredness may feed forward to exacerbate daytime inattention and, hence, school or work performance. This greater propensity for various forms of

sleep problems being linked to ADHD seems to be mediated in part by biological factors such as shared genetic risk, especially an association with the CLOCK gene (circadian regulator), poor sleep hygiene (routines) as established by parents (perhaps owing to parental ADHD and related disorders), comorbidity (ASD and anxiety, specifically, and internalizing symptoms, more generally, increase risks even further; ODD may be linked to bedtime resistance), as well as use of ADHD stimulants (well known to increase insomnia).

Excessive Internet use and addiction and gaming addiction. Children, adolescents, and young adults with ADHD manifest a significantly increased risk (34%) for problematic Internet use (PIU) or computer game use or frank Internet/gaming addiction. Moreover, individuals with PIU or Internet/gaming addiction are more likely to have elevated ADHD symptoms. The risk for PIU/addiction is linked not only with severity of ADHD symptoms, especially impulsivity, but also with depression, anxiety, and hostility/aggression. Yet it is possible that the association with depression (and possibly suicidality) and anxiety may represent consequences of rather than predispositions to PIU/addiction.

Exposure to traumatic events and victimization. Up to 62% of children with ADHD and 91% of those with comorbid ODD experience physical or emotional trauma, with rates of physical abuse estimated to be 3 times greater (14.3 vs. 4.5%) than in typical children.

Risky sexual behavior. Teens and adults with ADHD report an earlier age at first sexual intercourse, a lower likelihood of employing contraception, a greater number of sex partners, 4 times the risk for sexually transmitted disease, and 8–10 times the risk for teenage pregnancy. Risky sexual behavior was also related to ODD and conduct disorder (CD), with the combination of both disorders being associated with the highest risks for early sexual activity and pregnancy involvement. One reason for the reduced contraceptive (condom) use in males seems to be their greater

discounting of future consequences in decision making related to condom use. In adults, ADHD in males may be associated with an increased risk for premature ejaculation.

Poorer nutrition, greater consumption of junk food high in sugars and carbohydrates.

Greater sedentary lifestyle, less physical exercise.

Type 2 diabetes. As a correlate of their greater rates of obesity, poorer diets, and limited exercise, teens and adults with ADHD are 2.8–3.3 times more likely to develop type 2 diabetes.

Coronary heart disease (CHD). As a result of the factors cited just above, along with their greater penchant for substance use and abuse, some evidence now suggests that those with ADHD may also manifest a significantly greater risk for future CHD as early as age 27. This is likely a result of there being some shared genetic liability between ADHD and CHD.

Dementia. Adults with ADHD have been found to have double the risk for dementia in later life, as well as various disorders of the basal ganglia and cerebellum, such as Parkinson's disease.

Demontis et al. (2018) reported the results of a meta-analysis of DNA from 35,191 control cases and 20,183 ADHD cases. They noted significant shared genetic relationships between ADHD and many of the health risks cited above, such as obesity, diabetes, smoking, sleep, level of high-density lipid cholesterol, earlier age of parenthood, risk for rheumatoid arthritis, earlier menopause, and others.

Appendix C

Neurogenetics and ADHD

ADHD is among the most genetically influenced of all psychiatric disorders, rivaled perhaps by bipolar disorder (BPD) and autism spectrum disorder (ASD). That contribution exceeds those found in other mental disorders, such as anxiety and depression, as well as the contributions made to other psychological traits, such as intelligence and personality traits. What is being studied here, however, is not so much the genetics of ADHD but the genetics of the continuum of executive function and self-regulation (EF-SR) in the population, where ADHD represents the extreme tail of that continuum or distribution in humans.

Genetic Factors

Family Aggregation of Disorder

ADHD occurs far more often among the biological relatives of those with the disorder than expected from its base rate prevalence; the finding is universal across countries. From 10 to 35% of the biological relatives of children with ADHD also qualify for the disorder, with the risk to full siblings being about 32%. Parents of children with ADHD are 2–8 times more likely to have the disorder than are parents of children in control groups. The risk to parents who have two children with ADHD is as much as 55%. Conversely, parental ADHD conveys a risk of ADHD to offspring of up to 57%. Girls who manifest ADHD arguably may have a greater genetic loading (higher family member prevalence) than do males with ADHD to express the disorder. Clearly, degree of (in)competence in EF-SR is genetically transmissible.

Adoption Studies

There is no increased risk of ADHD among adoptive parents of adopted children with ADHD; all the elevated risk for disorder is among biological relatives. For instance, in one study (Sprich, Biederman, Crawford, Mundy, & Faraone, 2000) just 6% of the relatives of adopted children with ADHD also had ADHD—a figure very close to the population prevalence. In contrast, the same study found that families of the nonadopted children with ADHD had 18% of their relatives diagnosed with ADHD compared with 3% for the control group.

Twin Research

By comparing monozygotic with dizygotic twins, calculations can be made of the degree to which certain traits are determined by genetic (heritability) or environmental (shared and nonshared) variation. Nonshared environmental

effects refer to experiences that are unique to the individual child (unshared by siblings), whereas shared environmental effects exist for the siblings, too. Numerous twin studies exist on ADHD involving thousands of pairs of twins. The genetic contribution to individual differences (human variation) in ADHD symptoms explains 65–95% of the variation in the symptoms comprising ADHD, averaging 74% (70–84% range in most studies). Some genetic effects are responsible for the initial expression of the disorder and its age of onset, whereas others account for its persistent and variable developmental course and perhaps even its remission in a minority of cases. Again, what this reflects is the striking heritability for competence in the EF-SR dimensional trait(s). Recent research comparing human DNA across long evolutionary time suggests strong selection pressures operating on the genes related to ADHD (and typical EF-SR) over many thousands of years.

Twin studies also show no significant contribution of shared or common environmental factors (rearing environment) to ADHD symptoms. The studies do routinely find that the nonshared or unique environment (such as pregnancy complications, biohazards, developmental risks, and possibly unique and extreme social effects) make a small but significant contribution to variation in these traits (15–25% of the variance). But this range is likely much lower, as it also reflects measurement error. That means that not all ADHD arises from genetics—it can arise from various pre-, peri-, or postnatal injuries that adversely affect the developing brain.

Molecular Genetics

A single gene does not account for the disorder. Thus ADHD (and EF-SR) is polygenic, as are many human complex traits. The nature of gene variants studied so far include microsatellite polymorphisms (MSP), variable number tandem repeat (VNTR) polymorphisms, single nucleotide polymorphisms (SNPs), and copy number variants (CNVs). SNPs are single-base pair changes in the amino acids forming the DNA sequence. CNVs are much larger deletions and duplications that remove or add segments of entire genes. They

are typically rare, occurring in less than 5% of the population (and often much rarer); they usually change the function of a gene and thus have some etiological significance with regard to gene expression. Although SNPs usually have no functional significance, studies that find them may suggest that the actual functional gene variant contributing to ADHD could be nearby on that chromosome.

Multiple gene variants contribute to ADHD risk, with up to 26 candidate genes being implicated across studies and 40 or more sites in the genome contributing to the disorder. At least eight known genes are reliably associated with ADHD (5HTT, DAT1, DRD4, DRD5, HTR1B, and SNAP25, among others). Each gene makes a small contribution to risk. Thus ADHD must arise from a combination of many risk genes, known as a polygenic risk score (PRS). One recent genome-wide scan (Demontis et al., 2019) used thousands of ADHD (20,183) and control cases (35,191). It found at least 12 genetic sites reliably associated with ADHD. It also found that variation in ADHD PRS is linked to a greater risk for depression, conduct disorder (CD), antisocial behavior, and BPD, as well as a lower level of intelligence, less educational attainment, obesity, and higher risks for lung cancer, coronary artery disease, and even an earlier demise of one's parents. Hence, multiple genes and their variants contribute to the complex trait of EF-SR and variation in its phenotype, just as they do in intelligence.

Another genetic cause of ADHD is the accumulation of rare, large, deleterious deletions and duplications of genes across the genome, known as rare CNVs.

Studying the functional effects of such gene variants helps us better understand the cellular problems in the brain that underlie ADHD given that suites of genes contribute to neurotransmitters or other neurological pathways or networks. These findings provoke new ideas about the pathophysiology of ADHD and its variable clinical presentation, course, and response to treatments.

In rare cases, large genetic abnormalities increase risk for ADHD, such as those found in velocardiofacial syndrome. Children with fragile X syndrome

also may have even higher rates of ADHD inattention symptoms than do children in control groups (93 vs. 38%). Likewise, 24% of children with Turner syndrome have ADHD in comparison to 1.3% in the control-group children. Children with such large chromosomal abnormalities may show greater problems with attention and even higher than typical rates of ADHD, but such genetic abnormalities are fortunately very uncommon in children with ADHD.

Gene-by-Environment Interactions

Certain gene variants may interact with certain environmental factors to create or magnify risk for the disorder. Research here examines one or two selected genetic markers (candidates) in relation to selected measures of the environment. The problems with such studies are many. In particular, (1) the environmental measure may itself be influenced by variation in unmeasured genes, and (2) if variables are not properly scaled, artifactual or “false positive” effects are easily found. There appear to be reliable and consistent interactions of psychosocial distress and adversity measures with genotype, particularly for the dopamine transporter (DAT1) and serotonin transporter genes, in predicting ADHD. Others have shown an interaction of several different candidate gene variants with risk for low birth weight and subsequent ADHD risk. Still, results of the 61 studies done to date are complex yet often disappointing; most find few or no signs of gene-by-environment ($G \times E$) interactions, and those found are small in magnitude.

Epigenetics

One means by which a putative environmental variable might interact with a candidate gene variant to increase risk for ADHD could be through an epigenetic effect. This refers to the means by which environmental events such as hazard exposure can alter the expression of the genome, sometimes dramatically. This effect often occurs through methylation (modification of chromatin, the material in which DNA is “housed”). That methylation is like

the insertion of a flag on a gene, and that flag can potentially alter gene expression.

De Novo Mutations

These can be found in the genes of the child that are not present in the complete genome of the parents (outside of their gametes or reproductive cells). This may account for at least 10% of ADHD cases. New mutations can arise in the gametes simply from the length of time a person is alive, as we are continuously exposed to mutation-causing agents, such as the sun's rays, X-ray machines, trauma, environmental toxins such as pesticides, and more. The longer we live, the more mutation-causing agents we are exposed to, and so the more mutations we may accumulate in these gametes, to be passed on to that particular child. Such *de novo* mutations increase with the age of the parents, especially in fathers over 30 but also in mothers. Some evidence suggests that the genes most vulnerable to mutations are those related to intelligence, self-regulation, and social interaction, thus leading to ADHD and ASD, among others.

Gene-by-Gene interaction

Though not well studied in ADHD, it is quite possible that risk genes for ADHD may not just be additive in conveying risk for disorder but may be interactive in doing so. In the presence of a second or third ADHD risk gene, the effects of each gene are potentially magnified in such a way that the risk is far higher than mere additivity can explain.

Neurological Factors

Neuropsychological research finds substantial evidence for deficits in behavioral inhibition, sustained attention (task persistence), resistance to distraction, and executive functioning linked to ADHD. The executive functions are primarily though not entirely mediated by the prefrontal cortex and its networks with the basal ganglia, anterior cingulate cortex, and cerebellum, among other structures. These regions also play a prime role in deficits in the EF-SR phenotype as represented by ADHD. How might that happen?

For one thing, the genetics of ADHD noted above are the genetics of the brain and especially the EF-SR networks. Aberrant genetic variants and possibly epigenetic influences likely result in aberrant growth, connectivity, and functional variability in those regions and their networks. But sometimes such aberrations or maldevelopment can arise from outright damage to those regions and related brain networks. Children suffering from various brain infections, hypoxia, strokes, tumors, or head trauma are more likely to manifest an ADHD-like syndrome as a consequence. And ADHD is 2.5 times more likely to occur in children with seizure disorders (reflecting aberrant brain functioning), just as children with ADHD are 2.5 times more likely to have a seizure disorder. However, most children with ADHD have no history of significant gross brain injuries, and so such injuries are unlikely to account for the majority with this condition.

If not gross brain damage, then what about minimal brain dysfunctions as contributing to ADHD? Yes, they do. Psychophysiological research demonstrates reduced arousal to stimulation (particularly on averaged evoked responses), diminished sensitivity to reinforcement, and increased theta or slow-wave (associated with drowsiness and poor focus of attention) and often decreased beta or fast-wave (associated with decreased concentration and persistence) electrical activity on electroencephalograms

(EEG). Other studies find reduced blood flow to the frontal lobes, striatum, and cerebellum consistent with underactivity in these regions. Positron emission tomography (PET) scans are inconsistent but suggest some reduced activation in the insular and hippocampal regions and greater activation in the right anterior cingulate during decision-making tasks. Magnetic resonance imaging results revealed smaller total brain size (3–5%), with greatest reductions in brain volumes of the nucleus accumbens, amygdala, caudate, putamen, and hippocampus. Smaller regions in the anterior frontal lobes, anterior cingulate cortex, cerebellar vermis (mainly on the right), and corpus callosum (mostly the splenium or frontmost section) are also implicated in the disorder. Moreover, functional MRI research finds abnormal activity in the frontal region, basal ganglia, anterior cingulate cortex, and cerebellum, among other regions.

Analyses of white matter tracts and microstructural integrity, known as *diffusion tensor imaging* (DTI), revealed that white matter integrity was significantly decreased in ADHD whether using children, teens, or adults with the disorder. These findings have been replicated many times since that 2014 meta-analysis. In their totality, neurological research clearly shows evidence of maldevelopment and malfunctioning of brain regions and their networks in ADHD, even if ADHD does not arise chiefly from gross brain damage. That said, differences between groups of patients with ADHD and controls are small even if significant, arguing against the utility of these various neurological measures for clinical diagnosis of ADHD, much less determining treatment response.

Deficits in specific neurotransmitters related to ADHD have not been definitively established. But a clear role for dopamine and norepinephrine is suggested by the positive response of those with ADHD to stimulants (dopamine reuptake inhibitors and agonists) and atomoxetine (noradrenergic reuptake inhibitors). It is also suggested by the distribution of these two transmitter networks within the brain regions implicated in ADHD. There is also some evidence for these neurotransmitters being involved in ADHD from studies of peripheral metabolite indices of these neurotransmitters, such

as in blood or cerebral–spinal fluid. A review of 71 studies by Scassellati, Bonvicini, Faraone, and Gennarelli (2012) concluded that four of these neurotransmitters were reliably implicated in ADHD, these being increased norepinephrine, decreased MHPG (3-Methoxy-4-hydroxyphenylethylene glycol), decreased phenylethylamine, and decreased MAO (monoamine oxidase). The latter was interpreted in this review as possibly impairing the degrading of norepinephrine and thus served to lower MHPG levels in those with ADHD, and that might be a compensatory mechanism for the reduced noradrenergic activity in synapses in patients with the disorder.

Some problems with brain development and organization can be acquired from various life events or experiences that adversely affect brain development and functioning. Among these appear to be the following:

- Especially low birth weight and associated minor brain hemorrhaging
- Maternal phenylalanine levels (possible)
- A role for stress/anxiety during pregnancy (arguable)
- Maternal obesity at the time of conception (although the mother's obesity could just be a marker that she has ADHD herself and that that is what creates the risk for offspring ADHD, not the obesity itself)
- A breech delivery
- The extent of white matter abnormalities due to birth injuries, such as parenchymal lesions, intracerebral bleeding, and/or ventricular enlargement
- Increased placental size that may signal the occurrence of disturbances having occurred in the maternal environment during pregnancy, perhaps limited to boys, not to girls
- Prenatal toxins such as alcohol consumption
- Prenatal cocaine exposure
- Postnatal elevated body lead burden during the first 2–3 years
- Vitamin D deficiency
- Household and outdoor pesticide exposures during critical periods in pregnancy or child early development

- Streptococcal infection (triggers an immune response of antibodies that destroy cells of the basal ganglia)
- Traumatic brain injury (TBI; people with ADHD are also more likely to experience TBIs, and those can exacerbate their preexisting ADHD symptoms and executive function deficits)
- Stress or persistent anxiety during pregnancy (arguable; probably just a marker for maternal ADHD)
- Season of a child's birth—September (arguable; a proxy for the timing of seasonally mediated viral infections)
- Early severe deprivation and malnutrition (may constitute a separate type of ADHD due to its severity and unusual comorbidities)
- Prenatal maternal consumption of acetaminophen (arguable; possibly a marker for maternal ADHD given its association with poorer general health and greater complaints of joint and lower back pain, headaches, migraines, etc.)

A crucial challenge in all such research is to determine whether these correlates of ADHD risk are causal. Although $G \times E$ interactions, as well as gene–environment correlation, can mask environmental effects, they can also mask genetic effects. Teratogens and toxins noted in these studies might just be proxies for genetic risk (parental ADHD) because of gene–environment correlation. This cautionary remark applies to the evidence concerning maternal smoking during pregnancy, secondhand smoke after birth, and even paternal smoking. Such factors have been subsequently shown to be proxies for elevated ADHD in the parents, and parental ADHD is conveying a genetic risk for the disorder to offspring, not the smoking itself. Moreover, some researchers suggest that even if such early environmental insults (such as pregnancy complications) and toxins may not operate directly on brain maldevelopment, they might still produce some effects on risk for ADHD via epigenetic mechanisms that become dysregulated and thus result in altered and abnormal genetic expression.

Appendix D

Clinician Beware

Unproven and Disproven Treatments for ADHD

Various treatments are available for ADHD that have little, if any, convincing evidence to date for their effectiveness. I believe the reason these treatments have not been proven effective is that they do not address the executive functioning–self-regulation (EF-SR) deficits inherent in ADHD. Or, if they try to do so, as in cognitive rehabilitation applications, they focus more on skill training or knowledge rather than on performance of that knowledge. Furthermore, none of them are done at the point of performance in the natural ecology, where such knowledge should have been employed for more effective performance. Therefore, you should not encourage clients to engage in these treatments unless or until they have used the treatments discussed in the second half of the book, which do have good evidence for their effectiveness. Parents may come across such treatments on the Internet or hear about them via friends or media, and you can advise them that the websites of government mental health agencies, such as the National Institute of Mental Health; those of professional associations, such as the American Psychiatric and American Psychological Associations; and those of charities specializing in advocating for the disorder, such as Children and Adults with

ADHD (CHADD), are usually much better informed and contain more credible, science-based information than do commercial websites or those of political advocacy groups. To read about scientific research on a treatment, they can use Google Scholar as their web browser to search just the science journals and medical literature.

Trigeminal Nerve Stimulation during Sleep

In 2019, a small pilot study was conducted at the University of California, Los Angeles, by McGough and colleagues on the use of trigeminal nerve stimulation (TNS), a minimal-risk and noninvasive method for performing neuromodulation, with 62 children having ADHD who were randomized to receive TNS or a sham treatment that resembled TNS. The trigeminal nerve purportedly conveys sensory information from peripheral body regions to the brain's reticular activating system, locus coeruleus, and other centers that play some role in attention and alertness. TNS attempts to influence the trigeminal nerve via activation of its central projections to cortical structures. The therapy has been used for the treatment of depression, as well as epilepsy. It involves wearing a small stimulator during sleep that emits low-level electrical current via an electrode worn on the forehead over the V_1 branch of the trigeminal nerve for a period of 8 hours each night for 4 weeks. Results of the study showed that ADHD symptoms were significantly reduced by the active TNS relative to the placebo condition and that clinician global ratings of impairment were improved as well. The degree of change, or effect size, was of a moderate degree (0.50), comparable to some nonstimulant medications and even some psychosocial treatments. Electroencephalograph (EEG) measures revealed an increase in spectral power in the right frontal and frontal midline frequency bands from the active TNS treatment. Some children reported headaches and a sense of fatigue, but none discontinued participation, whereas others reported increased appetite and weight gain. Heart rate was also noted to increase from the active TNS treatment. This is the only study on this new form of treatment and must be considered a pilot or proof of concept study. Thus it is imperative that the treatment be studied by other clinical scientists to see if these initially positive results can be replicated. Despite this need for replication, the manufacturer sought and received Food and Drug Administration approval for this medical device, and

it is now clinically available for use under the supervision of a trained physician. I consider the treatment as interesting yet **unproven** at this time given the absence of any additional confirmatory studies.

Neurofeedback

Another approach to treating ADHD is neurofeedback or EEG biofeedback. Over 40 years ago scientists began to test EEG biofeedback. Since then, some dramatic claims have been made for this kind of treatment for a variety of disorders, including ADHD. There were advertisements stating that EEG biofeedback is an effective alternative to ADHD medications; that it results in permanent changes in the brain physiology underlying ADHD; that it improves IQ, social skills, and even learning disabilities; and that such improvements can last into adulthood in up to 80% of all treated cases of children. Those are fantastic claims for any treatment. They were not subsequently borne out.

The term *biofeedback* means that a patient is given back information in some form (usually visual) about their biological functioning—in this case, their brain activity as measured by electrodes placed near or on the scalp. These sensors detect brain electrical waves and send them to a computer for averaging and display. The computer can then be used to show the person just how much or how little brain activity is taking place. In this treatment, the computer can also reward the patient for practicing ways to increase that activity if it is unusually low. Over a great number of sessions, typically 40–80 sessions over 3–10 months or longer—at a cost of several thousand dollars (\$100 or more per session)—the patient supposedly learns to improve their brain activity. Participants achieve this change in EEG power through mental exercises and some form of signal from the biofeedback equipment. That signal tells them if they have been successful at increasing the desired brain activity related to sustained attention and decreasing the undesired activity associated with daydreaming or distraction. Participants are then rewarded for doing so. In that sense, this treatment is a type of behavioral conditioning method that tries to increase certain behaviors and voluntary mental activities by rewarding them. The result, supposedly, is that the patient's inattention,

hyperactivity, and impulsivity will then also improve.

Research does show that lower levels of brain activity are often associated with ADHD. There is too much theta activity, suggesting brain underactivation or underreactivity to tasks or events, and not enough beta activity, which is often associated with heightened alertness and sustained attention. So it makes some sense that trying to teach people with ADHD to increase the brain electrical activity associated with paying attention might be beneficial for controlling those attention deficits.

People can readily learn to change their brain activity, so that is not in dispute here. What is in question is whether such training produces results that generalize to ADHD-related symptoms in natural settings and domains of major life activities. It also needs to be shown that these effects last after the treatment session has ended. A large number of studies on this treatment have been published, but many lack rigorous scientific controls, so their results are open to doubt as being specific to this form of therapy and not just attention-placebo effects. One major problem for most such studies was the lack of an appropriate sham placebo condition and blinded assessments of ADHD symptoms. More recently, there have now been several very well-controlled studies, mostly with children, that did use a sham form of biofeedback with blinded evaluations, and they consistently failed to show any beneficial effects on ADHD or related outcome measures for the active training versus the sham placebo feedback condition. Indeed, the better and more rigorously the study is conducted, the less likely it is that any benefits have been found. A meta-analysis of 13 randomized controlled trials by Cortese and colleagues (2016) concluded that the evidence available did not support the effectiveness of this therapy for ADHD. I therefore consider the treatment to be **disproven** at this time.

Moreover, I believe there are considerable drawbacks to this therapy at this time for people with ADHD. For one thing, little if any research has been done with this treatment using adults with ADHD. So, it is not clear whether the treatment works on mature adult brain activity rather than maturing or developing child brain functioning. Also, the proponents of this treatment

claim that it has no side effects or adverse consequences. But any treatment that is supposed to be this effective has to produce some side effects in a small percentage of people. That is because people can differ in their brain organization and also because clinicians may not always apply the treatment reliably or accurately. All effective treatments, including psychological ones, can produce side effects in some people. It is therefore quite surprising and a cause for skepticism that proponents claim that this one does not.

Furthermore, the treatment is expensive, usually costing \$100 per hour, supposedly requiring 30–60 sessions, and rarely covered by insurance—that is \$3,000 to \$6,000, usually out of pocket. A person with ADHD could receive 12 years of ADHD medication, 3 years of weekly group therapy, nearly 3 years of twice-monthly individual therapy by a clinical psychologist, or almost 2 years of twice-weekly ADHD coaching for the cost of 6 months of this treatment, based on current average charges.

My advice, therefore, is to try the most effective and scientifically based treatments first (medication, cognitive-behavioral therapy, counseling, etc.). Only then, if clients are not satisfied with their improvements, should they try neurofeedback. It should be pursued then only if they have sufficient expendable income to cover the cost of treatment out of pocket. Do *not* encourage them to take on any debt to fund this treatment or any other so long as its effectiveness remains unclear or disproven in the research literature.

Executive Function (Neurocognitive) Training

Another form of psychological training uses computer games as mental exercises as a form of neurocognitive training. Typically, this involves people practicing mental exercises using games available on various computer software programs (e.g., BrainAge for Nintendo DS), websites (such as www.lumosity.com), or separate handheld devices (such as in CogMed, which also involves consulting with a professional on a weekly basis). These games target mental functions such as inhibition, resisting distractions, working memory, planning or anticipation, problem solving and mental flexibility, and other executive functions or general cognitive abilities. A person usually has to practice every day for 30–45 minutes or more for most days of the week for benefits to accrue, if then. The costs can run from less than \$10 per month for a subscription to the Internet websites that have such games available to up to \$295 for a handheld Nintendo gaming device (the BrainAge software is often free and comes with the device), and up to \$1,200–1,500 for a handheld device and associated professional consultation (CogMed). Some of the games can be fun, whereas others are entertaining initially but may become quite boring after a while. That is the reason some developers now recommend that parents institute a token reward program to reward children for doing these game-based exercises.

The developers often claim that engaging in such mental exercise is like physical exercise in that it can increase your capacities in the cognitive domains being practiced (attention, impulse control, memory, etc.). There were some early studies by some of the game developers that showed improvements in ADHD symptoms, including both in parent and teacher ratings. However, later studies done by other researchers mostly did not show any benefits at school or even at home if the parents doing the reporting are blind to (not informed about) the treatment and alternative treatment or if sham placebo conditions were used as controls. This contradicts many of the

claims made by developers of these programs. Recent reviews of this form of treatment by Rapport, Orban, Kofler, Friedman, and Bolden (2015) and later by Sonuga-Barke and Cortese (2018) found that, although a person clearly improves in playing these games and sometimes at tasks very similar to the games, the results do not generalize to everyday activities or domains in which these mental abilities are involved. So, people could get better at a game that involves remembering long strings of digits, yet this often does not mean they improve in their memory during everyday routines that require good memory. I therefore consider these forms of treatment to be **disproven**. Once again, I do not recommend these treatments at this time unless other, more effective treatments have been used first. The results to date are not convincing enough for recommending this training approach as a treatment for ADHD.

Diet

Fish Oils and Other Supplements

Many dietary supplements, such as omega 3/6 fish oil supplements, other antioxidants such as pycnogenol, or vitamin or nutrient supplements (zinc, iron, magnesium) have been proposed as beneficial for treating children with ADHD. Research to date has not shown much, if any, benefit, with negligible effects or none at all when tested with children with ADHD using rigorous scientific methods (see reviews by Buitelaar, Rommelse, Ly, & Rucklidge, 2018, and Hurt & Arnold, 2015, in Bibliography). Children with baseline vitamin deficiencies who have ADHD should certainly receive some dietary supplements to try to rectify those deficiencies, as Nigg (2017) recommends. But as a treatment for all cases of ADHD in which no deficiencies are evident, the research simply does not support doing so at this time.

Some early clinical evidence (case testimonials) was initially positive for the omega 3/6 supplements. The treatment was not studied very scientifically, using randomized assignments to treatment or control groups, until relatively recently. The more recent randomized trials used larger samples, control groups, placebos, and blinded evaluations of improvement. They found very small improvements from these oils for inattention mainly, and quite mixed or variable evidence across studies (see reviews by Nigg, Lewis, Edinger, & Falk, 2012, and Sonuga-Barke et al., 2013). A small degree of effect may have been found for improving emotional regulation, but even that has to be replicated. What little improvement in ADHD symptoms that was found in some studies occurred on inattention but was small in degree and limited to about 25% of the sample, mostly those who were just inattentive and not impulsive or hyperactive. Also, the degree of change in symptoms was rather modest and did not rise to a level sufficient to be considered as a clinical treatment for the disorder. My opinion is that there was little benefit from this supplement for those who had ADHD. That is why, for now, I consider

this treatment approach **disproven** even if some small effects on inattention might result. Those are hardly a basis on which to classify this as a clinical treatment.

Elimination Diets

Another approach to managing ADHD, typically in children, that has been popular is removing certain substances from one's routine diet. These can involve eliminating or reducing sugar, food additives and preservatives, artificial flavors, and artificial coloring. One of the first such approaches, started 40 years ago, was the Feingold diet, which argued for eliminating most or all of colorings, flavorings, and preservatives in children's daily diets. These treatments were supposed to cure 60–80% of all ADHD. When well-conducted scientific studies were done, the results did not support these claims. The most recent meta-analysis of research on the removal of these substances found no effects once children who were also taking ADHD medications were removed from the analyses (Buitelaar et al., 2018). There is a very small effect evident in some studies for the removal of food coloring benefiting ADHD symptoms, but the effect is not clinically important, even if statistically significant.

Another more recent program from Holland has been called the restrictive elimination diet, or RED. It recommends removal of dairy, gluten, citrus fruits, corn and corn-containing products, and all processed foods from children's diets and claims near miraculous effects of doing so. Some of the most extreme results in the research by the developer of this diet appear highly questionable, given that they claim to be 3–5 times more effective than stimulant medications—a near impossibility.

There is no evidence currently that sugar causes ADHD or that removing it benefits people with ADHD. The same is true so far for additives, preservatives, and flavorings. Moreover, the more rigorous the studies (using randomized assignment to groups, placebo controls, blinded conditions, etc.) were, the weaker the results were. The elimination diets also lack compelling

support, with results appearing to have more to do with whether or not the people rating the results of the diets were blinded to the nature of the diet children were receiving than to an actual demonstrable effect of the diet itself. Those REDs can be quite difficult to implement and, if focused mainly on “organic” foods, can be relatively expensive compared with typical grocery prices. The research on the various dietary approaches to ADHD has been nicely reviewed by Hurt and Arnold (2015), Nigg and colleagues (2012), and Sonuga-Barke and colleagues (2013). All of these reviews and a more recent one of all available research up to 2018 (Buitelaar et al., 2018) concluded that there was no compelling evidence for these restrictive or other dietary approaches in the management of ADHD. Although relatively harmless, except for lost time and expenses, I do not recommend such elimination diets for children or adults with ADHD at this time—to date they are **disproven**.

Chiropractic Head Massage

Some chiropractors use a treatment for ADHD and learning disorders that involves placing significant pressure at various points around the skull and even inside the mouth on the roof or palate. Known as scalp or skull massage or neurologic organization training, the therapy is based on a rather ridiculous idea—that nerve cells somehow became trapped in the wrong places during early brain development. Placing pressure on the skull over these points of entrapment supposedly causes the nerve cells trapped underneath to be released. That is supposed to enable the nerves to migrate to their appropriate destinations in the brain and spinal cord, and so function better, and thereby cure the problem. There is absolutely no controlled research on this treatment and so no evidence that such manipulation or massage results in any improvement in ADHD symptoms or learning disorders. The rationale for this method is so absurd that I consider it to be **unproven** and unlikely to receive serious scientific study.

Complementary and Alternative Treatments

Bader and Adesman (2015) reviewed available evidence for the following complementary and alternative treatments being offered to the public for management of ADHD: yoga, massage, homeopathy, chiropractic adjustments, exercise and green space, acupuncture, occupational therapies, caffeine, transcranial magnetic stimulation of the brain, and arthroposophical therapy (intended to improve rhythm, movement, and synchronization of the body as a means to improve balance between the “nerve sense and “metabolic limb” systems). They concluded that there was promising evidence only for aerobic exercise, though the studies were of low quality at that time. There was no compelling evidence to support the use of any of these other therapies, and a few had no research on them for ADHD at all. So, except for physical exercise, I would consider these other therapies **unproven or disproven**.

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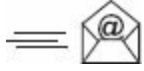
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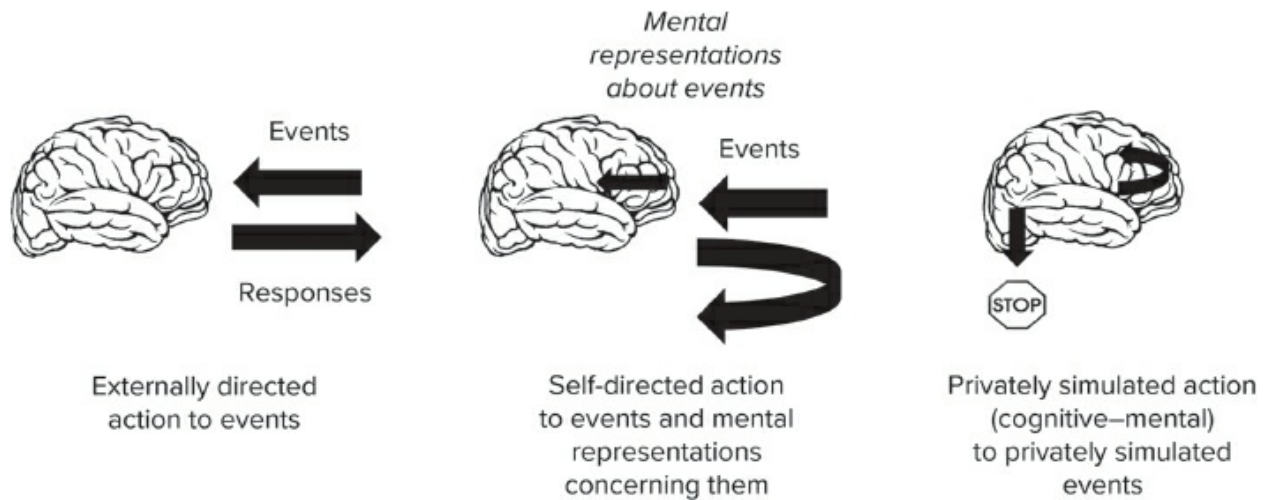


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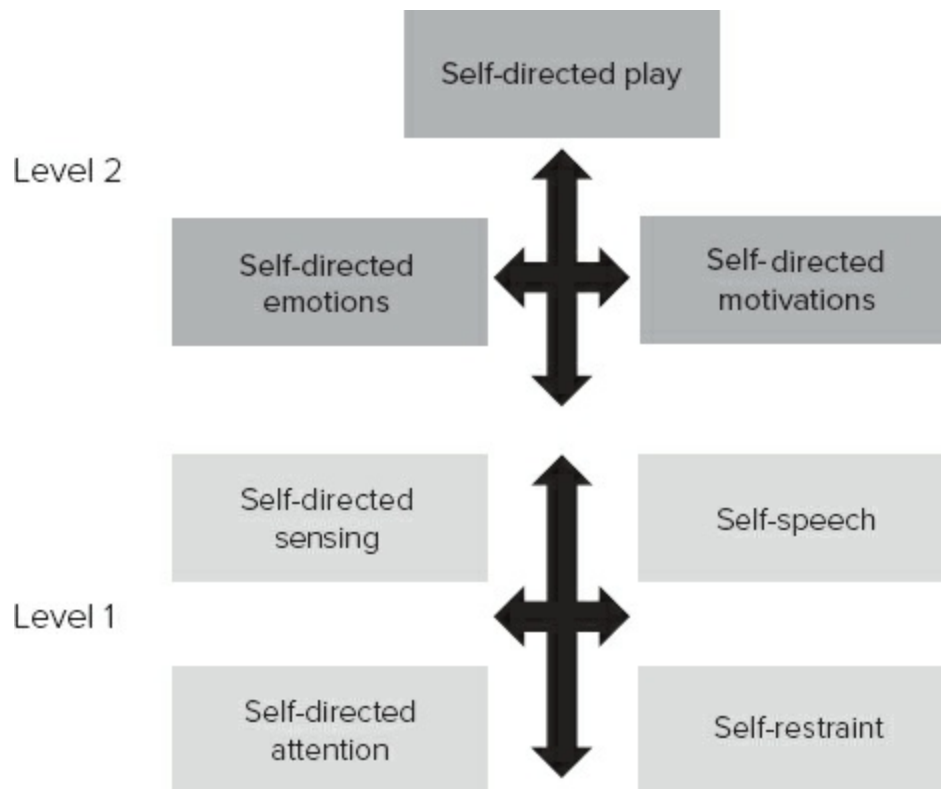
Extended image description for Figure 1.1



The first step shows externally directed actions to events. The second step shows self-directed action to events and mental representations concerning them. The third stage shows privately simulated action (both cognitive and mental) to privately simulated events.

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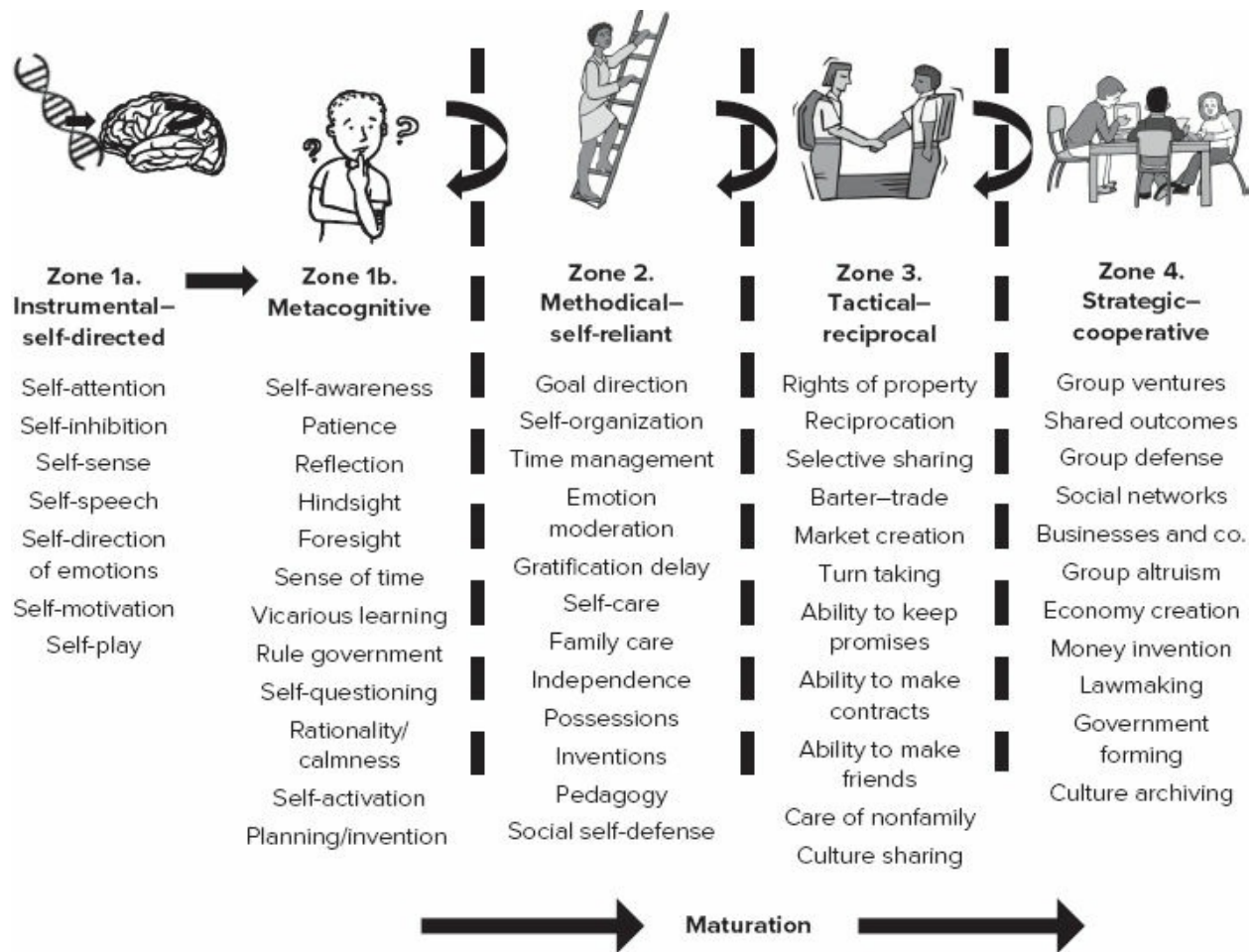
Extended image description for Figure 1.2



The seven major executive functions and their position in each level are as follows. Level 1: Top left: Self-directed sensing; Top right: self-speech; Bottom left: Self-directed attention; Bottom right: Self-restraint. Level 2: Top: self-directed play; Bottom left: Self-directed emotions; Bottom right: Self-directed motivations.

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Extended image description for Figure 1.3

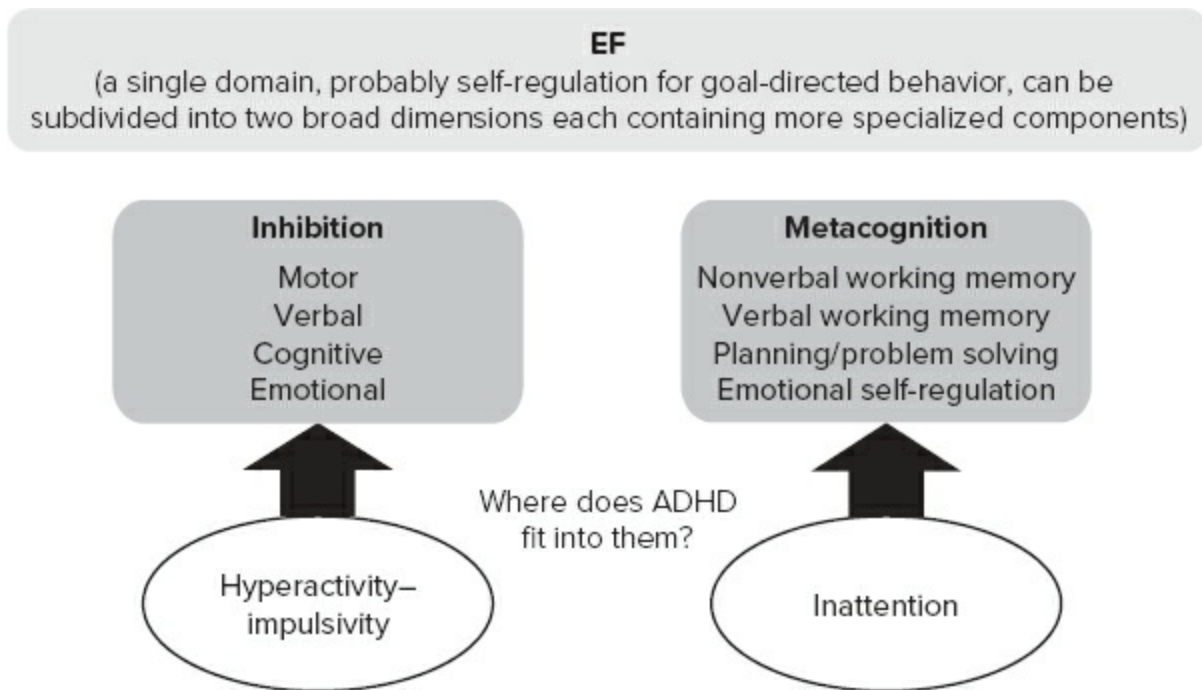


The executive functions mentioned in each zones are as follows. Zone 1 a. Instrumental –self directed: Self-attention, Self-inhibition, Self-sense, Self-speech, Self-direction of emotions, Self-motivation, and Self-play; Zone 1 b. Metacognitive: Self-awareness, Patience, Reflection, Hindsight, Foresight, Sense of time, Vicarious learning, Rule government, Self-questioning, Rationality/calmness, Self-activation, and Planning/invention; Zone 2. Methodical–self-reliant: Goal direction, Self-organization, Time management, Emotion moderation, Gratification delay, Self-care, Family care, Independence, Possessions, Inventions, Pedagogy, and Social self-

defense; Zone 3. Tactical–reciprocal: Rights of property, Reciprocation, Selective sharing, Barter–trade, Market creation, Turn taking, Ability to keep promises, Ability to make contracts, Ability to make friends, Care of nonfamily, and Culture sharing; Zone 4. Strategic cooperative: Group ventures, Shared outcomes, Group defense, Social networks, Businesses and co., Group altruism, Economy creation, Money invention, Lawmaking, Government forming, and Culture archiving. During this process, maturation moves from Zone 1 a to Zone 4.

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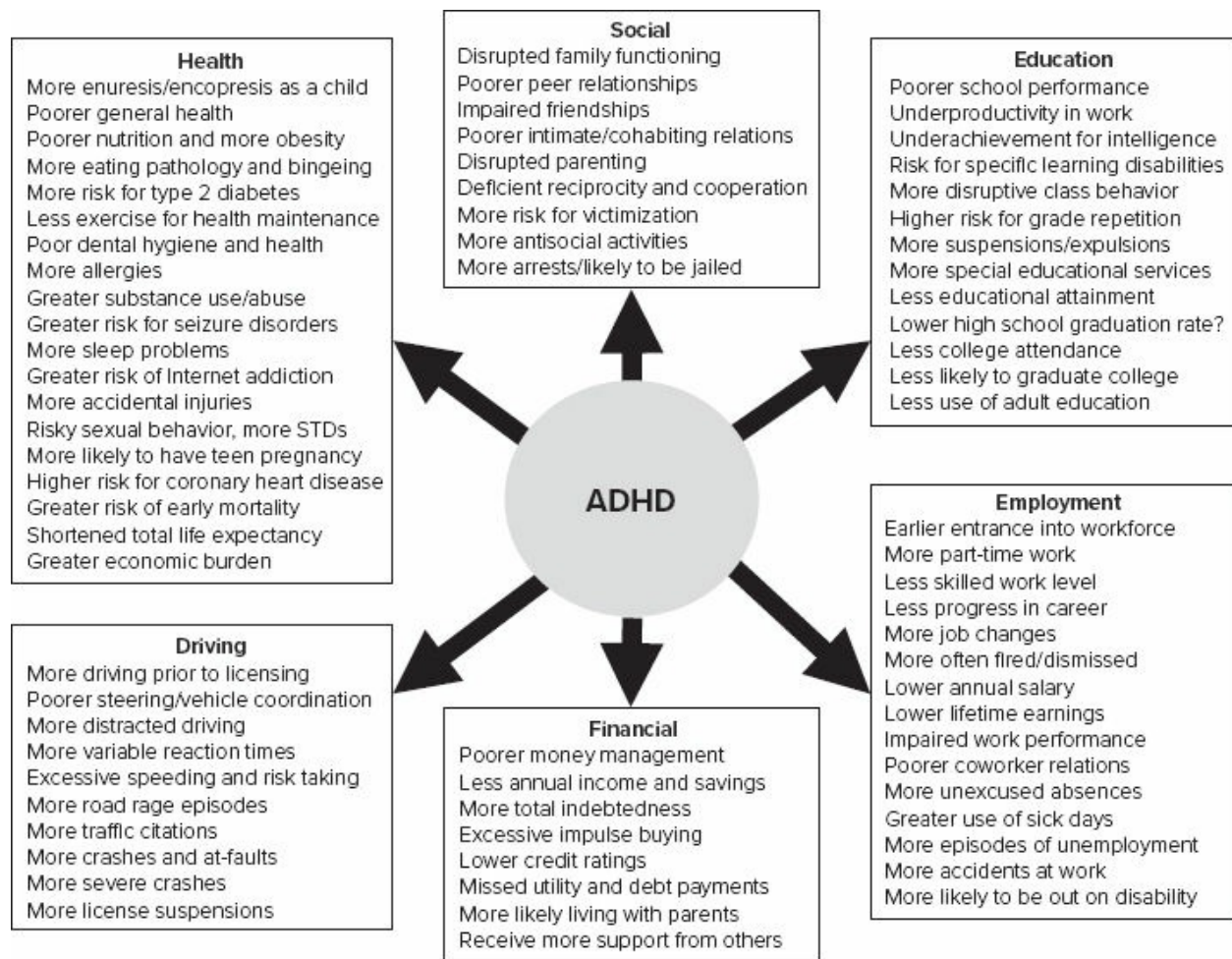
Extended image description for Figure 1.4



The two dimensions mentioned are Inhibition and Metacognition. The executive functions of Inhibition are Motor, Verbal, Cognitive, and Emotional. The executive functions of Metacognition are Nonverbal working memory, Verbal working memory, Planning/problem solving, and Emotional self-regulation. The Hyperactivity impulsivity connects to the executive functions of Inhibition, and the Inattention connects to the functions of Metacognition. The definition of E F at the top reads: a single domain, probably self-regulation for goal-directed behavior, can be subdivided into two broad dimensions each containing more specialized components.

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Extended image description for Figure 2.1

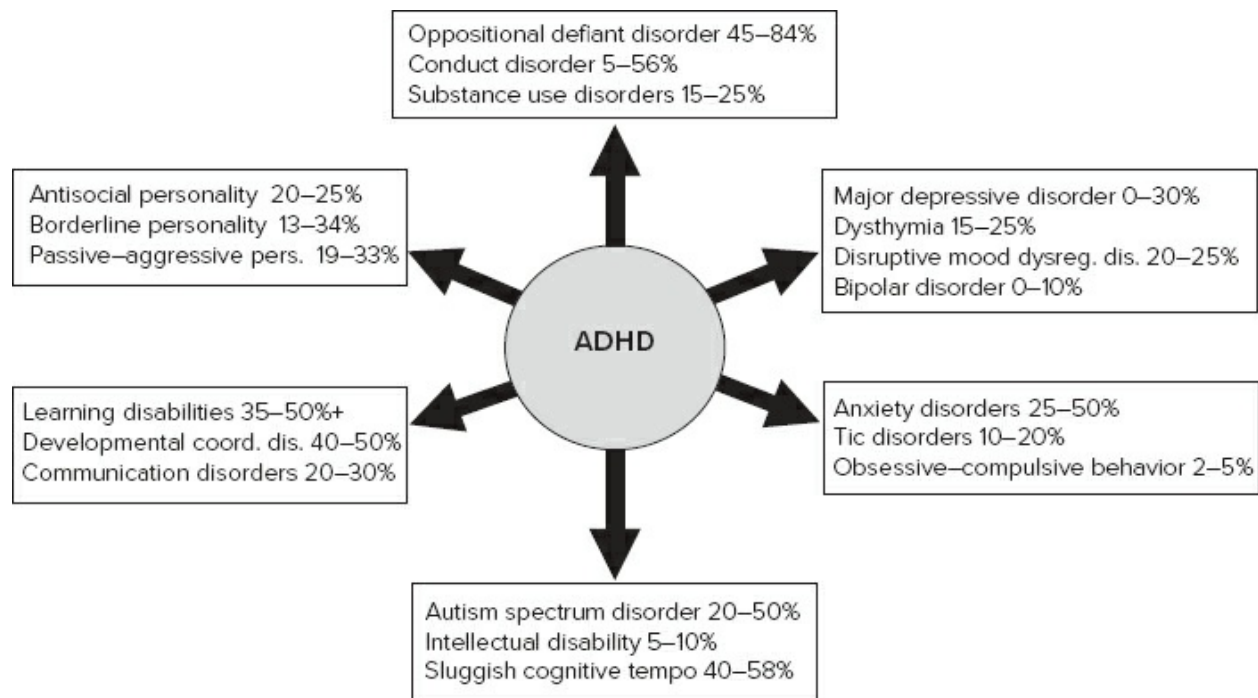


The impairments under each domains are as follows. Social: Disrupted family functioning, Poorer peer relationships, Impaired friendships, Poorer intimate/cohabiting relations, Disrupted parenting, Deficient reciprocity and cooperation, More risk for victimization, More antisocial activities, More arrests/likely to be jailed; Education: Poorer school performance, Underproductivity in work, Underachievement for intelligence, Risk for specific learning disabilities, More disruptive class behavior, Higher risk for grade repetition, More suspensions/expulsions, More special educational services, Less educational attainment, Lower high school graduation rate, Less

college attendance, Less likely to graduate college, Less use of adult education; Employment: Earlier entrance into workforce More part-time work, Less skilled work level, Less progress in career, More job changes, More often fired/dismissed, Lower annual salary, Lower lifetime earnings, Impaired work performance, Poorer coworker relations, More unexcused absences, Greater use of sick days, More episodes of unemployment, More accidents at work, More likely to be out on disability; Financial: Poorer money management, Less annual income and savings, More total indebtedness, Excessive impulse buying, Lower credit ratings, Missed utility and debt payments, More likely living with parents, Receive more support from others; Driving: More driving prior to licensing, Poorer steering/vehicle coordination, More distracted driving, More variable reaction times, Excessive speeding and risk taking, More road rage episodes, More traffic citations, More crashes and at-faults, More severe crashes, and more license suspensions; Health: More enuresis/encopresis as a child, Poorer general health, Poorer nutrition and more obesity, More eating pathology and bingeing, More risk for type 2 diabetes, Less exercise for health maintenance, Poor dental hygiene and health, More allergies, Greater substance use/abuse, Greater risk for seizure disorders, More sleep problems, Greater risk of Internet addiction, More accidental injuries, Risky sexual behavior, more STDs, More likely to have teen pregnancy, Higher risk for coronary heart disease, Greater risk of early mortality, Shortened total life expectancy, and Greater economic burden.

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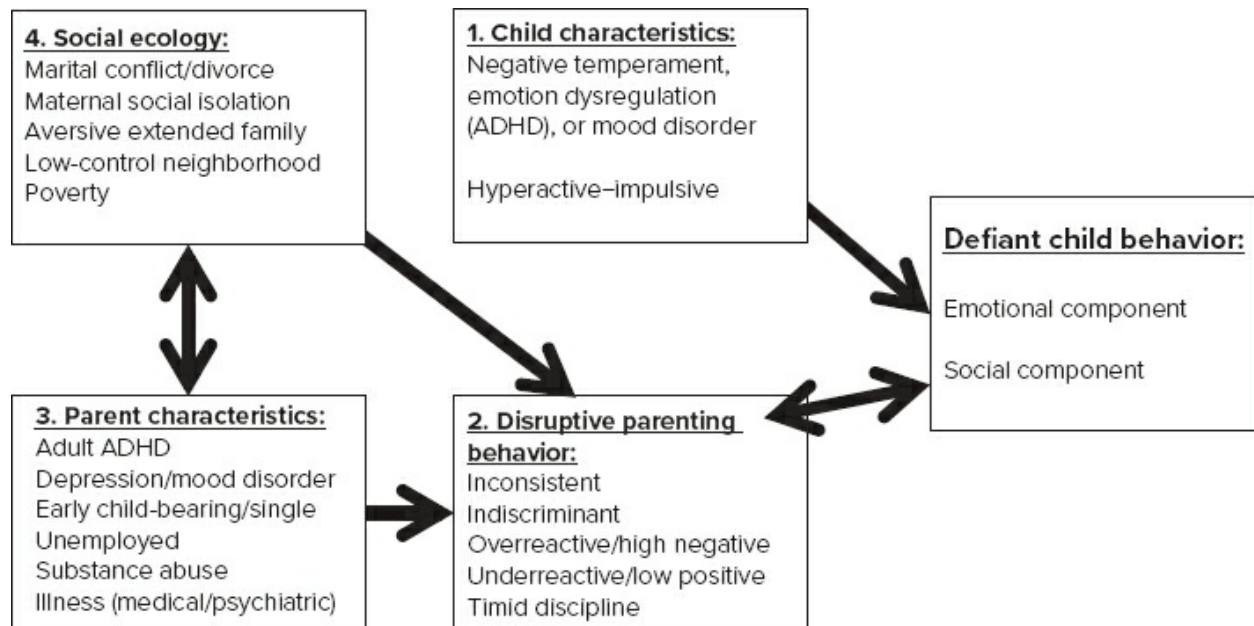
Extended image description for Figure 4.1



The Comorbid neurodevelopmental and psychiatric disorders related to ADHD are as follows. Oppositional defiant disorder 45 to 84 percent, Conduct disorder 5 to 56 percent Substance use disorders 15 to 25 percent. Major depressive disorder 0 to 30 percent; Dysthymia 15 to 25 percent, Disruptive mood dysregulation disorder 20 to 25 percent, Bipolar disorder 0 to 10 percent; Anxiety disorders 25 to 50 percent, Tic disorders 10 to 20 percent, Obsessive–compulsive behavior 2 to 5 percent; Autism spectrum disorder 20 to 50 percent, Intellectual disability 5 to 10 percent, Sluggish cognitive tempo 40 to 58 percent; Learning disabilities 35 to 50 plus percent, Developmental coordination disorder 40 to 50 percent, Communication disorders 20 to 30 percent; Antisocial personality 20 to 25 percent, Borderline personality 13 to 34 percent, Passive–aggressive personality disorder 19 to 33 percent.

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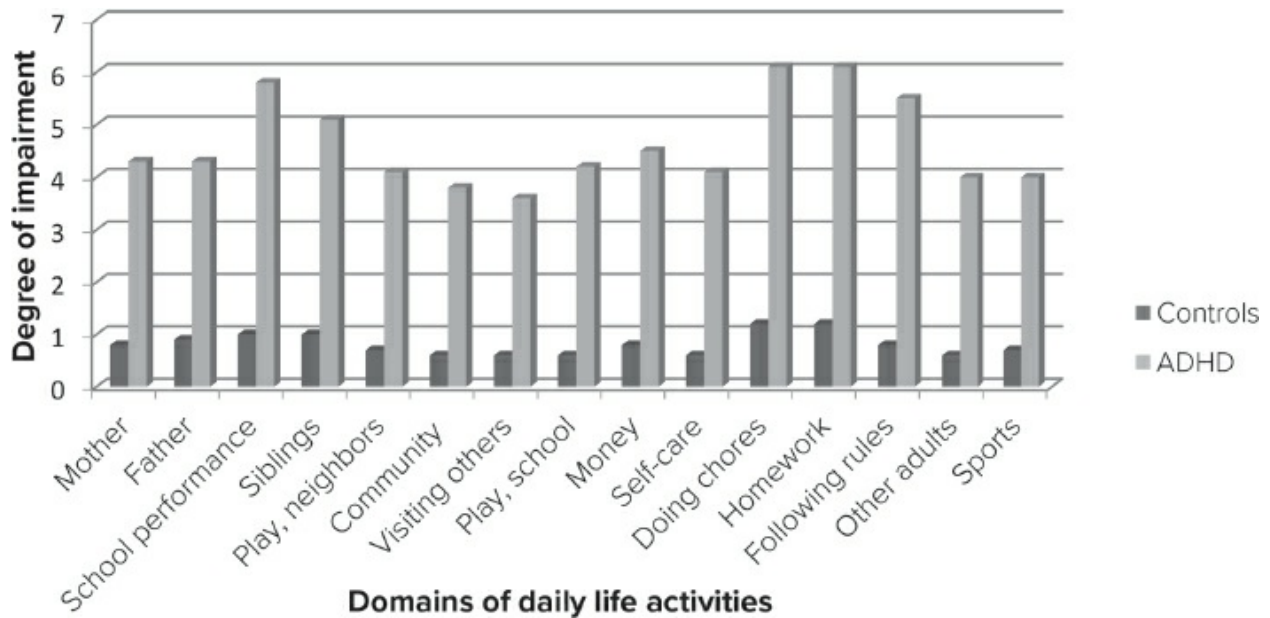
Extended image description for Figure 4.2



The four-factor models in the figure are as follows. 1. Child characteristics: Negative temperament, emotion dysregulation (A D H D), or mood disorder, and Hyperactive-impulsive; 2. Disruptive parenting behavior: Inconsistent, Indiscriminant, Overreactive/high negative, Underreactive/low positive, and Timid discipline; 3. Parent characteristics: Adult A D H D, Depression/mood disorder, Early child-bearing/single, Unemployed, Substance abuse Illness (medical/psychiatric); 4. Social ecology: Marital conflict/divorce, Maternal social isolation, Aversive extended family, Low-control neighborhood, Poverty. Defiant child behavior has both emotional components and social components. The child characteristics are connected to the emotional component, while disruptive parenting behavior is connected to the social component. The social ecology is connected to disruptive parenting behavior, and the parenting characteristics are connected to disruptive parenting behavior. The social ecology and parent characteristics are inter-connected.

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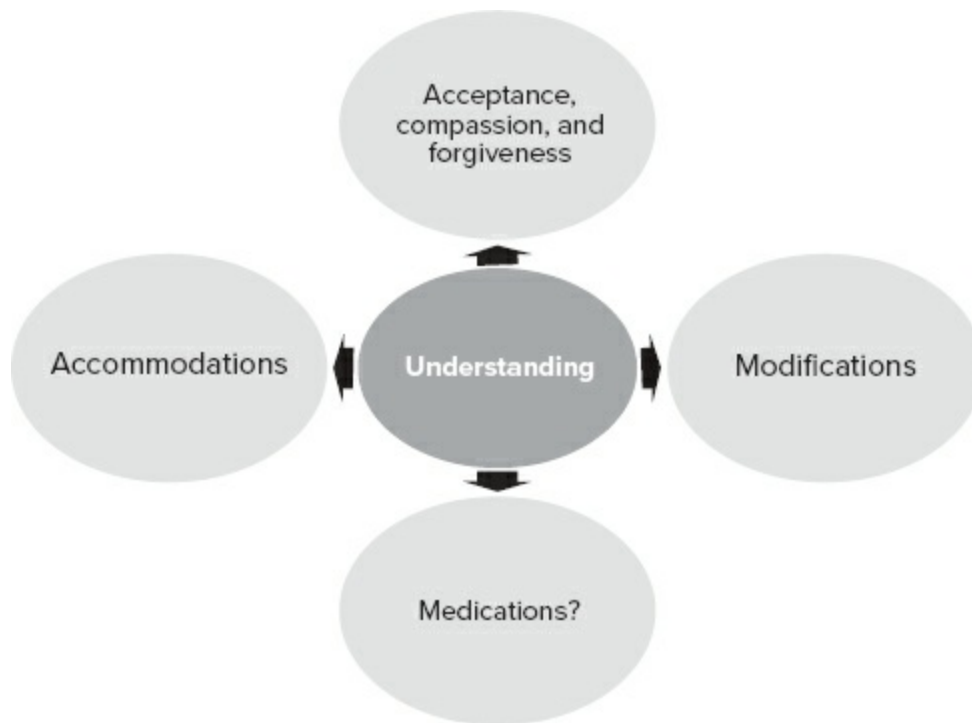
Extended image description for Figure 5.1



It compares the A D H D and controls in different domains of daily life activities. The horizontal axis represents the domains of daily life activities, and the vertical axis represents the degree of impairment with values ranging from 0 to 7 in increments of 1. The degree of impairment in controls and ADHD in each domain are as follows in the mentioned order. Mother: 0.8 and 5.2; Father: 0.9 and 4.2; School performance: 0.95 and 5.8; Siblings: 0.95 and 5; Play, neighbors: 0.5 and 3.7; Community: 0.5 and 3.8; Visiting others: 0.5 and 3.5; Play school: 0.6 and 4.2; Money: 0.7 and 4.4; Self-care: 0.4 and 4; Doing chores: 1.1 and 6; Homework: 1.1 and 6; Other adults: 0.5 and 3.9; Sports: 0.6 and 3.9. All values are estimates.

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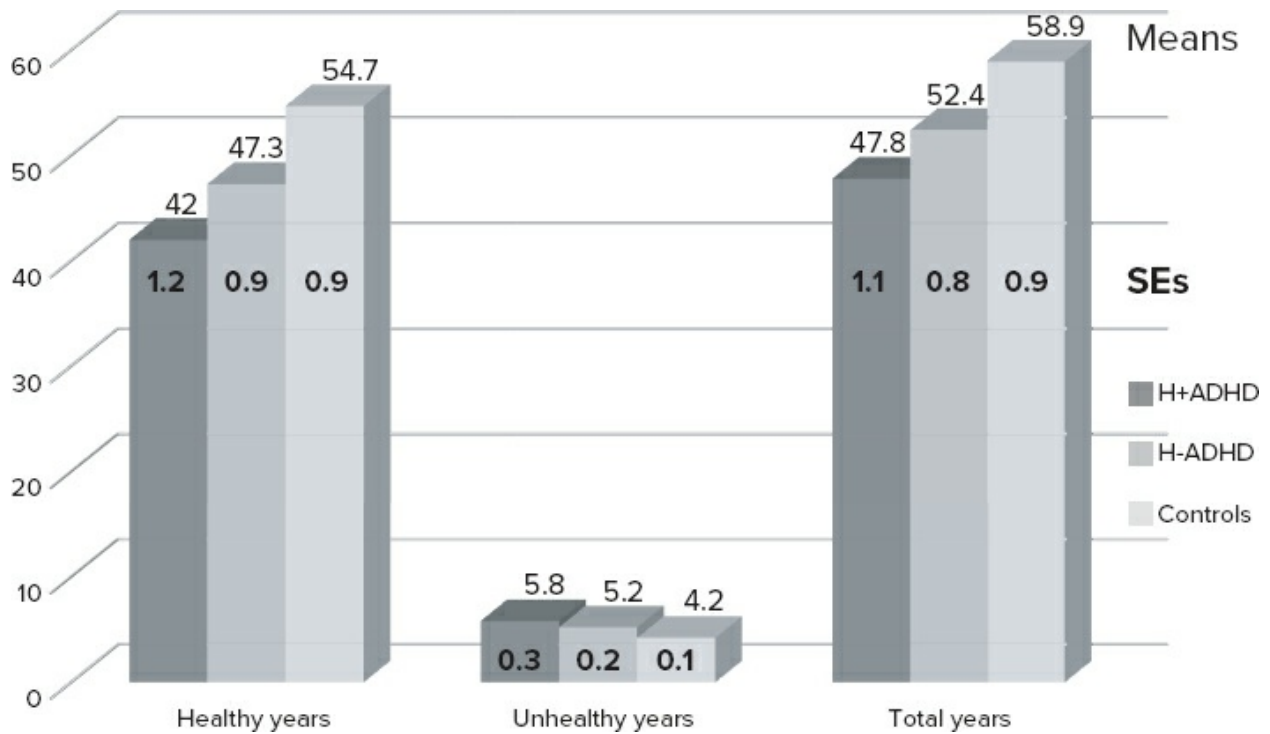
Extended image description for Figure 6.1



The five components mentioned in the figure are as follows. Understanding; Accommodations; Medications; Modifications; Acceptance, compassion, and forgiveness.

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Extended image description for Figure 6.2



The horizontal axis represents the categories, and the vertical axis represents the means with values ranging from 0 to 60 in increments of 10. The Means and standard errors in each years are as follows. Healthy years: H plus A D H D: 42, and 1.2, H negative A D H D: 47.3, and 0.9, controls: 54.7, and 0.9; unhealthy years: H plus A D H D: 5.8, and 0.3, H negative A D H D: 5.2, and 0.2, controls: 4.2, and 0.1; Total years: H plus A D H D: 47.8, and 1.1, H negative A D H D: 52.4, and 0.8, controls: 58.9, and 0.9.

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Child's name _____ **Date of birth** _____ **Age** _____

Address _____
(Street) (City) (State) (ZIP)

Home phone (_____) _____ Cell/work phone (_____) _____ Dad / Mom
(Circle one)

Child's school _____ Teacher's name _____

School address _____
(Street) (City) (State) (ZIP)

School phone (_____) _____ Child's grade _____

Is child in special education? Yes No If so, what type? _____

Father's name _____ Age _____ Education _____
(Years)

Father's place of employment _____

Type of employment _____ Annual salary _____

Mother's name _____ Age _____ Education _____
(Years)

Mother's place of employment _____

Type of employment _____ Annual salary _____

Is child adopted? Yes No If yes, age when adopted _____

Are parents married? Yes No Separated? Yes No Divorced? Yes No

Child's physician _____

Physician's address _____
(Street) (City) (State) (ZIP)

Physician's telephone number (_____) _____

Please list all other children in the family:

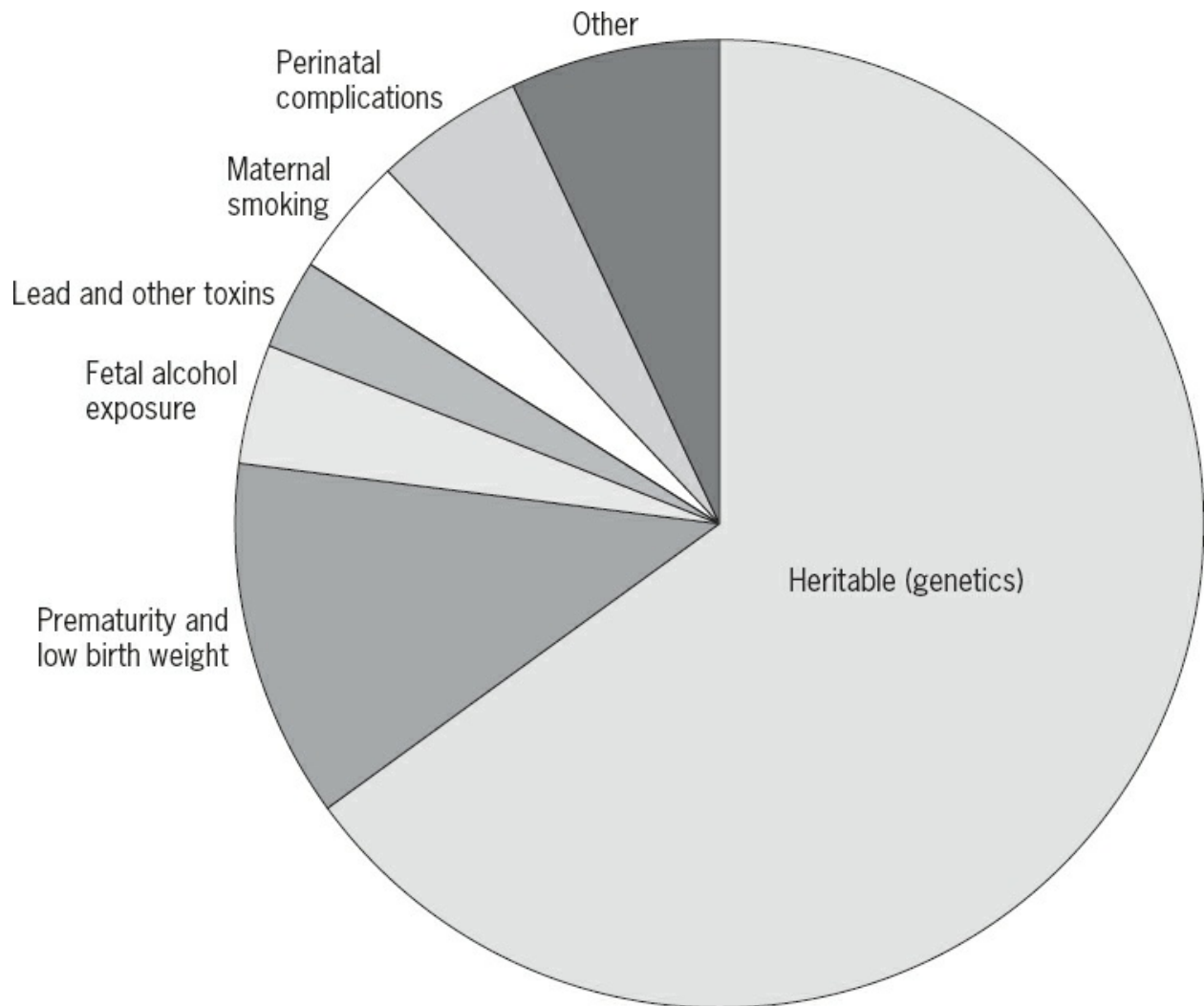
Name	Age	School grade
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

The form titled "Form 1, Child and family information lists fields such as Child's name, date of birth, age, address, home phone number, cell phone

number of dad or mom, child's school, teacher's name, school address, school phone, child's grade, type of special education for the child, Father name, father's age, education, type of employment, annual salary, mother name, age, education, mother's place of employment, details regarding adoption, details regarding the marital status of parents, child's physician, address, telephone number, name and age of other children in the family.

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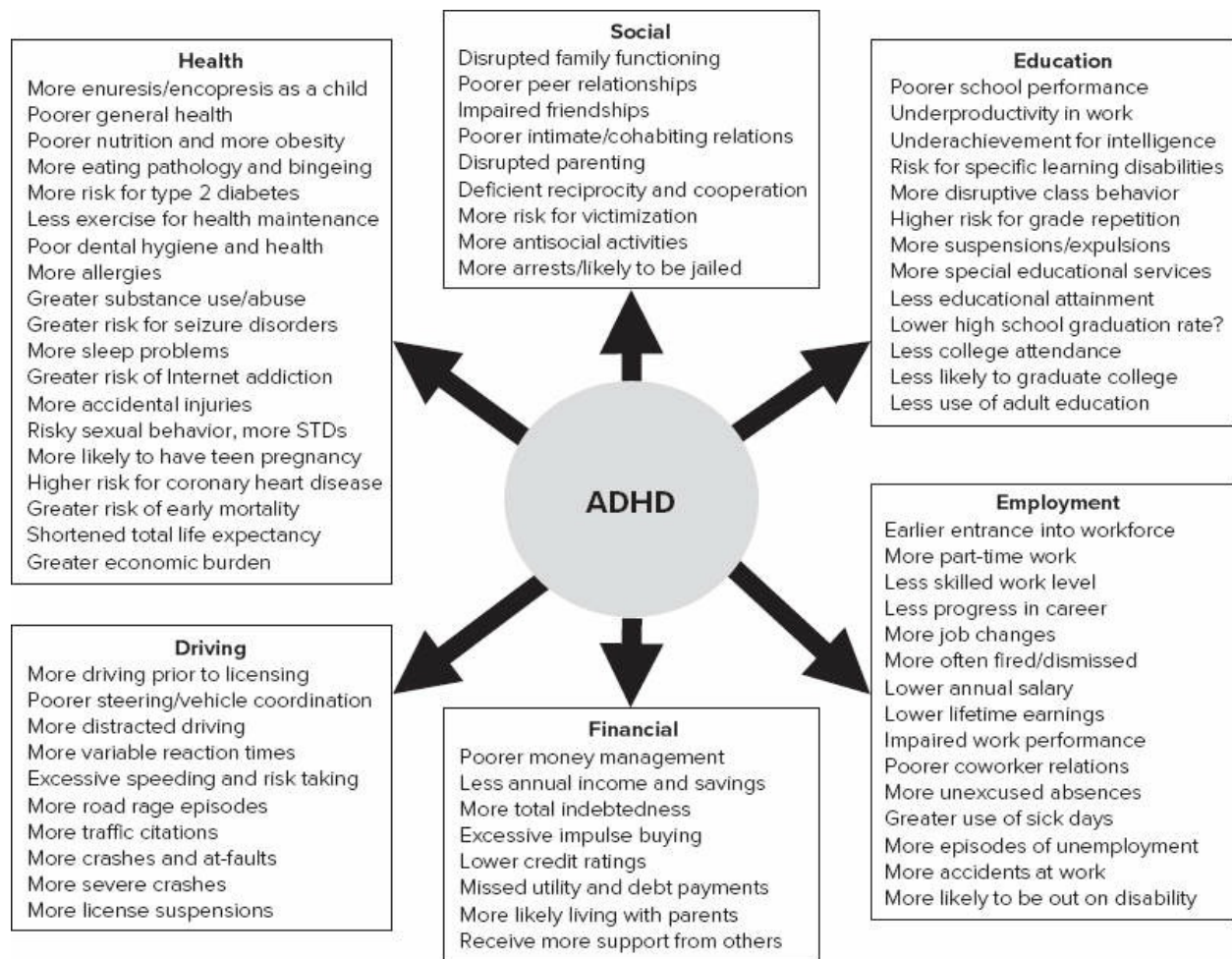
Extended image description for Page 255



The percentage breakdown of the causes of A D H D is as follows. Heritable (genetics): 61 percent; Prematurity and low birth weight: 17 percent; Other: 7 percent; Perinatal complications: 5 percent; Fetal alcohol exposure: 4 percent; Maternal smoking: 4 percent; lead and other toxins: 2 percent. All values are estimates.

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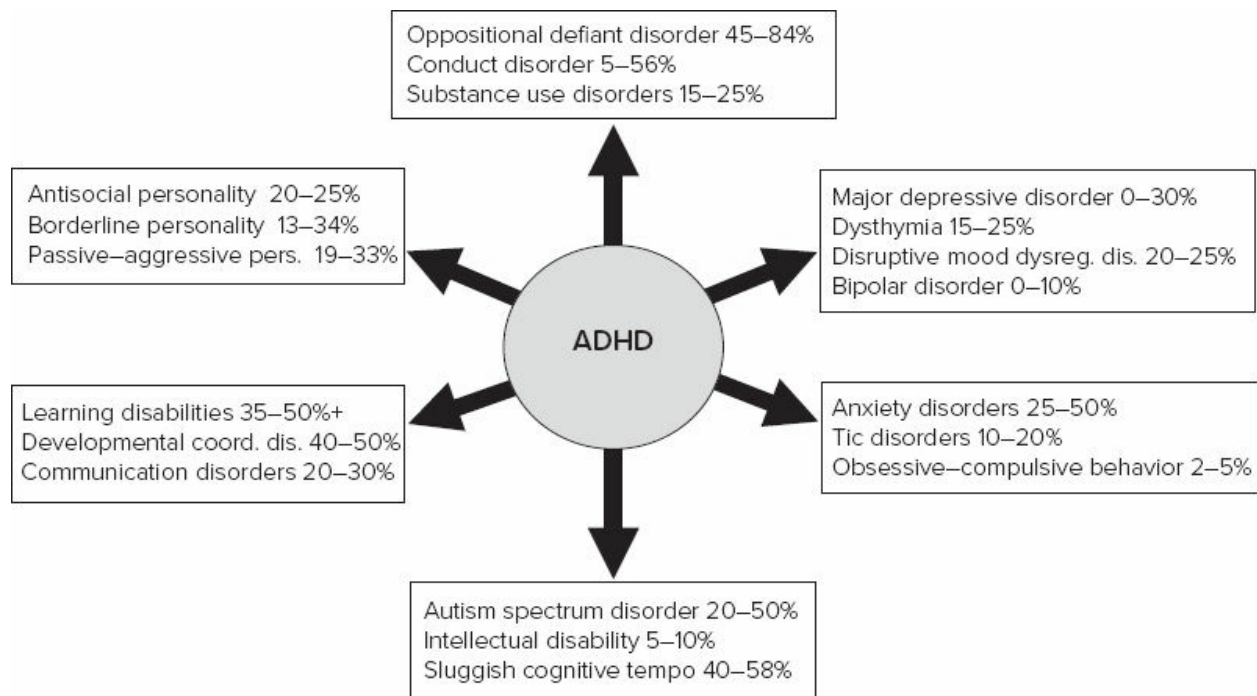


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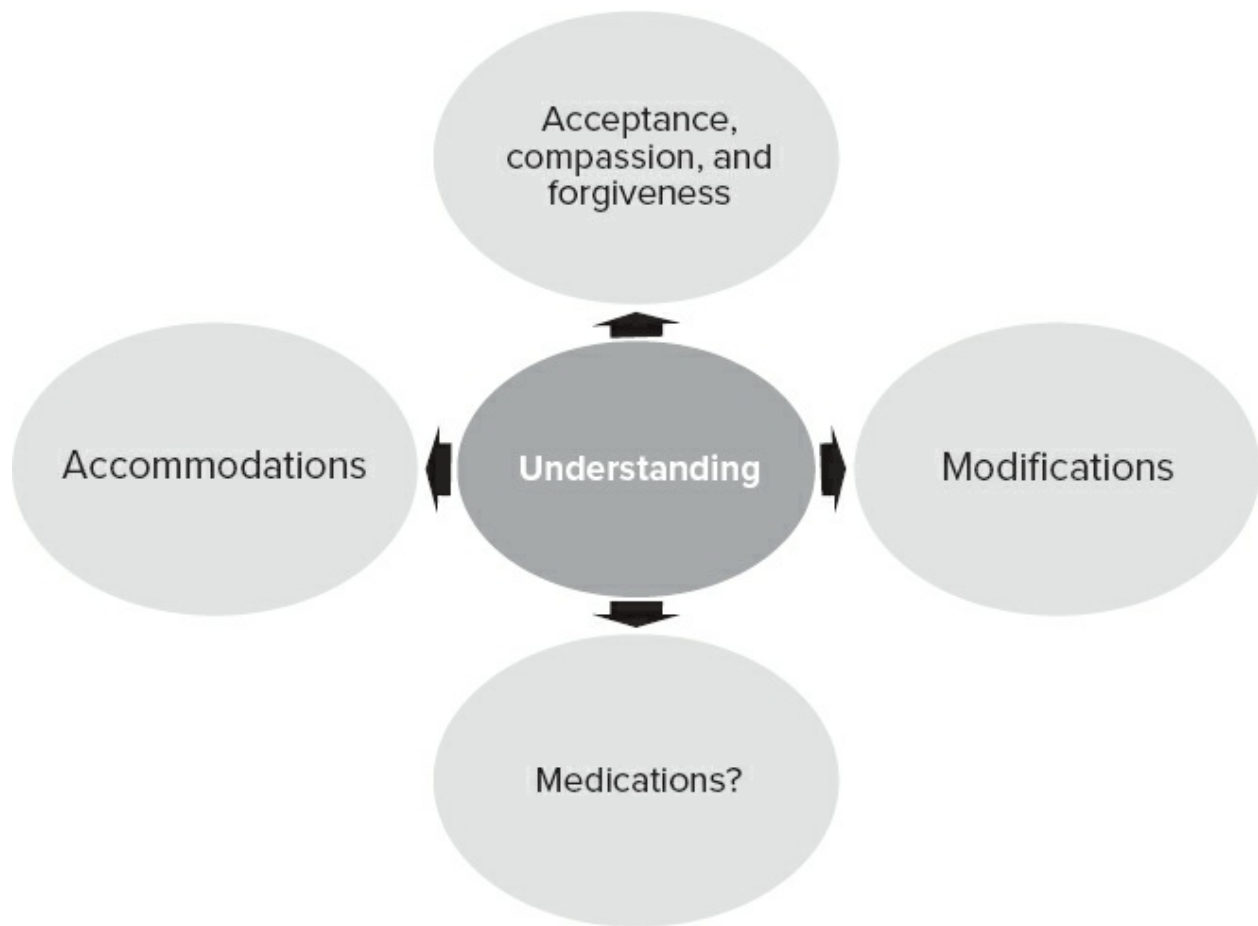
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Extended image description for Page 258



The five components mentioned in the figure are as follows. Understanding; Accommodations; Medications; Modifications; Acceptance, compassion, and forgiveness.

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