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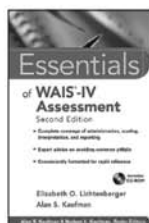
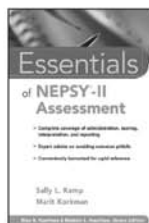
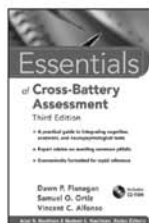
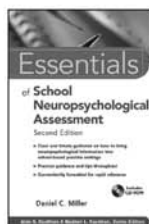
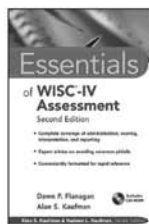
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To my family and friends—thank you for always understanding—ES

To Selma and Warren, with love and appreciation—DE

To C. Keith Conners, our valued mentor, colleague, and friend—DE & ES

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FOREWORD

This new book by Elizabeth Sparrow and Drew Erhardt addresses important needs during this time of rapid change in our understanding of ADHD. The American Psychiatric Association continues to “tweak” the DSM criteria for recognizing ADHD. Professionals need to be aware of these changes and understand their impact on clinical practice in a variety of settings. The knowledge required to correctly assess ADHD goes well beyond the general guidelines in the DSM manual. The purpose of this book is to provide that knowledge.

With prevalence estimates of ADHD already approaching nine to twenty percent of the child population, it seems that ADHD has been diagnosed too liberally, in a slap-dash fashion. There are an ever-increasing number of children and adolescents who are misdiagnosed, and therefore mistreated, with dire consequences such as drug diversion, emergency room visits, and suicide. Conversely, there are children and adolescents who are not correctly treated due to failure to recognize ADHD when it is present. The thorough, comprehensive guidelines in this book will help prevent the common occurrences of under- and over-diagnosis of ADHD.

Although often ignored, there is a vast array of practical clinical issues relevant to the assessment of this syndrome (e.g., dealing with discrepant data, differential diagnosis, comorbidity). This book will heighten mental health professionals’ awareness of these issues and provide the tools necessary to address them successfully. A clear, concise guide for conducting state-of-the-art ADHD evaluations, this book is a valuable resource for professionals in training, for those working in schools, and for those seeking to hone their ADHD assessment skills.

I had the good fortune to mentor Drs. Sparrow and Erhardt at the beginning of their careers and continue to collaborate with them as colleagues. In this authoritative yet highly accessible book, they combine their extensive experience in clinical assessment and treatment with their backgrounds in teaching, research, and test development.

The fundamental message of this book is the importance of a *comprehensive* assessment of ADHD and related disorders. This means that the assessment must include multiple sources of information and multiple methods. There is no single test or method for this task, and appropriate selection of the tasks and sources of information is the *sine qua non* of a good assessment.

This book offers a truly comprehensive *and* evidence-based approach to assessment, without fluff, surplus speculation, or unsupported opinion. I highly applaud this significant new work by two excellent, well-informed authors.

C. Keith Conners, Ph.D.

Professor Emeritus

Duke University

Department of Psychiatry & Behavioral Sciences

SERIES PREFACE

In the *Essentials of Psychological Assessment* series, we have attempted to provide the reader with books that will deliver key practical information in the most efficient and accessible style. The series features instruments in a variety of domains, such as cognition, personality, education, and neuropsychology. For the experienced clinician, books in the series offer a concise yet thorough way to master utilization of the continuously evolving supply of new and revised instruments, as well as a convenient method for keeping up to date on the tried-and-true measures. The novice will find here a prioritized assembly of all the information and techniques that must be at one's fingertips to begin the complicated process of individual psychological diagnosis.

Wherever feasible, visual shortcuts to highlight key points are utilized alongside systematic, step-by-step guidelines. Chapters are focused and succinct. Topics are targeted for an easy understanding of the essentials of administration, scoring, interpretation, and clinical application. Theory and research are continually woven into the fabric of each book, but always to enhance clinical inference, never to sidetrack or overwhelm. We have long been advocates of “intelligent” testing—the notion that a profile of test scores is meaningless unless it is brought to life by the clinical observations and astute detective work of knowledgeable examiners. Test profiles must be used to make a difference in the child's or adult's life, or why bother to test? We want this series to help our readers become the best intelligent testers they can be.

In *Essentials of ADHD Assessment in Children and Adolescents*, the authors provide a clear and informative road map for practitioners seeking to conduct state-of-the-art assessments for one of the most common disorders of childhood. Drawing upon years of experience in conducting diagnostic evaluations of ADHD following best-practice standards, they emphasize the importance of a comprehensive evaluation, incorporating data from multiple sources, using multiple methods, and interpreting findings within the appropriate developmental and cultural contexts. The major components of an ADHD evaluation (interviews,

rating scales, cognitive testing, observation, record review) are reviewed in detail. Expert guidance is provided for resolving the most common challenges in assessing ADHD, including differentiating symptoms from normal development, dealing with discrepant data, differential diagnosis, and considering comorbidity. The latest scholarly literature is integrated with the authors' practical recommendations to provide clinicians with the concepts and tools needed for effective and accurate assessment of ADHD.

Alan S. Kaufman, PhD, and Nadeen L. Kaufman, Ed.D, Series Editors
Yale Child Study Center, Yale University School of Medicine

PREFACE

Attention-deficit/hyperactivity disorder (ADHD) is one of the most common childhood disorders in the United States (Merikangas et al., 2010), and one of the diagnoses parents worry about the most (Garbutt et al., 2012). As a result, clinicians frequently receive requests to evaluate children for possible ADHD. Although there are diagnostic criteria for ADHD (see Chapter 2) and several practice guidelines delineating appropriate assessment components (see Chapter 3), it can be difficult to bridge the gap between these aspirational guides and the nitty-gritty of actual clinical work. Even seasoned professionals can fall prey to the lure of drawing conclusions based on first impressions and incomplete data. Misdiagnosis, whether over- or under-identification, has serious consequences for children, including inappropriate or denied treatment, prolonged distress, misuse of resources (time, energy, money), and development of secondary problems. Unfortunately, there is no definitive assessment tool, no neurological signature, no blood test for ADHD. There are certainly measures that improve the accuracy of ADHD diagnosis, but none of these are sufficient in isolation.

We believe that ADHD is a widely misunderstood disorder, and that a careful and comprehensive evaluation is the *only* way to ensure that a child is accurately diagnosed so that she can receive appropriate services. As such, we have prepared this book as an expert guide for the assessment of ADHD. We blend diagnostic guidelines with research findings, and add clinical tips from our years of thinking about ADHD in individual evaluations, scientific studies, and rating scale development.

ORGANIZATION OF THE BOOK

Just as an evaluation often starts with a developmental history, this book begins with a brief history of ADHD to provide you with a context for understanding the disorder. Chapter 1 then describes the core diagnostic features of ADHD—inattention, hyperactivity, and impulsivity—as well as non-diagnostic features

associated with the disorder. Disorders that tend to co-occur with ADHD are summarized before the chapter concludes with discussions of etiology and epidemiology.

In Chapter 2, we introduce diagnostic criteria for ADHD, based on the *Diagnostic and Statistical Manual of Mental Disorders* (DSM). We provide information for clinicians familiar with the DSM-IV-TR (American Psychiatric Association, 2000) who are transitioning to using the DSM-5 (American Psychiatric Association, 2013). If one regards the DSM criteria as the “laws” for diagnosing ADHD, then Chapter 3 elaborates on the “spirit” of ADHD assessment, including the essential goals of inclusion and exclusion as well as a number of guiding principles. Chapter 4 examines the major components of a comprehensive evaluation for ADHD, including record review, interviews, clinical observations, rating scales, and cognitive testing. For each component, we discuss what information to obtain, whom to ask, and when to implement it. We provide examples of tests that represent each of these assessment components.

Chapter 5 has two aims: (1) to guide your integration of data obtained from the assessment, and (2) to help you apply the essential concepts discussed in this book. In addition to elaborating on key ways to discriminate what *is* ADHD from what is *not*, the chapter walks you through a number of diagnostic challenges likely to arise in your clinical work. Issues like overlapping symptoms, differential diagnosis, and comorbidity are addressed. For each of these challenges, we provide information about how to compare the possibilities and reach a diagnostic determination. We share advice on resolving the inevitable discrepancies that occur as part of a comprehensive assessment for ADHD. Chapter 5 closes with the reminder that assessment does not end once you assign a diagnosis (or diagnoses), and offers some suggestions for treatment planning and providing feedback. The book concludes in Chapter 6 with three case studies of children referred for evaluation of ADHD.

FOCUS OF THE BOOK

This book focuses on the assessment of ADHD in children and adolescents. Thus, with occasional exceptions, content pertaining to ADHD in adults, ADHD in preschoolers, interventions for ADHD, general clinical practice, and general child psychopathology is excluded. Additional resources are noted in the text and annotated bibliography for readers interested in learning more about these topics.

INTENDED AUDIENCE

Our intended audience is licensed clinicians as well as those still in training. Professionals who do not have a background in child psychopathology and

development will need additional information to responsibly apply the principles outlined in this book within a developmental framework. Researchers, educators, and the general public may find some of what we discuss informative; however, they are reminded that this book cannot substitute for clinical training and supervision. The book is intended to supplement (not replace) the DSM-5; indeed, we urge clinicians to review and consult the DSM on a regular basis.

STYLISTIC CONVENTIONS

Throughout the book, we strive to be clear and straightforward. When there are essential points, we emphasize them with “Don’t Forget,” “Caution,” and “Rapid Reference” boxes. Special topics are discussed as they arise.

Out of necessity, we have adopted a few stylistic conventions used throughout the book:

- The terms *child* and *children* are used to describe school-aged children ages 6 through 18 years, rather than repeatedly specifying “children and adolescents.” The decision to split “children” (16 years and younger) from “older adolescents and adults” (17 years and older) for DSM-5 diagnosis of ADHD varies from the typical division of children from adults at 18 years old. Thus, we remind you of the distinction when relevant.
- ADHD occurs in both boys and girls, so we alternate *male and female pronouns* with no intended bias (other than when discussing gender-specific information).
- The term *parent* represents any relevant parental or caretaking figure, and should not be read as exclusively meaning “biologic parent.”
- Because the American *Psychiatric* Association and the American *Psychological* Association both use the acronym *APA*, we spell out the relevant organization name each time to avoid confusion.

SUMMARY

By gathering comprehensive data from multiple sources with multiple methods, you can establish the child’s history of symptoms, current presentation, and levels of impairment. These data will support your hypothesis testing as you evaluate the presence of ADHD and consider other explanations for the child’s difficulties. Although the core features of ADHD are behaviors that occur to some extent in most children, we believe that conducting the type of thorough assessment

described here will enable you to successfully differentiate these normal variants from the symptoms of ADHD.

REFERENCES

- American Psychiatric Association. (2000). Diagnostic and statistical manual of mental disorders (4th ed., text rev.). Washington, DC: Author.
- American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: Author.
- Garbutt, J. M., Leege, E., Sterkel, R., Gentry, S., Wallendorf, M., & Strunk, R. C. (2012). *What are parents worried about? Health problems and health concerns for children. Clinical pediatrics*, 51 (9), 840–847.
- Merikangas, K. R., He, J. P., Brody, D., Fisher, P. W., Bourdon, K., & Koretz, D. S. (2010). *Prevalence and treatment of mental disorders among U.S. children in the 2001–2004 NHANES. Pediatrics*, 125 (1), 75–81.

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UNDERSTANDING ADHD

Attention-deficit/hyperactivity disorder (ADHD) is a common neurodevelopmental condition marked by developmentally inappropriate levels of inattention, and/or impulsivity and hyperactivity that often significantly impair functioning across multiple domains and place children at elevated risk for a variety of adverse outcomes. It is important for clinicians who work with youth to possess a basic understanding of ADHD as it is one of the most frequently diagnosed disorders of childhood and among the most common reasons for child mental health referrals in both community and school settings. However, ADHD is frequently misunderstood even by mental health professionals. This is due in part to the confusing array of labels by which it is known, misinformation disseminated through the popular press, social media, and on the web, and to the complex, heterogeneous, and highly variable nature of the disorder itself.

Fortunately, ADHD has been subject to an enormous amount of scientific research (viz. more than 10,000 journal articles and over 100 textbooks) (Barkley, 2013). As a result, we know more about ADHD than any other mental health disorder beginning in childhood. The purpose of this chapter is to provide a brief but informative overview of ADHD, including current scientific knowledge. (Numerous resources exist for readers interested in more detailed descriptions of ADHD; see, for example, Barkley, 2006; DuPaul & Kern, 2011; Evans & Hoza, 2011; Goldstein & DeVries, 2011; Hinshaw & Scheffler, 2013; Jensen & Cooper, 2002). After a short summary of the history of ADHD, the chapter addresses core and associated features of the disorder, common comorbidities, etiology, and epidemiology. Although this book focuses on ADHD in children and adolescents, there is a growing body of literature about ADHD in adults (e.g., see Barkley, Murphy, & Fischer, 2008; Goldstein & Ellison, 2002; Surman, 2013; Weiss, Hechtman, & Weiss, 1999).

HISTORICAL PERSPECTIVE

ADHD has a long and somewhat controversial history (historical landmarks are summarized in Rapid Reference 1.1; for detailed accounts, see Antshel & Barkley, 2011; Taylor, 2011). Early clinical descriptions of the disorder, dating back over 200 years, came from physicians on the basis of children seen in their practices. These took numerous forms, ranging from book chapters (Weikard in 1775; see Barkley & Peters, 2012) and lengthy tomes (Crichton, 1798, 2008), to lectures (Still, 1902) and doggerel poems (Hoffmann's verses, "Fidgety Philip" and "Johnny Head-In-Air"; Hoffmann, 1844; English edition in 1848). Although the inclusion of inattentive, hyperactive, and impulsive symptoms has been relatively constant across clinical and scientific descriptions of the disorder over time, conceptualizations have evolved considerably with respect to presumed defining features, diagnostic labels, etiologic theories, and practice standards for assessment and treatment.

Early descriptions of ADHD often included inattention, but focused on hyperactivity as the core feature of the disorder. However, studies from Virginia Douglas' lab in the late 1960s and 1970s firmly reinstated the importance of deficits in sustained attention and impulse control in descriptions of the syndrome (Douglas, 1972, 1976). Influenced largely by this research, deficits in sustained attention rather than overactivity came to be viewed as central to the disorder by the early 1980s (American Psychiatric Association, 1980). Over recent decades, a neuroscience perspective has been applied to examining

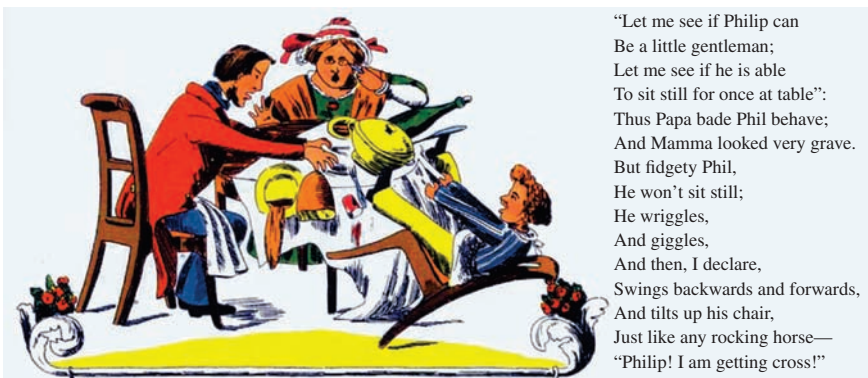


Figure 1.1. Excerpt from "The Story of Fidgety Philip," a cautionary poem about hyperactivity from the 1840s

Source: Hoffmann, 1844.

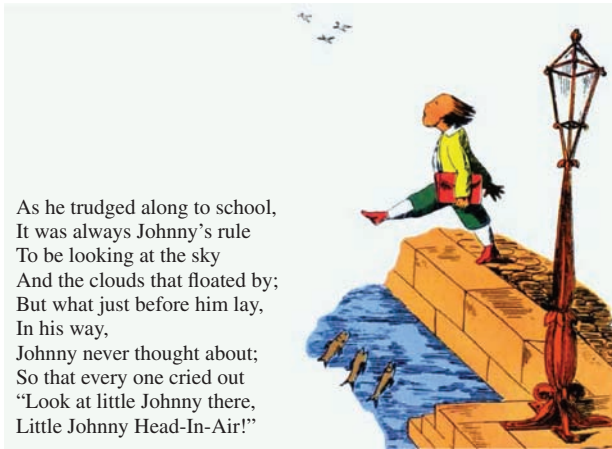


Figure 1.2. Excerpt from “The Story of Johnny Head-in-Air,” an 1840s poem about pervasive inattention

Source: Hoffmann, 1844.

difficulties with motivation, response to reinforcement, inhibition, and executive functions as possible core problems underlying ADHD (Barkley, 1997; Brown, 2013; Castellanos, Sonuga-Barke, Milham, & Tannock, 2006; Nigg, 2013a; Nigg & Casey, 2005; Sagvolden, Aase, Zeiner, & Berger, 1998; Schachar, Tannock, & Logan, 1993).

Similarly, presumptions about the causes of ADHD have changed considerably over time, reflecting both research findings and prevailing scientific paradigms used to explain cognitive and behavioral functioning (Conners & Erhardt, 1998). Early views centering on defective “moral control” and presumed brain damage along with later environmental theories highlighting diet and child-rearing gradually gave way to more biologically based and data-driven explanations. At various times, research investigations have focused on psychophysiology, motivational deficits, neurotransmitter deficiencies, neuropsychological functioning, and genetic factors. More recently, studies employing increasingly rigorous and sophisticated methods (including brain imaging techniques) have elucidated potential structural and functional neurological bases for ADHD and illuminated how genetically based risk might interact with or be triggered by various environmental factors (e.g., pre- or post-natal environmental toxins such as alcohol, nicotine, and pesticides) to culminate in the self-regulation problems characteristic of ADHD (see the section on etiology below).

Rapid Reference 1.1

Historical Landmarks Related to ADHD in Children and Adolescents

- 1775 —Weikard's medical text has a chapter about "Attention Deficit," including his recommendations for treatment.
- 1798 —Crichton writes about disordered attention.
- 1840s—Hoffmann, a German physician, composes moralistic verses for his young son, including characters with features of hyperactivity and inattention.
- 1902 —Still describes patients with features of impulsivity and short attention span as suffering from an "abnormal defect of moral control . . . without general impairment of intellect and without physical disease."
- 1937 —Bradley documents benefits of the stimulant Benzedrine (dextro-amphetamine sulfate) for children with behavior disorders, marking the beginning of pharmacotherapy for this population.
- 1950s—Stimulants begin to be used regularly to treat hyperactivity.
- 1955 —FDA approves methylphenidate (Ritalin) for treatment of hyperactivity.
- 1963 —65—Eisenberg publishes studies documenting benefits of stimulant medication in treating hyperkinesis, in comparison to placebo and traditional psychotherapy.
- 1969 —Conners develops the first structured parent and teacher rating scales to reliably assess ADHD symptoms and treatment response.
- 1970s—Various environmental factors (e.g., food additives, societal tempo, poor parenting) proposed as causes of ADHD; stimulants emerge as treatment of choice for ADHD symptoms; efficacy studies support the use of behavioral treatment, via classroom-based modification and parent training, contributing to the emergence of combined treatments; studies by Douglas contribute to shifting view of attention deficits (rather than hyperactivity) as the defining feature of the disorder.
- 1975 —Public Law 94-142 mandates special education services for children with behavioral (as well as other) disabilities, though exclusion of terms specific to hyperactivity/ADD/ADHD would result in services being denied to many with ADHD.
- 1980s—Broadband and ADD-specific standardized rating scales published; computerized tests of attention developed; non-stimulants investigated for treatment of ADHD.
- 1986 —Seminal longitudinal study by Weiss & Hechtman demonstrates the persistence of inattention and impulsivity past childhood despite declines in hyperactivity, undermining the view that adolescents "outgrow" the disorder.
- 1987 —*Children and Adults with Attention-Deficit/Hyperactivity Disorder* (CHADD) founded; this information, support, and advocacy group would play an important role in psychoeducation and in securing access to special education services for youth with ADHD.

1990 — 1991—Children with ADHD granted eligibility to special education services through the *Other Health Impaired* category of the *Individuals with Disabilities Education Act* (IDEA) and a memorandum from the U.S. Dept. of Education's Office of Special Education.

1990s—Present—Significant research advances pertaining to the neurological basis of ADHD (via brain imaging studies), distinguishing neuropsychological factors with a particular emphasis on executive functions, and genetic contributions to the disorder; theories increasingly focus on behavioral inhibition and executive functioning as putative “core” deficits; increased attention to ADHD in females; the large-scale *Multimodal Treatment of Attention Deficit Hyperactivity Disorder* (MTA) study is conducted; introduction of new stimulant and non-stimulant medications along with marked increases in pharmacologic treatment of ADHD.

Sources: Antshel & Barkley (2011); Barkley (2006).

The labels used to describe the disorder now known as ADHD, both within and outside of official classification systems for mental disorders, have changed frequently over the years. These changes have generally paralleled shifts in prevailing views of defining features and causal factors discussed earlier. Thus, a non-exhaustive list of the terms that have been used to describe this syndrome includes *minimal brain damage (MBD)*, *hyperkinetic impulse disorder*, *hyperactive child syndrome*, *hyperkinetic reaction of childhood*, *minimal brain dysfunction*, *hyperkinesis*, *attention-deficit disorder*, and the current *attention-deficit/hyperactivity disorder* (see Rapid Reference 1.2). Efforts to more accurately and precisely label and diagnose this disorder have been accompanied by examinations of the most meaningful ways to subtype ADHD, particularly with respect to whether certain subtypes are not only durable over time but associated with clinically meaningful differences with respect to factors such as the nature of core and associated symptoms, causality, comorbidities, course, response to treatment, and outcomes. The most notable basis for such subtyping has involved whether inattentive features, hyperactive/impulsive features, or both are salient in the presentation of the disorder (a subtyping scheme that has appeared, disappeared, and reappeared over various editions of the DSM classification system). However, children with ADHD have also been meaningfully subtyped on the basis of the presence or absence of comorbid aggression, learning disorders, and anxious or depressive features (Barkley, 2006).

Among the most significant turn of events in the history of ADHD has been a shift in our understanding of the persistence and seriousness of the disorder. Spurred by results of numerous longitudinal studies (see, for example, Klein

Rapid Reference 1.2

Changing Labels

- 1950s—*Minimal brain damage*—presumed neurological damage.
- 1957 —*Hyperkinetic impulse disorder*—attributed high activity levels to central nervous system deficit leading to cortical overstimulation.
- 1960s—*Hyperactive child syndrome*—focused on high activity level as the defining feature; symptoms described as remitting in adolescence.
Hyperkinetic reaction of childhood (DSM-II)—initial inclusion of the disorder in DSM comprised a single-sentence description that noted hyperactivity, distractibility, and short attention span along with the assertion that features typically decline by adolescence.
Minimal brain dysfunction—symptoms accounted for by high and poorly regulated levels of activation, deficits related to the experience of pleasure and pain, and extroversion.
- 1980 —*Attention-deficit disorder (with or without hyperactivity)* (DSM-III)—reconceptualized ADHD with a focus on inattention as the defining feature; separate symptoms lists provided for inattention, hyperactivity, and impulsivity; subtypes, numerical cutoff scores, and guidelines for age of onset and duration of symptoms first introduced; ADD-Residual Type (ADD-RT) introduced for persistence of some symptoms after remission of hyperactivity.
- 1987 —present—*Attention-deficit/hyperactivity disorder* (ADHD).
- 1987 —DSM-III-R dropped subtypes (but added *undifferentiated ADD*, which resembles the current inattentive presentation); empirical basis as field trial results contributed to criteria; single-symptom list and cutoff score; added verbal manifestations of hyperactivity, introduced need to establish symptoms as developmentally inappropriate; grouped ADHD with ODD and CD in a disruptive behavior disorders category.
- 1994 —DSM-IV reintroduced subtypes, including *predominantly inattentive type*, *predominantly hyperactive-impulsive type*, and *combined type*; criteria become increasingly empirically based; separate symptom lists and cutoff scores for *inattention* and *hyperactivity-impulsivity* factors; used ADHD *not otherwise specified* to capture atypical presentations.
- 2013 —DSM-5 downgraded subtypes to “presentations,” including *predominantly inattentive presentation*, *predominantly hyperactive/impulsive presentation*, and *combined presentation*; ADHD included among *Neurodevelopmental Disorders* but no longer grouped with ODD and CD; age of onset raised from 7 to 12 years.

Sources: Antshel & Barkley (2011); Barkley (2006); Taylor (2011).

et al., 2012; Weiss & Hechtman, 1986, 1993a), the prevailing view of ADHD has evolved from a largely benign disorder that children generally outgrow by adolescence to a typically chronic and impairing condition. This recognition, along with greater clarity with respect to how the presentation of ADHD changes

over the life span, has led to increased efforts to refine and optimize our assessment and treatment practices.

Medication therapies have long been the most common treatment for ADHD and remain so today. The use of stimulant medications with behaviorally disordered youth (and, in fact, the origins of child psychopharmacology more generally) can be traced back more than 75 years, when the physician Charles Bradley reported that Bensedrine resulted in notable behavioral and academic improvements in a hospitalized group of such children (Bradley, 1937). Stimulant medications became routinely prescribed for ADHD in the 1950s, following additional reports noting positive effects of amphetamine and methylphenidate on children with what was then called minimal brain dysfunction or hyperactive child syndrome (Wolraich, 2011). The U.S. Food and Drug Administration (FDA) approved methylphenidate (Ritalin) for use in children with hyperactivity in 1955 (U.S. Food and Drug Administration, 2013). Research conducted by Leon Eisenberg and Keith Connors (Eisenberg et al., 1963) ushered in era of increased methodological rigor in pediatric studies documenting the benefits of stimulant medication. The results of numerous additional random controlled trials over subsequent years (Swanson, McBurnett, Wigal, & Pfiffner, 1993) led to the gradual emergence of stimulant medications as the treatment of choice for ADHD. Recent decades have witnessed the introduction of a host of new pharmacologic agents for ADHD (e.g., atomoxetine), novel ways to deliver and sustain their effects over longer periods of time (e.g., micro-beads, dermal patches, osmotic pumps), and rather dramatic increases in their prescription rates, their use across the age span (including preschoolers), and, consequently, ongoing controversy regarding their use (Greenhill, Halperin, & Abikoff, 1999; Greenhill et al., 2002; Greenhill et al., 2006; Kaplan, 2011; Mayes, Bagwell, & Erkulwater, 2009; Solanto, Arnsten, & Castellanos, 2001; Swanson & Volkow, 2009; Zuvekas, 2012).

Alongside the voluminous literature on stimulant medications, a significant evidence base has accrued over the past 40 years for the efficacy of behavioral-based treatments for ADHD, whether delivered in the context of classroom interventions, parent training, or therapeutic settings like specialized summer camps (Owens, Storer, & Girio-Herrera, 2011). Many other forms of treatment have been tried for ADHD through the years. With respect to improving primary symptoms of the disorder, some are ineffective (e.g., play therapy), some may help only a small portion of sufferers (e.g., special diets), and others have some evidence but have yet to accrue the type of strong, consistent research support needed to establish them as “proven” treatments (e.g., neurofeedback, computer-based cognitive training) (Hurt, Lofthouse, & Arnold, 2011; Lofthouse, McBurnett, Arnold, & Hurt, 2011; Melby-Lervag & Hulme, 2013).

Numerous studies have examined treatments that combine medication and behavioral interventions, leading to the general conclusion that while stimulants are the single most effective and possibly sufficient treatment for reducing core ADHD symptoms, combined treatments are most likely to normalize problem behavior and appear to be superior with respect to improving comorbid symptoms, building skills (academic, social, parenting), and reducing key life impairments (Conners et al., 2001; MTA Cooperative Group, 1999; Swanson et al., 2001). What has been elusive over many decades of intervention research has been the identification of treatments or treatment combinations yielding benefits that generalize across situations and time once acute treatment is discontinued or that fundamentally alter the core deficits of ADHD.

ADHD assessment practices have evolved considerably from an early reliance on clinical impressions (e.g., “I know it when I see it”), to the introduction of structured behavior rating scales by Keith Conners in the late 1960s (Conners, 1969), to the development of a host of scales, interviews, and objective tests designed to assist in the detection of the disorder (Pelham, Fabiano, & Massetti, 2005; Smith, Barkley, & Shapiro, 2007). This progression has led us to the current standard of care: A careful integration of interview, rating scale, testing, and observational data drawn from multiple sources and informants in order to identify ADHD and distinguish it from typical development and from other conditions that might produce similar symptoms (American Academy of Child and Adolescent Psychiatry Work Group on Quality Issues, 2007a). The *hows* and *whys* of such assessment practices for ADHD will be the focus of subsequent chapters.

OVERARCHING PRINCIPLES

There are two central principles to remember when thinking about ADHD: *dimensionality* and *variability*. Although the practical realities of clinical diagnosis and the very nature of classification systems like the DSM lure us into thinking of ADHD (and other behavioral disorders) categorically (“either she *has* ADHD or she doesn’t”), the reality is that ADHD (like many other mental health disorders) is best thought of dimensionally (Frick & Nigg, 2012; Lahey & Willcutt, 2002; Marcus & Barry, 2011) (see Chapter 3 for further discussion of this distinction). That is, the features of ADHD exist on a continuum along which every person can be placed, just like height, weight, or IQ. To illustrate this essential truth, consider how much typically developing children differ with respect to their ability to regulate their activity levels, sustain attention, and restrain their impulses. At each age, there is an average level of these abilities with a considerable range of variation