

## One

### OVERVIEW

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**F**or decades the rating scales developed by Dr. C. Keith Conners have been used worldwide for assessment of children with Attention-Deficit/Hyperactivity Disorder (ADHD) and related issues. The Conners 3rd Edition (Conners 3) continues this tradition of excellence for ADHD identification and treatment monitoring. With the publication of the Conners Comprehensive Behavior Rating Scales (Conners CBRS), this standard of clinical utility and statistical foundations has been extended for assessment of a broad range of issues that occur in school-aged youth.<sup>1</sup> Most recently, these same techniques were applied for the development of a comprehensive rating scale for young children—the Conners Early Childhood (Conners EC). Rapid Reference 1.1 provides a quick snapshot of the three assessments.

The main objective of this book is to offer a comprehensive and user-friendly guide to the Conners 3, Conners CBRS, and Conners EC. This book was developed for those who work with youth 2 through 18 years old in educational, clinical, or research settings, including professionals in evaluation and treatment roles. The subsequent chapters explain the core “essentials” of Conners rating scale assessment and interpretation in a straightforward and understandable

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1. The terms “youth” and “child/children” are used interchangeably throughout the book to include ages 6 through 18 years, rather than specifying “children and adolescents” every time. “Child/children” may also include young children who are 2 through 6 years old, as indicated by the context.

 *Rapid Reference 1.1*

Snapshot of the Conners Assessments

	<b>Conners 3rd Edition (Conners 3)</b>	<b>Conners Comprehensive Behavior Rating Scales (Conners CBRS)</b>	<b>Conners Early Childhood (Conners EC)</b>
<b>Author</b>	C. Keith Conners, PhD		
<b>Publication date</b>	2008	2008	2009
<b>Purpose</b>	Focused assessment of ADHD and most commonly co-occurring problems and disorders in school-aged children	Comprehensive assessment tool for a wide range of behavioral, emotional, social, and academic concerns in school-aged children	Broad coverage of important behavioral, emotional, social, cognitive, and developmental issues in young children
<b>Age Range</b>	Parent & Teacher: 6–18 years Self-Report: 8–18 years	Parent & Teacher: 6–18 years Self-Report: 8–18 years	Parent & Teacher: 2–6 years Self-Report: n/a

<b>Available Forms</b>	<p>Conners 3<sup>a</sup>                      Conners 3 Short<sup>a</sup>                      Conners 3 ADHD Index<sup>a</sup>                      Conners 3 Global Index<sup>b</sup></p>	<p>Conners CBRS<sup>a</sup>                      Conners Clinical Index<sup>a</sup></p>	<p>Conners EC<sup>b</sup>                      Conners EC-BEH<sup>b</sup>                      Conners EC-BEH(S)<sup>b</sup>                      Conners ECGI<sup>b</sup>                      Conners EC-DM<sup>b</sup></p>
<b>Minimum Reading Levels<sup>c</sup></b>	<p>Parent &amp; Teacher: 5th grade                      Self-Report: 3rd grade</p>	<p>Parent &amp; Teacher: 5th–6th grade                      Self-Report: 3rd–4th grade</p>	<p>Parent: 3rd–5th grade                      Teacher: 5th grade                      Self-Report: n/a</p>
<b>Rater Requirements</b>	<p>Must have known and had the opportunity to observe child for at least one month.                      Cognitive abilities and reading level must be adequate (see above).                      Must be motivated to assist in assessment.</p>		
<b>Examiner Requirements</b>	<p>Administration and scoring: Formal training in clinical psychology or psychometrics is not required                      Interpretation: Graduate-level courses in tests and measurement at a university (or other documented equivalent training)</p>		
<b>Publisher</b>	<p>Multi-Health Systems, Inc.                      1-800-456-3003 in the United States; 1-800-268-6011 in Canada; 1-416-492-2627 International                      www.mhs.com</p>		

<sup>a</sup> Available in forms for completion by parent, teacher, or youth.

<sup>b</sup> Available in forms for completion by parent or teacher.

<sup>c</sup> Approximate range listed here for quick reference; varies by form used. See relevant test manual for details.

## 4 ESSENTIALS OF CONNERS BEHAVIOR ASSESSMENTS

manner, including not only key information from the test manuals, but also practical tips and high-level interpretation guidelines. Chapter 1 provides a historical context for understanding the Conners assessments as well as a quick overview of each rating scale. Chapter 2 reviews key assessment tips, such as choosing which rating scale is best for a specific child and deciding which form to use. Scoring is covered in Chapter 3. Chapter 4 explains a straightforward technique for interpreting the Conners assessments, with special sections for integrating results across more than one version of the rating scales. Chapter 5 offers a critical review of the strengths and weaknesses of the Conners assessments, and Chapter 6 explores clinical applications. Finally, Chapter 7 illustrates use of the Conners 3, Conners CBRS, and Conners EC through several case studies. Throughout the book, Rapid Reference, Caution, and Don't Forget boxes draw attention to critical points. Tables present information succinctly, and figures illustrate information in graphic form. Each chapter ends with a Test Yourself section to help review and check retention of important concepts. Information contained in this book should support responsible and competent use of the Conners 3, Conners CBRS, and Conners EC.

This chapter includes an overview of appropriate ways to use rating scales and a brief history of the Conners assessments. Each of the new rating scales is described, with an overview of key features, changes from the Conners' Rating Scales–Revised™ (CRS–R™), and psychometric properties. See Rapid References 1.14, 1.18, and 1.23 for an overview of the content provided by each of the Conners assessments. Chapters 2, 3, and 4 in this book discuss the administration, scoring, and interpretation of each rating scale in more detail, including how to select which rating scale and form to use.

### USE OF RATING SCALES

A rating scale is simply a group of items that are rated on a specified scale to describe an individual. For example, a food critic might use a rating scale of one to five stars to rate a chef on the appearance, speed, and taste of his food. In the world of educational and psychological measurement, some rating scales are not much more complicated than those used by a food critic. Some rating scales are just a group of items that can be rated, and interpretation is a matter of opinion. At the other end of the spectrum are rating scales that are derived solely from statistical analyses with little input as to the clinical utility of the factors for diagnosis or treatment, or rating scales that are based entirely on results of a single research project without consideration of generalizability. Ideally, a rating scale that is used in the assessment and monitoring of a child will have a blend of these features, combining clinical wisdom with research data and statistical expertise. See Rapid Reference 1.2 for important features of rating scales.

## *Rapid Reference 1.2*

### **Summary of Key Points to Consider in Rating Scale Selection**

Ideally, a rating scale that is used in the assessment and monitoring of a child will have a blend of these features, combining clinical wisdom with research data and statistical expertise. Features to look for when selecting a rating scale include:

- Results that can be interpreted to answer your questions about a child and that can be explained to parents, teachers, and others who help the child.
- Item development and selection guided by clinicians with experience in relevant areas.
- Relevant research findings reflected in scale content and interpretation.
- Large and diverse standardization sample (i.e., considering different ages, genders, races/ethnicities, geographic regions, neighborhood types, and socioeconomic statuses), providing an appropriate comparison for each child assessed and helping to decide if any of these factors impact how results are interpreted (e.g., does age matter for this?).
- Data from relevant clinical groups, showing how results help distinguish between children with and without different diagnoses (i.e., specificity and sensitivity).
- Solid psychometrics, including reliability and validity, so you know how confident you can be that the rating scale is consistently measuring the targeted issues over different people and dates.
- Ease of use (administration, scoring, and interpretation).
- Results that help identify targets for treatment and then measure response to treatment.

Even when a rating scale has all of the features listed in Rapid Reference 1.2, it should not be used in isolation for assessment purposes. An assessment should be multimodal, based on information from multiple informants and multiple settings. A rating scale is only one mode of assessment; other modes might include interview, record review, observation, and direct assessment of knowledge, skills, and abilities. For example, you might review available records, interview the child and her parents, observe the child in the classroom and other settings, administer a rating scale, and administer tests of intellectual ability, academic achievement, and memory skills. This would be a multimodal evaluation. Assessments should not rely on information from a single source, but should include more than one informant. For children, informants can include parents, teachers, and service providers. Do not forget that the child is often a valuable source of information and that you are in fact an informant—your reactions to the child and your observations of him are very

## 6 ESSENTIALS OF CONNERS BEHAVIOR ASSESSMENTS

relevant. Finally, an assessment should combine information from multiple settings. Typical settings for children include home, school, and community. School does not just mean the academic classroom, but it also includes aspects of the child's functioning in other parts of the schoolday (e.g., the hallway between classes, the lunchroom, the bus-stop, the playground, special classes like art, music, and gym). The community setting might be after-school care, neighborhood park, religious centers, grocery stores, or community centers. For adolescents, there may be a work setting as well.

### **DON'T FORGET**

#### **The “Multi’s” of Responsible Assessment**

1. Multi-modal: Use more than one mode of assessment (e.g., interview, record review, observation, rating scale, individual testing).
2. Multi-informant: Gather data from more than one informant (e.g., child, parents, teachers, other professionals, yourself).
3. Multi-setting: Gather data from more than one setting, considering physical settings (e.g., home, school, community) and functional settings (e.g., social interactions, structured settings).

Once all the “multi” requirements are met (i.e., multimodal, multi-informant, and multiple settings), it is also important to gather sufficient depth and breadth of information to help with differential diagnosis decisions. These include deciding if the child's symptoms are due to one thing or another, or possibly a combination of more than one factor. In some cases, the decision is not a simple yes/no but whether additional evaluation might be helpful in answering questions and forming a plan to help the child. Again, no single instrument can serve in isolation for differential diagnosis decisions.

### **DON'T FORGET**

#### **Differential Diagnosis and Referrals**

Gather sufficient breadth and depth of information to help you decide if the child's diagnosis is “either/or” (e.g., “Is it ADHD *or* something else?”), or if his diagnosis is “this and that” (e.g., “Does he have ADHD *and* comorbid CD?”). If you do not have expertise in an area that you think might be important for a child, get enough information to help you make a referral or to consult with a colleague.

When a rating scale has the features described above, and is used as part of a responsible assessment, it can contribute in a variety of ways, informing diagnosis, treatment planning/monitoring, research, and program evaluation. (See Chapter 6 for additional information on these applications of the Conners assessments.)

- Most people use rating scales primarily as diagnostic aids, as a rating scale can help you gather data from multiple settings and multiple raters. When referral questions are vague, information gathered by a rating scale can help focus initial efforts to begin assessment quickly and efficiently. Even when the referral is clear, results from a rating scale may identify additional issues to address or investigate through other modalities of assessment.
- Rating scales can be equally valuable in planning treatment. Results from raters in different settings can help you understand which settings are impacted by which issues and which settings do not seem to be affected. This information can help you discover potentially useful differences among raters/settings that could suggest interventions to try with a child in an RTI model (see also Rapid Reference 6.1). For example, if a child shows symptoms of anxiety and academic failure in a classroom with 25 students but is indistinguishable from peers in her reading group of 8 students, this might indicate the benefit of trying small group instruction for other subject areas while determining if the difference is content area, group size, or instructor characteristics (among other possible explanations). Results from rating scales can help identify target behaviors to address in treatment and can even help prioritize these targets. Rating scales can provide data to support treatment recommendations, showing why a particular suggestion is being made for the child in that setting.
- Once an intervention is begun, rating scales can help monitor changes in the child.<sup>2</sup> These might include improvement in the target behavior, lack of change, or deterioration in that area. Rating scales can indicate new areas that are emerging as concerns as old areas are addressed, or suggest a shift in relative importance of which target should be addressed first. Some rating scales can help track potential side effects of treatment—usually a consideration for pharmaceutical intervention. Results from a repeated rating scale can suggest considerations for change in a treatment

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2. On the Conners assessments, the Reliable Change Indices (RCI) provide the absolute difference score needed to determine if there is a statistically significant change in scores between administrations. This provides utility when monitoring responses to intervention. See also Rapid Reference 6.2.

## 8 ESSENTIALS OF CONNERS BEHAVIOR ASSESSMENTS

plan, whether adding services, decreasing intensity of services, shifting to maintenance levels, or discontinuing services.

- In research settings, rating scales offer a systematic way to identify children for inclusion in a research study or to identify children who might not be appropriate for that particular study. Data from rating scales are often used as a way to measure the outcome of a studied intervention or research manipulation.
- Finally, rating scales can be used programmatically. A rating scale can help screen a group of children to determine who might be candidates to participate in a special program (e.g., a reading enrichment program, a social skills group). Results from rating scales could be used to evaluate the effectiveness of such programs as might be needed when deciding whether to continue the program or to support continued funding for the program.

In summary, rating scales should reflect a combination of clinical, statistical, and research supports. When used for assessment purposes, they should be part of a complete evaluation that integrates data from multiple modalities, informants, and settings to obtain sufficient information for differential decisions or referrals. Rating scales can be used in a variety of ways, for individuals and groups of children. With this information in mind, let's take a look at the background for the Conners 3, Conners CBRS, and Conners EC.

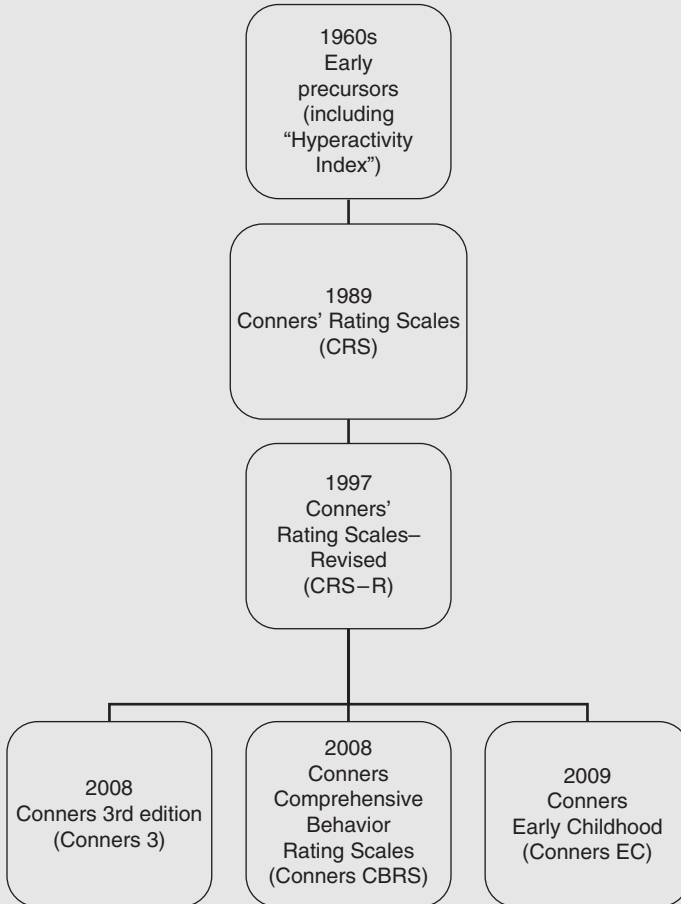
### **HISTORY AND DEVELOPMENT OF THE CONNERS ASSESSMENTS**

The Conners line of assessments has grown from a lifetime of clinical work and research (see Rapid Reference 1.3 for an overview of the timeline, and Rapid Reference 1.4 for a summary of published Conners rating scales). The earliest versions of rating scales by Dr. Conners were developed in the 1960s when he was training at Johns Hopkins Hospital. While studying the effects of stimulant medications on juvenile delinquents, Dr. Conners discovered that parents and teachers were effective observers of behavioral changes exhibited by this group of youth. He developed a list of items, grouped by problem area, that he could use to quantify changes parents and teachers observed. This list of items was shared with colleagues, who gathered further information about how parents and teachers rated children at different ages. Over time, sufficient data were collected to be a useful comparison when determining if a child's results were typical or atypical. Some felt the list of items was too long for use when monitoring a child's response to treatment, so Dr. Conners worked to create a shorter form. He selected the 10 best items for distinguishing children with hyperactivity from those without hyperactivity and called this the "Hyperactivity Index" (referencing the DSM-II diagnostic term in



## *Rapid Reference 1.3*

### History of the Conners Assessments



use at that time). It was not uncommon to see very faint copies of the Hyperactivity Index being used at that time, as the original typed list was photocopied many times and distributed. As copies reached the point where they could not be read, individual clinicians retyped the form, resulting in many variations in formatting and even wording as unintentional changes were made.

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## 10 ESSENTIALS OF CONNERS BEHAVIOR ASSESSMENTS

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In the 1980s, Dr. Conners partnered with a small start-up company that was developing tests—Multi-Health Systems, Inc. (MHS). He worked with MHS to gather a more comprehensive normative sample, and in 1989, the first copyrighted version of the items was published as the Conners' Rating Scales (CRS). The CRS became very widely used across the globe and was translated into many languages. After many validation studies were conducted and published, the CRS was established as the gold standard for assessment of what is now called ADHD. Over the next 10 years, additional data were collected, items were reviewed, and statistical analyses were conducted. This led to revision of the CRS, and in 1997 the Conners' Rating Scales—Revised (CRS–R) was released for rating children ages 3 to 17.

The CRS–R reflected a larger, more diverse normative sample and improved psychometric properties. It expanded the rater options from parent and teacher by adding an adolescent self-report form (for use with youth ages 12 to 17). Items based on DSM-IV criteria for ADHD were added. In addition to continuing in-depth coverage of ADHD, the CRS–R included conduct problems, cognitive problems, family issues, emotional lability, and anger control. Items reflecting internalizing features were added, such as anxiety, psychosomatic symptoms, and perfectionism; coverage of these features was facilitated by the addition of the adolescent self-report form. The historic “Hyperactivity Index” (also known as the “Conners 10-item” or the “Abbreviated Symptoms Questionnaire [ASQ]”) was updated and labelled the “Conners Global Index” to reflect its utility in identifying children with general pathology (not just hyperactivity). A statistically derived index was developed using the best items for distinguishing between children with ADHD and children in the general population; this was called the “ADHD Index.” The physical forms for the CRS–R were improved, including simplified hand-scoring options and new feedback/progress forms. Both “long” and “short” forms were made available.

### **Changing the CRS–R**

In 2003, the research and development team at MHS began gathering feedback from users of the CRS–R to update and revise the CRS–R into the Conners 3. Team members included Dr. Conners (the author of the Conners assessments), Dr. Sparrow (clinical consultant for the project), and MHS staff. During many conversations, we realized the need to develop a comprehensive rating scale that was built on the same principles as the CRS–R: guided by clinical experience and research, supported by solid psychometrics and statistical analyses, and useful to professionals who work with children and adolescents. As the rating scale grew longer and longer, it became clear that one rating scale could not responsibly

 **Rapid Reference 1.4**

**Published Conners Assessments Over the Years**

	<b>Parent (P)</b>	<b>Teacher (T)</b>	<b>Self-Report (SR)</b>
<b>Conners 3rd Edition (Conners, 2008)</b>			
Full length	Conners 3-P	Conners 3-T	Conners 3-SR
Short	Conners 3-P(S)	Conners 3-T(S)	Conners 3-SR(S)
Index/Auxiliary	Conners 3 Global Index Conners 3GI	Conners 3GI-T	—
	Conners 3 ADHD Index Conners 3AI	Conners 3AI-T	Conners 3AI-SR
<b>Conners Comprehensive Behavior Rating Scales (Conners, 2008)</b>			
Full length	Conners CBRS-P	Conners CBRS-T	Conners CBRS-SR
Index/Auxiliary	Conners CI-P	Conners CI-T	Conners CI-SR

	Parent (P)	Teacher (T)	Self-Report (SR)
<b>Conners Early Childhood (Conners, 2009)</b>			
Full length	Conners EC-P	Conners EC-T	—
Behavior	Conners EC BEH-P	Conners EC BEH-T	—
Developmental Milestones	Conners EC DM-P	Conners EC DM-T	—
Short	Conners EC BEH-P(S)	Conners EC BEH-T(S)	—
Index/Auxiliary	Conners ECGI-P	Conners ECGI-T	—
<b>Conners' Rating Scales-Revised (Conners, 1997)</b>			
Full length	Conners' Rating Scales-Revised: Long CRS-R:L	CTRS-R:L	CASS:L <sup>a</sup>
Short	Conners' Rating Scales-Revised: Short CRS-R:S	CTRS-R:S	CASS:S <sup>a</sup>

Index/Auxiliary	Conners' Global Index CGI	CGI-P	CGI-T	—
	Conners' ADHD/DSM-IV Scales CADS	CADS-P	CADS-T	CADS-A
<b>Conners' Rating Scales (Conners, 1989, 1990)</b>				
Full length	Conners' Rating Scales (GRS) Long Form	CPRS-93 item	CTRS-39 item	—
Short	Conners' Rating Scales (GRS) Short Form	CPRS-48 item	CTRS-28 item	—
Index/Auxiliary	Abbreviated Symptom Questionnaire (ASQ; Hyperactivity Index)	ASQ-P	ASQ-T	—

<sup>a</sup> CASS = Conners-Wells' Adolescent Self-Report Scales

## 14 ESSENTIALS OF CONNERS BEHAVIOR ASSESSMENTS

serve as both a focused ADHD tool and a comprehensive survey. Thus, the Conners CBRS was added to the development plan to provide broad coverage of important clinical issues in children and adolescents, and the Conners 3 was streamlined to serve as a focused ADHD tool.

We reviewed the entire DSM-IV-TR and available research publications to determine which clinical constructs were most critical for inclusion on these two rating scales. Approaching this daunting task from many different angles, we agreed to select the initial constructs from a domain-based perspective as well as a DSM-based perspective. Domains and subcategories were generated from a review of clinic referrals and relevant research literature (see Rapid Reference 1.5 for a summary of these goals for content inclusion). We agreed to include information to help clinicians identify when the validity of results might be questionable. Items asking about impairment associated with symptoms were also added, given the importance of establishing impairment for educational identification and for DSM-based diagnosis. Finally, we set the goal of creating rating scales that would go beyond labeling a problem, continuing with identifying intervention goals and ways to monitor progress in treatment.

### *Rapid Reference 1.5*

#### Content Goals for Conners 3 and Conners CBRS

<b>Domain</b>	<b>Subcategory</b>	<b>DSM-IV-TR Diagnostic Categories</b>
Behavioral	<ul style="list-style-type: none"> <li>• Aggressive/Oppositional behaviors</li> <li>• Hyperactive/Impulsive behaviors</li> </ul>	<ul style="list-style-type: none"> <li>• Attention and Disruptive Behavior Disorders (ADHD, ODD, CD)</li> </ul>
Emotional	<ul style="list-style-type: none"> <li>• Irritability, anxiety (worrying, separation fears, perfectionism)</li> <li>• General distress, symptoms of depression</li> </ul>	<ul style="list-style-type: none"> <li>• Anxiety Disorders (GAD, SAD, Social Phobia, OCD, Panic Attack, Specific Phobia, PTSD)</li> <li>• Mood Disorders (Major Depressive Episode, Manic Episode)</li> </ul>
Social	<ul style="list-style-type: none"> <li>• Social skills, social interests, social isolation</li> </ul>	<ul style="list-style-type: none"> <li>• Pervasive Developmental Disorders (Autistic Disorder, Asperger's Disorder)</li> </ul>

Academic/ Cognitive	<ul style="list-style-type: none"> <li>• Subject-specific difficulties</li> <li>• Inattention</li> <li>• Executive deficits</li> </ul>	<ul style="list-style-type: none"> <li>• Specific Learning Disorders</li> </ul>
Other	<ul style="list-style-type: none"> <li>• Predicting potential for violence</li> <li>• Risk factors for possible suicide attempt</li> <li>• Physical symptoms (medication side effects and/or emotional correlates)</li> </ul>	<ul style="list-style-type: none"> <li>• Substance Use, Pica, Tics, Trichotillomania, Enuresis and Encopresis</li> </ul>

Another topic of discussion was possible expansion of the self-report age-range. The CRS–R Adolescent Self-Report was limited to 12- to 17-year-olds based on opinions about the age at which a child could accurately and reliably describe his own symptoms. During the interval between publication of the CRS–R and this development project, research suggested that the CRS–R Adolescent Self-Report could be reliably used by children as young as 8 years old (Parker, Bond, Reker, & Wood, 2005). While some of the team members were skeptical, we agreed to collect self-report pilot data from children ages 8 and up, then revisit the issue. Pilot data confirmed the earlier publication; self-report data were reliable for children as young as 8 years old. These findings were supported by further analyses of self-report data from the full standardization sample. Thus, the Conners 3 and Conners CBRS both have self-report forms for use by children ages 8 through 18 years.

While planning the Conners 3 and Conners CBRS, one more critical issue emerged in discussion. Continuing to cover the same age range as the CRS–R (3 through 17 years old) significantly limited our choice of items; either items were so general that they did not capture important concerns, or items were inappropriate for part of the age-range. We and others commented that parents and teachers of young children tended to skip certain items when responding to the CRS–R (typically academic items), preventing some scales from being scored. Important questions to aid early identification and intervention efforts were not included as they did not apply to school-aged children. After some discussion, the team decided to create a separate scale for young children (the Conners EC) and to concentrate on school-aged youth with the Conners 3 and Conners CBRS.

Given our desire to create a developmentally appropriate rating scale for use with young children, the team did not limit the Conners EC to a downward

 *Rapid Reference 1.6***Key Development Goals***Conners 3:*

- Thorough and reliable ADHD assessment
- Added emphasis on associated features and commonly comorbid disorders
- New normative data and updated psychometric properties
- School-age focused age range
- Content alignment across Parent, Teacher, and Self-Report forms
- Simplification of DSM-IV-TR scale language
- Addition of new features (e.g., validity scales, executive functioning)
- Increased links to intervention

*Conners CBRS:*

- Comprehensive coverage of issues that arise in school-aged youth
- Strong statistical foundation and diagnostic utility
- Links to identification and diagnosis
- DSM-IV-TR symptoms for a number of diagnoses
- Links to intervention and treatment planning (e.g., IDEA 2004)
- Multiple ratings in multiple settings with easily integrated results

*Conners EC:*

- Comprehensive coverage of issues that occur in young children
- Developmentally sensitive items
- Strong statistical foundation and diagnostic utility
- Support early identification and intervention
- Multiple ratings in multiple settings with easily integrated results

extension of the Conners 3 and Conners CBRS. We again brainstormed, considered clinical cases, and reviewed relevant research and publications about young children. We agreed that it was critical to include items reflecting important research on early indicators of certain disorders. We considered whether to represent symptoms of DSM-IV-TR disorders, but we ultimately decided that the more important job for the Conners EC was to capture functional issues that are usually first observed in young children. As such, a set of developmental milestone items was added, requiring a departure from the traditional 0 to 3 Likert scale used in all previous versions of the Conners rating scales. All of this labor and deliberation delivered a robust tool with behavioral, emotional, social, and cognitive components, as well as norm-referenced



markers for key developmental skills across a range of domains. See Rapid Reference 1.6 for a summary of the key development goals for the Conners 3, Conners CBRS, and Conners EC. See Rapid Reference 1.7 for an overview of changes made to the CRS–R and Rapid References 1.8 through 1.9 for a scale-by-scale comparison.

## *Rapid Reference 1.7*

### **Key Changes from the CRS–R to the Conners 3 and Conners CBRS**

- Updated normative sample and normative groups.
  - Ensures that the norms reflect current levels of behaviors.
  - Separate norms for each age, by year (CRS–R norms were grouped by 3-year age bins)—this reflects findings that the scores were age sensitive, and that different areas changed at different ages. Using 1-year age groups provides more accurate and precise results.
  - Optional combined gender norms for boys and girls. As with the CRS–R, data were gender specific for many scales, with changes occurring at different ages for boys versus girls. Because some settings require combined-gender norms, combined-gender norms are provided for the Conners assessments (see Rapid Reference 1.24 for additional information).
- Expanded clinical samples. Data were collected about a much wider range of clinical diagnoses than for the CRS–R (see Rapid References 1.25 and 1.26).<sup>a</sup>
- Modified age range. Conners 3 and Conners CBRS norms begin at 6 years, 0 months and extend through 18 years, 11 months to capture the range of ages present in school-aged youth (CRS–R norms ranged from 3 years through 17 years, 11 months). Self-report forms can be completed by youth who are 8 to 18 years old.
  - Young children need different items to accurately capture important issues. Ages 2 to 6 years are now represented on the Conners EC. The Conners 3 and Conners CBRS begin at 6 years old, the age at which most children enter an academic setting in the first grade.<sup>b</sup>
  - Many youth turn 18 years old before they complete high school. The upward extension of the age range helps describe these students before they transition to instruments designed for use with adults, such as the Conners Adult ADHD Rating Scale™ (CAARS™).
  - Based on data supporting the accuracy of self-report by children as young as 8 years old, norms are provided for the self-report forms when completed by 8- to 18-year-olds.

## 18 ESSENTIALS OF CONNERS BEHAVIOR ASSESSMENTS

- Different approach to short forms. The CRS–R short forms included a subset of items from selected scales and the ADHD Index. The Conners 3 short form includes items from every Content scale; the ADHD Index can be added by use of the additional Conners 3AI form. The Conners CBRS does not have a short form for the content scales as this was counterintuitive for a comprehensive scale. (The Conners CI is a short form of sorts, as it gives information about five different diagnostic groups.)
- In-depth assessment of ADHD: Conners 3.
  - Detailed information about ADHD from clinical, research, and DSM perspectives is kept on the Conners 3.
  - Former CRS–R “Cognitive Problems/Inattention” scale is now two separate scales (Inattention, Learning Problems) to simplify interpretation.
  - Executive Functioning scale added to reflect an important associated issue for ADHD.
  - Features of disruptive behaviors retained on the Conners 3, and DSM-IV-TR symptoms of key comorbid diagnoses (CD, ODD) added.
  - The majority of CRS–R content about anxiety shifted to Conners CBRS, with Anxiety and Depression Screener items added to the Conners 3 to help indicate when further evaluation may be needed.
- Broad coverage of school-aged issues: Conners CBRS.
  - General information about behavioral, social, emotional, and academic issues shifted to the Conners CBRS and expanded.
  - Content from CRS–R Anxious/Shy, Emotional Problems, and Perfectionism now represented on Conners CBRS.
  - CRS–R “Psychosomatic” scale more accurately identified as “Physical Symptoms” on Conners CBRS.
  - DSM-IV-TR coverage expanded significantly beyond symptoms of ADHD (see Rapid Reference 1.18 for a complete listing of DSM-based scales).
- Simplified language. All items reflect the goal of reducing the required reading level for parent, teacher, and self-report forms. This includes rewording items about DSM-IV-TR symptoms so that they are more easily understood by nonprofessionals, thereby improving how accurately they can rate these items (CRS–R contained ADHD symptoms from the DSM-IV, verbatim). See Rapid Reference 1.1 for new reading levels.
- New elements.
  - Caution flags. The computerized reports for the Conners 3 and Conners CBRS flag items that suggest special attention when they are endorsed. This helps draw your attention to these individual items so they are not overlooked. These items are grouped into “Critical items” (Conners 3 and Conners CBRS), “Screener items” (Conners 3), and “Other Clinical Indicators” (Conners CBRS).
  - Validity scales. The Conners 3 and Conners CBRS each have three new Validity scales to help describe the rater’s response style. The Positive Impression scale indicates when an overly positive response style is possible,

the Negative Impression scale an overly negative response style, and the Inconsistency Index inconsistent responding. These results can help you understand certain patterns in the data, including the possibility of invalid ratings (see Chapter 4 for additional guidance).

- Impairment items. These items help you assess the level of impairment in home, school, and social settings, as required for consideration of a DSM-IV-TR diagnosis and/or educational eligibility.
- Improved comparison across raters. The Conners 3 and Conners CBRS preserve similarities across parent, teacher, and self-report forms wherever appropriate to facilitate your comparison of results across multiple informants. A computerized Comparative Report is available for each of these rating scales that indicates statistically significant differences in ratings of a child.
- Improved comparison across time. Scores from a current administration of the Conners 3 or Conners CBRS can be compared statistically with results from past evaluations with these rating scales using the "Reliable Change Index" score reported in the Progress Report (see Chapter 4 for more information). This can be used to supplement clinical judgment of meaningful change.
- Cultural relevance. Items for the Conners 3 and Conners CBRS were reviewed by experts in multicultural issues of assessment to help select the items that were most culturally fair and applicable. Once items were selected, the Spanish translations of these rating scales were created through a careful process of forward and backward translations (i.e., the English words were translated into Spanish by one translator, the Spanish translations were translated into English by another translator, and the two versions were compared to make certain that nothing was "lost in translation," literally). See Rapid Reference 1.11 for additional information about Spanish translations of the Conners assessments.
- Inclusion of positively worded items. Items on past Conners rating scales were all phrased in the negative direction, describing problems. The new Conners line of assessments include positive items. See Rapid Reference 1.10 for discussion.

<sup>a</sup> The CRS-R Technical Manual (2001) mentions two clinical groups: ADHD and "emotional problems."

<sup>b</sup> Norms for the Conners EC overlap with those for the Conners 3 and Conners CBRS for one year at the 6-year-old age range. This reflects that some 6-year-old children are in pre-academic settings in which the Conners EC might more accurately assess their functioning. Other 6-year-old children are already in 1<sup>st</sup> grade, and items on the Conners 3 and/or Conners CBRS may be more appropriate. This overlap in normative data sets allows flexibility for assessors to choose the measure that is most relevant for a specific 6-year-old child.

 *Rapid Reference 1.8*

**Comparison of CRS-R with Conners 3 and Conners CBRS**

	<b>CRS-R</b>	<b>Conners 3</b>	<b>Conners CBRS</b>
Age range:	3–17 years <sup>a</sup> 12–17 years	6–18 years 8–18 years	6–18 years 8–18 years
Parent and Teacher forms			
Self-report forms			
Behavioral content	Oppositional (P & T) Conduct Problems (SR) Anger Control Problems (SR) Hyperactivity	Defiance/Aggression	Defiant/Aggressive Behaviors
Emotional content	Emotional Problems (SR) Anxious/Shy (P & T)  Perfectionism (P & T)	Hyperactivity/Impulsivity Critical items: Severe Conduct	Hyperactivity/Impulsivity Critical items: Severe Conduct  OCI: Bullying (victimization, perpetration)
		Screener items: Anxiety	Emotional Distress  Separation Fears  Perfectionistic and Compulsive Behaviors (P & T) OCI: Panic Attack, PTSD, Specific Phobia, Trichotillomania

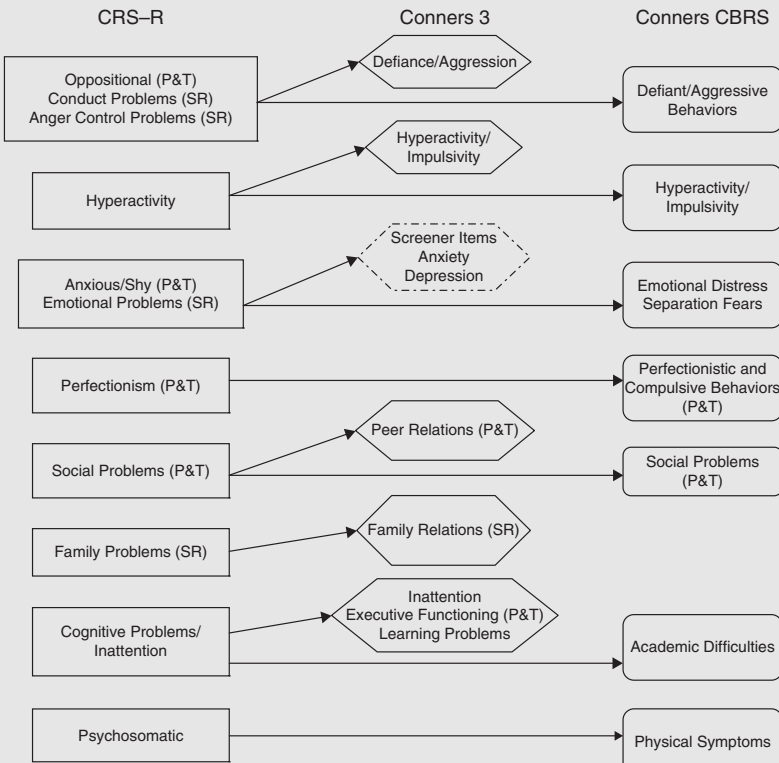
	Screener items: Depression	Critical items: Self Harm
Social content	Social Problems (P & T) Family Problems (SR)	Social Problems (P & T)
Cognitive/Academic content	Cognitive Problems/Inattention  Inattention Executive Functioning (P & T)	Academic Difficulties
DSM-based scales	ADHD Inattentive ADHD Hyperactive-Impulsive	ADHD Inattentive ADHD Hyperactive-Impulsive
	Conduct Disorder Oppositional Defiant Disorder	Conduct Disorder Oppositional Defiant Disorder
		Major Depressive Episode Manic Episode Generalized Anxiety Disorder Separation Anxiety Disorder Social Phobia Obsessive-Compulsive Disorder Autistic Disorder (P & T) Asperger's Disorder (P & T)

	<b>CRS-R</b>	<b>Conners 3</b>	<b>Conners CBRS</b>
Index scores	Conners ADHD Index  Conners Global Index (P & T)	Conners 3 ADHD Index  Conners 3 Global Index (P & T)	Conners Clinical Index
Other content	Psychosomatic (P)	Validity scales Impairment items Additional Questions	Violence Potential Indicator Physical Symptoms OCI: Enuresis/Encopresis (P & T) OCI: Pervasive Developmental Disorder (SR) OCI: Pica (P & SR), Tics, Substance Use Validity scales Impairment items Additional Questions

<sup>a</sup> Young children (2 – 6 years old) are now represented on the Conners Early Childhood (Conners EC).  
 Note: P = Parent form only, T = Teacher form only, SR = Self-report form only, OCI = Other Clinical Indicator(s), PTSD = Posttraumatic Stress Disorder,  
 PI = Positive Impression, NI = Negative Impression, IncX = Inconsistency Index

## *Rapid Reference 1.9*

### Transitions from the CRS-R to the Conners 3 and Conners CBRS Content Scales



## *Rapid Reference 1.10*

### Positive and Negative Wording

Many rating scales are written completely in the negative direction, listing only problems. This is certainly consistent with the idea that people complete rating scales to identify problems. When every item is written in the negative direction, however, it is easy for raters to fall into a "response bias" where they

## 24 ESSENTIALS OF CONNERS BEHAVIOR ASSESSMENTS

assign the same level of rating to almost every item; for example, “This child is fine” (rate everything a 0) or “Everything is wrong with this child” (rate everything a 3). This same response bias issue could occur if the rating scale was written entirely in the positive direction (i.e., listing intact skills and strengths).

One obvious solution is to create a rating scale that has both positively and negatively worded items. The interesting thing is that positively worded items (i.e., items that describe intact skills or strengths) don’t perform as well statistically. The inclusion of positively worded items also complicates scoring, as ratings of these items must be converted during the scoring process.

The Conners assessments use a blended approach—primarily problem-focused items with a sprinkling of positively worded items. This gives the rater several chances to remember he is not just describing problems, but preserves the statistical strength of the rating scale.

### Developmental Elements

The Conners 3 and Conners CBRS were published in 2008, with interpretive updates in 2009.<sup>3</sup> The Conners EC was published in 2009. The manuals for these three rating scales provide extensive coverage of the development process for these instruments. The general principles were consistent across all three rating scales and included the following elements:

- **Item generation:** The development team reviewed items from past versions of the Conners rating scales. We reflected on our experiences with the children, parents, and teachers in our clinical practices. We gathered input from many professionals through focus groups. We examined concepts from relevant research publications and various classification systems (including the DSM-IV-TR, ICD-10, and IDEA
3. These interpretive updates to the Conners 3 and Conners CBRS should be reviewed for complete details. In brief, three clarifications were provided for both rating scales. These included: (1) describing elevated results on the Validity scales as indicating “possibly positive,” “possibly negative,” and/or “inconsistent” response style rather than “possibly invalid” results; (2) relabelling the “borderline range” for *T*-score interpretation as “high average score (Slightly more concerns than are typically reported)”; and (3) relabelling the Aggression scale as “Defiance/Aggression” (Conners 3) and the Aggressive Behaviors scale as “Defiant/Aggressive Behaviors” (Conners CBRS). Two additional updates affected the Conners CBRS: (1) renaming the Violence Potential scale as “Violence Potential Indicator” and weighting relative contributions of items to the score; and (2) raising the minimum score for flagging the Specific Phobia Other Clinical Indicator item. These updates were issued to clarify these important aspects of interpretation so that professionals were more comfortable explaining results from the rating scales. Conners software scoring programs should be updated on a regular basis; see Chapter 3 for more information.



2004). We reviewed the content, strengths, and weaknesses of other instruments to ensure the new Conners assessments would make a unique contribution to the field. We considered the topics we thought were important to include. Based on all of these discussions, we generated many items for consideration, including multiple versions of some items. We considered how certain behaviors might be described by different observers, specifically parents, teachers, and children; this helped us create items that were appropriate for multiple types of raters in different settings.

- **Expert review:** A condensed list of items was sent to expert clinicians and researchers in relevant fields. Each was asked to review the items and send feedback, including topics included, coverage of the topics, wording of items, and additional considerations. The experts who reviewed each rating scale are listed in the relevant manuals. This step was included to help make sure the information on the rating scales was clinically meaningful and relevant and that no important topics or examples were omitted.
- **Cultural relevance:** A special type of expert review was conducted by professionals who specialize in multicultural issues of assessment. As items were being developed, they were reviewed not just by clinicians but by people with expertise in linguistic and cultural issues of translation. This helped create rating scales that could be translated into other languages for use with people from different cultures—particularly Spanish for use with the Hispanic population of the United States. The Spanish translations of the Conners 3 and Conners CBRS were developed simultaneously with the English versions. The Conners EC was translated into Spanish after data collection.
- **Co-norming:** Data for the Conners 3 and Conners CBRS were collected concurrently. Many of the children rated with the Conners 3 were also rated with the Conners CBRS. This means that the normative data for the Conners 3 and Conners CBRS describe a similar group of children, which facilitates comparison among scores from these two Conners assessments. This is useful when integrating results from co-administration of the Conners 3 and Conners CBRS forms or from multiple evaluations using different Conners assessments.
- **Pilot data:** Preliminary data were collected on the initial pool of items. These data were used to help select which items were the strongest when more than one item existed for a given concept. These data also helped identify which clinical concepts were statistically supported. The pilot

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## 26 ESSENTIALS OF CONNERS BEHAVIOR ASSESSMENTS

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data were used as the basis for discussions about which items were retained for the final data collection with the standardization samples. The preliminary structure for the Conners 3 and Conners CBRS was established with these data.

- Standardization: A large data collection project was undertaken. The general population sample was stratified by age and gender (i.e., equal numbers of boys and girls in each age group were represented), as well as by race/ethnicity (proportionate to the U.S. Census). Data were collected about children from different geographic regions, representing children with different backgrounds (including rural, suburban, and urban settings; safe and dangerous neighborhoods; low to high parental education and income levels).
- Clinical samples were also collected for relevant types of diagnoses for validation of constructs included on each rating scale (including both confirmation that the scales were capturing the targeted clinical group and that they were useful in distinguishing that group from the general population and from other clinical groups). See Rapid References 1.25 and 1.26 for a list of clinical groups sampled.
- The extensive data set was used to examine psychometrics of each rating scale. In cases where psychometrics were not solid, the constructs, scales, and items were re-examined to better understand the issue. For example, some items occurred at very low frequency in the general population, so there were not enough data to support keeping them on the scale; however, review of the clinical data indicated these items were very important for recognizing features of a certain diagnosis or identifying a child at risk for later difficulties. In cases like these, clinical judgment supported inclusion of the items for purposes of clinical utility. For the majority of the scales included in final versions of the Conners 3, Conners CBRS, and Conners EC, reliability and validity were good (see “Standardization and Psychometric Properties” in this chapter for an overview of reliability and validity; see relevant chapters in manuals for specific psychometrics).
- As the final structure of each rating scale was confirmed, we reviewed the clinical utility of each scale and how it might inform treatment efforts.

In summary, the Conners assessments have evolved over several generations of development to reach their current level of sophistication and utility. Each version shows refinements and improvements as well as updates corresponding with current needs of the educational, clinical, and research fields. Important

considerations in the creation of the Conners 3, Conners CBRS, and Conners EC include depth and breadth of content, solid statistical basis, clinical utility for both identification and intervention, links to the DSM-IV-TR, and age-appropriate items/versions.

## *Rapid Reference 1.11*

### **Spanish Translations of the Conners Assessments**

Parent and self-report forms were translated into Spanish for the initial release of the Conners assessments, as a large percentage of the U.S. population is primarily Spanish-speaking. Teacher forms for the Conners 3 and Conners CBRS were released in English only, as most U.S. schools require teachers to be literate in English. Conners EC Teacher forms were released in English and Spanish, as there is more linguistic variation among the teachers and caregivers of young children.

### **CONNERS 3rd EDITION (CONNERS 3)**

The Conners 3 is a focused assessment tool for ADHD and associated issues in children ages 6 to 18 years. It includes items related to inattention, hyperactivity, and impulsivity, using relevant descriptions from clinical and research applications as well as the DSM-IV-TR symptoms of ADHD. Executive functioning, learning problems, and relationships are also included, as these are key areas often involved for youth with ADHD (see Rapid Reference 1.12 for additional information about executive functioning).

## *Rapid Reference 1.12*

### **Executive Functions**

*Executive functioning* is a term used to describe the so-called “higher order” skills of the human brain. It seems that certain parts of the human brain (including the frontal lobes and white matter tracts) help coordinate all of the brain’s functions, just like a Chief Executive Officer (CEO) coordinates the activities of a large corporation. Skills that are thought of as executive functions include: organization (both physical and mental), prioritization, integration of information, forming and implementing a problem-solving strategy (with back-up plans if the first way does not work), efficiency, self-regulation (of thoughts, actions, and emotions), and mental flexibility.

## 28 ESSENTIALS OF CONNERS BEHAVIOR ASSESSMENTS


The human brain continues developing after birth, and the last areas to reach maturity are the frontal lobes and white matter tracts. These areas continue developing into early adulthood. Thus, as typically developing children grow older, we see increased ability to show self-control, be independent, and accept responsibility. This developmental path makes it difficult to recognize deficits in executive functioning at very young ages because most young children have limited skills in this area (e.g., it is typical for a 2-year-old child to have a temper tantrum). These deficits in executive functioning become more apparent as children grow older (e.g., it is unusual for a 13-year-old child to have a temper tantrum).

It is important to consider information about everyday functioning when evaluating executive functioning. Parents and teachers are often aware of these deficits because they see children in unstructured situations where executive functioning is required. The very nature of most formal, standardized evaluations makes it difficult to detect executive deficits, as the child is evaluated in a highly structured, reduced distraction setting with clearly stated rules and expectations.

Problems with executive functioning are described with terms like *executive deficits* or *executive dysfunction*. Although executive deficits are often seen with ADHD, they are not diagnostic and can also occur with Anxiety Disorders, Mood Disorders, Pervasive Developmental Disorders, and many other diagnoses. In fact, it is possible to see executive deficits in children who don't have a DSM-IV-TR diagnosis. Executive functioning is a broad concept, like attention, that is not limited to one diagnostic category.

The Disruptive Behavior Disorders, which often are comorbid with ADHD, are included on the Conners 3 with items representing DSM-IV-TR symptoms of CD and ODD as well as other content about defiance, aggression, and severe conduct problems. Parent, teacher, and self-report forms are available, in English or Spanish.<sup>4</sup> The Conners 3 has four different form lengths, summarized in Rapid Reference 1.13; the similarities and differences among these forms are discussed in Chapter 2. Each form can be completed in paper-and-pencil format or online. Scoring options include hand-scoring, online scoring, and computer scoring with the software package<sup>5</sup> (see Chapter 3). Typical time required to administer and score the Conners 3 forms is summarized in Rapid Reference 1.13. Computerized reports are available when using online or software scoring; see Chapter 3 for more information.

4. Additional translations may be available; check with the publisher if another language is needed. At the time this book was prepared, some Conners 3 forms were also available in French.
5. Note that the software package is stored on a portable USB drive rather than installed on a single computer's hard drive. See Chapter 3 for further discussion.

 **Rapid Reference 1.13**

**Overview of Conners 3 Options**

<b>Rater type (# items)</b>	<b>Conners 3 (Full-Length)</b>	<b>Conners 3(S) (Short Form)</b>	<b>Conners 3AI (ADHD Index Form)</b>	<b>Conners 3GI (Global Index Form)</b>
	Parent (110) Teacher (115) Self-Report (99)	Parent (45) Teacher (41) Self-Report (41)	Parent (10) Teacher (10) Self-Report (10)	Parent (10) Teacher (10)
<b>Language<sup>a</sup></b>	English (Parent, Teacher, and Self-Report forms) Spanish (Parent and Self-Report forms)			
<b>Information</b>	Content scales DSM-IV-TR Symptom scales Validity scales Index scales Screener items Critical items Impairment items Additional Questions	Content scales Validity scales Additional Questions	Conners 3AI	Conners 3GI

	<b>Conners 3 (Full-Length)</b>	<b>Conners 3(S) (Short Form)</b>	<b>Conners 3AI (ADHD Index Form)</b>	<b>Conners 3GI (Global Index Form)</b>
<b>Administration<sup>b</sup></b>	Paper: 20–25 min. Online: 20–25 min.	Paper: 10 min. Online: 10 min.	Paper: 5 min. Online: 5 min.	Paper: 5 min. Online: 5 min.
<b>Scoring<sup>c</sup></b>	Hand-score: 20 min. Online: 5 min. Software: 5 min.	Hand-score: 10 min. Online: 2–3 min. Software: 2–3 min.	Hand-score: 5 min. Online: 1 min. Software: 1 min.	Hand-score: 5 min. Online: 1 min. Software: 1 min.
<b>Reports</b>	Assessment (results from a single administration) Progress (change over time) Comparative (comparison of multiple ratings of a child at one point in time)			

<sup>a</sup> Additional translations may be available; check with the publisher if another language is needed. At the time this book was prepared, some Conners 3 forms were also available in French.

<sup>b</sup> Typical time to complete the form, not including instructions and review of completed form.

<sup>c</sup> Typical time to enter data or complete the QuikScore form (not including time to open scoring program or gather materials). Online scoring is immediate when online administration is used.

### Structure of the Conners 3

The Conners 3 is composed of Content scales, DSM-IV-TR Symptom scales, Screener items, Critical items, Validity scales, the Conners 3 ADHD Index, the Conners 3 Global Index, Impairment items, and Additional Questions. See Rapid Reference 1.14 for an overview of the Conners 3 structure. Each of these components is briefly reviewed below; please see Chapter 3 Scoring and Chapter 4 Interpretation for additional information.

## Rapid Reference 1.14

### Conners 3 Structure

#### Conners 3rd Edition (Conners 3)

Content Scales		
Parent (6-18yo)	Teacher (6-18yo)	Self (8-18yo)
Inattention	Inattention	Inattention
Hyperactivity/Impulsivity	Hyperactivity/ Impulsivity	Hyperactivity/Impulsivity
Learning Problems	Learning Problems /Executive Functioning	Learning Problems
Executive Functioning	- Learning Problems subscale - Executive Functioning subscale	—
Defiance/Aggression	Defiance/Aggression	Defiance/Aggression
Peer Relations	Peer Relations	Family Relations

<b>DSM-IV-TR Symptom Scales</b> ADHD Inattentive ADHD Hyperactive-Impulsive Conduct Disorder Oppositional Defiant Disorder	<b>Conners 3 ADHD Index (Conners 3AI)</b> <b>Conners 3 Global Index (Conners 3GI; not on SR)</b> Restless-Impulsive subscale Emotional Lability subscale	<b>Validity Scales</b> Positive Impression (PI) Negative Impression (NI) Inconsistency Index (IncX)
<b>Screener Items</b> Anxiety Depression	<b>Severe Conduct Critical Items</b>	<b>Impairment Items</b>
		<b>Additional Questions</b>

- **Content Scales:** Each of these scales/subscales focuses on key content for ADHD and the Disruptive Behavior Disorders. Primary ADHD content is captured by the Inattention and Hyperactivity/Impulsivity scales. The Executive Functioning,<sup>6</sup> Learning Problems, and Peer/

6. Executive Functioning is a subscale of the Learning Problems/Executive Functioning scale on the Teacher form.

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## 32 ESSENTIALS OF CONNERS BEHAVIOR ASSESSMENTS

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Family Relations<sup>7</sup> scales/subscales reflect issues that are often related to ADHD. Key behaviors that accompany the Disruptive Behavior Disorders are described on the Defiance/Aggression scale. There are differences among the different rater types on the Content scales, reflecting different ways behaviors are observed in different settings. Each of these scales is reported as a *T*-score (with optional percentile score), comparing ratings of the child with expectations based on age and gender (combined gender norms are also available; see Rapid Reference 1.24).

- **DSM-IV-TR Symptom Scales:** The Conners 3 includes DSM-IV-TR-based scales for three diagnoses: ADHD (by subtype), CD, and ODD. Each of these scales includes symptoms of the relevant diagnosis as listed in the DSM-IV-TR. Remember that symptoms alone are not adequate for diagnosis; other important criteria must also be met before a diagnosis can be assigned (see Caution: DSM-IV-TR Diagnosis in Chapter 6). Each of these scales is reported in two different ways: *T*-score and symptom count. The *T*-score describes whether the child is showing more severe/frequent demonstrations of the symptoms in comparison to age- and gender-matched peers (unless the combined gender option is selected). The symptom count score reflects how many of the DSM-IV-TR symptoms were endorsed at sufficient levels to be considered for a possible diagnosis of that particular disorder.
- **Screeener Items:** There are two groups of Screeener items on the Conners 3: Anxiety and Depression, with four items in each group. These items were selected from the larger set of anxiety and mood items on the Conners CBRS as the most likely to indicate possible anxiety or depression. When any of these Screeener items are endorsed, it suggests the need for further investigation.
- **Critical Items:** The Conners 3 has a group of Severe Conduct Critical Items (see Rapid References 1.15 and 1.16). These items represent concerns about misconduct that should be investigated quickly when they are present, as they may require rapid intervention. The Severe Conduct Critical items include behaviors that may predict future violence or harm to others.
- **Validity Scales:**<sup>8</sup> These three scales help you identify potential biases in the rater's response style that could impact your interpretation of that

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7. The Parent and Teacher forms both have a Peer Relations scale that describes the child's relationships with peers. The Self-Report form has a Family Relations scale that describes the child's relationships with her family.
  8. The Conners 3 interpretative update issued in 2009 clarifies the interpretation of these Validity scales, as some clinicians were discarding all results when one or more of these scales was elevated. As described in the Interpretation chapter of the manual and of this book, an elevated Validity scale score may indicate many things, not just invalid ratings.



rater's results. They include the Positive Impression (PI) scale, Negative Impression (NI) scale, and Inconsistency Index (IncX). Elevated scores on these scales lead to careful examination of available information to determine what could lead to this response pattern, and may suggest caution during interpretation. In rare cases, extreme scores on validity scales may cause you to question the validity of the ratings.

- **Conners 3 ADHD Index (Conners 3AI):** This scale describes whether a child is more similar to children with a diagnosis of ADHD or to children in the general population, based on the rater's responses to these 10 items. The Conners 3AI is reported as a probability score, with higher scores indicating the child is more similar to children in the ADHD sample.
- **Conners 3 Global Index (Conners 3GI):** This index is the same 10 items as the original Conners Global Index (CGI; CRS-R). It is a good indicator of global concerns about a child's functioning. Research using these same 10 items from the CRS found good sensitivity to treatment effects. The Conners 3GI is reported as a *T*-score.
- **Impairment Items:** There is one item per setting, including academic, social, and home. Each item asks the rater to mark how much the child's symptoms impact his functioning in that setting. The raw scores are reviewed for these items.
- **Additional Questions:** These two items allow the rater to report additional information that may not be captured by the other items on the Conners 3. One item asks the rater to describe the child's strengths. The other item asks if there are any other concerns not described in their ratings. The text responses recorded here can add new information or clarify the rater's intentions with some of the ratings. These items are not scored.

## *Rapid Reference 1.15*

### **Sensitive Topics**

There is considerable debate among professionals and laypeople regarding whether children should be asked about sensitive topics like suicide and sexual activity. We all know that children experience thoughts about such topics, and some children engage in behaviors related to these topics. Although the research literature shows that asking about sensitive topics does not increase the behaviors, and in fact may *decrease* thoughts about certain behaviors (for example, see Gould, Marrocco, et al., 2005 regarding suicide screening), some

## 34 ESSENTIALS OF CONNERS BEHAVIOR ASSESSMENTS

people continue to worry that asking questions may give children ideas. From a legal perspective, some argue that documenting the presence of risk factors could place an assessor at risk if he did not act quickly to intervene; I counter that failing to ask is a greater legal risk in the context of an evaluation. From an ethical perspective, it is critical to assess all factors that may be impacting a child's functioning, even if they are uncomfortable or risky to consider. The bottom line is that, if any behaviors related to these sensitive topics are present, it is important for assessors, parents, and teachers to be aware of them so appropriate investigation and intervention can be started.

A quick review of Rapid Reference 1.16 reveals that there are several critical concepts that are not included on the Conners self-report forms (i.e., suicide, thoughts of death/dying, caring about others, forced sex). During pilot data collection, the data collection team received feedback that many schools and parents were not comfortable with these items on a self-report form to be completed by 6- to 18-year-olds. This presented a difficult dilemma—should the items be retained at the risk of losing self-report for a portion of evaluations, or should the items be dropped from the self-report form? After much deliberation, the development team decided to keep the items on the parent and teacher forms, drop them on the self-report forms, and remind assessors that these are important concepts to include when interviewing a child. Two unique Critical items were included on the self-report form to serve as additional indicators of possible suicide risk (i.e., nobody cares, discouragement).

There are two Critical items that are reworded for self-report. The cruelty to animals item uses the word “mean” rather than “cruel.” The fire-setting item is simply, “I like to set fires,” which omits the concept of intention to cause damage. Both of these differences were implemented to reduce the overall reading level for the self-report form. It is important to realize these differences though, as they may impact a rater's willingness to endorse one of these items (i.e., a child may endorse the item which has milder wording even though the parent or teacher did not endorse the corresponding item).

One item is on the Conners 3 parent and teacher forms, but is not listed as a “Critical item.” The “cold-hearted and cruel” item can certainly be considered when interpreting results from the Conners 3 even though it is not explicitly listed as a Critical item.

Finally, although the Conners EC does not list “Critical items,” four of the Conners EC Other Clinical Indicators represent similar concepts (i.e., self-injury, stealing, cruelty to animals, fire-setting).

If you are faced with a parent or teacher who is uncomfortable with a topic included on the Conners assessments, it is important to clarify that not every item on the rating scale applies to every child, but that each item on the rating scale does happen for some children. You can also reassure the parent or teacher that the self-report form does not contain all of the items that are on the parent and teacher forms. Remind the rater that when one of these behaviors is present, it is extremely important for all helping the child to be aware so that they can respond appropriately.

*Rapid Reference 1.16*

Comparison of Critical Items

Critical Item Concept	Conners 3			Conners CBRS			Conners EC
	Parent	Teacher	Self	Parent	Teacher	Self	
Hopelessness				✓	✓	✓	
Helplessness				✓	✓	✓	
Worthlessness				✓	✓	✓	
Nobody cares						✓	
Discouragement						✓	
Self-injury				✓	✓	✓	*
Suicide				✓	✓		
Thoughts of Death/Dying				✓	✓		
Caring about others				✓	✓		
Breaking into property	✓	✓	✓	✓	✓	✓	

Critical Item Concept	Conners 3			Conners CBRS			Conners EC
	Parent	Teacher	Self	Parent	Teacher	Self	
Confrontational stealing	✓	✓	✓	✓	✓	✓	*
Forced sex	✓	✓		✓	✓		
Cruelty to animals	✓	✓	✓	✓	✓	✓	*
Cold-hearted and Cruel	(✓)	(✓)					
Fire-setting	✓	✓	✓	✓	✓	✓	*
Interest in Weapons				✓	✓		
Access to Weapons						✓	
Carries weapon				✓	✓	✓	
Uses weapon	✓	✓	✓	✓	✓	✓	
Gang membership				✓	✓	✓	
Police activity		✓	✓	✓	✓	✓	

\* Concept represented in Conners EC Other: Clinical Indicators; the Conners EC does not have "Critical items" per se. (✓) = not listed as a Critical item in Conners 3 manual.

## CONNERS COMPREHENSIVE BEHAVIOR RATING SCALES (CONNERS CBRS)

As indicated by the name, the Conners CBRS is a comprehensive tool to use in assessing a wide range of behavioral, emotional, social, and academic issues that are relevant in children ages 6 to 18 years. In addition to broad assessment of clinical issues that commonly arise in school-aged youth, the Conners CBRS includes less common but critical issues that require immediate intervention (e.g., self-harm, violence potential). The Conners CBRS results include information about general content areas as well as specific DSM-IV-TR diagnoses. Forms are available for completion by parents, teachers, and children, in English or Spanish.<sup>9</sup> In addition

### Rapid Reference 1.17

#### Overview of Conners CBRS Options

	<b>Conners CBRS (Full-Length)</b>	<b>Conners CI (Clinical Index Form)</b>
Rater type (# items)	Parent (203) Teacher (204) Self-Report (179)	Parent (24) Teacher (24) Self-Report (24)
Language <sup>a</sup>	English (Parent, Teacher, and Self-Report forms) French (Parent, Teacher, and Self-Report forms) Spanish (Parent and Self-Report forms)	
Information	Content scales DSM-IV-TR Symptom scales Validity scales Clinical Index Other Clinical Indicators Critical items Impairment items Additional Questions	Clinical Index

9. Additional translations may be available; check with the publisher if another language is needed.

	<b>Conners CBRS (Full-Length)</b>	<b>Conners CI (Clinical Index Form)</b>
Administration <sup>b</sup>	Paper: 20–25 min. Online: 20–25 min.	Paper: 10 min. Online: 10 min.
Scoring <sup>c</sup>	Hand-score: n/a Online: 10 min. Software: 10 min.	Hand-score: 10 min. Online: 2 min. Software: 2 min.
Reports	Assessment (results from a single administration) Progress (change over time) Comparative (comparison of multiple ratings of a child at one point in time)	

<sup>a</sup> Additional translations may be available; check with the publisher if another language is needed.

<sup>b</sup> Typical time to complete the form, not including instructions and review of completed form.

<sup>c</sup> Typical time to enter data or complete the QuikScore form (not including time to open scoring program or gather materials). Online scoring is immediate when online administration is used.

to the full Conners CBRS form, there is also a form that only contains the Conners Clinical Index (see Rapid Reference 1.17; see also Chapter 2 for more information about these two forms). Both forms can be completed in paper-and-pencil format or online. The Conners CBRS forms can be computer scored (either online or software<sup>10</sup>); the Conners CI form can also be hand-scored (see Chapter 3 for more information). Typical time required to administer and score the Conners CBRS forms is summarized in Rapid Reference 1.17. Computerized reports are available when using online or software scoring; see Chapter 3 for more information.

### **Structure of the Conners CBRS**

The Conners CBRS is composed of Content scales, DSM-IV-TR Symptom scales, Other Clinical Indicators, Critical items, Validity scales, Clinical Index,

10. Note that the software package is stored on a portable USB drive rather than installed on a single computer's hard drive. See Chapter 3 for further discussion.

Impairment items, and Additional Questions. See Rapid Reference 1.18 for an overview of the Conners CBRS structure. Each of these components is briefly reviewed below; please see Chapter 3 Scoring and Chapter 4 Interpretation for additional information.

- **Content Scales<sup>11</sup>**: Each of these scales/subscales reflects a general content area that is important to assess in school-aged youth. These areas include behavioral issues (i.e., Defiant/Aggressive Behaviors, Violence Potential Indicator, Hyperactivity/Impulsivity), emotional issues (i.e., Emotional Distress, Separation Fears, Perfectionistic and Compulsive Behaviors), social issues (i.e., Social Problems), and academic issues (i.e.,

## Rapid Reference 1.18

### Conners CBRS Structure

#### Conners Comprehensive Behavior Rating Scales (Conners CBRS)

Content Scales		
Parent (6-18yo)	Teacher (6-18yo)	Self (8-18yo)
Emotional Distress (Upsetting Thoughts, Worrying, Social Problems)	Emotional Distress (Upsetting Thoughts/Physical Symptoms, Social Anxiety, Separation Fears)	Emotional Distress
Defiant/Aggressive Behaviors	Defiant/Aggressive Behaviors	Defiant/Aggressive Behaviors
Academic Difficulties (Language, Math)	Academic Difficulties (Language, Math)	Academic Difficulties
Hyperactivity/Impulsivity (Social Problems subscale)	Hyperactivity	Hyperactivity/Impulsivity
Separation Fears	Social Problems (Separation Fears subscale)	—
Perfectionistic and Compulsive Behaviors	Perfectionistic and Compulsive Behaviors	—
Violence Potential Indicator	Violence Potential Indicator	Violence Potential Indicator
Physical Symptoms	Physical Symptoms	Physical Symptoms

#### DSM-IV-TR Symptom Scales

ADHD Inattentive  
ADHD Hyperactive-Impulsive  
Conduct Disorder  
Oppositional Defiant Disorder  
Major Depressive Episode  
Manic Episode  
Generalized Anxiety Disorder  
Separation Anxiety Disorder  
Social Phobia  
Obsessive-Compulsive Disorder  
Autistic Disorder (not on Self)  
Asperger's Disorder (not on Self)

#### Other Clinical Indicators

Bullying Perpetration  
Bullying Victimization  
Enuresis/Encopresis (not on Self)  
Panic Attack  
PDD (Self only)  
Pica (not on Teacher)  
Posttraumatic Stress Disorder  
Specific Phobia  
Substance Use  
Tics  
Trichotillomania

#### Critical Items

Severe Conduct  
Self Harm

#### Validity Scales

Positive Impression (PI)  
Negative Impression (NI)  
Inconsistency Index (IncX)

#### Clinical Index (Conners CI)

Disruptive Behavior Disorder Indicator  
Learning and Language Disorder Indicator  
Mood Disorder Indicator  
Anxiety Disorder Indicator  
ADHD Indicator

#### Impairment Items

#### Additional Questions

11. Defiant/Aggressive Behaviors and Violence Potential Indicator are the updated scale names as per the Conners CBRS interpretative update issued in 2009. Note that, although the scale names changed, the item content did not change.

Academic Difficulties), as well as key Physical Symptoms. Some of the scales have subscale scores (e.g., Emotional Distress) on the Parent and Teacher forms. There are differences among the different rater types on the Content scales, reflecting different ways behaviors are observed in different settings. Each of these scales is reported as a *T*-score (with optional percentile score), comparing ratings of the child with expectations based on age and gender (combined gender norms are also available; see Rapid Reference 1.24).

- **DSM-IV-TR Symptom Scales:** The Conners CBRS has a number of DSM-IV-TR Symptom scales based on symptoms of the relevant diagnosis (see Rapid Reference 1.18 for a comprehensive list of these diagnoses; see Rapid References 1.19 and 1.20 for special information about how Pervasive Developmental Disorders and Mood Disorders are represented on the Conners CBRS). Remember that symptoms alone are not adequate for diagnosis; other important criteria must also be met before a diagnosis can be assigned (see Caution: DSM-IV-TR Diagnosis in Chapter 6). Each of these scales is reported in two different ways: *T*-score and symptom count. The *T*-score describes whether the child is showing more severe/frequent demonstrations of the symptoms in comparison to age- and gender-matched peers (unless the combined gender option is selected). The symptom count score reflects how many of the DSM-IV-TR symptoms were endorsed at

### *Rapid Reference 1.19*

#### **Pervasive Developmental Disorders (PDD) on the Conners CBRS**

The initial goal was to create parallel scales across all informant types (i.e., parent, teacher, and self-report). As the development team discussed DSM-IV-TR items for symptoms of Autistic Disorder and Asperger's Disorder (diagnoses in the PDD category), we shared concerns that children with these disorders might have difficulty recognizing and reporting these symptoms. We created many items to try to capture aspects of the experience that children with diagnoses in the PDD category would endorse. Pilot data from youth's self-ratings of the Conners CBRS did not support a solid DSM-IV-TR Autistic Disorder or Asperger's Disorder scale on the self-report form. There were three items that reflected aspects of PDD that were reliably rated by children with a diagnosis in the PDD category. These three items were retained and are listed as Other Clinical Indicators for PDD on the self-report form.



## Rapid Reference 1.20

### Mood Disorders on the Conners CBRS

The diagnostic category of Mood Disorders in the DSM-IV-TR begins with descriptions of episodes, including Major Depressive Episode and Manic Episode. The episodes have criteria, including a list of observable symptoms. Mood episodes are not diagnoses; they are the building blocks used to establish diagnoses like Major Depressive Disorder and Bipolar Disorder. The actual Mood Disorder diagnoses require certain combinations of the mood episode building blocks in combination with other criteria (see Chapter 6, particularly Rapid Reference 6.9, and the DSM-IV-TR for more information). Consistent with the limitations of a rating scale, the Conners CBRS approaches these diagnoses from a symptomatic level, with the reminder that additional criteria must be met before a diagnosis can be assigned. Therefore, the Conners CBRS includes symptoms of Major Depressive Episode and Manic Episode. When either of these building blocks is present, further evaluation for possible mood disorder is recommended.

sufficient levels to be considered for a possible diagnosis of that particular disorder.

- **Other Clinical Indicators:** These topics are each covered by one or more items, rather than by entire scales. These are areas that are important to consider for school-aged children. When one of these items is endorsed at a certain level, the item is flagged for further consideration by the clinician.
- **Critical Items:** There are two groups of Critical items on the Conners CBRS: Severe Conduct and Self-Harm (see Rapid References 1.15 and 1.16). These items represent concerns that should be investigated quickly when they are present, as they may require rapid intervention. The Severe Conduct Critical items include behaviors that may predict future violence or harm to others. The Self-Harm Critical items include risk factors for possible suicide attempt and/or self-mutilation.
- **Validity Scales<sup>12</sup>:** These three scales help you identify potential biases in the rater's response style that could impact your

12. The Conners CBRS interpretative update issued in 2009 clarifies the interpretation of these Validity scales, as some clinicians were discarding all results when one or more of these scales was elevated. As described in the Interpretation chapter of the manual and of this book, an elevated Validity scale score may indicate many things, not just invalid ratings.

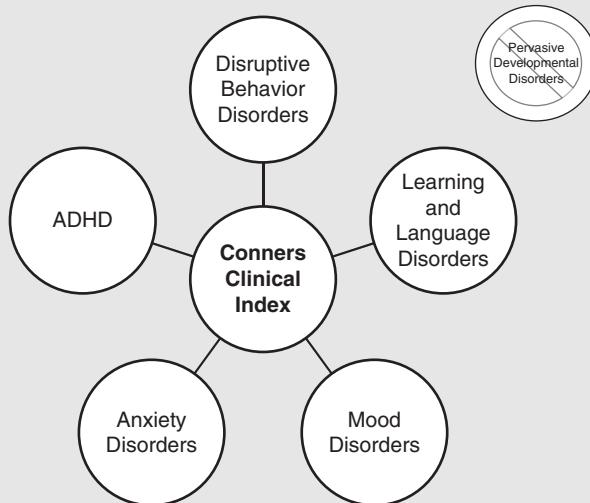
## 42 ESSENTIALS OF CONNERS BEHAVIOR ASSESSMENTS

interpretation of that rater's results. They include the Positive Impression (PI) scale, Negative Impression (NI) scale, and Inconsistency Index (IncX). Elevated scores on these scales lead to careful examination of available information to determine what could lead to this response pattern, and may suggest caution during interpretation. In rare cases, extreme scores on validity scales may cause you to question the validity of the ratings.

- **Conners Clinical Index (Conners CI):** This scale describes whether a child is more similar to children with a clinical diagnosis or to children in the general population, based on the rater's responses to these 24 items. Five clinical groups were used to derive this index: Disruptive Behavior Disorders, Learning Disorders and Language Disorders, Mood Disorders, Anxiety Disorders, and ADHD. As illustrated in Rapid Reference 1.21, children with Pervasive Developmental Disorders (a.k.a., autism spectrum disorders) were not included in this analysis; as a result, this index is not applicable to consideration of that group of diagnoses.

### *Rapid Reference 1.21*

#### Clinical Groups Represented in the Conners Clinical Index



The Conners CI is reported as a probability score, with higher scores indicating that the child is more similar to clinical populations. In addition, a *T*-score can be calculated for each of the five clinical categories in this index, suggesting which diagnostic group a child is most similar to on the basis of this quick index. (See Appendix D.)

- **Impairment Items:** There is one item per setting, including academic, social, and home. Each item asks the rater to mark how much the child's symptoms impact her functioning in that setting. The raw scores are reviewed for these items.
- **Additional Questions:** One of these two Additional Questions asks the rater to describe the child's strengths. The other item asks if there are any other concerns not described in their ratings. The text responses recorded here can add new information or clarify the rater's intentions with some of the ratings. These items are not scored.

### CONNERS EARLY CHILDHOOD (CONNERS EC)

The Conners EC is a broadband assessment tool for important behavioral, emotional, social, cognitive, and developmental issues in young children, ages 2 to 6 years. It is divided into two main sections: Behavior scales and Developmental Milestone scales. The Behavior scales include key concepts of hyperactivity, defiance, aggressive behaviors, anxiety, mood/affect, social functioning, atypical behaviors, inattention, and physical symptoms. The Developmental Milestone scales have important markers for development in adaptive skills, communication, motor skills, play, and pre-academic arenas. As mentioned previously, the Conners EC does not include DSM-IV-TR Symptom scales; rather, the relevant areas are included conceptually. Parent and teacher/childcare provider forms are available in English and Spanish.<sup>13</sup> There are five different form lengths available for the Conners EC (see Rapid Reference 1.22; see also Chapter 2 for comparisons among these forms). All Conners EC forms can be completed in paper-and-pencil format or online. The Conners EC forms can be computer scored (either online or software<sup>14</sup>); the Conners ECGI form can also be hand-scored (see Chapter 3 for more information). Typical time required to administer

13. Additional translations may be available; check with the publisher if another language is needed.

14. Note that the software package is stored on a portable USB drive rather than installed on a single computer's hard drive. See Chapter 3 for further discussion.

## *Rapid Reference 1.22*

### Overview of Conners EC Options

<b>Rater type (# items)</b>	<b>Conners EC (Full-Length)</b>	<b>Conners EC BEH (Behavior Scales)</b>	<b>Conners EC BEH(S) (Behavior Short)</b>	<b>Conners ECGI (Global Index Form)</b>	<b>Conners EC DM (Developmental Milestone Scales)</b>
	Parent (190) Teacher (186)	Parent (115) Teacher (116)	Parent (49) Teacher (48)	Parent (10) Teacher (10)	Parent (80) Teacher (74)
<b>Language<sup>a</sup></b>	English (Parent and Teacher forms) Spanish (Parent and Teacher forms)				
<b>Information</b>	Behavior scales Validity scales Conners ECGI Other Clinical Indicators DM scales Impairment items Additional Questions	Behavior scales Validity scales Conners ECGI Other Clinical Indicators Impairment items Additional Questions	Behavior scales Validity scales Additional Questions	Conners ECGI	DM scales Impairment items Additional Questions

<b>Administration<sup>b</sup></b>	Paper: 25 min. Online: 25 min.	Paper: 15 min. Online: 15 min.	Paper: 10 min. Online: 10 min.	Paper: 5 min. Online: 5 min.	Paper: 10 min. Online: 10 min.
<b>Scoring<sup>c</sup></b>	Hand: n/a Online: 10 min. Software: 10 min.	Hand: n/a Online: 6 min. Software: 6 min.	Hand: n/a Online: 3 min. Software: 3 min.	Hand: 5 min. Online: 1 min. Software: 1 min.	Hand: n/a Online: 4 min. Software: 4 min.
<b>Reports</b>	Assessment (results from a single administration) Progress (change over time) Comparative (comparison of multiple ratings of a child at one point in time)				

<sup>a</sup> Additional translations may be available; check with the publisher if another language is needed. At the time this book was prepared, some Connors 3 forms were also available in French.

<sup>b</sup> Typical time to complete the form, not including instructions and review of completed form.

<sup>c</sup> Typical time to enter data or complete the QuikScore form (not including time to open scoring program or gather materials). Online scoring is immediate when online administration is used.

and score the Conners EC forms is summarized in Rapid Reference 1.22. Computerized reports are available when using online or software scoring; see Chapter 3 for more information.

### Structure of the Conners EC

The Behavior scales section of the Conners EC is composed of Behavior scales, Other Clinical Indicators, Validity scales, and the Conners EC Global Index. The Developmental Milestone scales section of the Conners EC includes five scales, one for each area included (i.e., Adaptive Skills, Communication, Motor Skills, Play, and Pre-Academic/Cognitive). Some of the Developmental Milestone scales have subclusters of skills (e.g., Communication subclusters are Expressive and Receptive). The Conners EC also includes Impairment items and Additional Questions. See Rapid Reference 1.23 for an overview of the Conners EC structure. Each of these components is briefly reviewed below; please see Chapter 3 Scoring and Chapter 4 Interpretation for additional information.

- **Behavior Scales:** Each of these scales/subscales addresses general issues that arise in assessment of young children. These include behavioral issues (i.e., Defiant/Aggressive Behaviors, hyperactivity/impulsivity items on the Inattention/Hyperactivity scale), emotional issues (i.e., Anxiety, Mood, and Affect), social issues (i.e., Social Functioning), and cognitive issues (i.e., inattention items on the Inattention/Hyperactivity scale). There is a subscale for unusual behaviors (i.e., Atypical Behaviors), which includes red-flag items for early detection of possible autism spectrum disorders. There is also a Physical Symptoms scale. There are differences between the parent forms and the teacher/childcare provider forms on the Behavior scales, reflecting different ways behaviors are observed in various settings. Each of these scales is reported as a *T*-score (with optional percentile score), comparing ratings of the child with expectations based on age and gender (combined gender norms are also available; see Rapid Reference 1.24).
- **Other Clinical Indicators:** These items represent important issues that can arise during the early childhood period but that were not included on the Content scales (e.g., tics, fire-setting). When one of these items is endorsed at a certain level, the item is flagged for further consideration by the clinician. See also Rapid References 1.15 and 1.16.

## Rapid Reference 1.23

### Conners EC Structure

#### Conners Early Childhood (Conners EC)

Behavior scales	Developmental Milestone scales
<p><b>Inattention/Hyperactivity</b></p> <p><b>Defiant/Aggressive Behaviors</b> -Defiance/Temper -Aggression</p> <p><b>Social Functioning/ Atypical Behaviors</b> -Social Functioning -Atypical Behaviors</p> <p><b>Anxiety</b></p> <p><b>Mood and Affect</b></p> <p><b>Physical Symptoms</b> -Sleep Problems (<i>Parent</i>)</p> <p><b>Conners EC Global Index (Conners ECGI)</b> Restless-Impulsive Emotional Lability</p>	<p><b>Adaptive Skills</b> -Dressing -Eating/Drinking -Toileting -Hygiene -Helping</p> <p><b>Communication</b> -Expressive Language -Receptive Language</p> <p><b>Motor Skills</b> -Fine Motor -Gross Motor</p> <p><b>Play</b></p> <p><b>Pre-Academic/Cognitive</b></p>
<p><b>Other Clinical Indicators</b> Cruelty to animals Fire setting Perfectionism Pica PTSD Self-Injury Specific Phobia Stealing Tics Trichotillomania</p>	
<p><b>Validity Scales</b> Positive Impression Negative Impression Inconsistency Index</p>	
<b>Impairment Items</b>	<b>Additional Questions</b>

- **Validity Scales:** These three scales help you identify potential biases in the rater's response style that could impact your interpretation of that rater's results. They include the Positive Impression (PI) scale, Negative Impression (NI) scale, and Inconsistency Index (IncX). Elevated scores on these scales lead to careful examination of available information to determine what could lead to this response pattern, and may suggest caution during interpretation. In rare cases, extreme scores on Validity scales may cause you to question the validity of the ratings.
- **Conners EC Global Index (Conners ECGI):** This index is the original 10 items from the Conners Global Index (CGI on the CRS-R; Conners 3GI on the Conners 3). It is a good indicator of global concerns about a child's functioning. Research using these same 10 items from the CRS found good sensitivity to treatment effects. The Conners ECGI is reported as a *T*-score.

## *Rapid Reference 1.24*

### **Age- and Gender-Based Norms?**

There is an ongoing debate regarding whether normative data should be divided based on gender. Proponents of combined gender norms argue that boys and girls should be held to the same standard. Proponents of norms separated by gender state that some disorders present differently for boys than girls, and failure to recognize this results in over- and/or underdiagnosis for certain gender groups. The parallel of physical development is sometimes referenced, as nobody argues with the fact that boys and girls show growth spurts at different ages. The use of gender-based norms is an emotionally charged topic in many settings.

For some reason, the emotional tone disappears when discussing the use of age-based normative data. Most people in the assessment community agree that age should be a factor when deciding if a child's performance is typical or not. There are slight differences of opinion as to how precise age-based comparisons should be, in terms of whether normative data are used in large age bands (e.g., children 6 to 10 years old, 11 to 15 years old, 16 to 18 years old) or smaller age bands (e.g., one group per year, so 6-year-olds, 7-year-olds, and so on). It is less costly in time and money to collect normative data for larger age bands, as this approach requires fewer participants and less stringent standards (e.g., an age band for 6- to 10-year-old children might have a majority of 9-year-olds if that was a convenient age-group to capture, but it would not be as representative of the 6-year-old children). Collecting smaller age bands, while costly, allows more careful examination of developmental trends in the data and ultimately can produce a more exact description of a child's functioning relative to age-matched peers.

The development team for the Conners assessments agreed to review results from pilot data and make their recommendation for normative data based on these results. Data were collected from equal numbers of boys and girls in each age group (in 1-year age bands for the Conners 3 and Conners CBRS, and in 6-month age bands for the Conners EC). When these data were analyzed, there were statistically significant differences by gender, by age, and by gender and age considered together. In other words, boys and girls showed different patterns of behavior. Children showed different patterns of behavior at different ages. Finally, boys and girls showed changes in behavior by age, but boys changed at a different age than girls for some scales. When the data were grouped into 3-year age bands, some of these clinically important and statistically significant differences were obscured. These findings were confirmed when the complete standardization sample was analyzed.

Based on these findings, we recommend using age- and gender-based norms with the Conners 3, Conners CBRS, and Conners EC. This recommendation is made not from our personal biases, but from analyses of the large data set. Standard normative data for the Conners assessments are presented by gender in very precise age bands: 1-year groups (e.g., "6 years 0 months through 6 years 11 months 30 days" is a 1-year age band) for the Conners 3 and Conners



CBRS, and 6-month groups (e.g., “6 years 0 months through 6 years 5 months 30 days” is a 6-month age band) for the Conners EC.

For the Conners assessments, combined gender norms average out important differences between boys and girls, which could lead to underidentification or overidentification, depending on the direction of the gender difference for that particular scale. For those who have strong opinions or requirements, a set of combined gender norms is available.

- **Developmental Milestone Scales:** Each of these scales summarizes many aspects of a child’s development in a given domain, based on independent mastery of key skills. The Adaptive Skills scale includes five subclusters: Dressing, Eating/Drinking, Toileting, Hygiene, and Helping. The Communications scale has two subclusters: Expressive Language and Receptive Language. The Motor Skills scale is divided into two subclusters: Fine Motor and Gross Motor. Each of the Developmental Milestone scales is reported as a *T*-score (with optional percentile score), comparing ratings of the child with expectations based on age and gender (combined gender norms are also available; see Rapid Reference 1.24). The subclusters are reviewed as groups of items rather than by a composite score.
- **Impairment Items:** There is one item per setting, including learning/pre-academic, peer interactions, and home. Each item asks the rater to mark how much the child’s symptoms impact his functioning in that setting. The raw scores are reviewed for these items.
- **Additional Questions:** These two items allow the rater to report additional information that may not be captured by the other items on the Conners EC. One item asks the rater to describe the child’s strengths. The other item asks if there are any other concerns not described in their ratings. The text responses recorded here can add new information or clarify the rater’s intentions with some of the ratings. These items are not scored.

## STANDARDIZATION AND PSYCHOMETRIC PROPERTIES

Because the Conners 3, Conners CBRS, and Conners EC were developed during the same time period, there are similarities in their standardization process and statistical techniques used to establish psychometric properties. This section describes key aspects of standardization and psychometrics for these three rating scales. Please see the Conners 3rd Edition manual (Conners 2008a; Chapters 11,

12, and 13), the Conners Comprehensive Behavior Rating Scales manual (Conners 2008b; Chapters 11, 12, and 13), and the Conners Early Childhood manual (Conners 2009; Chapters 9, 10, and 11) for comprehensive sample descriptions and results from the studies summarized in this section. See Chapter 6 in this book for additional information on clinical studies used to examine discriminative validity.

### **Standardization Samples**

#### ***Conners 3 and Conners CBRS***

The Conners 3 and Conners CBRS were co-normed (i.e., 85 to 90 percent of the children in the standardization samples were rated with the Conners 3 *and* the Conners CBRS). Data collection for these assessments took place between March, 2006, and August, 2007. Data were collected by over 100 site coordinators in more than 25 states and provinces throughout the United States and Canada. Some of the rating scales described children with no history of a clinical diagnosis; these children were considered “general population data.” In addition, some children with specific clinical diagnoses were involved in data collection; parent, teacher, and self-report forms about these children were considered “clinical data.” A total of 6,825 (4,682 general population and 2,143 clinical) Conners 3 forms and 6,702 (4,626 general population, 2,076 clinical) Conners CBRS forms were completed.

A large set of data were selected from the general population cases to use as the normative sample, making sure that boys and girls were represented equally at each age and that race/ethnicity was distributed across the sample to match the U.S. Census. The normative sample is the group of children used for comparison when interpreting an individual child’s results. Both the Conners 3 normative sample ( $N = 3,400$ ; 1,200 parent, 1,200 teacher, and 1,000 self-report) and the Conners CBRS normative sample ( $N = 3,400$ ; 1,200 parent, 1,200 teacher, and 1,000 self-report) included 50 boys and 50 girls from each age (1-year age bands from 6 to 18 years for the parent and teacher report, from 8 to 18 years for the self-report). The normative samples have a racial/ethnic distribution that closely matches that of the U.S. population (according to the 2000 U.S. Census figures). Demographic analyses revealed that both age and gender significantly affected the Conners 3 and Conners CBRS scale scores, while race/ethnicity had a negligible impact on scores (see Chapter 10 in both the Conners 3rd Edition manual [Conners 2008a] and Conners Comprehensive Behavior Rating Scales manual [Conners 2008b] for details). Because of these effects, separate gender- and age-based norms are provided (see Rapid Reference 1.24 for further discussion).

Ratings of youth with various clinical diagnoses were collected and stringent data collection procedures were employed in order to ensure the accuracy of the diagnoses.<sup>15</sup> In total, 2,143 Conners 3 (731 parent, 694 teacher, 718 self-report) and 2,076 Conners CBRS (704 parent, 672 teacher, and 700 self-report) ratings of youth with clinical diagnoses were collected (see Rapid Reference 1.25). The clinical samples did not have a 50/50 gender split. For example, there were more boys in the Pervasive Developmental Disorder groups, while there were more girls in the Anxiety Disorders group (see Chapter 10 in both the Conners 3rd Edition manual and Conners Comprehensive Behavior Rating Scales manual for details).

### ***Conners EC***

Data collection for the Conners EC took place between September, 2006, and October, 2008. Over 50 site coordinators throughout the United States and Canada collected 3,281 Conners EC assessments (2,567 general population and 714 clinical). The normative sample ( $N = 1,600$ ; 800 parent and 800 teacher/childcare provider) was selected from the general population cases and includes 40 boys and 40 girls from each age group (6-month age bands from ages 2 to 6 years). These smaller age bands were chosen given the rapid rate of change during the early childhood period. The normative samples have a racial/ethnic distribution that closely matches that of the U.S. population (according to the 2000 U.S. Census figures). Results of demographic analyses revealed that both age and gender significantly affected the Conners EC scale scores, while race/ethnicity had a minimal impact on scores (see Chapter 8 in the Conners Early Childhood manual [Conners 2009] for details). Because of these effects, separate gender and age-based (in 6-month age bands) norms are provided (see also discussion in Rapid Reference 1.24).

Ratings of children with various clinical diagnoses were collected and stringent data collection procedures were employed in order to ensure the accuracy of the diagnoses.<sup>16</sup> In total, 714 Conners EC (340 parent and 374 teacher/childcare provider) ratings of children with clinical diagnoses were collected (see Rapid Reference 1.26). The clinical groups were not comprised of equal numbers of

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15. In order for a case to be accepted for the clinical sample, information completed by the site coordinator had to meet certain criteria. These included: (1) only one primary diagnosis, (2) diagnosis was assigned by a qualified professional, (3) diagnosis was based on DSM-IV-TR or ICD-10 criteria, and (4) multiple methods of assessment were employed in the diagnosis (e.g., record review, rating scales, observation, and/or interviews).

16. Criteria for the Conners EC clinical cases matched requirements for the Conners 3 and Conners CBRS. See previous footnote.

**Rapid Reference 1.25**

**Conners 3 and Conners CBRS Clinical Samples**

Clinical Group	Included Diagnoses	Conners 3			Conners CBRS		
		Parent (N)	Teacher (N)	Self (N)	Parent (N)	Teacher (N)	Self (N)
ADHD	ADHD Inattentive, ADHD Hyperactive-Impulsive, ADHD Combined	277	243	263	270	231	263
Disruptive Behavior Disorders	Conduct Disorder, Oppositional Defiant Disorder	60	58	69	51	50	59
Learning Disorders	Reading Disorder, Mathematics Disorder, Disorder of Written Expression	120	118	116	121	121	114
Anxiety Disorders	Generalized Anxiety Disorder, Separation Anxiety Disorder, Social Phobia, Obsessive-Compulsive Disorder	70	55	70	65	56	64

Major Depressive Disorder	Major Depressive Disorder	42	43	43	41	41	41	42
Bipolar Disorder	Bipolar Disorder	35	34	35	34	32	34	34
Pervasive Developmental Disorders	Autistic Disorder, Asperger's Disorder	32	47	31	35	48	32	32
Other (content of this group not specified in manual)		95	96	91	87	93	92	92
Total		731	694	718	704	672	700	700

Source: Information in this table was provided by the MHS Research and Development department.


**Rapid Reference 1.26**
**Conners EC Clinical Sample**

<b>Clinical Group</b>	<b>Included Diagnoses</b>	<b>Conners EC Parent (N)</b>	<b>Conners EC Teacher/ Childcare Provider (N)</b>
ADHD	ADHD Inattentive, ADHD Hyperactive-Impulsive, ADHD Combined	57	71
Disruptive Behavior Disorders	Oppositional Defiant Disorder, Conduct Disorder	30	36
Delayed Cognitive Development	Mental Retardation	51	55
Delayed Communication Development	Expressive Language Disorder, Receptive Language Disorder, Mixed Receptive-Expressive Language Disorder	45	47
Delayed Social or Emotional Development	Disorders related to Anxiety and Depression	42	40
Delayed Adaptive Development	Autistic Disorder, Asperger's Disorder, Pervasive Developmental Disorder-Not Otherwise Specified	75	73
Other (content of this group not specified in manual)		40	52
Total		340	374

Source: Information in this table was provided by the MHS Research and Development department.

boys and girls. For example, the ADHD group had more boys than girls, consistent with gender ratios expected for this sample (see Appendix F in the Conners Early Childhood manual for more information).

### **Psychometric Properties**

The psychometric properties (i.e., reliability and validity) of the Conners 3, Conners CBRS, and Conners EC were thoroughly assessed in a series of reliability and validity studies. A summary of results from these analyses is presented below; see the relevant test manual for detailed findings. See Rapid References 1.27 and 1.28 for tips to understand the statistics presented in this section.

#### ***Reliability***

This section provides a summary of the results from the reliability analyses conducted on the Conners forms (see Rapid References 1.29 through 1.31 for an overview of these results, and see the relevant test manuals for detailed results). Reliability analyses included internal consistency, test-retest reliability, and inter-rater reliability.

The Conners forms were found to have high levels of **internal consistency**. The mean Cronbach's alpha for each rating scale, averaged across all scales and across all rater types, was:

- Conners 3 = .90
- Conners CBRS = .84
- Conners EC = .87

**Test-retest reliability** estimates were computed on a sample of participants who completed the Conners forms two times over a 2- to 4-week interval. Results indicated that all Conners forms have excellent temporal stability (all correlations significant,  $p < .001$ ). The mean test-retest correlation for each rating scale, averaged across all scales and across all rater types, was:

- Conners 3 = .83
- Conners CBRS = .82
- Conners EC = .90

Results from the **inter-rater reliability** studies indicated that there was a great deal of consistency between multiple parents rating the same child and among multiple teachers rating the same child (all correlations significant,

 *Rapid Reference 1.27***Psychometric Terms****Reliability Terms**

Assessing the reliability of a rating scale means evaluating how consistently it measures what it was designed to measure. The reliability of an instrument is measured in a number of ways, including:

- **Internal Consistency:** how consistent the items on a scale are with each other in measuring the same concept. Often reported using Cronbach's alpha, which ranges from 0.0 to 1.0; higher numbers indicate higher internal consistency. Values from 0.70 to 0.79 are good, 0.80 to 0.89 very good, and 0.90 or higher excellent. This value typically increases as the number of items increases, so a larger scale is held to a higher standard.
- **Test-Retest Reliability:** the degree of similarity between two administrations of the same test to the same person. Usually tested with a short time between administrations (e.g., 2 to 4 weeks). Often reported with Pearson's  $r$ , ranging from  $-1.0$  to  $1.0$ ; higher numbers indicate higher test-retest reliability. High test-retest reliability suggests greater confidence that changes in scores between two administrations are due to change in the child, rather than variation in the test. This value should be at least 0.60. Standards vary depending on the test-retest interval (i.e., time between two administrations) and construct (i.e., what is being tested). Relatively stable, trait-like constructs should have higher test-retest reliability, whereas dynamic, state-like constructs have lower test-retest reliability standards.
- **Inter-rater Reliability:** the degree of agreement between two parents' or two teachers' ratings of the same child. Often reported using Pearson's  $r$ , ranging from  $-1.0$  to  $1.0$ ; higher numbers indicate higher inter-rater reliability. A value of 0.60 or higher is considered acceptable.

**Validity Terms**

Assessing the validity of a rating scale means evaluating how well it measures what it was designed to measure. The validity of an instrument is assessed in a number of ways, including:

- **Across-Informant Correlations:** the degree of similarity between two raters describing the same child when the raters are different types of raters (e.g., parent-to-teacher, parent-to-youth, teacher-to-youth). Often reported with Pearson's  $r$ , which ranges from  $-1.0$  to  $1.0$ ; higher numbers indicate higher degree of similarity. Correlations should be moderate in size, as different raters provide different information (e.g., observed in different settings, at different times, in a different context)—if multiple raters provided the same information, there would be no reason to collect data from multiple informants in an assessment. Research shows that across-informant correlations for youth self-report versus parent- or teacher-report are often low.



- **Discriminative Validity:** the ability of a scale to differentiate between children from the general population versus a clinical group. Reported in terms of the following classification accuracy statistics; higher numbers indicate higher rates of accurate classification. Values ranging from 70 to 79 percent are good, 80 to 89 percent are very good, and 90 percent or higher are excellent. See also Rapid Reference 1.28.
  - **Overall Correct Classification Rate:** the percentage of children correctly classified on the basis of the scale score.
  - **Sensitivity:** the ability of a scale to detect clinical cases in a group, expressed as the percentage of children accurately classified as clinical (i.e., children who had a clinical diagnosis and who were classified as clinical on the basis of the scale score).
  - **Specificity:** the percentage of children accurately classified as being in the general population (i.e., children who did not have a clinical diagnosis and who were classified as belonging to the general population on the basis of the scale score).
- **Convergent Validity:** scores correlate with results from other tests of the same concept; reported with Pearson's  $r$ , which ranges from  $-1.0$  to  $1.0$ ; larger correlations indicate scores are more convergent, or more similar. When two tests are scaled in opposite directions, large negative correlations indicate similarity (i.e., the Conners assessments are scaled such that high scores indicate big concerns; if compared with a test where high scores indicate very good functioning, a negative correlation would indicate agreement). There are many factors that impact this statistic, so it is difficult to give a general guideline. That being said, correlations of  $.20$  to  $.34$  (about 5 to 10 percent of the variance between the scores) suggests a mild relationship and therefore mild support for convergent validity,  $.35$  to  $.49$  (about 10 to 25 percent explained variance) suggests moderate support, and  $.50$  and higher (more than 25 percent explained variance) suggests stronger support.
- **Divergent Validity:** scores do not correlate with results from other tests of different concepts; reported with Pearson's  $r$ , which ranges from  $-1.0$  to  $1.0$ ; smaller correlations indicate scores are more divergent, or more dissimilar. As described above for convergent validity, either positive or negative correlations may indicate divergent validity depending on the direction of scaling. The important thing is that when a correlation is close to zero, it means very little agreement. Following the same caveats and rough guidelines from convergent validity above, correlations below  $.20$  suggest weak relationship/correspondence, and therefore support for divergent validity.

Source: Information in this Rapid Reference was provided by Gill Sitarenios and Sara Rzepa (personal communication, July 6, 2009).

## Rapid Reference 1.28

### Understanding Discriminative Validity

		Group (according to site coordinator)	
		Clinical	General Population
Classification (according to score on Conners)	Clinical	<p><i>Sensitivity</i></p> <p>Percentage of clinical cases identified as clinical by the score</p>	<p><i>Classification errors</i></p> <p>(if a general population case is classified as "clinical" by the score)</p> <p>Risk of calling a typical child "clinical"</p>
	General Population	<p><i>Classification errors</i></p> <p>(if a clinical case is classified as "general population" by the score)</p> <p>Risk of missing a clinical case</p>	<p><i>Specificity</i></p> <p>Percentage of general population cases correctly identified by the score</p>

$p < .001$ ).<sup>17</sup> The mean inter-rater correlation for each rating scale, averaged across all scales and across parent and teacher ratings, was:

- Conners 3 = .78
- Conners CBRS = .73
- Conners EC = .74

#### **Validity**

This section provides a summary of the results from the validity analyses conducted on the Conners forms (see the relevant test manuals for detailed results). Validity analyses included across-informant correlations, discriminative validity, and convergent/divergent validity.

17. This statistic cannot be calculated for youth-youth, as only one person can complete the self-report form about a given child.

**Rapid Reference 1.29**

**Summary of Conners 3 Reliability Coefficients**

Reliability	Rater	Conners 3 Full-Length		Conners 3 Short		Conners 3AI		Conners 3GI	
		Mean	Range	Mean	Range	Value	Range	Mean	Range
<b>Internal Consistency (Cronbach's alpha)</b>	Parent	.90	.83-.94	.89	.85-.92	.90	.85-.92	.85	.75-.90
	Teacher	.93	.77-.97	.91	.87-.94	.93	.87-.94	.87	.80-.91
	Self-Report	.86	.81-.92	.83	.77-.89	.80	.77-.89	—	—
<b>Test-Retest (r)</b>	Parent	.86	.72-.98	.86	.73-.97	.93	.73-.97	.87	.81-.91
	Teacher	.85	.78-.90	.78	.70-.83	.84	.70-.83	.79	.74-.82
	Self-Report	.77	.71-.83	.77	.74-.82	.88	.74-.82	—	—
<b>Inter-Rater (r)</b>	Parent-to-Parent	.82	.74-.94	.83	.79-.87	.85	.79-.87	.80	.78-.81
	Teacher-to-Teacher	.71	.52-.77	.77	.72-.83	.85	.72-.83	.76	.74-.80

Source: Information in this table was provided by the MHS Research and Development department.  
 Note: All rs significant,  $p < .001$ .

## Rapid Reference 1.30

### Summary of Conners CBRS Reliability Coefficients

Reliability	Rater	Conners CBRS		Conners Clinical Index	
		Mean	Range	Mean	Range
<b>Internal Consistency (Cronbach's alpha)</b>	Parent	.85	.73–.95	.79	.73–.85
	Teacher	.86	.69–.97	.76	.62–.83
	Self-Report	.86	.74–.96	.76	.73–.83
<b>Test-Retest (r)</b>	Parent	.85	.66–.96	.87	.83–.91
	Teacher	.86	.76–.96	.90	.83–.94
	Self-Report	.67	.56–.82	.82	.79–.85
<b>Inter-Rater (r)</b>	Parent to Parent	.74	.53–.89	.82	.55–.90
	Teacher to Teacher	.68	.50–.89	.79	.62–.88

Source: Information in this table was provided by the MHS Research and Development department.

Note: All *r*s significant,  $p < .001$ .

Because the different informants (i.e., Parent, Teacher, and Self-Report on the Conners 3 and Conners CBRS; Parent and Teacher/Childcare Provider on the Conners EC) all are rating similar constructs, similarity in scores across informants provides some support for the validity of the assessment. This similarity can be assessed with **across-informant correlations**. As expected, the across-informant correlations tended to be moderate in size (all correlations significant,  $p < .001$ ; see Rapid Reference 1.32). The mean across-informant correlation for each rating scale, averaged across all scales and across all rater types, was:

- Conners 3 = .55
- Conners CBRS = .50
- Conners EC = .72

*Rapid Reference 1.31*

**Summary of Conners EC Reliability Coefficients**

Reliability	Rater	Conners EC Behavior (Full-Length)		Conners EC Developmental Milestones		Conners EC Behavior (Short)		Conners ECGI	
		Mean	Range	Mean	Range	Mean	Range	Mean	Range
<b>Internal Consistency (Cronbach's alpha)</b>	Parent Teacher/Childcare Provider	.86	.64-.94	.93	.89-.96	.79	.71-.87	.84	.75-.89
		.89	.75-.96	.93	.91-.96	.84	.76-.94	.90	.86-.92
<b>Test-Retest (r)</b>	Parent Teacher/Childcare Provider	.87	.73-.92	.95	.93-.98	.83	.80-.88	.84	.78-.91
		.93	.86-1.00	.94	.88-.97	.90	.80-.93	.92	.90-.95
<b>Inter-Rater (r)</b>	Parent to Parent	.72	.62-.85	.84	.77-.90	.65	.55-.73	.67	.62-.74

Source: Information in this table was provided by the MHS Research and Development department.

Note: All rs significant,  $p < .001$ . Inter-rater reliability data were not reported for the Conners EC Teacher/Childcare Provider form.

**Rapid Reference 1.32**

**Summary of Across-Informant Correlations**

Form	Raters Being Compared					
	Parent-to-Teacher		Parent-to-Child		Teacher-to-Child	
	Mean	Range	Mean	Range	Mean	Range
Conners 3 Full-Length	.60	.52-.67	.56	.49-.62	.48	.43-.56
Conners 3 Short	.59	.50-.66	.57	.50-.66	.49	.42-.57
Conners 3AI	Value = .61		Value = .57		Value = .51	
Conners 3GI	.56	.45-.61	—	—	—	—
Conners CBRS	.53	.29-.67	.51	.33-.61	.39	.20-.51
Conners CI	.58	.48-.63	.55	.50-.59	.48	.35-.54
Conners EC Behavior (Full-Length)	.72	.46-.87	—	—	—	—
Conners EC Developmental Milestones	.81	.77-.85	—	—	—	—
Conners EC Behavior (Short)	.66	.42-.79	—	—	—	—
Conners ECGI	.71	.62-.75	—	—	—	—

Source: Information in this table was provided by the MHS Research and Development department.

Note: All rs significant,  $p < .001$ .

Correlations of this magnitude indicate that, while there is some degree of consistency between ratings from different informants, there are also some differences in the information provided by different raters, underscoring the importance of obtaining ratings from multiple informants.

Data using the Conners assessments were collected for groups of children with clinical diagnoses. These clinical groups were compared to a general population group in order to provide evidence of the **discriminative validity** of the Conners assessments. See Rapid References 1.25 and 1.26 for a list of clinical groups in these analyses and for group sizes. Analyses of Covariance (ANCOVAs) were conducted to determine if there were significant differences in scores between the target clinical group and the general population, as well as between the target clinical group and the other clinical groups. The target clinical group was always the one most relevant to the scale (e.g., when examining the Learning Problems scale, the Learning Disorders group was the target clinical group). For every scale, scores for the target clinical group were significantly higher than scores for the general population group. Furthermore, in the vast majority of the analyses, scores for the target clinical group were significantly higher than scores for the other clinical groups. In other words, children in the target clinical group tended to have higher scores on the relevant Conners scale when compared with children in the general population sample or with children in a different clinical group.

Discriminant Function Analyses (DFAs) were conducted to determine if Conners scales could accurately predict group membership (i.e., whether a set of ratings came from the general population group or one of the clinical groups). The **overall correct classification rates, sensitivity values, and specificity values** for all scales were calculated (see relevant test manuals; see also summary of findings in Chapter 6). The Conners scale scores accurately classified most of the youth. The mean overall correct classification rate for each rating scale, averaged across all scales and across all rater types, was:

- Conners 3 = 75%
- Conners CBRS = 78%
- Conners EC = 86%

See Chapter 6 for more results from these analyses (ANCOVAs and DFAs); in brief, these results indicate that scales on the Conners assessments can help differentiate between clinical and general population cases *and* between the different clinical groups.

A group of parents, teachers, and youth<sup>18</sup> were asked to complete other measures of childhood psychopathology when they completed the Conners assessments (see Rapid Reference 1.33 for a list of these instruments and the

18. Self-report was only collected from 8- to 18-year-old children completing the Conners 3 and/or Conners CBRS.

### Rapid Reference 1.33

#### Instruments Used to Examine Convergent and Divergent Validity (and sample size for each comparison)

Comparison Measure	Conners 3	Conners CBRS	Conners EC
Achenbach System of Empirically-Based Assessment (ASEBA; Achenbach & Rescorla, 2001)	96	96	58
Behavior Assessment System for Children, Second Edition (BASC-2; Reynolds & Kamphaus, 2004)	365	365	88
Behavior Rating Inventory of Executive Function (BRIEF; Gioia, Isquith, Guy, & Kenworthy, 2000)	181	181	
Behavior Rating Inventory of Executive Function Preschool Version (BRIEF-P; Gioia, Espy, & Isquith, 2003)			186
Children's Depression Inventory (CDI; Kovacs, 2003)	—	480	
Multidimensional Anxiety Scale for Children (MASC; March, 1997)	—	248	
Vineland Adaptive Behavior Scales, Second Edition (Vineland-II; Sparrow, Cicchetti, & Balla, 2005)	—	—	98

Source: Information in this table was provided by the MHS Research and Development department.



**Rapid Reference 1.34**

**Correlations Between Select Conners 3 Scales and Other Measures**

<b>Content Area</b>	<b>Conners 3 Scale</b>	<b>Other Measure</b>	<b>Parent</b>	<b>Teacher</b>	<b>Self-Report</b>
<b>Inattention and Executive Functioning</b>	Inattention	ASEBA: Attention Problems	.92	.73	.96
	DSM-IV-TR ADHD Inattentive	BRIEF: Metacognition Index	.83	.97	—
	Executive Functioning	BRIEF: Metacognition Index	.81	.89	—
<b>Hyperactivity and Impulsivity</b>	Hyperactivity/Impulsivity	BASC-2 Adolescent: Hyperactivity	.77	.91	.62
	DSM-IV-TR ADHD Hyperactive-Impulsive	BRIEF: Inhibit	.78	.92	—
<b>Defiance and Aggression</b>	Defiance/Aggression	ASEBA: Aggressive Behavior	.93	.76	.69
	DSM-IV-TR Conduct Disorder	BASC-2 Adolescent: Conduct Problems	.78	.79	—
<b>Social Problems</b>	Peer Relations	ASEBA: Social Problems	.72	.84	—

Source: Information in this table was provided by the MHS Research and Development department.  
 Note: All *r*s significant; *p* < .05.

 **Rapid Reference 1.35**

**Correlations Between Select Conners CBRS Scales and Other Measures**


<b>Content Area</b>	<b>Conners CBRS Scale</b>	<b>Other Measure</b>	<b>Parent</b>	<b>Teacher</b>	<b>Self-Report</b>
<b>Emotional Distress, Depression, and Anxiety</b>	Emotional Distress	BASC-2: Adolescent: Depression	.57	.67	.28
		BASC-2 Child: Anxiety	.67	.87	.66
		ASEBA: Anxious/Depressed	.85	.53	.78
	DSM-IV-TR Major Depressive Episode	BASC-2 Child: Depression	.61	.64	.59
		BASC-2: Adolescent: Depression	.62	.71	.38
		ASEBA: Anxious/Depressed	.83	.43	.71
		CDI: Total Score	.57	.48	.55
	DSM-IV-TR Generalized Anxiety Disorder	BASC-2 Child: Anxiety	.61	.62	.67
		ASEBA: Anxious/Depressed	.83	.51	.71
	DSM-IV-TR Social Phobia	MASC: Social Anxiety	.68	—	.62

<b>Physical Symptoms</b>	Physical Symptoms	BASC-2 Adolescent: Somatization	.78	.59	.59
		MASC: Physical Symptoms	.49	—	.57
<b>Pervasive Developmental Disorders</b>	DSM-IV-TR Autistic Disorder	BASC-2 Adolescent: Developmental Social Disorders	.69	.51	—
	DSM-IV-TR Asperger's Disorder	BASC-2 Adolescent: Developmental Social Disorders	.67	.54	—
<b>Defiance and Aggression</b>	Defiant/Aggressive Behaviors	ASEBA: Aggressive Behavior	.96	.72	.60
	DSM-IV-TR Conduct Disorder	BASC-2 Adolescent: Conduct Problems	.71	.80	—
		ASEBA: Aggressive Behavior	.93	.61	.55
	DSM-IV-TR Oppositional Defiant Disorder	BASC-2 Child: Anger Control	.61	.79	—
		ASEBA: Aggressive Behavior	.96	.73	.71

<b>Content Area</b>	<b>Conners CBRS Scale</b>	<b>Other Measure</b>	<b>Parent</b>	<b>Teacher</b>	<b>Self-Report</b>
<b>Inattention and Hyperactivity</b>	DSM-IV-TR ADHD Inattentive	ASEBA: Attention Problems	.91	.72	.79
		BRIEF: Metacognition Index	.80	.96	—
<b>Social Problems</b>	Social Problems	DSM-IV-TR ADHD Hyperactive-Impulsive	.81	.78	.52
		BASC-2 Adolescent: Hyperactivity	.68	.73	—
		BASC-2 Child: Withdrawal	.63	.69	—
		ASEBA: Social Problems			

Source: Information in this table was provided by the MHS Research and Development department.

Note: All *r*s significant, *p* < .05.

 *Rapid Reference 1.36*

**Correlations Between Select Conners EC Scales and Other Measures**

<b>Conners EC Scale</b>	<b>Other Measure</b>	<b>Parent</b>	<b>Teacher/ Childcare Provider</b>
<b>Behavior Scales</b>  Inattention/ Hyperactivity	ASEBA: Attention Deficit/ Hyperactivity	.80	.92
	BRIEF-P: Global Executive Composite	.77	.81
Defiant/Aggressive Behaviors	BASC-2-P: Aggression	.87	.91
	ASEBA: Oppositional Defiant	.91	.85
Social Functioning/ Atypical Behaviors	BASC-2-P: Developmental Social Disorders	.71	.80
	ASEBA: Anxiety (DSM- Oriented)	.80	.59

<b>Conners EC Scale</b>	<b>Other Measure</b>	<b>Parent</b>	<b>Teacher/ Childcare Provider</b>
<b>Behavior Scales (continued)</b>	Mood and Affect	.87	.90
<b>Developmental Milestone Scales</b>	Physical Symptoms	.69	.83
	Adaptive Skills	.60	.86
	Communication	-.37	-.68
	Motor Skills	-.51	-.73
	Play/Curiosity	-.43	-.55
	Pre-Academic/Cognitive	-.57	-.58
		—	-.77

<sup>a</sup> Negative correlations with the Vineland-II scales are expected because higher scores on the Vineland-II indicate better functioning, in contrast to higher scores on the Conners EC, which indicate problematic functioning.

Source: Information in this table was provided by the MHS Research and Development department.

Note: All *r*s significant, *p* < .05.

number of raters who completed each pair of forms). Results from these other instruments were compared with results from the Conners assessments to examine **convergent validity** and **divergent validity**.

Overall, the correlations converged and diverged in a meaningful way. The correlations between scales that assess similar constructs tended to be moderate to strong in size, while the correlations between scales that did not assess similar constructs tended to be smaller in magnitude. See Rapid References 1.34 through 1.36 for examples of these findings.

### COMPREHENSIVE REFERENCES

The Conners 3, Conners CBRS, and Conners EC each has a comprehensive manual published by Multi-Health Systems, Inc. (MHS). Each manual provides important information about the conceptual framework of each rating scale, as well as guidelines for administration, scoring, and interpretation of these scales. Suggestions for planning and monitoring intervention and applied case studies are provided in each manual. The manuals also contain very detailed information about statistical analyses and standardization samples. See Rapid Reference 1.1 for a summary of key information for these three rating scales. See Rapid References 1.13, 1.17, and 1.22 for details of each Conners assessment (also Rapid References 1.14, 1.18, and 1.23).



### TEST YOURSELF



- 1. Which of the following Conners assessment tools include items about behavioral, emotional, social, and cognitive functioning? Mark all that apply.**
  - (a) Conners 3
  - (b) Conners CBRS
  - (c) Conners EC
- 2. Which of the following statements are true about responsible assessment? Mark all that apply.**
  - (a) Responsible assessment should include multiple modalities.
  - (b) Responsible assessment relies on information from more than one informant.
  - (c) Responsible assessment can be conducted with a single, well-constructed rating scale such as the Conners assessments.
  - (d) Responsible assessment includes data gathered from more than one setting.
- 3. The Conners 3 and Conners CBRS have self-report forms that can be completed by children ages 8 to 18 years.**

True or False?

72 ESSENTIALS OF CONNERS BEHAVIOR ASSESSMENTS

**4. Which of the following clinical groups is *not* represented in the Conners Clinical Index?**

- (a) Attention-Deficit and Disruptive Behavior Disorders
- (b) Anxiety Disorders
- (c) Learning and Language Disorders
- (d) Mood Disorders
- (e) Pervasive Developmental Disorders

**5. Age and gender impact interpretation of scores for the Conners assessments, so it is recommended that age- and gender-specific norms be used.**

True or False?

Answers: 1. a, b, c; 2. a, b, d; 3. True; 4. e; 5. True.