

Behavior Rating Inventory of Executive Function[®], Second Edition

Generated by PARiConnect

Teacher Form Interpretive Report

by Peter K. Isquith, PhD, Gerard A. Gioia, PhD, Steven C. Guy, PhD, Lauren Kenworthy, PhD, and PAR Staff

Client name :	Sample Client
Client ID :	111
Gender :	Male
Age :	7
Grade :	2nd
Test date :	04/14/2015
Test form :	Teacher Form
Rater name :	Not Specified
Relationship to student :	Teacher
Knows student :	Very Well
Has known student for :	9 months
Student receiving special educational services? :	No

This report is intended for use by qualified professionals only and is not to be shared with the examinee or any other unqualified persons.

Validity

Before examining the Behavior Rating Inventory of Executive Function[®], Second Edition (BRIEF[®]2) Teacher Form profile, it is essential to carefully consider the validity of the data provided. The inherent nature of rating scales (i.e., relying upon a third party for ratings of a child's behavior) carries potential rating and score biases. The first step is to examine the protocol for missing data. With a valid number of responses, the BRIEF2 Inconsistency, Negativity, and Infrequency scales provide additional information about the validity of the protocol.

- **Missing items** The respondent completed 63 of a possible 63 BRIEF2 items. For reference purposes, the summary table for each scale indicates the respondent's actual rating for each item. There are no missing responses in the protocol, providing a complete data set for interpretation.
- Inconsistency Scores on the Inconsistency scale indicate the extent to which the respondent answered similar BRIEF2 items in an inconsistent manner relative to the clinical samples. For example, a high Inconsistency score might be associated with the combination of responding Never to the item "Small events trigger big reactions" and Often to the item "Becomes upset too easily." Item pairs comprising the Inconsistency scale are shown in the following summary table. T scores are not generated for the Inconsistency scale. Instead, the absolute value of the raw difference scores for the eight paired items are summed, and the total difference score (i.e., the Inconsistency score) is compared with the cumulative percentile of similar scores in the combined clinical sample and used to classify the protocol as either Acceptable, Questionable, or Inconsistent. The Inconsistency score of 1 is within the Acceptable range, suggesting that the rater was reasonably consistent in responding to BRIEF2 items.

Item	Inconsistency items	Response	Diff
3	When given three things to do, remembers only the first or last	Often	0
19	Remaining content redacted for sample report purposes	Often	

Item	Inconsistency items	Response	Diff	
4		Often	0	
20		Often	0	
5		Sometimes	1	
33		Often	1	
6		Sometimes	0	
14		Sometimes	U	
12		Often	0	
32		Often	0	
16		Often	0	
39		Often	0	
22		Sometimes	0	
56		Sometimes	0	
60		Never	0	
63		Never	0	

Negativity

The Negativity scale measures the extent to which the respondent answered selected BRIEF2 items in an unusually negative manner relative to the clinical sample. Items comprising the Negativity scale are shown in the following summary table. A higher raw score on this scale indicates a greater degree of negativity, with less than 3% of respondents scoring 5 or above in the clinical sample.

As with the Inconsistency scale, *T* scores are not generated for this scale. The Negativity score of 0 is within the acceptable range, suggesting that the respondent's view of Sample is not overly negative and that the BRIEF2 protocol is likely to be valid.

Item #	Negativity items	Response
2	Resists or has trouble accepting a different way to solve a problem with schoolwork, friends, tasks, etc.	Sometimes
11	Remaining content redacted for sample report purposes	Sometimes
31		Sometimes
34		Sometimes
37		Sometimes
43		Sometimes
45		Sometimes
49		Sometimes

Infrequency The Infrequency scale measures the extent to which the respondent endorsed items in an atypical fashion. The scale includes three items that are likely to be endorsed in one direction by most respondents. Marking Sometimes or Often to any of the items is highly unusual, even in cases of severe impairment.

Items comprising the Infrequency scale are shown in the following summary table. A higher raw score on this scale indicates a greater degree of infrequency, with less than 1% of respondents scoring 1 or greater in the standardization sample. As with the Inconsistency and Negativity scales, *T* scores are not generated for this scale. The Infrequency score of 0 is within the acceptable range, reducing the likelihood of an atypical response pattern.

Item #	Infrequency items	Response
18	Forgets his/her name	Never
36	Remaining content redacted for sample report purposes	Never
54		Never

End of Validity Section

Introduction

The BRIEF[®]2 is a questionnaire completed by parents and teachers of school-aged children as well as adolescents ages 11 to 18. Parent and teacher ratings of executive functions are good predictors of a child's or adolescent's functioning in many domains, including the academic, social, behavioral, and emotional domains. As is the case for all measures, the BRIEF2 should not be used in isolation as a diagnostic tool. Instead, it should be used in conjunction with other sources of information, including detailed history, other BRIEF2 and behavior ratings, clinical interviews, performance test results, and, when possible, direct observation in the natural setting. By examining converging evidence, the clinician can confidently arrive at a valid diagnosis and, most importantly, an effective treatment plan. A thorough understanding of the BRIEF2, including its development and its psychometric properties, is a prerequisite to interpretation. As with any clinical method or procedure, appropriate training and clinical supervision are necessary to ensure competent use of the BRIEF2.

This report is confidential and intended for use by qualified professionals only. This report should not be released to the parents or teachers of the child being evaluated. If a summary of the results specifically written for parents and teachers is desired, the BRIEF2 Feedback Report can be generated and given to the interested parents and teachers.

T scores are used to interpret the level of executive functioning as reported by parents and teachers on the BRIEF2 rating forms. These scores are linear transformations of the raw scale scores (M = 50, SD = 10). *T* scores provide information about an individual's scores relative to the scores of respondents in the standardization sample. Percentiles represent the percentage of children in the standardization sample with scores at or below the same value. For all BRIEF2 clinical scales and indexes, *T* scores from 60 to 64 are considered mildly elevated, and *T* scores from 65 to 69 are considered potentially clinically elevated. *T* scores at or above 70 are considered clinically elevated.

In the process of interpreting the BRIEF2, review of individual items within each scale can yield useful information for understanding the specific nature of the child's elevated score on any given clinical scale. In addition, certain items may be particularly relevant to specific clinical groups. Placing too much interpretive significance on individual items, however, is not recommended due to lower reliability of individual items relative to the scales and indexes.

Overview

Sample's teacher completed the Teacher Form of the Behavior Rating Inventory of Executive Function[®], Second Edition (BRIEF[®]2) on 04/14/2015. There are no missing item responses in the protocol. Responses are reasonably consistent. The respondent's ratings of Sample do not appear overly negative. There were no atypical responses to infrequently endorsed items. In the context of these validity considerations, ratings of Sample's executive function exhibited in everyday behavior reveal some areas of concern.

The overall index, the GEC, was clinically elevated (GEC T = 72, %ile = 98). The BRI, ERI, and CRI were all elevated (BRI T = 78, %ile = \geq 99; ERI T = 62, %ile = 88, CRI T = 70, %ile = 95), suggesting self-regulatory problems in multiple domains.

Within these summary indicators, all of the individual scales are valid. One or more of the individual BRIEF2 scales were elevated, suggesting that Sample exhibits difficulty with some aspects of executive function. Concerns are noted with his ability to resist impulses, be aware of his functioning in social settings, react to events appropriately, get going on tasks, activities, and problem-solving approaches, sustain working memory, plan and organize his approach to problem solving appropriately, be appropriately cautious in his approach to tasks and check for mistakes and keep materials and his belongings reasonably well organized. Sample's ability to adjust well to changes in environment, people, plans, or demands is not described as problematic by the respondent.

Current models of self-regulation suggest that behavior regulation and/or emotion regulation, particularly inhibitory control, emotional control, and flexibility, underlie most other areas of executive function. Essentially, one needs to be and appropriately inhibited, flexible, well-modulated emotionally for efficient, systematic, and organized problem solving to take place. Sample's elevated scores on scales reflecting problems with fundamental behavioral and/or emotional regulation suggest that more global problems with self-regulation are having a negative effect on active cognitive problem solving. Behavior and emotion regulation concerns do not negate the meaningfulness of the elevated CRI score. Instead, one must simultaneously consider the influence of the underlying self-regulation issues and the unique problems with

cognitive problem-solving skills.

Index/scale	Raw score	T score	Percentile	90% C.I.
Inhibit	24	78	≥ 99	73-83
Self-Monitor	14	72	≥ 99	67-77
Behavior Regulation Index (BRI)	38	78	≥ 99	74-82
Shift	13	55	80	49-61
Emotional Control	15	66	91	62-70
Emotion Regulation Index (ERI)	28	62	88	58-66
Initiate	11	69	98	64-74
Working Memory	22	74	≥ 99	69-79
Plan/Organize	17	62	92	56-68
Task-Monitor	15	63	92	58-68
Organization of Materials	11	65	93	59-71
Cognitive Regulation Index (CRI)	76	70	95	67-73
Global Executive Composite (GEC)	142	72	98	70-74

BRIEF[®]2 Teacher Score Summary Table

Validity scale	Raw score	Percentile	Protocol classification
Negativity	0	≤ 9 8	Acceptable
Inconsistency	1	≤ 9 8	Acceptable
Infrequency	0	99	Acceptable

Note: Male, age-specific norms have been used to generate this profile. For additional normative information, refer to Appendixes A–C in the BRIEF®2 Professional Manual.

Profile of BRIEF[®]2 *T* Scores

T score	Inhibit e	Self- Monitor	Shift	Emotional Control	Initiate	Working Memory	Plan/ Organize	Task- Monitor	Org. of Materials	BRI	ERI	CRI	GEC	T score
≥90			_				_		_	_	_			≥90
_	_	_	_	_	_	_	_		_	_	_		_	E
85-		_	_	_	_	_	_	_	_	_	_	_		- 85
	-		-	-	-	-	-	-	-	-	-	-	-	-
	-	-	_		-	_	-	-	-	-	_	-	-	-
80		_	_	_	_	_	_	_	_	_	_	_		
-	_	_	_	_	_	_	_	_	_	4	_	_	_	-
- 75	\	_	_	_	_	_	_	_	_	_	_	_		- 75
-	_	\	_	_		Å	-	_	_	_ \	_	-	-	-
-	_	-	_	_	- /		-	_	_	- \	-	-	<u>/</u>	-
70	-	-	-	-	•	- \	_	-	-	-	-	7-	-	- 70
-	_	_	_	_	_	_	\	_	_	_		/-	_	-
65-	-	-	-		-	-	<u> </u>	-	-	-	//	-	-	-65
-	_	-	_	/-	-	_	F	-	-	-	\mathbf{V}	-	_	F
-	_	_	_	/ -	_	_	-	_	_	_	• -	_	_	-
60	-	-	/	-	_	_	-	_	-	-	-	-	-	60
-	_	_	_/	_	_	_	_	_	_	-	_	_	_	F
55—		-	4		_	_	_	_	-	_	_			
	-	-	_	_	-	_	-	-	-	-	-	-	-	F
50	_	-	_	_	_	-	_	-	-	-	_	-	-	50
	-	-	_	_	-	-	-	-	-	-	-	-	-	- 30
	_	_	_	_	_	_	-	_	_	_	_	_	-	E
45			_			_	_			_	_			45
	_	-	_	_	-	_	_	-	_	-	_	-	-	F
40		-	_	-	_	-	_	_	_	-	_	_	-	40
	_	-	_		-	_	_	-	-	-	_	-	-	
	_	-	_	_	-	_	-	-	_	-	-	-	-	F
35			_	_	_	_	_	_		_	_	_		35
-	-	-	_		-	_	-	_	-	-	-	-	-	F
_ ≤30	_	_	_	_	_	_	_	_	_	-	_	_	-	_ ≤30
	Inhibit	Self- Monitor	Shift	Emotional Control	initiate			Task- Monitor	Org. of Materials	BRI	ERI	CRI	GEC	
T score	78 24	72	55 13	66 15	69 11	74	62	63	65	78 28	62 28	70 76	72 142	
Raw score	24	14	13	15	11	22	17	15	11	38	28	76	142	

Note: Male, age-specific norms have been used to generate this profile.

For additional normative information, refer to Appendixes A-C in the BRIEF®2 Professional Manual.

Clinical Scales

The BRIEF2 clinical scales measure the extent to which the respondent reports problems with different types of behavior related to the nine domains of executive functioning. The following sections describe the scores obtained on the clinical scales and the suggested interpretation for each individual clinical scale.

Inhibit

The Inhibit scale assesses inhibitory control and impulsivity. This can be described as the ability to resist impulses and the ability to stop one's own behavior at the appropriate time. Sample's score on this scale is clinically elevated (T = 78, %ile = \geq 99) as compared to his peers. Children with similar scores on the Inhibit scale typically have marked difficulty resisting impulses and difficulty considering consequences before acting. They are often perceived as (1) being less in control of themselves than their peers, (2) having difficulty staying in place in line or in the classroom, (3) interrupting others or calling out in class frequently, and (4) requiring higher levels of adult supervision. Often, caregivers and teachers are particularly concerned about the verbal and social intrusiveness and the lack of personal safety observed in children who do not inhibit impulses well. Such children may display high levels of physical activity, inappropriate physical responses to others, a tendency to interrupt and disrupt group activities, and a general failure to look before leaping.

In the contexts of the classroom and assessment settings, children with inhibitory control difficulties often require a higher degree of external structure to limit their impulsive responding. They may start an activity or task before listening to instructions, before developing a plan, or before grasping the organization or gist of the situation.

Examination of the individual items that comprise the Inhibit scale may be informative and may help guide interpretation and intervention.

Item #	Inhibit items	Response
1	Is fidgety	Often
10	Remaining content redacted for sample report purposes	Often

Item #	Inhibit items	Response
16		Often
24		Often
30		Often
39		Often
48		Often
58		Often

Self-Monitor

The Self-Monitor scale assesses awareness of the impact of one's own behavior on other people and outcomes. It captures the degree to which a child or adolescent is aware of the effect that his or her behavior has on others and how it compares with standards or expectations for behavior. Sample's score on the Self-Monitor scale is clinically elevated, suggesting substantial difficulty with monitoring his behavior in social settings (T = 72, %ile = \geq 99). Children with similar scores tend to show limited awareness of their behavior and the impact it has on their social interactions with others.

Item #	Self-Monitor items	Response
4	Is unaware of how his/her behavior affects or bothers others	Often
13	Remaining content redacted for sample report purposes	Often
20		Often
26		Sometimes
59		Often

The Shift scale assesses the ability to move freely from one situation, activity, or aspect of a problem to another as the circumstances demand. Key aspects of shifting include the ability to make transitions, tolerate change, problem solve flexibly, switch or alternate attention between tasks, and change focus from one task or topic to another. Mild deficits may compromise efficiency of problem solving and result in a tendency to get stuck or focused on a topic or problem, whereas more severe difficulties can be reflected in perseverative behaviors and marked resistance to change. Sample's score on the Shift scale is within the average range compared with peers (T = 55, %ile = 80). This suggests that Sample is generally able to change from task to task or from place to place without difficulty, is able to think of or accept different ways of solving problems, and is able to demonstrate flexibility in day-to-day activities.

Item #	Shift items	Response
2	Resists or has trouble accepting a different way to solve a problem with schoolwork, friends, tasks, etc.	Sometimes
11	Remaining content redacted for sample report purposes	Sometimes
17		Sometimes
31		Sometimes
40		Never
49		Sometimes
60		Never
63		Never

Shift

Emotional Control The Emotional Control scale measures the impact of executive function problems on emotional expression and assesses a child's ability to modulate or regulate his or her emotional responses. Sample's score on the Emotional Control scale is potentially clinically elevated compared with peers (T = 66, %ile = 91). This score suggests marked concerns with regulation or modulation of emotions. Sample likely overreacts to events and likely demonstrates sudden outbursts, sudden and/or frequent mood changes, and excessive periods of emotional upset. Poor emotional control is often expressed as emotional lability, sudden outbursts, or emotional explosiveness. Children with difficulties in this domain often have overblown emotional reactions to seemingly minor events. Caregivers and teachers of such children frequently describe a child who cries easily or laughs hysterically with small provocation or a child who has temper tantrums of a frequency or severity that is not age appropriate.

Item #	Emotional Control items	Response
6	Has explosive, angry outbursts	Sometimes
14	Remaining content redacted for sample report purposes	Sometimes
22		Sometimes
27		Sometimes
34		Sometimes
43		Sometimes
51		Never
56		Sometimes

Initiate

The Initiate scale reflects a child's ability to begin a task or activity and to independently generate ideas, responses, or problem-solving strategies. Sample's score on the Initiate scale is potentially clinically elevated compared with peers (T = 69, %ile = 98). This suggests that Sample has marked difficulties getting going on tasks, activities, and problem-solving approaches. Poor initiation typically does not reflect noncompliance or disinterest in a specific task. Children with initiation problems typically want to succeed at and complete a task, but they have trouble getting started. Caregivers of such children frequently report observing difficulties getting started on homework or chores, along with a need for extensive prompts or cues to begin a task or activity. Children with initiation difficulties are at risk for being viewed as unmotivated. In the context of psychological assessment, initiation difficulties are often demonstrated in the form of slow speed of output despite prompts to work quickly and difficulty generating ideas such as for word and design fluency tasks. There is often a need for additional prompts from the examiner to begin tasks in general. Alternatively, initiation deficits may reflect depression, and this should particularly be examined if this finding is consistent with the overall affective presentation of the child.

Item #	Initiate items	Response
9	Is not a self-starter	Sometimes
38	Remaining content redacted for sample report purposes	Often
50		Often
55		Often

Working Memory The Working Memory scale measures online representational memory-that is, the capacity to hold information in mind for the purpose of completing a task; encoding information; or generating goals, plans, and sequential steps to achieve goals. Working memory is essential to carrying out multistep activities, completing mental manipulations such as mental arithmetic, and following complex instructions. Sample's score on the Working Memory scale is clinically elevated compared with peers (T = 74, %ile = \geq 99). This suggests that Sample has substantial difficulty holding an appropriate amount of information in mind or in active memory for further processing, encoding, and/or mental manipulation. Further, Sample's score suggests difficulties sustaining working memory, which has a negative impact on his ability to remain attentive and focused for appropriate lengths of time. Caregivers describe children with fragile or limited working memory as having trouble remembering things (e.g., phone numbers or instructions) even for a few seconds, losing track of what they are doing as they work, or forgetting what they are supposed to retrieve when sent on an errand. They often miss information that exceeds their working memory capacity such as instructions for an assignment. Clinical evaluators may observe that Sample cannot remember the rules governing a specific task (even as he works on that task), rehearses information repeatedly, loses track of what responses he has already given on a task that requires multiple answers, and struggles with mental manipulation tasks (e.g., repeating digits in reverse order) or solving arithmetic problems that are orally presented without writing down figures.

Appropriate working memory is necessary to sustaining performance and attention. Parents of children with difficulties in this domain report that they cannot stick to an activity for an age-appropriate amount of time and that they frequently switch or fail to complete tasks. Although working memory and the ability to sustain it have been conceptualized as distinct entities, behavioral outcomes of these two domains are often difficult to distinguish.

Item #	Working Memory items	Response
3	When given three things to do, remembers only the first or last	Often

Item #	Working Memory items	Response
12	Remaining content redacted for sample report purposes	Often
19		Often
25		Often
28		Often
32		Often
41		Sometimes
46		Sometimes

Plan/Organize The Plan/Organize scale measures a child's ability to manage current and future-oriented task demands. The scale has two components: Plan and Organize. The Plan component captures the ability to anticipate future events, to set goals, and to develop appropriate sequential steps ahead of time to carry out a task or activity. The Organize component refers to the ability to bring order to information and to appreciate main ideas or key concepts when learning or communicating information. Sample's score on the Plan/Organize scale is mildly elevated compared with peers (T = 62, %ile = 92). This suggests that Sample has some difficulty with planning and organizing information, which has a negative impact on his approach to problem solving. Planning involves developing a goal or end state and then strategically determining the most effective method or steps to attain that goal. Evaluators can observe planning when a child is given a problem requiring multiple steps (e.g., assembling a puzzle or completing a maze). Sample may underestimate the time required to complete tasks or the level of difficulty inherent in a task. He may often wait until the last minute to begin a long-term project or assignment for school, and he may have trouble carrying out the actions needed to reach his goals.

Organization involves the ability to bring order to oral and written expression and to understand the main points expressed in presentations or written material. Organization also has a clerical component that is demonstrated, for example, in the ability to efficiently scan a visual array or to keep track of a homework assignment. Sample may approach tasks in a haphazard fashion, getting caught up in the details and missing the big picture. He may have good ideas that he fails to express on tests and written assignments. He may often feel overwhelmed by large amounts of information and may have difficulty retrieving material spontaneously or in response to open-ended questions. He may, however, exhibit better performance with recognition (multiple-choice) questions.

Item #	Plan/Organize items	Response
7	Does not plan ahead for school assignments	Often
15	Remaining content redacted for sample report purposes	Sometimes
23		Sometimes

Item #	Plan/Organize items	Response
35		Often
44		Sometimes
52		Sometimes
57		Never
61		Sometimes

Task-MonitorThe Task-Monitor scale assesses task-oriented monitoring or
work-checking habits. The scale captures whether a child
assesses his or her own performance during or shortly after
finishing a task to ensure accuracy or appropriate attainment of a
goal. Sample's score on the Task-Monitor scale is mildly elevated,
suggesting some difficulty with task monitoring (T = 63, %ile =
92). Children with similar scores tend to be less cautious in their
approach to tasks or assignments and often do not notice and/or
check for mistakes. Caregivers often describe children with
task-oriented monitoring difficulties as rushing through their
work, as making careless mistakes, and as failing to check their
work. Clinical evaluators may observe the same types of
behavior during formal assessment.

Item #	Task Monitor items	Response
5	Work is sloppy	Sometimes
21	Remaining content redacted for sample report purposes	Sometimes
29		Sometimes
33		Often
42		Often
62		Often

Organization of The Organization of Materials scale measures orderliness of **Materials** work, play, and storage spaces (e.g., desks, lockers, backpacks, and bedrooms). Caregivers and teachers typically can provide an abundance of examples describing a child's ability to organize, keep track of, or clean up his or her belongings. Sample's score on the Organization of Materials scale is potentially clinically elevated compared with children (T = 65, %ile = 93). Sample is described as having marked difficulty (1) keeping his materials and belongings reasonably well organized, (2) having his materials readily available for projects or assignments, and (3) finding his belongings when needed. Children who have significant difficulties in this area often do not function efficiently in school or at home because they do not have ready access to what they need and must spend time getting organized rather than producing work. Pragmatically, teaching a child to organize his or her belongings can be a useful, concrete tool for teaching

greater task organization.

Item #	Organization of Materials items	Response
8	Cannot find things in desk	Often
37	Remaining content redacted for sample report purposes	Sometimes
45		Sometimes
47		Sometimes
53		Sometimes

Summary Indexes and Global Executive Composite

Behavior Regulation, Emotion Regulation, and Cognitive Regulation Indexes The Behavior Regulation Index (BRI) captures the child's ability to regulate and monitor behavior effectively. It is composed of the Inhibit and Self-Monitor scales. Appropriate behavior regulation is likely to be a precursor to appropriate cognitive regulation. It enables the cognitive regulatory processes to successfully guide active, systematic problem solving and more generally supports appropriate self-regulation.

The Emotion Regulation Index (ERI) represents the child's ability to regulate emotional responses and to shift set or adjust to changes in environment, people, plans, or demands. It is composed of the Shift and Emotional Control scales. Appropriate emotion regulation and flexibility are precursors to effective cognitive regulation.

The Cognitive Regulation Index (CRI) reflects the child's ability to control and manage cognitive processes and to problem solve effectively. It is composed of the Initiate, Working Memory, Plan/Organize, Task-Monitor, and Organization of Materials scales and relates directly to the ability to actively problem solve in a variety of contexts and to complete tasks such as schoolwork.

Examination of the indexes reveals that the BRI is clinically elevated (T = 78, %ile = \geq 99), the ERI is mildly elevated (T = 62, %ile = 88), and the CRI is clinically elevated (T = 70, %ile = 95). This suggests difficulties with all aspects of executive function including inhibitory control, self-monitoring, emotion regulation, flexibility, and cognitive regulatory functions including ability to sustain working memory and to initiate, plan, organize, and monitor problem solving.

Global Executive The Global Executive Composite (GEC) is an overarching Composite summary score that incorporates all of the BRIEF2 clinical scales. Although review of the BRI, ERI, CRI, and individual scale scores is strongly recommended for all BRIEF2 profiles, the GEC can sometimes be useful as a summary measure. In this case, at least two summary indexes are substantially different, with T scores separated by an unusually large number of points relative to the standardization sample, where differences of this magnitude occurred less than 10% of the time. Thus, the GEC may not adequately reflect the overall profile or severity of executive function problems. With this in mind, Sample's T score of 72 (%ile = 98) on the GEC is clinically elevated compared with the scores of his peers, suggesting significant difficulty in one or more areas of executive function.

Comparison of BRIEF2 Working Memory and Inhibit Scales to ADHD Groups

The BRIEF2 Inhibit and Working Memory scales, in the context of a comprehensive be helpful identifying children with assessment, may in suspected attention-deficit/hyperactivity disorder (ADHD). Theoretically, inhibitory control enables self-regulation, and working memory enables sustained attention. It is important at the outset, however, to appreciate the distinction between executive functions and the diagnosis of ADHD: Executive functions are neuropsychological constructs, whereas ADHD is a neuropsychiatric diagnosis based on a cluster of observed symptoms. Although it is well-established that different aspects of executive dysfunction contribute to the symptoms that characterize ADHD, executive dysfunction is not synonymous with a diagnosis of ADHD. Further, problems with inhibitory control and, in particular, working memory are not unique to the diagnosis of ADHD but may be seen in many developmental and acquired conditions. Therefore, the following analysis may be useful when there is a question about the presence or absence of an attention disorder but should not be used in isolation or as the sole basis of diagnosis. Information from the BRIEF2 may be helpful when combined with other information such as parent and teacher ratings on broad-band scales, ADHD specific scales, clinical interviews, observations and performance assessment.

Profile analyses have shown that children diagnosed with different disorders often have recognizable and logical scale profiles on the BRIEF2. Children with ADHD, inattentive presentation (ADHD-I) tend to have greater elevations on Working Memory, Plan/Organize, and Task-Monitor scales than their typically developing peers but lower scores on the BRI and ERI than children diagnosed with ADHD, combined presentation (ADHD-C).

The BRIEF2 Teacher Form Working Memory scale exhibits limited sensitivity but good specificity for detecting a likely diagnosis of ADHD regardless of whether inattentive or combined type. In combined research and clinical samples, *T* scores of 65 or greater on the Working Memory scale discriminated between healthy controls and children with either the inattentive or combined type of ADHD with 74% classification accuracy. The likelihood that a child with a *T* score of 65 or higher is a true case of ADHD was .86 (positive predictive value), whereas the likelihood that a child with a score below 65 would not have ADHD was .69 (negative predictive value). The likelihood of a child being correctly identified as meeting criteria for a diagnosis of ADHD was more than 6 times greater with a Working Memory *T* score of 65 or greater.

The Inhibit scale can help further distinguish between children with ADHD-I versus those with ADHD-C. Using a *T* score of 65 or greater, approximately 72% of children were correctly classified as being diagnosed with ADHD-C versus ADHD-I in a Sample Client (111) 22 04/14/2015

combined research and clinical sample. Children with *T* scores at or above 65 on the Inhibit scale are 3.5 times more likely to be diagnosed with the combined type than the inattentive type of ADHD. If the cutoff is increased to a *T* score of 70 or greater on the Inhibit scale, sensitivity is reduced but specificity is increased. Children with *T* scores of 70 or more are more than 4 times more likely to have a diagnosis of ADHD-C than ADHD-I.

While the BRIEF2 may be a helpful and efficient tool in evidence-based assessment for ADHD, it is important that all relevant data be considered in the context of clinical judgment before reaching a diagnostic decision.

In this particular profile, Teacher ratings of Sample's working memory (T = 74, %ile = \geq 99) are clinically elevated. *T* scores of 70 or greater on the BRIEF2 Teacher Form were seen in over 40% of children clinically diagnosed with either type of ADHD but were seen in only less than 3% of typically developing children and 4% of children with learning disabilities. Scores at this level are more than 6 times more likely to be seen in students diagnosed with ADHD and half as likely to be seen in typically developing students, raising the possibility of the presence of ADHD. In considering ADHD presentations, the Inhibit scale may be useful in the context of a significantly elevated Working Memory scale. Sample's ratings of his inhibitory control were also clinically elevated (T = 78, %ile = \geq 99). Students with significantly elevated Working Memory and Inhibit *T* scores in a clinical sample were correctly classified as being diagnosed with ADHD-C approximately 80% of the time.

Comparison of BRIEF2 Shift Scale to Children with Autism Spectrum Disorders (ASD)

Children with Autism Spectrum Disorder (ASD) have difficulties with executive functions related to flexibility, planning, organization, and other aspects of metacognition. Numerous studies have shown a signature BRIEF profile in children with ASD with elevations across most BRIEF scales and a peak in problems captured on the Shift scale. Parent and teacher ratings on the BRIEF2 in large numbers of clinically referred children with well-defined ASD diagnoses showed similar patterns of elevations on most scales with a prominent peak on the Shift scale. While the BRIEF2 is not intended as a stand-alone diagnostic instrument, it can be useful as part of a more comprehensive assessment for a wide range of clinical conditions. For children with ASD, the BRIEF2 adds value to other measures of everyday functioning, social responsiveness, and ASD characteristics in the context of medical history in reaching a comprehensive diagnostic picture.

The BRIEF2 Teacher Form Shift scale exhibits good specificity for ruling out children who do not have ASD. This is reflected in the positive predictive values of .92 for teacher ratings at or above 65 and .98 when using a cutoff of 70. In clinical samples, T scores of 65 or greater on the Shift scale discriminated between healthy controls and children with ASD with 78% classification accuracy, and with 69% accuracy when T scores were greater than or equal to 70. The lower classification accuracy is due to reduced sensitivity at higher T scores for teacher ratings. The likelihood of a child being correctly identified as meeting criteria for a diagnosis of ADHD was 10 times greater (positive likelihood ratio = 10.83) with a Shift T score of 65 or greater, while the likelihood of a child with an ASD being incorrectly ruled out was reduced by half (negative likelihood ration = .41).

In this particular profile, Teacher ratings of Sample's cognitive and behavioral flexibility (T = 55, %ile = 80) are within normal limits. This suggests that Sample does not exhibit the cognitive rigidity and adherence to routine and sameness that is often seen in children diagnosed with ASD.

Executive Function Interventions

Ratings of Sample's everyday functioning revealed some areas of concern. Recommendations for interventions and accommodations are offered according to the identified concerns. While the efficacy of each intervention has not been empirically demonstrated, the majority are common interventions that are likely familiar to the intervention team. These recommendations are general and are intended here as suggestions or ideas that may be tailored to suit Sample's needs. As with any intervention, clinical judgment is paramount.

Remaining content redacted for sample report purposes

References

Braga, L. W., Rossi, L., Moretto, A. L. L., da Silva, J. M., & Cole, M. (2012). Empowering preadolescents with ABI through metacognition: Preliminary results of a randomized clinical trial. *NeuroRehabilitation*, *30*, 205-212.

Chan, D. Y. K., & Fong, K. N. K. (2011). The effects of problem-solving skills training based on metacognitive principles for children with acquired brain injury attending mainstream schools: A controlled clinical trial. *Disability & Rehabilitation*, *33*, 2023-2032.

Kenworthy, L., Anthony, L. G., Alexander, K. C., Werner, M. A., Cannon, L., & Greenman, L. (2014). *Solving executive functioning challenges: Simple ways to get kids with autism unstuck and on target*. Baltimore, MD: Brookes Publishing.

Levine, B., Robertson, I. H., Clare, L., Carter, G., Hong, J., Wilson, B. A., ... & Struss, D. T. (2000). Rehabilitation of executive functioning: An experimental-clinical validation of goal management training. *Journal of the International Neuropsychological Society*, *6*, 299-312.

Marlowe, W. B. (2001). An intervention for children with disorders of executive functions. *Developmental Neuropsychology*, *18*, 445-454.

Wade, S. L., Wolfe, C. R., Brown, T. M., & Pestian, J. P. (2005). Can a web-based family problem-solving intervention work for children with traumatic brain injury?. *Rehabilitation Psychology*, *50*, 337-345.

Wade, S. L., Wolfe, C. R., & Pestian, J. P. (2004). A web-based family problem-solving intervention for families of children with traumatic brain injury. *Behavior Research Methods, Instruments, & Computers, 36,* 261-269.

Ylvisaker, M. (Ed.). (1998). *Traumatic brain injury rehabilitation: Children and adolescents* (2nd ed.). Boston, MA: Butterworth-Heinemann.

Ylvisaker, M., & Feeney, T. (1998). *Collaborative brain injury intervention: Positive everyday routines*. San Diego, CA: Singular Publishing Group.

Ylvisaker, M., Szekeres, S., & Feeney, T. (1998). Cognitive rehabilitation: Executive functions. In M. Ylvisaker (Ed.), *Traumatic brain injury rehabilitation: Children and adolescents* (2nd ed., pp. 221-269). Boston, MA: Butterworth-Heinemann.

Item	Response	Item	Response	Item	Response
1	Often	22	Sometimes	43	Sometimes
2	Sometimes	23	Sometimes	44	Sometimes
3	Often	24	Often	45	Sometimes
4	Often	25	Often	46	Sometimes
5	Sometimes	26	Sometimes	47	Sometimes
6	Sometimes	27	Sometimes	48	Often
7	Often	28	Often	49	Sometimes
8	Often	29	Sometimes	50	Often
9	Sometimes	30	Often	51	Never
10	Often	31	Sometimes	52	Sometimes
11	Sometimes	32	Often	53	Sometimes
12	Often	33	Often	54	Never
13	Often	34	Sometimes	55	Often
14	Sometimes	35	Often	56	Sometimes
15	Sometimes	36	Never	57	Never
16	Often	37	Sometimes	58	Often
17	Sometimes	38	Often	59	Often
18	Never	39	Often	60	Never
19	Often	40	Never	61	Sometimes
20	Often	41	Sometimes	62	Often
21	Sometimes	42	Often	63	Never

BRIEF[®]2 Teacher Form Item Response Table

*** End of Report ***