

# Behavior Rating Inventory of Executive Function<sup>®</sup>, Second Edition

# Generated by PARiConnect

# **Parent Form Interpretive Report**

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Client name :	Sample Client
Client ID :	111
Gender :	Male
Age :	8
Grade :	3rd
Test date :	02/12/2015
Test form :	Parent Form
Rater name :	Not Specified
Relationship to child :	Parent

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<sup>®</sup>, Second Edition (BRIEF<sup>®</sup>2) Parent 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 4 is within the Acceptable range, suggesting that the rater was reasonably consistent in responding to BRIEF2 items.

Item #	Inconsistency items	Response	Diff
5	Work is sloppy	Often	1
21	Remaining content redacted for sample report purposes	Sometimes	1
9		Often	0

Item #	Inconsistency items	Response	Diff
55		Often	
10		Often	0
48		Often	0
17		Sometimes	1
40		Often	1
20		Sometimes	0
26		Sometimes	0
22		Often	0
56		Often	0
25		Sometimes	1
50		Often	1
37		Sometimes	1
63		Often	1

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 6 or above in the clinical sample.

As with the Inconsistency scale, *T* scores are not generated for this scale. The Negativity score of 2 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
14	Has outbursts for little reason	Sometimes
28	Remaining content redacted for sample report purposes	Sometimes
30		Sometimes
34		Sometimes
39		Often
41		Sometimes
58		Often
60		Never

**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<sup>®</sup>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 parent completed the Parent Form of the Behavior Rating Inventory of Executive Function<sup>®</sup>, Second Edition (BRIEF<sup>®</sup>2) on 02/12/2015. 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 = 78, %ile =  $\geq$  99). The BRI, ERI, and CRI were all elevated (BRI T = 72, %ile = 97; ERI T = 66, %ile = 93, CRI T = 75, %ile =  $\geq$  99), 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	21	72	96	66-78
Self-Monitor	10	68	97	61-75
Behavior Regulation Index (BRI)	31	72	97	67-77
Shift	13	56	77	49-63
Emotional Control	20	73	96	68-78
Emotion Regulation Index (ERI)	33	66	93	61-71
Initiate	14	75	≥ 99	68-82
Working Memory	21	72	97	67-77
Plan/Organize	24	79	≥ 99	73-85
Task-Monitor	14	69	97	62-76
Organization of Materials	16	70	97	64-76
Cognitive Regulation Index (CRI)	89	75	≥ 99	72-78
Global Executive Composite (GEC)	153	78	≥ 99	76-80

# BRIEF<sup>®</sup>2 Parent Score Summary Table

Validity scale	Raw score	Percentile	Protocol classification
Negativity	2	≤ <b>9</b> 8	Acceptable
Inconsistency	4	≤ <b>9</b> 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<sup>®</sup>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
_	-	-	-	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	-	-	-	F
80		_	_	_	_	_	_	_	_	_	_	_		80
-	-	-	-	-	-	-	Ā	-	-	-	-	-	, ,	F
	_	-	-	_	-	_	/ - \	_	_	_	_		-	F
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1	_	-	-		_	_	_	_	_	_	_	_	_	E
60	-	-	/	-	-	-	-	-	-	-	-	-	-	- 60
_	_	_	_/	_	_	_	_	_	_	_	_	_	_	F
-	-	-	1	_	-	-	_	_	-	-	-	_	_	E
55—	· —	_	_	_	_	_	_	_	_	_	_	_		55
_	_	_	_	_	_	_	_	_	_	_	_	_	_	F
50	-	-	-	-	-	-	_	_	-	-	-	-	-	50
- 50	-	-	-	-	-	-	-	-	-	-	-	-	-	- 50
-	_	-	-	_	_	_	_	_	_	_	_	_	_	F
45		_	_	_	_	_	_	_	_	_	_	_		45
	_	_	_	_	_	_	_	_	_	_	_	_	_	F
4	_	_	-	_	_	_	_	_		_	_	_	_	F
40	_	_	_	_	_	_	_	_	_	_	_	_	_	40
-	_	_	_	_	_	_	_	_	_	_	_	_	_	Ę
35		-	-	_	_	_	_	_	-	-	_	_	-	- 35
	_	_	_	_	_	_	_	_	_	_	_	-	_	E
_	_	_	_		_	_	_	_	_		_		_	F
≤30		—					—		—	—	_	—	— •	
	Inhibit	Self-	Shift	Emotional	Initiate		Plan/	Task-	Org. of	BRI	ERI	CRI	GEC	_
T score	72	Monitor 68	56	Control 73	75	Memory 72	Organize 79	Monitor 69	Materials 70	72	66	75	78	
Raw score	21	10	13	20	73 14	21	24	14	16	31	33	89	153	

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 = 72, %ile = 96) 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
16		Often

Item #	Inhibit items	Response
24		Often
30		Sometimes
39		Often
48		Often
62		Never

#### 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 potentially clinically elevated, suggesting substantial difficulty with monitoring his behavior in social settings (T = 68, %ile = 97). 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		Sometimes
26		Sometimes

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 = 56, %ile = 77). 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.	Never
11	Remaining content redacted for sample report purposes	Never
17		Sometimes
31		Never
40		Often
49		Never
58		Often
60		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 clinically elevated compared with peers (T = 73, %ile = 96). 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	Often
14	Remaining content redacted for sample report purposes	Sometimes
22		Often
27		Sometimes
34		Sometimes
43		Often
51		Sometimes
56		Often

#### 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 clinically elevated compared with peers (T = 75, %ile =  $\geq$  99). 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	Often
38	Remaining content redacted for sample report purposes	Sometimes
50		Often
55		Often
61		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 = 72, %ile = 97). 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		Sometimes
28		Sometimes
32		Often
41		Sometimes
46		Often

#### 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 clinically elevated compared with peers (T = 79, %ile = $\geq 99$ ). This suggests that Sample has marked 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	Often
23		Often

Item #	Plan/Organize items	Response
35		Often
44		Often
52		Often
57		Often
59		Often

**Task-Monitor**The Task-Monitor scale assesses task-oriented monitoring or<br/>work-checking habits. The scale captures whether a child<br/>assesses his or her own performance during or shortly after<br/>finishing a task to ensure accuracy or appropriate attainment of a<br/>goal. Sample's score on the Task-Monitor scale is potentially<br/>clinically elevated, suggesting substantial difficulty with task<br/>monitoring (T = 69, %ile = 97). Children with similar scores tend<br/>not to be cautious in their approach to tasks or assignments and<br/>often do not notice and/or check for mistakes. Caregivers often<br/>describe children with task-oriented monitoring difficulties as<br/>rushing through their work, as making careless mistakes, and as<br/>failing to check their work. Clinical evaluators may observe the<br/>same types of behavior during formal assessment.

Item #	Task Monitor items	Response	
5	Work is sloppy	Often	
21	Remaining content redacted for sample report purposes	Sometimes	
29		Often	
33		Often	
42		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 clinically elevated compared with children (T = 70, %ile = 97). 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 room or school desk	Often
37	Remaining content redacted for sample report purposes	Sometimes
45		Sometimes
47		Often
53		Often
63		Often

# **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 = 72, %ile = 97), the ERI is potentially clinically elevated (T = 66, %ile = 93), and the CRI is clinically elevated (T = 75, %ile =  $\geq$  99). 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 Composite** The Global Executive Composite (GEC) is an overarching 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, the three summary indexes are not substantially different from each other, with differences between *T* scores for each seen in 90% of the standardization sample. Thus, the GEC adequately captures the elevation or severity of the overall profile. With this in mind, Sample's *T* score of 78 (%ile = $\geq$ 99) 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 helpful identifying children with assessment, may be 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 Parent Form Working Memory scale exhibits good sensitivity and specificity for detecting a likely diagnosis of ADHD regardless of whether inattentive or combined presentation. In research and clinical samples, *T* scores of 65 or greater on the Working Memory scale discriminated between healthy controls and children with either ADHD-I or ADHD-C with over 80% classification accuracy. The likelihood that a child with a *T* score of 65 or higher is a true case of ADHD was .90 (positive predictive value), whereas the likelihood that a child with a score below 65 would not have ADHD was .80 (negative predictive value). The likelihood of a child being correctly identified as meeting criteria for a diagnosis of ADHD was 7 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 75% of children were correctly classified as being diagnosed with ADHD-C versus ADHD-I in separate Sample Client (111) 22 02/12/2015

research and clinical samples. Children with *T* scores at or above 65 on the Inhibit scale are 1.5 to 3 times more likely to be diagnosed with ADHD-C than ADHD-I. 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 2.3 to more than 5 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, Parent ratings of Sample's working memory (T = 72, %ile = 97) are clinically elevated. *T* scores of 70 or greater on the Parent Form of the BRIEF2 were seen in more than 60% of children clinically diagnosed with either presentation of ADHD but were seen in only less than 2% of typically developing children and 4% of children with learning disabilities. Scores at this level are more than 7 times more likely to be seen in students diagnosed with ADHD and one-third 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 = 72, %ile = 96). 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 Parent Form Shift scale exhibits good specificity for ruling out children who do not have ASD. This is reflected in the positive predictive values of .91 for parent ratings at or above 65 and .93 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 more than 80% classification accuracy, and with 75% accuracy when *T* scores were greater than or equal to 70. The likelihood of a child being correctly identified as meeting criteria for a diagnosis of ASD was 10 times greater (positive likelihood ratio = 10.61) 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 two thirds (negative likelihood ratio = .29).

In this particular profile, Parent ratings of Sample's cognitive and behavioral flexibility (T = 56, %ile = 77) 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

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

# BRIEF<sup>®</sup>2 Parent Form Item Response Table

\*\*\* End of Report \*\*\*