Attachment 20.

ATSDR Pease Study Child/Parent Neurobehavioral Test Battery

Form Approved
OMB No. 0923-XXXX
Exp. Date xx/xx/201x

Proprietary Neurobehavioral Test Information

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To review a copy of the test forms, write to the publishers at the addresses provided below:

Wechsler Abbreviated Scale of Intelligence – 2nd Edition (WASI - II)	Pearson Education, Inc. (Clinical Assessment Ordering Department, P.O. Box 599700, San Antonio, TX 78259) Toll-free: 800-627-7271
A Developmental NEuroPSYchological Assessment – Second Edition (NEPSY-II)	Pearson Education, Inc. (Clinical Assessment Ordering Department, P.O. Box 599700, San Antonio, TX 78259) Toll-free: 800-627-7271
Conners Kiddie Continuous Performance Test, 2nd Edition (Conners K-CPT 2)	Multi-Health Systems Inc. (P.O. Box 950, North Tonawanda, NY, 14120-0950) Toll-free: 800-456-3003
Conners Continuous Performance Test 3rd Edition (CPT 3)	Multi-Health Systems Inc. (P.O. Box 950, North Tonawanda, NY, 14120-0950) Toll-free: 800-456-3003
Strengths and Difficulties Questionnaire© (SDQ©)	Development and Well-Being Assessment (DAWBA). Feedback and **enquiries** welcome at youthinmind@gmail.com The SDQ is part of the DAWBA family of mental health measures. **COPYRIGHT NOTICE:** Please note that Strengths and Difficulties Questionnaires, whether in English or in translation, are **copyright documents that are not in the public domain**. As such, they may not be modified in any way (e.g. changing the wording of questions, adding questions or administering only subsets of questions). This is to ensure that the SDQ is fully comparable across studies and settings. Similarly, to ensure high quality and consistency, unauthorized translations are not permitted. Paper versions may be downloaded and subsequently photocopied without charge by individuals or non-profit organizations provided they are not making any charge to families. Users are not permitted to create or distribute electronic versions for any purpose without prior authorization from **youth*in*mind**. If you are interested in making translations or creating electronic versions you **MUST** first contact youthinmind@gmail.com.
Behavior Rating Inventory of Executive Function® (BRIEF®)	Psychological Assessment Resources, Inc. (16204 North Florida Avenue, Lutz, FL 33549) Toll-free 800-331-8378
Behavior Rating Inventory of Executive Function® – Preschool Version (BRIEF®-P)	Psychological Assessment Resources, Inc. (16204 North Florida Avenue, Lutz, FL 33549) Toll-free 800-331-8378

Pease Study Neurobehavioral Test Battery for Children

Neurobehavioral Test	Domain	Age	Administration	Time to Administer
Wechsler Abbreviated Scale of Intelligence – 2nd Edition (WASI - II)	Two Subtest Form (FSIQ-2) (Vocabulary and Matrix Reasoning)	6 – 17*	Child	15 minutes
A Developmental Neuropsychological Assessment – 2nd edition (NEPSY – II) subtests * from Core Assessment	Auditory Attention and Response Set* (reduced attention)	5 – 16	Child	7 – 11 minutes
	Inhibition*	5 – 16	Child	8 – 11 minutes
	Comprehension of Instructions* (receptive language, trouble following multi-step commands)	4 – 16	Child	6 – 8 minutes
	Speeded Naming* (expressive language, processing speed)	4 – 16	Child	2 – 7 minutes
	Word List Interference* (verbal memory)	7 – 16	Child	6 – 8 minutes
	Narrative Memory* (comprehension, verbal memory)	4 – 16	Child	6 – 11 minutes
	Design Copying* (visuospatial processing)	4 – 16	Child	7 – 10 minutes
	Theory of Mind (social perception)	4 – 16	Child	10 – 13 minutes
	Sentence Repetition (verbal memory)	4 – 6	Child	4 minutes
	Statue (inhibitory control)	4 – 6	Child	3 minutes
	Word Generation (expressive language, executive control)	4 - 16	Child	4 – 6 minutes
Conners Kiddie Continuous Performance Test, 2nd Edition (Conners K-CPT 2)	Inattentiveness, Impulsivity, Sustained Attention, Vigilance	4-7	Child	8 minutes
Conners Continuous Performance Test 3rd edition (CPT 3)	Inattentiveness, Impulsivity, Sustained Attention, Vigilance	8-17	Child	14 minutes
Strengths and Difficulties Questionnaire© (SDQ©)	Double-sided form with impact supplement (behavioral problems)	4 – 17	Parent about Child	5 minutes
Behavior Rating Inventory of Executive Function® (BRIEF®)	Executive Function	6-17	Parent about Child	10 minutes
Behavior Rating Inventory of Executive Function® – Preschool Version (BRIEF®-P)	Executive Function - Preschool	4-5	Parent about Child	10 minutes

Neuropsychological Test Battery, Children aged 4-17 years		
Age Range, years	Test	Domains
6-17 years	Wechsler Abbreviated Scale of Intelligence® - Second Edition (WASI® - II)	https://www.pearsonclinical.com/psychology/products/100000037/wechsler-abbreviated-scale-of-intelligence--second-edition-wasi-ii.html **Author: David Wechsler** **Qualification Level:** C **Age Range:** Individuals 6:0–90:11 **Completion Time:** Two-subtest form (Vocabulary and Matrix Reasoning), 15 minutes **Scores/Interpretation:** FSIQ–2 score: Estimate of general cognitive ability **Scoring Options:** Manual scoring **Publication Date:** 2011
4-16 years	A Developmental NEuroPSYchological Assessment – 2nd Edition (NEPSY-II)	https://www.pearsonclinical.com/psychology/products/100000584/nepsy-second-edition-nepsy-ii.html https://images.pearsonclinical.com/images/Products/NEPSY-II/Clin_Chp_2.pdf **Author(s):** Marit Korkman, Ursula Kirk, Sally Kemp **Qualification Code:** CL1 **Age Range:** 3 years to 4 years; 5 years to 16 years **Administration:** Core Assessment 45 minutes for preschool ages, 1 hour for school ages; Comprehensive Assessment - 90 minutes for preschool ages, 2-3 hours for school ages **Publication Year:** 2007 **This NEPSY-II battery covers Five of Six Domains** Executive Functioning/Attention, Language, Memory and Learning, Visuospatial Processing, Social Perception. Sensorimotor Functioning will not be tested. **ATTENTION AND EXECUTIVE FUNCTIONING** 1) **Auditory Attention and Response Set** (AA - 5-16 years; RS - 7-16 years). Auditory Attention is designed to assess selective auditory attention and the ability to sustain it (vigilance). Response Set is designed to assess the ability to shift and maintain a new and complex set involving both inhibition of previously learned responses and correctly responding to matching or contrasting stimuli. The child listens to a series of words and touches the appropriate cirle when he or she hears a target word. 2) **Inhibition** (IN – 5-16 years). This timed subtest is designed to assess the ability to inhibit automatic responses in favor of novel responses and the ability to switch between response types. The child looks at a series of black and white shapes or arrows and names either the shape or direction or an alternate response, depending on the color of the shape or arrow. 3) **Statute** (ST – 3-6 years). This subtest is designed to assess motor persistence and inhibition. The child is asked to maintain a

		body position with eyes closed during a 75-second period and to inhibit the impulse to respond to sound distracters. **LANGUAGE** 1) **Comprehension of Instructions** (CI – 3-16 years). This subtest is designed to assess the ability to receive, process, and execute oral instructions of increasing syntactic complexity. For each item, the child points to appropriate stimuli in response to oral instructions. 2) **Speeded Naming** (SN – 3-16 years). This timed subtest is designed to assess rapid semantic access to and production of names of colors, shapes, sizes, letters, or numbers. The child is shown an array of colors and shapes; colors, shapes, and sizes; or letters and numbers. He or she names them in order as quickly as possible. 3) **Word Generation** (SN – 3-16 years). This subtest is designed to assess verbal productivity through the ability to generate words within specific semantic and initial letter categories. The child is given a semantic or initial letter category and asked to produce as many words as possible in 60 seconds. **MEMORY AND LEARNING** 1) **Word List Interference** (WI – 7-16 years). This subtest is designed to assess verbal working memory, repetition, and word recall following interference. The child is presented with two series of words and asked to repeat each sequence following its presentation. Then, he or she recalls each series in order of presentation. 2) **Narrative Memory** (NM – 3-16 years). This subtest is designed to assess memory for organized verbal material under free recall, cued recall, and recognition conditions. The child listens to a story and is then asked to repeat the story. The child is then asked questions to elicit missing details from his or her recall of the story. 3) **Sentence Repetition** (SR – 3-6 years). This subtest is designed to assess the ability to repeat sentences of increasing complexity and length. The child is read a series of sentences and asked to recall each sentence immediately after it is presented. **VISUOPSPATIAL PROCESSING** 1) **Design Copying** (DC – 3-16 years). This subtest is designed to assess motor and visual-perceptual skills associated with the ability to copy two-dimensional geometric figures. The child copies figures displayed in the Response Booklet. **SOCIAL PERCEPTION** 1) **Theory of Mind** (3-16 years). This subtest is designed to assess the ability to understand mental functions such as belief, intention, deception, emotion, imagination, and pretending, as well as the ability to understand that others have their own thoughts, ideas, and feelings that may be different from one's own and the ability to understand how emotion relates to social context and to recognize the appropriate affect given various social contexts. In the Verbal task, the child is read various scenarios or shown pictures and is then asked questions that require knowledge of another individual's point of view to answer correctly. In the Contextual task, the child is shown a picture depicting a social context and asked to select a photograph from four options that depicts the appropriate affect of one of the

		people in the picture.
4-7 years	Connors Kiddie Continuous Performance Test Second Edition™ (Conners K-CPT 2™)	https://www.mhs.com/MHS-Assessment?prodname=kcpt2 **Overview** The Conners Kiddie Continuous Performance Test 2nd Edition™ (Conners K-CPT 2™) assesses attention deficits in children ages 4 to 7 years old. Based on the well-established Conners CPT paradigm, the Conners K–CPT 2 takes only half the time (7.5 minutes) to complete, making it more appropriate for younger children. Results from the measure can be used for clinical assessment, early identification, and educational classification. The assessment can be also be used to evaluate treatment effectiveness by administering the test before treatment and during treatment to monitor change. **Author(s):** Keith Conners, Ph.D **Key Areas Measured:** ▪ Inattentiveness ▪ Impulsivity ▪ Sustained Attention ▪ Vigilance

		Age: 4 to 7 **Administration Type:** Self **Administration Time:** 7.5 Minutes **Qualification Level:** B

8-17 years	Connors Continuous Performance Test Third Edition™ (CPT 3™)	https://www.mhs.com/MHS-Assessment?prodname=cpt3 **Overview** The Conners Continuous Performance Test Third Edition™ (Conners CPT 3™) measures attention-related problems in individuals aged eight years and older. By indexing the respondent's performance in areas of inattentiveness, impulsivity, sustained attention, and vigilance, the Conners CPT 3 can aid in the assessment of Attention-Deficit/Hyperactive Disorder (ADHD) and other neurological conditions related to attention. The Conners CPT 3 provides objective information about an individual's performance in attention tasks, complementing information obtained from rating scales such as the Conners 3®. **New Scores and Score Dimensions of Attention Measured**: ▪ Inattentiveness ▪ Impulsivity ▪ Sustained Attention ▪ Vigilance **Key Areas Measured:** ▪ Inattentiveness ▪ Impulsivity ▪ Sustained Attention ▪ Vigilance **Age:** 8+ **Administration Type:** Self **Administration Time:** 14 Minutes **Qualification Level:** B
Parent (4-17 years)	Strengths and Difficulties Questionnaire (SDQ)	http://www.cebc4cw.org/assessment-tool/strengths-and-difficulties-questionnaire/ The Strengths and Difficulties Questionnaire (SDQ) is a brief behavioural screening questionnaire about 3-16 year olds. It exists in several versions to meet the needs of researchers, clinicians and educationalists. Each version includes between one and three of the following components: 25 items on psychological attributes. All versions of the SDQ ask about 25 attributes, some positive and others negative. These 25 items are divided between 5 scales: 1) emotional symptoms (5 items) 2) conduct problems (5 items) 3) hyperactivity/inattention (5 items) 4) peer relationship problems (5 items) 5) prosocial behaviour (5 items) [1) to 4) added together generate a total difficulties score (based on 20 items)] A two-sided version of the SDQ has the 25 items on strengths and difficulties on the front of the page and an impact supplement on the back. These extended versions of the SDQ ask whether the

		respondent thinks the young person has a problem, and if so, enquire further about chronicity, distress, social impairment, and burden to others. This provides useful additional information for clinicians and researchers with an interest in psychiatric caseness and the determinants of service use (Goodman, 1999). **Target Population:** Children between the ages of 2 to 17 **Time to Administer:** One sided version with 25 items, administration time approximately 5 minutes **Completed By:** Parents and teachers **NOTE:** As of June 2014 the authors have relabelled all SDQ questionnaires to be consistent in giving '4-17 years' as the age range of the standard SDQ (e.g. 4-17 years not 4-16 years) and giving '2-4 years' as the age range of the early-years SDQ (i.e. 2-4 years not 3/4 years). **The content of the SDQs themselves is unchanged**. They have relabelled the SDQs following evidence that the SDQ has good psychometric properties in 2-year-olds, and that the performance of the SDQ in 17-year-olds is similar to that in 15- and 16-year olds.
Parent (4-5 years)	Behavior Rating Inventory of Executive Function® – Preschool Version (BRIEF®-P)	https://www.parinc.com/Products/Pkey/26 **BRIEF®-P** Behavior Rating Inventory of Executive Function® —Preschool Version *Gerard A. Gioia, PhD, Kimberly Andrews Espy, PhD, and Peter K. Isquith, PhD* Purpose: Assesses executive functioning in preschool-aged children Format: Paper and pencil, Online administration and scoring via PARiConnect, Software Age range: 2 years to 5 years, 11 months Time: Approximately 10-15 minutes to administer; 15-20 minutes to score Qualification level: B The BRIEF-P is the first standardized rating scale designed to specifically measure the range of executive function in preschool-aged children. Features and benefits ▪ Measures multiple aspects of executive functioning; scales include Inhibit, Shift, Emotional Control, Working Memory, and Plan/Organize. ▪ Useful in assessing preschool-aged children with such medical, acquired neurological, and developmental conditions as prematurity, emerging learning disabilities and attention disorders, language disorders, traumatic brain injuries, lead exposure, and pervasive developmental disorders/autism. Test structure ▪ A single Rating Form allows parents, teachers, and day care providers to rate a child's executive functions within the context of his or her everyday environments—home and preschool. ▪ Three broad indexes (Inhibitory Self-Control, Flexibility, and Emergent Metacognition), one composite score, and two

		validity scales (Inconsistency and Negativity) are provided. Technical information ▪ Normative data are based on child ratings from 460 parents and 302 teachers from urban, suburban, and rural areas, reflecting 1999 U.S. Census estimates for race/ethnicity, gender, socioeconomic status, and age. ▪ Clinical samples included children with ADHD, prematurity, language disorders, and autism spectrum disorders, as well as a mixed clinical group. ▪ Demonstrates high internal consistency reliability (.80-.95 for the parent sample and .90-.97 for the teacher sample) and moderate test-retest reliability (.78-.90 for the parent sample and .64-.94 for the teacher sample). ▪ Demonstrates convergent and discriminant validity with other measures of inattention, hyperactivity-impulsivity, depression, atypicality, anxiety, and somatic complaints.
Parent (6-17 years)	Behavior Rating Inventory of Executive Function® (BRIEF®)	https://www.parinc.com/Products/Pkey/23 **BRIEF®** Behavior Rating Inventory of Executive Function® *Gerard A. Gioia, PhD, Peter K. Isquith, PhD, Steven C. Guy, PhD, and Lauren Kenworthy, PhD* Purpose: Assesses impairment of executive function Format: Paper and pencil, Online administration and scoring via PARiConnect Age range: 5 years to 18 years Time: 10-15 minutes to administer; 15-20 minutes to score Qualification level: B Assess executive function behaviors in the school and home environments with the BRIEF, a questionnaire developed for parents and teachers of school-age children. Designed to assess the abilities of a broad range of children and adolescents, the BRIEF is useful when working with children who have learning disabilities and attention disorders, traumatic brain injuries, lead exposure, pervasive developmental disorders, depression, and other developmental, neurological, psychiatric, and medical conditions. Features and benefits ▪ **Provides multiple perspectives**. The Parent and Teacher Forms of the BRIEF each contain 86 items that measure different aspects of executive function. ▪ **Specific normative data based on age and gender**. Separate normative tables for parent and teacher forms provide *T* scores, percentiles, and 90% confidence intervals for four developmental age groups by gender of the child. ▪ **Nonoverlapping scales**. Theoretically and statistically derived scales measure different aspects of a child or adolescent's behavior, such as his or her ability to control impulses, move freely from one situation to the next, modulate responses, anticipate future events, and keep track of the effect of his or her behavior on others. Test structure ▪ Eight clinical scales (Inhibit, Shift, Emotional Control, Initiate, Working Memory, Plan/Organize, Organization of Materials,

		Monitor) and two validity scales (Inconsistency and Negativity) give the clinician a well-rounded picture of the behavior of the child or adolescent being rated. ▪ The clinical scales form two broader Indexes (Behavioral Regulation and Metacognition) and an overall score, the Global Executive Composite. ▪ The Working Memory and Inhibit scales differentiate among ADHD subtypes. Technical information ▪ Normative data are based on child ratings from 1,419 parents and 720 teachers from rural, suburban, and urban areas. ▪ The clinical sample included children with developmental disorders or acquired neurological disorders (e.g., reading disorder, ADHD subtypes, traumatic brain injury, Tourette's disorder, mental retardation, localized brain lesions, high functioning autism). ▪ High internal consistency (αs = .80-.98) and test-retest reliability (*r*s = .82 for parents, .88 for teachers) were found.