

**TABLE S1. Neuropsychological Tests Administered in Childhood and Adulthood**

| Child Measure                                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Adult Measure                               | Description                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Wechsler Intelligence Scale for Children-Revised</b> | The Wechsler Intelligence Scale For Children – Revised (WISC–R) (1) was administered to study members at ages 7, 9, 11, and 13 years, and scores were averaged across these assessments. The test was individually administered on each occasion according to standard protocol. Psychometrists were blind to the children’s performance on previous administrations of the WISC–R. The WISC-R consists of 10 core subtests. Eight core subtests were administered (see below). Two core subtests (comprehension and picture arrangement) were omitted due to time constraints (2,3). | <b>Wechsler Adult Intelligence Scale-IV</b> | The Wechsler Adult Intelligence Scale – IV (WAIS-IV) (4) was administered to study members individually according to standard protocol at age 38 years. Psychometrists were blind to the study member’s earlier performance on the WISC-R. Ten subtests were administered (see below). |
| Full Scale IQ                                           | Derived from the eight subtests using the method recommended in the test manual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Full Scale IQ                               | Derived from the ten subtests using the method recommended in the test manual.                                                                                                                                                                                                         |
| Verbal IQ                                               | Prorated from the four verbal subtests (information, similarities, vocabulary, and arithmetic) using the method recommended in the test manual.                                                                                                                                                                                                                                                                                                                                                                                                                                       | Verbal IQ                                   | The arithmetical mean of the Verbal Comprehension Index (information, similarities, and vocabulary subtests) and the Working Memory Index (arithmetic and digit span subtests).                                                                                                        |

TABLE S1. Continued.

| Child Measure        | Description                                                                                                                                                                                                                                                                                                                                                           | Adult Measure        | Description                                                                                                                                                                                                |
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| Performance IQ       | Prorated from the four performance subtests (digit symbol coding, block design, object assembly, and picture completion) using the method recommended in the test manual.                                                                                                                                                                                             | Performance IQ       | The arithmetical mean of the Processing Speed Index (digit symbol coding and symbol search subtests) and the Perceptual Reasoning Index (block design, picture completion, and matrix reasoning subtests). |
| Information Subtest  | This is a test of general knowledge. It reflects the ability to acquire and store knowledge in long-term memory, to access it, and to express it verbally. Test items include questions about knowledge in history, geography, and art and are arranged in order of difficulty from the simplest to most difficult.                                                   | Information Subtest  | The description for this subtest is the same as the WISC-R subtest, but item difficulty is appropriate for adults.                                                                                         |
| Similarities Subtest | This is a test of verbal concept formation, abstraction, and reasoning. It captures the ability to categorize and conceptualize information available in long-term memory. The test requires stating how a pair of words are related (e.g., that apples and oranges are both fruits), with word-pairs ranging in difficulty from concrete relations to abstract ones. | Similarities Subtest | The description for this subtest is the same as the WISC-R subtest, but item difficulty is appropriate for adults.                                                                                         |

TABLE S1. Continued.

| Child Measure      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Adult Measure      | Description                                                                                                        |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------|
| Vocabulary Subtest | This is a test of language skills and includes questions about the meaning of words (e.g., What does winter mean?). It captures language processes such as the ability to acquire word meaning, recall it, and effectively express it.                                                                                                                                                                                                                                                                                                                                                                                                          | Vocabulary Subtest | The description for this subtest is the same as the WISC-R subtest, but item difficulty is appropriate for adults. |
| Arithmetic Subtest | This is a test that requires working memory processes to be applied to orally presented verbal information. It involves numerical knowledge, short-term memory, attention, and concentration. Arithmetic problems are presented in story format (e.g., Four men can finish a job in eight hours. How many men will be needed to finish it in one-half hour?). Performance requires holding information in short-term memory, accessing long-term memory to retrieve numerical rules of mathematical operation, and using the rules to manipulate the stored data. Items are arranged according to the level of difficulty and have time limits. | Arithmetic Subtest | The description for this subtest is the same as the WISC-R subtest, but item difficulty is appropriate for adults. |

TABLE S1. Continued.

| Child Measure               | Description                                                                                                                                                                                                                                                                                                                                                                | Adult Measure               | Description                                                                                                        |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------|
| Digit Symbol Coding Subtest | This is a test of processing speed, psychomotor speed and coordination, and attention/concentration. Better performance also depends on incidental learning. A key that pairs symbols and numbers is presented. The test requires filling in rows containing blank squares (each with a randomly assigned number above it) using the key. The test has time limits.        | Digit Symbol Coding Subtest | The description for this subtest is the same as the WISC-R subtest, but item difficulty is appropriate for adults. |
| Block Design Subtest        | This is a test of visual-spatial organization, executive planning, and problem solving skills. The test requires putting together two, four, or nine red and white blocks in a pattern according to specific designs being displayed. Test items are presented with increasing difficulty and have time limits. Higher scores reflect both accuracy and speeded responses. | Block Design Subtest        | The description for this subtest is the same as the WISC-R subtest, but item difficulty is appropriate for adults. |

TABLE S1. Continued.

| Child Measure              | Description                                                                                                                                                                                                                                                                                                                                                    | Adult Measure              | Description                                                                                                                                                                                                                                                                                                                       |
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| Picture Completion Subtest | This is a test of visual discrimination and reasoning. The test involves looking at an incomplete picture of common objects or scenes and determining which part is missing. Test items are arranged in order of difficulty and have time limits. The test requires looking at the visual whole presented and analyzing its parts to identify what is missing. | Picture Completion Subtest | The description for this subtest is the same as the WISC-R subtest, but item difficulty is appropriate for adults.                                                                                                                                                                                                                |
| Object Assembly Subtest    | This is a test of visual perception and construction ability. This test contains cut-up cardboard figures of familiar objects (puzzles), which are given in order of increasing difficulty. The child must analyze the object and construct the whole visual object from its parts within time constraints. Responses are scored for both accuracy and speed.  | -                          | This test is not included in the WAIS-IV.                                                                                                                                                                                                                                                                                         |
| -                          | This test was omitted due to time constraints.                                                                                                                                                                                                                                                                                                                 | Digit-Span Subtest         | This is a test of memory span, attention/concentration, and ability to mentally manipulate information. The test requires listening to a sequence of digits read aloud and repeating them in forward, backward, and ascending order. Digit sequences range in length from 2 to 9 digits and are presented in order of difficulty. |

TABLE S1. Continued.

| Child Measure                            | Description                                                                                                                                                                                                                                                                                                                                                        | Adult Measure                            | Description                                                                                                                                                                                                                                                           |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -                                        | This test was not included in the WISC-R.                                                                                                                                                                                                                                                                                                                          | Symbol Search Subtest                    | This is a test of visual processing speed, psychomotor speed and attention/concentration. Better performance also depends on incidental learning. The test requires determining whether target symbols appear in a row of symbols. The test has time limits.          |
| -                                        | This test was not included in the WISC-R.                                                                                                                                                                                                                                                                                                                          | Matrix Reasoning Subtest                 | This is a test of visual-perceptual organization and reasoning ability. The test requires viewing design patterns with a missing part and selecting, from a set of five options, the part that completes the design. Test items are presented in order of difficulty. |
| <b>Rey Auditory Verbal Learning Test</b> | This is a test of verbal learning and memory administered at age 13 years (5). The test involves a five-trial presentation of a 15-word list and a one-time presentation of an interference list. Four trials of the 15-word list were administered due to time constraints. Words are recalled immediately after each trial and later after a 25-30 minute delay. | <b>Rey Auditory Verbal Learning Test</b> | The description for this measure (5), administered at age 38 years, is the same as the childhood description.                                                                                                                                                         |

TABLE S1. Continued.

| Child Measure              | Description                                                                                                                                                                                                                                                                                                        | Adult Measure              | Description                                                                                                                                                                                          |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Total Recall               | The total number of words (0-60) recalled over four trials (the sum of words recalled across trials 1-4).                                                                                                                                                                                                          | Total Recall               | The description of this measure is the same as the childhood description.                                                                                                                            |
| Delayed Recall             | The total number of words (0-15) recalled after a 25-30 minute delay.                                                                                                                                                                                                                                              | Delayed Recall             | The description of this measure is the same as the childhood description.                                                                                                                            |
| <b>Trail Making Test A</b> | This is a test of processing speed administered at age 13 years (6). The test involves drawing lines to connect consecutively numbered circles. Scores represent the time, in seconds, to complete the test.                                                                                                       | <b>Trail Making Test A</b> | The description of this measure (6), administered at age 38 years, is the same as the childhood description, except that difficulty (i.e., greater number of circles) is appropriate for adults.     |
| <b>Trail Making Test B</b> | This is a test of scanning and tracking, divided attention, and mental flexibility administered at age 13 years (6). The test involves drawing lines to connect consecutively numbered and lettered circles, alternating between numbers and letters. Scores represent the time, in seconds, to complete the test. | <b>Trail Making Test B</b> | The description of this measure, administered at age 38 years (6), is the same as the childhood description, except that the difficulty (i.e., greater number of circles) is appropriate for adults. |

TABLE S1. Continued.

| Child Measure           | Description                                                                                                                                                                                                                                                                                                                           | Adult Measure           | Description                                                                                                  |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------|
| <b>Grooved Pegboard</b> | This is a test of visual-motor coordination and motor speed administered at age 13 years (5). It consists of a board with 25 holes in a 5x5 matrix. Pegs, which have a ridge along one side, must be rotated to match the hole before they can be inserted. Scores represent the time to completion in seconds for the dominant hand. | <b>Grooved Pegboard</b> | The description of this measure, administered at age 38 years (5), is the same as the childhood description. |



## References

1. Wechsler D. Manual of the Wechsler Intelligence Scale for Children – Revised. New York: Psychological Corporation; 1974.
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3. Reichenberg A, Caspi A, Harrington H, Houts R, Keefe RS, Murray RM, Poulton R, Moffitt TE: Static and dynamic cognitive deficits in childhood preceding adult schizophrenia: A 30-year study. *Am J Psychiatry* 2010;167(2):160-9 Epub 2010/01/06.
4. Wechsler D. Wechsler Adult Intelligence Scale -- Fourth Edition. San Antonio, TX: Pearson Assessment; 2008.
5. Lezak MD. Neuropsychological Assessment - Fourth Edition. New York, New York: Oxford University Press; 2004.
6. Army Individual Battery. Manual & directions for scoring. Washington, DC: War Department, Adjutant General's Office; 1944