

**Citywide Psychological Center
1234 Basic Drive
Milwaukee, WI 53202
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Neuropsychological Evaluation

Name: John Doe
Date of Birth: 10/29/95
Grade: 9th

Date of Evaluation: 12/6/2010
Age: 15 years, 1 month
Handedness: Right

Referral

John Doe is a 15-year-old boy who was referred for neuropsychological testing by his pediatrician to further examine symptoms of a possible attention disorder. The evaluation included assessment of intellectual ability, academic achievement, verbal and visual and visual-spatial memory, executive processing, attention/concentration, motor skills, sensory perception, and emotional/behavioral functioning. It also included interviews with John and his mother, input from several of his current teachers, and a review of available records.

Tests and Procedures

Wechsler Intelligence Scale for Children – Fourth Edition (WISC-IV)
Woodcock-Johnson Tests of Achievement – Third Edition (WJ-III)
Nelson-Denny Reading Test: Form H
Wide Range Assessment of Memory and Learning – Screener (WRAML)
Children's Category Test: Level 2
Tower of London – Drexel University (TOL_{DX})
Conners' Continuous Performance Test – Second Edition (CPT-II)
Grooved Pegboard Task
Sensory-Perceptual Examination
Conners' Parent Rating Scales – Revised (Long Version)
Adolescent Symptom Inventory – 4 (Parent and Youth Versions)

Background Information

John's mother was placed on bed rest during her pregnancy, with labor being induced at 36 weeks gestation. An emergency cesarean section was eventually required because the cord was around John's neck, although he was in good condition at birth and able to come home from the hospital with his mother as expected. John was colicky for his first six months and did not sleep well, although early developmental milestones were attained at the expected times. His hearing and vision has been normal in prior assessments. John's medical history is significant for the need for stitches at 26 months and hospitalization secondary to dehydration at age two. He also has asthma and allergies, currently treated with Singular and Zyrtec. John was described as an otherwise healthy child with no evidence of seizures or acquired neurological insult.

John attended Johnson Elementary School from junior kindergarten through sixth grade, with his mother recalling that concerns regarding his focus were initially raised in second grade. At that time, a behavior modification chart seemed helpful in improving his attention and concentration. The summer between fourth and fifth grade, a non-special education evaluation was completed by the school psychologist Dr. Miranda Cotter, M.Ed. because of concerns regarding John's reading fluency. Results indicated high average intellectual ability overall (WISC-III Full Scale IQ=114, 82nd percentile), with a particular strength in verbal comprehension (VCI-131, 98th percentile) and a weakness in processing speed (PSI=83, 13th percentile). Academic achievement testing indicated strong skills in sight-word reading, reading comprehension, math calculations, and math reasoning, but reading speed well below grade expectations (WJ-III Reading Fluency=80, 9th percentile). While no formal diagnoses were made in conjunction with this evaluation, some strategies for helping him work to his potential were provided, including the opportunity for additional time to complete tasks when needed. John transferred to Mason Middle School for seventh and eighth grades, with his mother recalling that he was a little quiet and shy there at first, but eventually made friends. Academically, he seemed to do well, although they were fairly flexible in providing extra time when necessary. John has since gone on to Marquette University High School, and while he enjoys it there, his grades have not been as good as they have been in the past because he is not getting the same accommodations as he did in elementary and middle school. In addition, even with participation in a summer program to improve reading speed, John still reads slowly and needs frequent breaks to get through assignments of any length. Focus issues also appear to interfere with his ability to complete his homework, with his mother adding that while he has become more independent, he still requires frequent redirection and has trouble following through with tasks on his own. In discussing John's organizational skills, his mother indicated that while he works hard to keep track of his assignments, he does struggle in this area and tends to procrastinate when it comes to projects and tests. No difficulties with hyperactivity or impulsivity were reported, although John does have a tendency to bounce his leg as he works. In discussing his social, emotional and behavioral functioning, John's mother indicated that while he is often shy with peers at first he has many friends and seems well liked by his classmates. He has never been a behavioral problem and tends to be sensitive and caring towards others. In his free time, John enjoys listening to music, playing video games and socializing with friends. Formal extracurricular activities include football in the fall and track in the spring. John has also been taking Tae Kwon Do for many years and is a second-degree black belt.

John lives with his father, mother, and younger brother (age 13). The family atmosphere was described as generally positive with no recent or chronic family stressors being reported. John's father attended some college and is employed by the city. His mother has a masters' degree and works as a teacher. Family history is significant for seasonal depression and a probable attention disorder diagnosis in John's father. His mother, several of her siblings, and her father have been diagnosed with dyslexia. John also has a paternal aunt and cousin who have been diagnosed with an attention disorder.

On the day of testing, John presented as a polite, friendly adolescent. Rapport was easily established and he remained cooperative throughout the day. During formal testing, John's speech was clear and fluent and he had no apparent difficulty comprehending instructions. His fine- and gross-motor coordination were also adequate to meet the demands of the evaluation. In this one-on-one setting, John was able to remain focused on the tasks presented to him without the need for redirection, although a decrease in productivity was noted on the few occasions he was asked to work independently. He exhibited no overt difficulties with hyperactivity or impulsivity. Throughout the day, John appeared to be putting forth excellent effort on the tasks presented to him and the results to follow are thought to represent a valid and reliable measure of his current neuropsychological functioning.

Test Findings

On the Wechsler Intelligence Scale for Children – Fourth Edition (WISC-IV), John obtained an overall IQ score in the high average range (Full Scale IQ=114, 82nd percentile). Index scores revealed verbal comprehension skills in the superior range overall (VC=134, 99th percentile), with individual subtests in this area also falling consistently in the superior range. This included measures of abstract verbal reasoning ability, vocabulary knowledge, and verbal expression of social judgment. John's perceptual reasoning skills were in the upper end of the average range overall (PR=108, 70th percentile), with individual subtests ranging from average on measures of visual construction skills and visual pattern recognition to superior on a measure of abstract nonverbal reasoning ability. On working memory subtests, John's skills were in the high average range overall (WM=113, 81st percentile), with individual subtests in this area also falling consistently in the high average range. This included measures of his ability to mentally manipulate a letter-number series and a measure of his ability to repeat a series of numbers forwards and backwards. On measures of processing speed, John performed in the low average range overall (PS=80, 9th percentile), with individual subtests in this area also falling consistently in the low average range. This included measures of speeded visual scanning and graphomotor (paper-and-pencil) processing speed.

John was administered sections of the Woodcock-Johnson Tests of Achievement – Third Edition (WJ-III) to assess his development of academic skills in comparison to other individuals his age. On this instrument, his reading skills were in the average range overall (Broad Reading=101, 53rd percentile; 9:9 grade level), with individual subtests in this area also falling consistently in the average range. This included measures of individual sight-word reading (Letter-Word Identification=102, 55th percentile), his ability to read and comprehend simple sentences (Reading fluency=101, 53rd percentile), and his ability to fill in the missing word in short written passages (Passage Comprehension=99, 48th percentile). On arithmetic measures, John again performed in the average range overall (Broad Mathematics=100, 50th percentile; 9:6 grade level), with individual subtests in this area also falling consistently in the average range. This included measures of his ability to

perform grade level math calculations (Calculation=96,40th percentile), his ability to quickly perform basic math calculations (Math Fluency=95, 38th percentile), and his ability to solve story problems (Applied Problems=104, 59th percentile). John's written language skills were in the high average range overall (Broad Written Language=114,83rd percentile; 13:0 grade level), with individual subtests in this area ranging from average on a measure of his ability to quickly compose simple sentences (Writing Fluency=107, 67th percentile) to high average on measures of written spelling skills (Spelling=110, 75th percentile) and his ability to express his ideas through writing (Writing Samples=117, 87th percentile).

Further assessment of John's reading skills using the Nelson-Denny Reading Test: Form H revealed reading vocabulary in the upper end of the average range (SS=109, 74th percentile) and at an 11:9 grade equivalent. John's reading rate on this instrument was below average, however, (SS=86, 18th percentile) and his reading comprehension, while still considered average, was below grade expectations (SS=97, 41st percentile; 9:2 grade level).

On memory screening with the Wide Range Assessment of Memory and Learning (WRAML), John's performance was in the average range (memory Screen Index=104, 61st percentile). When asked to recall elements of several paragraph-length stories, his immediate recall was in the average range. Following a delay, his free-recall of story elements was within expectations based on initial learning, as was his recognition in a multiple-choice format. When asked to learn a list of words over several repeated trials, he scored in the average range for initial recall. Following a delay, he was able to recall nine of the eleven words he had learned by the last trial, which is slightly below expectations. On visual memory tests, performance was in the average range for immediate recall of meaningful stimuli (pictures) and in the superior range for recall of abstract geometric designs.

On the Children's Category Test: Level 2, a measure of his ability to solve abstract problems by systematically generating and testing hypothesis, John performed in the high average range (SS=115, 84th percentile). On the Tower of London – Drexel University (TOL_{DX}), a measure of executive planning ability, John's performance was in the high average range for total errors (SS=112, 79th percentile) and in the average range for total problem solving time (SS=106, 66th percentile). On the Conners' Continuous Performance Test – Second Edition (CPT-II), a measure of sustained attention to visual stimuli, he had an average number of omission (inattention) and fewer than average commission (impulsivity) errors. These scores were obtained within the context of average response time and response time variability, indicating a valid performance.

John's fine-manual dexterity on the Grooved Pegboard Task was in the low average range in both his dominant right hand and his non-dominant left hand. Screening of tactile, auditory, and visual perception on the Sensory-Perceptual Examination was within normal limits, bilaterally.

On the Conners' Parents Rating Scales – Revised, the responses provided by John's parents resulted in an elevation on the cognitive problems/inattention and restless/impulsive scales, with items specifically designed to assess for symptoms of Attention-Deficit/Hyperactivity Disorder falling within the clinically significant range. Some mild social anxiety was also noted on this instrument. On the Adolescent Symptom Inventory – 4, their responses again suggested the need to further explore symptoms of Attention-Deficit/Hyperactivity Disorder. The Conners' Teacher Rating Scales – Revised was also completed by two of John's current teachers, including Ms. DeWitt (Spanish) and Mr. Brady (algebra). On this instrument, both teachers reported no significant emotional, social, or behavioral concerns in the classroom. On scales specifically designed to assess for symptoms of Attention-Deficit/Hyperactivity Disorder, their ratings were within normal limits. In accompanying notes, John was described as being well behaved in class by both teachers. While Mr. Brady expressed no learning concerns, Ms. DeWitt did comment on John's somewhat inconsistent test performance.

Conclusions and Recommendations

In summary, John is a 15-year-old who was referred for neuropsychological testing by his pediatrician to further examine symptoms of a possible attention disorder. During formal testing, John demonstrated intellectual ability in the high average range overall, with a relative strength in verbal comprehension and a relative weakness in processing speed. These results are quite consistent with those obtained when John was assessed through his public school district the summer after fourth grade. Academic achievement measures completed in conjunction with the present evaluation revealed average reading skills overall, although individual subtests suggested better reading vocabulary and sight-word reading than reading comprehension and reading rate. In the area of arithmetic, John again performed in the average range overall, with evidence of stronger math reasoning skills than math calculation skills. On measures of written expression, his performance was considered high average, with individual subtests indicating consistently well-developed skills. Additional neuropsychological testing revealed low average fine-manual dexterity, average memory skills, average sustained visual-attention, and high average executive processing. Interview information combined with parent-completed behavior rating scales indicated some trouble with inattention, distractibility, and restlessness/impulsivity at home, as well as some mild social anxiety. On self-report measures, John also reported some trouble with organization and distractibility. Teacher ratings were not indicative of any significant concerns in the classroom setting at this time, although history information indicates that teachers have expressed some concern with John's focus in the past. Based on these results, John's difficulties with attention and concentration appear most consistent with a diagnosis of Attention-Deficit/Hyperactivity Disorder, Not Otherwise Specified. Behavioral strategies for working with his current strengths and weaknesses are provided below, although depending on their effectiveness, further consultation with John's pediatrician regarding medication options could also be considered.

Diagnostic Impression:

Axis I: 314. Attention-Deficit/Hyperactivity Disorder, Not Otherwise Specified

Axis II: No Diagnosis

Axis III: Defer to physician

Axis IV: Academic problems

Axis V: 65

Based on the present evaluation, the following recommendations can be offered:

- 1) While John's performance in most academic areas was within the average range or higher, it is important to note that the grade equivalents reported are based on national norms and may not accurately reflect his skill level in comparison to classmates at Marquette University High School. Several areas also fell slightly below grade level, including reading comprehension, math calculation and math fluency, which may be subjects to focus on in the future. In addition, John's visual-spatial skills, while generally average, are not as well developed as his verbal skills, which may mean that he will need to put a little more effort into subjects that are difficult to put into words (such as geometry).
- 2) John's below average processing speed and reading rate have the potential to interfere with his ability to complete homework assignments, projects, and tests/exams in the same amount of time as his peers. This means that good time management is even more important for John than it is for most individuals his age and that he may need to work on his ability to prioritize so that assignments that count the most towards his grade receive the most attention. John is also an appropriate candidate for extended test taking time, particularly on major tests and exams, and his parents are encouraged to schedule a meeting with school professionals to determine the best way to go about implementing this accommodation in the classroom.
- 3) Based on the present results, John is most likely to be successful in classroom settings that encourage active student participation and hands-on learning. In situations where he is expected to attend a lecture or work independently, John may need occasional reminders to stay focused on the task at hand and more frequent breaks. If not already in place, accommodations in John's academic environment to reduce distractions could also be considered. This may include keeping him in close proximity to the teacher during direct instruction, as well as offering him a quiet place to work during independent study times and test taking.
- 4) Although John performed well on measures that usually correlate with organization and planning skills, his parents reported that he has to work hard to keep track of his assignments and has a tendency to procrastinate when it comes to major projects and tests. While this is not all that unusual for an individual his age, John may benefit from participating in a summer course that offers suggestions for further

developing good study habits and time management skills. Often times, adolescents are more likely to be receptive to these types of suggestions if given by someone other than a parent.

James Jones, PhD
Clinical Neuropsychologist

(Please note that results from testing from WISC – IV and WJIII or other pertinent tests administered that led to the diagnosis would normally be included)