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CONFIDENTIAL NEUROPSYCHOLOGICAL EVALUATION

Name:	Student Surname
Age:	17 years, 9 months
Date of Birth:	XXX
Date of Evaluation:	August 29, 2019
Referred By:	Dr. Doctor
Examiner:	Jennifer Morrison, Ph.D., L.S.S.P.

REASON FOR REFERRAL AND BRIEF HISTORY

Student Surname is a 17 year and 9 month old female who was referred by her primary care physician for a comprehensive neuropsychological assessment. Mr. and Mrs. Surname and Student have concerns that she may be struggling with unresolved neurocognitive deficits following a concussion sustained more than 4 years ago. The focus of the current evaluation was to determine diagnostic standing, document any needs for educational supports, and generate recommendations for intervention planning based on her individual constellation of skills.

Student resides with her natural parents, Dad and Mom Surname. She has an older half-brother who is 30 years of age and no longer resides in the family home. Mr. and Mrs. Surname have been married for 19 years and reported no recent changes in their household structure or marital status. Student was born in XXX, Texas. The family then moved to Washington state, Colorado, and then back to Texas over 4 years ago. Mr. and Mrs. Surname completed a clinical interview with the current examiner, several parent behavior rating scales, and a developmental history form. They are thought to be reliable informants regarding Student's birth, developmental, medical, educational, and social histories. Mrs. Surname reported that she was 34 and Mr. Surname 36 years of age at the time of her pregnancy with Student. She presented with hyperemesis and weight loss. Preeclampsia was diagnosed at the end of her pregnancy and excess water weight gain was present as a result. Mrs. Surname reported that she took a prenatal vitamin during her pregnancy. Mrs. Surname indicated a significant depletion in amniotic fluid and secondary induction at 36.5 weeks gestation. Student was delivered with use of vacuum extraction. She was born with the umbilical cord wrapped around her neck 2 times, with reduced initial respiration. There were indications that damage had occurred during labor and delivery including the presence of a clavicle fracture and Erb's palsy. This is an injury to the brachial plexus that causes arm paralysis and impacts range of motion. She was seen in the Neonatal Intensive Care Unit (NICU) briefly before transitioning to the regular nursery. She and her mother remained in the hospital for 2 days before discharging home. Birth weight was 5 lbs. 14 oz. Mr. and Mrs. Surname indicated that Student was always an active baby. She pulled to standing at 8 months of age and took her first steps at 11 months of age. In transitioning from crawling to walking she scooted on her bottom with one leg extended for a time before using an Army crawl and then quadruped crawl. Student's diagnosis with Erb's palsy and a clavicle fracture during labor and delivery resulted in provision of early physical therapy services. Beginning at 2 weeks of age she was provided with direct therapeutic intervention to assist with range of motion. Total duration was

6 to 8 months. Student has always had precocious language skills and no delays have been present. Student is consistently followed by her pediatrician, Dr. Doctor. Medical history is positive for the presence of recurrent strep and obstructive sleep apnea resulting in removal of her tonsils and adenoids at 8 years of age. She was very healthy prior to 8 years of age. She has had instances of bowel obstruction on occasion and requires provision of a probiotic on a daily basis as a result. Student's older brother has struggled with substance use, her maternal grandfather was addicted to over-the-counter medications, and both grandmothers have a history of anxiety and social phobia.

When Student was 12 years old, she sustained a concussion. The family was living in Colorado at the time and Student was attending the 7th grade. She was staying overnight at a friend's house when several unexpected peers showed up. One of the girls present was not originally supposed to attend the sleep over had seemingly garnered some ill will toward Student. At one point in the early morning hours, Student had separated from the group and was walking on the treadmill in the family's workout room. Other peers from the party joined her and the young lady that disliked Student turned up the treadmill unexpectedly while she was walking on it, resulting in a rapid increase in acceleration and a fall. Student does not recall this incident, but injuries incurred during the accident suggested that she fell and hit the left side of her chin and jaw on the control panel and then the treadmill belt before being thrown from the treadmill into a wall. Injury was noted regarding deviation of her jaw, injury to her left hip, and indications of neck and back pain. She lost consciousness and was disoriented after regaining consciousness. No emergency services were sought, and this incident was not reported to adults that were on site at the time. When Student returned home the following day, her parents noted that she had sustained facial injuries (road rash to left chin/jaw) and was not acting herself. They monitored her over the weekend and then took her to her pediatrician on Monday. She was diagnosed with a concussion and it was recommended that she receive follow-up treatment at a local concussion clinic. She stayed home for several days after her injury and experienced increased dizziness, noise sensitivity, and light sensitivity. Poor tolerance for sounds around her (especially those that she deems distracting) and bright lights persists to the present. Student reports that she has not "felt like herself" since this incident although it has been several years. No neural imaging was completed at the time. She received physical therapy services for 6 to 7 months to address the injury to her hip and back. She continues to struggle with headaches, which become more prominent when she is stressed. Continued aggression was present from the girl who caused this original injury and the family moved from Colorado back to Texas as a result. Student was in Advanced Placement (AP) math prior to her injury, but has had to drop to a regular math class because her parents indicated that she had lost some math concepts and struggles to keep up. Student had no recollection of having learned to play the guitar, which occurred prior to her concussion. Since her injury, Mr. and Mrs. Surname indicated that Student has made improvement but has never returned to baseline. She continues to have ongoing issues with information processing. Specifically, Mr. and Mrs. Surname noted that Student experiences language confusion, sometimes slurs her words in conversation, struggles with word finding, and when stress is at a high level, seems to be unable to process verbal instructions. Mr. and Mrs. Surname described Student as more withdrawn than she was previously. They noted that their daughter has always been shy but was previously happy and well-liked. Her parents indicated that she now is only occasionally happy, tends to be more serious, and has become more insistent on following and enforcing rules (which has impacted social relationships to some degree). Mr. and Mrs. Surname noted that Student continues to be able to make social connections with others and stated that she often gravitates towards friends who are having personal problems. She is a very accepting friend and is an advocate for those who are the "underdog." Student notes that she has several best friends, but Mr. and Mrs. Surname are unsure of the degree to which

feelings of closeness are reciprocated. She has lots of acquaintances and receives lots of invitations for outings but does not appear to have very close friends since her injury.

Student has complained of issues with attention since her concussion. In August 2019 her pediatrician Dr. Doctor prescribed a low dose of Concerta as a stimulant trial. Student took this medication for two days, but it resulted in excess dizziness and was discontinued as a result. She takes a daily probiotic. No other consistent medications were reported. Mr. and Mrs. Surname noted that Student eats normally and that there are some meat textures that she doesn't prefer, but that she otherwise eats a wide range of foods. Mr. and Mrs. Surname noted a significant reduction in growth trajectory since the 5th grade. There are no indications of hearing or vision problems. After her concussion, Student noted significant issues with sleep. Her parents indicated that she has trouble staying asleep and has consistently woken up multiple times per night, sometimes with bad dreams since. Student continues to report that she's awake in the night 2 to 3 times, sometimes with hip and back pain, and sometimes with bad dreams (feeling as if she is falling and jerking awake). Although overnight disturbance is present, she reported that she is generally able to go back to sleep quickly. Student is typically in bed with lights out at 9:30 PM. Mr. and Mrs. Surname noted that it takes some time for her to wind down for the day, with sleep onset approximately 45 minutes later. She awakens herself by alarm and has no trouble getting up and getting started for the day. There are no indications of daytime fatigue and no instances of falling asleep in class. However, Mr. and Mrs. Surname noted that her transition to an early waking schedule as a result of participation as an athletic trainer with the football team has caused her to complain of fatigue during the day. Mr. and Mrs. Surname indicated that Student frequently struggles with clumsiness and bumps into things more frequently than would be expected. They noted that she struggles with poor desk posture. Additionally, Student notes difficulties in keeping her place when she's reading. Auditory sensitivities are present that were not reported prior to confession. Student is sensitive to the sound of others chewing, tends to be slow in processing auditory information, has struggles in following complex verbal instructions, and is easily distracted by noises in her environment.

Student attended a full-time preschool program starting at 3 years of age. She transitioned to a full-day kindergarten program with afterschool care at the YMCA. The family moved from Washington state to Colorado in the middle of her kindergarten school year. She finished her kindergarten school year at a charter school, attending the same program consistently through 3rd grade. She then transitioned to a public elementary school, where she attended classes through the 5th grade. She attended her local public middle school until her family moved from Colorado back to Texas in the middle of her 7th grade school year. Since then, she has been enrolled in classes in Local Independent School District. She is currently a 12th grade student at Local High School. She has never repeated a grade. Standardized testing results suggested that without accommodations, her ACT score was a 20. On re-administration, her score dropped to a 19. Student took the SAT and earned a score of 1060. Repeated administration resulted in a score of 1050. Student is interested in becoming an athletic trainer. She has been pre-accepted at Tarleton State University, University of Central Florida, and University of North Carolina. Her parents noted that she loves her history and sports medicine classes. Although she has received some tutoring supports and skill sets have improved, she continues to struggle most in math. Student maintains a high GPA, but this is only as a result of extraordinary amounts of work and effort. Mr. and Mrs. Surname noted extreme overcompensation and long latencies in completing academic tasks at home. The largest academic concerns that they have for Student include slow information processing, distraction by noises in her environment, and consistent reduction in self-confidence in her academic abilities. Escalating levels of emotional difficulties have been present. Student has begun to

have doubts that she may not have the functional skills needed to become an athletic trainer. Her parents reported that she experienced an anxiety attack at school after being in a high stress situation and being unable to process information quickly enough to be of assistance when functioning in her role as a student athletic trainer. She was able to talk with her primary care physician and her emotional status has improved since then. However, Mr. and Mrs. Surname continue to have concerns that Student seems to have lost her confidence because she processes information too slowly and self-reports that her brain has been different since the concussion. She has been able to maintain academic trajectory because of high levels of overcompensation but has now hit a point where she's unable to maintain pace and productivity without high levels of distress.

Information from Student's student leadership and US history teacher Mr. History suggested that Student has "really good academic skills." She was noted to be a student who is very organized, self-driven, and always turns in assignments on time. This teacher noted that Student has excellent scores on curriculum and benchmark testing. No behavior problems were noted in class. This teacher stated that Student is hard-working and has been involved in student council for 2 years. Mr. History described Student as an advocate for students and a great student leader. Student has also spent several years in interaction with her sports medicine teacher and athletic trainer Mr. Sports. This teacher noted that academically, Student seems to be able to make good progress. However, she was noted to be quieter recently and to keep problems hidden more than she has before. Mr. Sports voiced concerns that Student struggles with self-confidence, has difficulty reaching out to others when she needs assistance, and is reticent to express concerns and ask questions when needed. Mr. Sports noted that he observes that Student is struggling with some issues, but she is reticent to talk about these issues with her teachers and classmates. Student frequently becomes upset when other students turn in classwork and tests before her. After this distress is present, she continues to struggle and her performance and productivity suffer as a result. Student notes that she struggles to do well after this thought process has started. Student's not receiving any educational supports at school presently. Her pediatrician has stepped in in the past to transition her from AP classes to regular classes. The school consistently places her in advanced classes because of her grades, but Student is unable to maintain the processing speed and productivity needed to complete the heavier caseload.

Mr. and Mrs. Surname noted no behavior problems in Student. She is a well behaved young lady and is cooperative, asks for help, is obedient, and is helpful with her family. Student has never had a boyfriend and does not desire to have one currently. She has gone on several dates in the past, but she reported that both young men were too immature and were impolite and she didn't want to see them again. Student spends a large portion of her time in academic pursuits and participation in the athletic training program at her school. No significant parent concerns were noted regarding levels of depression. However, Mr. and Mrs. Surname observed that high levels of anxiety have resulted in emotional distress at a higher level recently. They describe Student as very organized, self-motivated, respectful, generous and her volunteering time, accomplished in her school citizenship, responsible, trustworthy, and reliable. They noted that she's respected and trusted by teachers and coaches that she works with and is often placed in leadership positions as a result. Her parents stated that she has struggled significantly since her concussion but seemingly has overcompensated on her own until recently, when it appears that life demands have become too much for her to handle independently without support.

Student babysits for money but does not have consistent employment. She drives independently and her parents noted that she is a safe driver. She tends to be fearful of faster driving speeds, remains on the side roads, only drives on the highway when there is no other way to get where she's going, and has insisted that her parents put a safety monitoring application on her phone keep track of her driving tendencies and location. Student has always paid her own car insurance. Student becomes easily frustrated when people don't do what they're supposed to do, with particular feelings of distress and a tendency to "police" peers. She struggles when transitioning away from activities before they are complete and becomes distressed when interruption is present.

TECHNIQUES UTILIZED

Review of Records
Interviews-Mr. and Mrs. Surname, Student
Woodcock-Johnson Tests of Cognitive Abilities-Fourth Edition (WJ-IV Cog)-selected subtests
Woodcock-Johnson Tests of Achievement-Fourth Edition (WJ-IV Ach)-selected subtests
Woodcock-Johnson Tests of Oral Language-Fourth Edition (WJ-IV OL)-selected subtests
Gray Oral Reading Test-Fifth Edition (GORT-5)-Form A
Expressive One Word Picture Vocabulary Test-Fourth Edition (EOWPVT-4)
Receptive One Word Picture Vocabulary Test-Fourth Edition (ROWPVT-4)
Developmental Test of Visual Perception-Adolescent/Adult (DTVP-A)-selected subtests
Wide Range Assessment of Visual Motor Abilities (WRAVMA)-pegboard
Wide Range Assessment of Memory and Learning-Second Edition (WRAML2)-selected subtests
Delis-Kaplan Executive Function System (D-KEFS)-selected subtests
Integrated Visual-Auditory Continuous Performance Test-Second Edition (IVA-2)
Behavior Assessment System for Children-Second Edition-Parent, Teacher, and Self Report (BASC-3)
Multidimensional Anxiety Scale for Children-Second Edition (MASC-2)-Parent and Self-Report
Children's Depression Inventory-Second Edition (CDI-2)-Self, Parent, and Teacher Report

BEHAVIORAL OBSERVATIONS/CLINICAL INTERVIEW

Student was evaluated over several hours in the morning and afternoon of a single day. She joined the examiner in the testing room without hesitation and was cordial and conversational. Student makes and maintains typical eye contact and is reciprocal in conversation and interaction. No concerns were present regarding social perception or engagement. This examiner observed that Student does not appear to have the ability to fully close her right eyelid. Further, some visual tracking differences and asymmetries were noted between her right and left eyes on neurobehavioral exam and in application. Consultation with Mr. and Mrs. Surname after the evaluation suggested that this is something that was not present prior to her concussion. Student exerted excellent effort over the course of several hours of evaluation. She was not inattentive but did need regular repetition of instructions for clarification. She was able to process information in her head for easier items but tended to whisper to herself for problem solving on more challenging task. For verbal comprehension tasks, she tended to read and then reread items as they got harder in order to put the pieces together in a meaningful way. Student exhibited some signs of cognitive fatigue when working. Specifically, approximately 90 minutes after testing was initiated, she began to show signs of drowsiness. Regularly scheduled breaks with movement were offered as a result. This examiner observed some struggles with fluency. Student had some difficulty quickly mentally retrieving verbal concepts. Productivity was impacted by slower information processing on a regular basis. Student did not always independently start tasks without

explicit and direct cues to begin. She was able to write fluidly and showed no significant lag in coming up with topics for writing on shorter sentences, but her productivity slowed as the complexity of items increased. When left to work at her own pace, Student tended to proceed more slowly and with caution. She uses a quiet voice and sometimes the examiner required her to repeat her answers at a higher volume.

In clinical interview with Student, she revealed that her goal is to be an athletic trainer for a professional baseball team or basketball team. After some time, she would like to transition to work at a high school so that she can pursue having a family. She noted that forgetfulness has become more problematic lately. Student stated that she feels her mood has been about the same, but feelings of generalized and free-floating anxiety have been more prominent. Student self-reported experiencing consistent fears that something bad might happen and often feels the need to be hypervigilant regarding possible dangers in her environment. She indicated that she has recurrent nightmares of falling and then jerks awake. She noted that this happens several times per night. Student indicated that she grinds her teeth overnight. She indicated that she experiences a headache at least 2 times a day. She noted that she does not pursue any treatment and just proceeds until the headache goes away. They tend to be distracting for her. Student reported stable appetite and self-reported no disordered eating habits. She denied prior sexual contact, use of drugs, and use of alcohol. As an ultimate goal, she noted that she wanted to visit Greece. She indicated that she would enjoy visiting because it is on the ocean, has good seafood, is a relaxing environment, and is a slower and more calming setting. Student reported having a wide range of friends in several cliques. She noted no "drama" in her friendships and no distress in the current level of connectedness between she and her peers. She reported that she would like to go to college to be an athletic trainer. As alternate plans she also noted an interest in the hospitality industry, being a flight attendant, or being a forensic psychologist with a specialty in behavioral analysis. Observation of Student during academic tasks suggested unexpected math calculation errors. She does not appear to have mastered the ability to find a percentage of a larger number (20% of 120). Some calculation errors in math facts were present (8x4=24). Further, she struggled with algebra items. Student tends to be more serious in her demeanor than other young ladies in her age range. However, she was also clearly wanting to work hard and perform well for the examiner. She exhibited a range of facial expressions and reported no feelings of lethargy, sleep onset issues, an excess need for sleep, or feelings of excess guilt or reduced self-worth. She noted no recent increases or decreases in appetite or weight. Student denied any prior or current self-harm behaviors or dangerous impulses. She was fully oriented in all spheres and was a willing participant in the assessment. As a result, the findings from the current evaluation are thought to be a reliable indication of her neurocognitive skill set at the time of the evaluation.

RESULTS AND INTERPRETATION

Key to Test Scores:

Standard Scores are ways to compare an individual's performance across tests. On test batteries with standard scores with a mean of 100 and standard deviation of 15, two-thirds of all individuals will obtain a score between 85 and 115. Standard scores between 90 and 110 are often considered "average," though may be significantly below or above expectation for an individual, depending on other factors. *Subtest scaled scores* typically have a mean of 10 with a standard deviation of 3. Two-thirds of all individuals will obtain a scaled score between 8 and 12. Scaled scores of 15 and above are considered to be significant areas of strength and are in the "superior" range. When scaled scores fall between 13 and 14, they typically denote scores that are

within normal limits but at the higher end of the scores in the average range and are considered to be "high average." Scaled scores between 8 and 12 are considered to be "average." Performance in the 6 to 7 scaled score range is considered to be "below average" and is at the lower end of the average range. Scores in this range often reflect mild weaknesses in functioning. Scaled scores from 4 to 5 are "borderline" and are considered to be red flag areas of performance and consistent with moderate weakness. Scores at this level are likely to impact daily activities at home and school. When functional skills are estimated to be significantly problematic, they fall in the "impaired" range, which is found when the scaled score falls between 3 and 1. *Percentiles* refer to the percent of peers around the United States that the test maker found to typically score below an individual's score. For example, a percentile (percentile) score of "70%" indicates that an individual performed better than 70% of peers taking that test.

Intellectual Functioning

Woodcock-Johnson Tests of Cognitive Abilities-Fourth Edition (WJ-IV) Scores based on Age Norms		
Composite Scores	**Standard Score**	**Descriptive Range**
Comprehension Knowledge	90	Average
Fluid Reasoning	112	High Average
Short-Term Working Memory	90	Average
Cognitive Processing Speed	106	Average
Auditory Processing	99	Average
Long-Term Retrieval	99	Average
Visual Processing	108	Average
General Intellectual Ability	**98**	**Average**

Woodcock-Johnson Tests of Cognitive Abilities-Fourth Edition (WJ-IV)		
Subtest Scores	**Scaled Score**	**Descriptor**
Oral Vocabulary	87	Below Average
Number Series	105	Average
Verbal Attention	91	Average
Letter-Pattern Matching	113	High Average
Phonological Processing	91	Average
Story Recall	94	Average
Visualization	108	Average
General Information	93	Average
Concept Formation	114	High Average
Numbers Reversed	92	Average
Nonword Repetition	105	Average
Visual-Auditory Learning	103	Average
Picture Recognition	105	Average
Pair Cancellation	100	Average
Number-Pattern Matching	105	Average
Memory for Words	96	Average

A widely accepted theory of cognitive abilities/processes is the empirically supported Cattell-Horn-Carroll (CHC) theory of cognitive abilities. This theory proposes a multi-factor model of cognitive abilities or processes. The factors of cognitive ability are described as G's. The G's listed below are the areas of cognitive processing which research indicates are most highly correlated with learning.

The Comprehension-Knowledge Cluster (Gc) on the WJ IV, represents crystallized verbal intelligence and includes the breadth and depth of a person's acquired knowledge, the ability to communicate one's knowledge (especially verbally), and the ability to reason using previously learned experiences or procedures. This store of primarily language-based knowledge represents those abilities that have been developed through the investment of time, talent, and resources during education and general life experiences. ***Oral Vocabulary* includes two subcomponents: Synonyms and Antonyms. Each subtest measures an aspect of vocabulary knowledge of spoken English.** *Synonyms* requires the examinee to listen to a word and then provide an appropriate word with the same or a similar meaning. *Antonyms* requires the examinee to hear a word and then provide an appropriate word with the opposite meaning. ***Oral Vocabulary* is a measure of acquired knowledge, or comprehension-knowledge (Gc), on the WJ IV. Student scored within the below range (SS=87).** On a second subtest in this domain, ***General Information***, students are asked to identify where objects would be found as well as the specific function of a set of different items. This requires vocabulary knowledge of increasingly complex concepts. **Student earned a score within the average range (SS=93).** These scores were unitary and suggested overall **crystallized verbal intelligence in the average range (Gc, SS=90). Mild weaknesses were noted with oral vocabulary usage, which is explored further in later portions of the report.**

Fluid Reasoning (Gf) on the WJ IV includes the broad ability to reason, form concepts, and solve problems using unfamiliar information or novel procedures. The narrow abilities of inductive and deductive reasoning are generally considered to be the hallmark indicators of Gf. However, fluid reasoning is actually a complex mixture of many mental operations, such as identifying relations, drawing inferences, recognizing and forming concepts, identifying conjunctions, and recognizing disjunctions. Fluid reasoning requires deliberate and flexible control of attention to solve on-the-spot problems. **On the WJ IV,** this ability is extended to include quantitative reasoning. ***Number Series*** is a test of quantitative and inductive reasoning, both of which are narrow abilities of fluid reasoning (Gf). The examinee is presented with a series of numbers with one number missing and must determine the missing component by deducting a pattern or association between the provided data. **Student performed within the average range (SS=105).** ***Concept Formation*** is a controlled-learning task that involves categorical reasoning based on principles of inductive logic. It also measures an aspect of executive functioning—the mental flexibility required when an individual shifts his/her mental set. This test does not include a memory component. The examinee is presented with a complete stimulus set and he or she must derive the rule for each item. Except on the last several items, the examinee is given immediate feedback regarding the correctness of each response before a new item is presented, thus providing a controlled learning task. **Student's earned score was within the high average range (SS=114).** These scores suggested that an overall estimate of **fluid reasoning was in the high average range (Gf, SS=112).**

Short-Term Working Memory (Gwm) on the WJ IV is an aspect of cognitive efficiency. Specifically, it is the ability to apprehend and hold information in immediate awareness and then use or manipulate it to carry out a goal. Gwm is a limited capacity system where information is typically retained for only a few seconds

before it is lost or transformed. Short-term working memory reflects both the capacity to hold and manipulate information as well as efficiency of attention control during this process. ***Verbal Attention*** **is a test of short-term working memory (Gwm) on the WJ IV, sometimes described as verbal working memory.** Verbal Attention taps a critical ability necessary for efficient working memory—attentional control. The task requires the examinee to listen to an intermingled series of animals and digits presented on an audio recording. The examinee is asked to answer a specific question regarding the sequence—for example, "Say the animal that came before the 5." **Student's measured skill was within the average range (SS=91).** ***Numbers Reversed*** is a test of short-term working memory (Gwm). The test requires the examinee to hold a span of numbers in immediate awareness (memory) while performing a mental operation on it (reversing the sequence of the numbers). **Student performed within the average range (SS=92).** These scores suggest overall performance on **auditory short-term and working memory tasks was in the average range (Gwm, SS=90).**

Cognitive Processing Speed (Gs) on the WJ IV is the ability to perform simple and complex cognitive tasks, particularly when measured under pressure to sustain controlled visual attention and concentration for several minutes. Cognitive processing speed is an aspect of cognitive efficiency. ***Letter-Pattern Matching*** **on the WJ IV is a perceptual speed task—the speed with which an individual can make visual symbol discriminations and identify common orthographic (spelling) patterns.** The examinee is asked to locate and circle the two identical letter patterns in a row of six patterns in the Response Booklet. The letter patterns that match are always a possible English spelling pattern such as "oa" or "sh, whereas the other patterns are impossible or less frequent letter strings such as "ao" or "hs." **Student earned a score within the high average range (SS=113).** ***Number-Pattern Matching*** **assesses speed with which an individual can make visual symbol discriminations and identify common number patterns.** The examinee is asked to locate and circle the two identical number patterns in a row of six patterns in the Response Booklet. **Student earned a score within the average range (SS=105).** ***Pair Cancellation*** is a test that measures attention/concentration and provides information about selective visual attention. It requires the subject to stay on task in a vigilant manner. Because it is timed, Pair Cancellation also provides information about the examinee's ability to perform a simple cognitive task under time pressure. In a 3-minute time period, the examinee is asked to locate and mark a repeated pattern as quickly as possible. **Student was able to earn a score in the average range (SS=100).** Her overall performance suggested her **visual processing speed was in the average range (Gs, SS=106)**.

Auditory Processing (Ga) on the WJ IV is the ability to encode, synthesize, and discriminate auditory stimuli, including the ability to employ auditory information in task performance. Auditory processing is a broad ability that subsumes many of those abilities referred to as phonological awareness, phonological processing, phonological sensitivity, and phonetic coding. ***Phonological Processing*** **is a cognitively complex auditory processing (Ga) task on the WJ IV that includes speed of lexical access, a narrow ability of long-term retrieval (Glr).** It is comprised of three parts: Word Access, Word Fluency, and Substitution. Word Access requires the examinee to provide a word that has a specific phonemic element in a specific location (e.g. "b" at the beginning). Word Fluency requires the examinee to name as many words as possible that begin with a specified sound in 1 minute. Substitution requires the examinee to substitute part of a word to create a new word. **Student performed within the average range (SS=91).** ***Nonword Repetition*** is a measure of phonological processing, measuring aspects of auditory processing (Ga) and short-term working memory (Gwm). Similar tasks are sometimes described as measuring phonological short-term memory or assessing functioning of the phonological loop. The task requires the examinee to listen to a nonsense word and then repeat the word exactly. Item difficulty increases as the number of syllables in the nonsense word increases.

Student earned a score within the average range (SS=105). Student's **auditory processing was in the average range (Ga, SS=99)**.

Long-Term Retrieval (Glr) on the WJ IV is the ability to store information (after it has been displaced from immediate awareness—Gwm) and fluently retrieve it later in the process of thinking. Long-term retrieval involves both the amount of information that can be stored and the rate and fluency with which the information can be retrieved and accessed. ***Story Recall*** **on the WJ IV measures meaningful memory, a narrow ability of long-term retrieval, as well as some aspects of oral language development.** The task requires the examinee to recall increasingly complex stories that are presented from an audio recording. After listening to a passage, the individual is asked to recall as many details of the story as he or she can remember. **Student's functioning was within the average range (SS=94).** ***Visual-Auditory Learning*** is a test of long-term storage and retrieval (Glr). This measure requires the examinee to learn, store, and retrieve a series of visual-auditory associations. On this measure of associative memory, the examinee is asked to learn and recall rebuses (pictographic representations of words). The examinee receives feedback on his or her responses, which makes this a controlled learning task. **Student's capability was in the average range (SS=103).** These scores suggested that **her ability to store and then retrieve verbal information was in the average range (Glr, SS=99)**.

Visual Processing (Gv) on the WJ IV is the ability to perceive, analyze, synthesize, and think with visual patterns, including the ability to store and recall visual representations. This broad ability includes a number of specific skills, including the ability to manipulate objects or patterns mentally, the ability to identify visual representations that appear in obscure or vague circumstances, visual imagery, and visual memory. Typical Gv tasks include recognizing rotations and reversals of figures, finding hidden figures, identifying incomplete or distorted figures, and comprehending spatial configurations. ***Visualization*** **includes two subtests: Spatial Relations and Block Rotation. Each subtest measures a different aspect of the narrow ability visualization, a component of visual processing (Gv) on the WJ IV.** *Spatial Relations* requires the examinee to identify the two or three pieces that form a complete target shape. The item difficulty increases as the pieces that form the shape are flipped, rotated, and become more similar in appearance. *Block Rotation* requires the examinee to identify the two block patterns that match the target pattern. **Student's measured skill was in the average range (SS=108).** ***Picture Recognition*** measures memory for objects or pictures, which is a narrow ability of visual processing (Gv). The examinee's task is to recognize a subset of previously presented pictures within a field of distracting pictures. To eliminate verbal mediation as a memory strategy, varieties of the same type of object are used as the stimuli and distractors for each item (e.g., several different bowls or several different windows). The difficulty of the items increases as the number of pictures in the stimulus set increases. **Student's measured skill was within the average range (SS=105).** These scores suggested that her ability to complete **visual discrimination and memory tasks was in the average range (Gv, SS=108).**

Academic Functioning

Academic estimates were gathered through administration of the GORT-5 and portions of the WJ-IV Tests of Achievement. Achievement scores reflect a child's capabilities in the basic domains of school (reading, writing, math) in comparison with others that are the same age. This gives an indication of the current knowledge needed to apply what they have learned at school when compared with a large group of other children across the United States. This does not always match up with what is required in the child's actual classroom, where the curriculum and implementation may differ widely. The purpose of completing academic assessment is to

determine whether risk factors for specific learning differences are present.

Achievement Scores		
Cluster/Subtest	**Standard Score/(Scaled) Score**	**Descriptor**
Basic Reading Skills	--	--
Letter-Word Identification	102	Average
GORT-5 Accuracy	(8)	Average
Reading Fluency	--	--
GORT-5 Rate	(8)	Average
Sentence Reading Fluency	102	Average
Reading Comprehension	85	Below Average
GORT-5 Comprehension	(7)	Below Average
Passage Comprehension	90	Average
Reading Recall	83	Below Average
Math Calculations	101	Average
Calculation	101	Average
Math Facts Fluency	101	Average
Math Problem Solving	-	--
Applied Problems	98	Average
Written Language	112	High Average
Spelling	113	High Average
Writing Samples	106	Average

Letter-Word Identification measures the examinee's word identification skills, a reading-writing (Grw) ability. The items require the person to read individual words correctly aloud. The examinee is not required to know the meaning of any word. The items become increasingly difficult as the selected words appear less frequently in written English. **Student performed within the average range (SS=102).** When she was to read short passages and sentences aloud, her reading accuracy was in the average range (GORT-5 Accuracy, Scaled Score=8). **Assessment of basic reading skills suggested that Student possesses age and grade typical functions.**

A measure of oral reading speed (using passages) was in the average range (GORT-5 Rate, Scaled Score=8). When she was asked to read a series of statements and determine if they were true or false as quickly as possible, she demonstrated functioning in the average range (WJ-IV Sentence Reading Fluency, Standard Score=102). There were no indications of reading fluency deficits. However, she demonstrated below average performance when answering factual questions regarding the content of self-read passages (GORT-5 Comprehension, Scaled Score=7). This task does not allow students to re-read the passages more than once and is therefore more reliant on verbal memory and retention. When the passage remained in front of her to read as much as needed, she earned a score in the average range when asked to provide a missing word using context clues from a series of short passages (WJ-IV Passage Comprehension, SS=90). However, when Student was asked to read short passages to herself (silently) and then to repeat the story back with as much detail as possible, she demonstrated below average performance (WJ-IV Reading Recall, Standard Score=83). Her Oral Reading Index score suggested below average functioning (GORT-5, Standard Score=86), which reflects below

expected performance in comparison with same age peers. There were no indications of basic reading or reading fluency problems in this set of scores. However, she struggled with reading comprehension for material that required her to use her auditory short term memory systems instead of referring back to the passage to check for accuracy.

The Math Calculation Skills cluster on the WJ IV suggested performance within the average range (SS=101). ***Calculation*** is a test of math achievement measuring the ability to perform mathematical computations, a quantitative knowledge (Gq) ability. The items require the person to perform addition, subtraction, multiplication, division, and combinations of these basic operations, when appropriate for their age and grade. Because the calculations are presented in a traditional problem format in the Response Booklet, the person is not required to make any decisions about what operations to use or what data to include. **Student performed within the average range (SS=101).** ***Math Facts Fluency*** is a test of math achievement measuring the ability to perform mixed addition, subtraction, and multiplication problems under a 3 minute time limit. **Student performed within the average range (SS=101).** ***Applied Problems*** requires the person to analyze and solve math problems, a quantitative knowledge (Gq) ability. To solve the problems, the person must listen to the problem, recognize the procedure to be followed, and then perform relatively simple calculations. Because many of the problems include extraneous information, the individual must decide not only the appropriate mathematical operations to use but also which numbers to include in the calculation. Item difficulty increases with the more complex calculations. **On Applied Problems, Student's measured skill was in the average range (SS=98). She exhibited typical math calculation and reasoning skills.**

The Written Language cluster on the WJ IV suggested performance within the high average range (SS=112). ***Spelling,*** a reading-writing (Grw) ability, requires the person to write words that are presented orally. The items measure the person's ability to spell words correctly. The items become increasingly difficult as the words become more complex and unfamiliar. **Student performed within the high average range (SS=113).** ***Writing Samples*** measures the examinee's skills in writing responses to a variety of demands, a reading-writing (Grw) ability. The person must write sentences that are evaluated for their quality of expression. Item difficulty increases by increasing passage length, the level of vocabulary, and the sophistication of the content. The individual is not penalized for errors in basic writing skills, such as spelling and punctuation. **Student's estimated functioning was within the average range (SS=106). There were no indications of normative weaknesses in written expression.**

Student's profile of scores suggested mild weaknesses in reading comprehension across several measures. This indicates some risk for struggles with processing and retaining material that she has read to herself, specifically when the stimulus is only read one time and she is relying on her memory systems to retain details. She needed longer latencies to read and then re-read material for better comprehension. This suggests a need for extra time to process larger amounts of verbal material.

Language

Student's ability to complete receptive and expressive language tasks was measured using several tools including parts of the WJ-IV Tests of Cognitive Abilities, EOWPVT-4, ROWPVT-4, WJ-IV Oral Language, and the D-KEFS. Student's scores were in the average to below average range on measures of expressive and receptive language. Her ability to orally name a series of increasingly complex objects and concepts was in the below average range (EOWPVT-4, Standard Score=84). Her ability to provide synonyms and antonyms was in the

below average range (WJ-IV Oral Vocabulary, Standard Score=87). She could indicate the location and function of vocabulary words with ability in the average range (WJ-IV General Information, Standard Score=93). Student's performance was in the average range when she was asked to provide words based on a common starting sound, quickly retrieve words based on phonemic categorization, and to substitute parts of words to produce new words (WJ-IV Phonological Processing, Standard Score=91). Measures of verbal fluency suggested average pace and accuracy when scanning visual information and naming it as quickly as possible (D-KEFS Color-Word Interference-Color Naming, Scaled Score=11). When no visual information was present, asking her to pull verbal information from her mind as quickly as possible, she demonstrated average skill when naming words with a common starting letter and within a common category (D-KEFS Verbal Fluency-Letter, Scaled Score=9; Category, Scaled Score=10). When visually scanning and naming a series of objects as quickly as possible, her verbal fluency was in the average range (WJ-IV Rapid Picture Naming, Standard Score=100). Measures of verbal fluency, both with and without a visual aspect, suggested intact to above expected functions. However, Student presented with scores in the below average range for the most part when asked to use oral vocabulary development and confrontation naming skills. Vocabulary development is essential for further growth in multiple domains including reading comprehension, listening comprehension, and written expression.

Student's receptive language performance was in the average to below average range. Assessment of basic receptive language suggested average skill (ROWPVT-4, Standard Score=102). Her ability to use phonetic comprehension to repeat nonsense words was in the average range (WJ-IV Nonword Repetition, Standard Score=105). She was able to provide words with a common starting letter, to generate words quickly, and to work with words to take a portion out and insert another one with skills in the average range (WJ-IV Phonological Processing, Standard Score=91). When listening to a series of increasingly complex stories and then repeating the stories from memory, Student's performance was in the average range (WJ-IV Story Recall, Standard Score=94). However, when the amount of information to be processed was more complex and she was asked to analyze what she was hearing, versus just listening and holding it in mind, her earned score was at the very bottom of the average range (WJ-IV Oral Comprehension, Standard Score=90). Further, listening comprehension needed to listen to, process, and then act upon a series of increasingly detailed verbal instructions suggested performance in the below average range (WJ-IV Understanding Directions, Standard Score=82). Student's profile of scores suggested weaknesses in her auditory processing skills when analysis and listening comprehension were required (versus simply listening and mentally capturing details). In combination with struggles with expressive naming and vocabulary development, Student appears to be struggling with language deficits following concussion. Further testing with a speech therapist may be warranted.

Motor/Visual Perceptual/Processing Speed

Student's ability to perceive visual stimuli, provide a coordinated motor response, and integrate visual input and an appropriate motor output was assessed using parts of the DTVP-A, WJ-IV Tests of Cognitive Abilities, WRAVMA, and D-KEFS. She is right hand dominant and utilizes a modified tripod grip. Overall, scores in this domain were in the average range. Basic visual perception (2-D) and mental spatial rotation (3-D) was in the average range (WJ-IV Cog Visualization, Standard Score=108). Additional measures of visual perception suggested average functioning on tasks requiring her to mentally visualize missing components (DTVP-A Visual Closure, Scaled Score=10), average skill when identifying figures after resizing or spatial rotation (DTVP-A Form Constancy, Scaled Score=12), and average functioning when asked to decipher visual detail amid a high degree of overlaid visual clutter (DTVP-A Figure-Ground, Scaled Score=9). Assessment in this domain suggested typical

capabilities in the basic visual perception domain. When asked to complete a visual motor integration task, requiring her to view and then copy a set of geometric drawings with pencil and paper, Student demonstrated expected skills, with average proficiency in comparison with peers (DTVP-A Copying, Scaled Score=11). Assessment of fine motor speed was in the average range in her dominant right hand and in her non-dominant left hand (WRAVMA Pegboard-Dom, Standard Score=93; Non-Dominant, Standard Score=91). There were no indications of clinical deficits warranting further occupational therapy evaluation. Visual perceptual, visual motor, and fine motor functions appear to be functionally intact.

Student was also administered several measures with a time component. Speeded visual symbol discrimination, which required her to identify common spelling patterns as quickly as possible, was in the high average range (WJ-IV Cog Letter-Pattern Matching, Standard Score=113). On another speeded task, which asked her to make visual number discriminations, she performed in the average range (WJ-IV Cog Number-Pattern Matching, Standard Score=105). Her visual perceptual processing speed was in the expected range.

Memory

Student's memory was assessed using parts of the WRAML-2 and the WJ-IV. Her WRAML-2 Verbal Memory Index score was in the average range (Standard Score=97). Her Visual Memory Index score was in the average range (Standard Score=97). When asked to recall details from passage-length stories read aloud, her performance was in the average range (WRAML-2 Story Memory, Scaled Score=10). Her skill in recalling the stories after a delay was in the average range (WRAML-2 Story Memory Recall, Scaled Score=10) and recognition of information from the stories was in the average range (WRAML-2 Story Recognition, Scaled Score=11). This is an intact skill set for Student. When asked to remember a list of unrelated words presented with repetition, her earned score was in the average range (WRAML-2 Verbal Learning, Scaled Score=9). She was able to recall words from the list after a delay with average accuracy (WRAML-2 Verbal Learning Recall, Scaled Score=11), and her recognition of words from the list was in the average range (WRAML-2 Verbal Learning Recognition, Scaled Score=11). When asked to listen to and then repeat an increasing number of words after a single exposure, her recall was in the average range (WJ-IV Memory for Words, Standard Score=96). She demonstrated intact story recall skills, both immediately and after a delay. She also exhibited the ability to remember smaller amounts of verbal information when it was provided with a series of repetitions to foster retention. However, when verbal information was less related, was in larger quantities, and was offered only one time, she struggled to hold needed details and her performance declined to the bottom of the average range or below it (based on scores in the language and cognitive domains). She will need verbal instruction to be highly related, to link to prior learning, and to allow for priming and repetition when smaller details are to be recalled. She should be offered verbal directions in writing to refer back to later. When comprehension questions are asked, she should be allowed to refer back to the text when not being directly assessed on long term retention (like on a test or quiz).

In regard to Student's ability to recall visual or nonverbal information, scores were in the high average to below average range. When visual information was less verbally embedded (meaningful) but was also more simplistic, her immediate recall was in the below average range (WRAML-2 Design Memory, Scaled Score=7). Following a delay, her ability to identify portions of previously seen drawings was in the average range (WRAML-2 Design Memory Recognition, Scaled Score=11). Her proficiency was in the average range on a measure of visual memory skills in which she was to identify altered details from complex, meaningful pictures (WRAML-2 Picture Memory, Scaled Score=12). Her skill, when asked to recognize previously viewed portions of

the pictures after a delay, was in the high average range (WRAML-2 Picture Memory Recognition, Scaled Score=14). Student's memory profile suggested well developed auditory and visual memory skills for highly contextual information presented within a story or as a picture scene that told a story. Less developed proficiencies were noted in the visual and auditory immediate memory domains. When presented with stimulus that was not easily cross-modally learned (no verbal/word supports, didn't tell a story), Student demonstrated poor initial encoding, but later retention appeared to be typical. This may impact her initial encoding of primarily visual stimulus like details from charts, graphs, tables, or elements from math proofs. She should be given a desk copy of visual aids used in instruction and should be allowed a "cheat sheet" of common formulas used in math when retention of the actual formula itself is not required.

Attention/Executive Functioning

Student was administered several tasks from the WJ-IV Tests of Cognitive Abilities, the D-KEFS, and IVA-2 in order to estimate her ability to utilize attention and executive skills. Attention tasks required her to concentrate on a variety of stimuli, both visual and auditory, over differing lengths of time. Executive functions are a set of cognitive processes which guide goal-directed behaviors. They do not refer to an individual's knowledge or skills but to the mental processes that direct whether and how these are applied to accomplish a goal. They include control of attention, inhibition of impulses, shifting set, working memory, planning, organization, self-monitoring and emotional regulation.

Her ability to focus on a variety of auditory and/or visual stimuli was reflective of scores in the average to below average range. On a measure requiring her to listen to a series of animals and digits through an audio recording and then respond to a specific question with regards to the sequencing of the objects, she performed in the average range (WJ-IV Verbal Attention, Standard Score=91). Her performance on a visual selective attention measure, requiring that she process a visually cluttered array to pick out targets, was in the average range (WJ-IV Pair Cancellation, Standard Score=100). She demonstrated average functioning when searching for and sequencing a series of numbers and then letters (like a dot to dot; D-KEFS Trail 2, Scaled Score=10; Trail 3, Scaled Score=10). There were no clinical indications of selective attention deficits in her profile.

Student underwent intensive computerized assessment of her sustained attention skills. The IVA-2 CPT (Integrated Visual & Auditory 2 Continuous Performance Test) is a test of attention and impulsivity that measures responses to 500 intermixed auditory and visual stimuli spaced 1.5 seconds apart. The task is to click the mouse to the target stimuli which is either an auditory or visual "1" and to refrain from clicking when the foil stimulus (i.e., an auditory or visual "2") is presented. The quotient scores for all of the IVA-2 scales are reported as standard scores (Mean = 100, SD = 15). The percentile ranks for the standard scores are also reported. The main test lasts about twelve minutes. The main test results were found to be valid. All global and primary test scale scores can be interpreted without reservation. Student's response pattern did not reveal any apparent abnormalities in her responses to either visual or auditory test stimuli. The examiner can proceed in an interpretation of all visual and auditory test scores without reservation.

The Full Scale Response Control Quotient is a global measure of the overall ability for Student to regulate her responses and respond appropriately. Factors that load on this scale include the ability to inhibit responses to non-targets, the consistency of recognition reaction times and the person's ability to maintain her mental processing speed during the IVA-2 test. Student's overall global quotient scale score for the **Full Scale**

Response Control scale was 110 (PR=76). This score fell in the above average range. Her **Auditory Response Control** quotient scale score was 103 (PR=58). This global scale score fell in the average range. The **Visual Response Control** quotient scale score for Student was 116 (PR=86). This global scale score fell in the above average range.

The Full Scale Attention Quotient provides a measure of an individual's overall ability to accurately and quickly respond while maintaining focus. This global scale primarily measures performance under low demand conditions. Student's overall quotient score on the **Full Scale Attention** scale was 107 (PR=69). This global scale score fell in the average range. Her **Auditory Attention** quotient scale score was 102 (PR=54), and this global scale score fell in the average range. The **Visual Attention** quotient scale score for Student was 110 (PR=76). This global scale score was classified as falling in the above average range.

The Combined Sustained Attention quotient scale score provides a global measure of a person's ability to accurately and quickly respond in a reliable manner to stimuli under low demand conditions. In addition, it includes the ability to sustain attention and be flexible when things change under high demand conditions. These are reported as separate scale scores for both the auditory and visual modalities. Student's global quotient score on the **Combined Sustained Attention** scale was 106 (PR=66). This score fell in the average range. Her global **Auditory Sustained Attention** quotient scale score was 105 (PR=62), and it fell in the average range. The global **Visual Sustained Attention** quotient scale score for Student was 107 (PR=69). This score was found to fall in the average range.

Student's auditory performance was essentially the same under both the high and low demand conditions that comprise the Auditory Vigilance scale. Her ability to respond accurately to auditory test targets was relatively stable and consistent and was not affected by the frequency of the target presentation or whether targets were preceded by a non-target. There was a significant difference found when comparing her visual attentional functioning under high demand and low demand conditions. Her performance was better under high demand conditions. She was significantly less accurate in her responses to the visual test targets under low demand conditions. Her visual attentional ability appeared to be relatively weaker when she had to sustain her attention when targets were more infrequent. Although this pattern of performance may be helpful in optimizing performance, it is not likely to have much impact on her functioning in the home or school settings.

Although she had a few lapses of attention, Student is able to stay focused most of the time when processing verbal information. Her lapses in auditory attention may be due to a momentary preoccupation with her thoughts or due to slight fatigue. She will potentially be able to help herself by asking others to restate their communication to her when it is important and she needs to be certain of what is being communicated. Typically, problems will only occur for her in environments that have a high frequency of auditory distractions or when she is emotionally upset. Her problems with remaining focused occurred when the required pace to pay attention was less demanding. Thus, Student showed difficulty that is likely to impact her efforts to learn and perform in the school environments. She may at times be challenged specifically by routine tasks or tasks that are not intrinsically motivating for her. Her processing speed shows that she is above average with respect to her ability to perceive and respond to auditory stimuli. However, she was found to be slower in her visual reaction time during the Cool-down as compared to the Warm-up period. This slower reaction time after the main section of the IVA-2 test suggests mental fatigue when required to perform a simple visual test task over longer durations.

These test results do not provide the examiner with support for the consideration of the diagnosis of ADHD. No significant impairment was found in respect to Student's overall response control, attentional functioning, or ability to sustain her attention based on all the global IVA-2 quotient scale scores. However, if the individual has specific symptoms or complaints that need to be addressed, then the examiner may want to consider obtaining further medical or psychological evaluations. Based on these evaluations, other medical diagnoses or mental disorders could then be considered.

On executive function tasks, Student's overall proficiency was in the average range. When she was presented with a series of numbers and asked to determine the missing number from the pattern, she performed in the average range (WJ-IV Number Series, Standard Score=105). When she was asked to establish a set of rules to differentiate target from non-target objects, she earned a score in the high average range (WJ-IV Concept Formation, Standard Score=114). Her verbal working memory and ability to mentally manipulate information was in the average range (WJ-IV Numbers Reversed, Standard Score=92). Measures of verbal fluency were in the average range. When additional cognitive flexibility demands were added, requesting that she mentally switch between two verbal categories as quickly as possible, Student's earned score was in the average range (D-KEFS Verbal Fluency Switching Responses, Scaled Score=11) for the number of responses provided, and was in the average range regarding her ability to switch between cognitive categories (Accuracy, Scaled Score=12). Error rates were typical regarding mental maintenance of task demands and self-monitoring needed to inhibit repetition of the same responses over time. Student's ability to use visual fluency skills to make as many new shapes as possible by connecting a series of dots was in the average range when combined across two measures (D-KEFS Design Fluency Combined, Scaled Score=12). When she was asked to switch to a new set of rules, requiring an increased amount of set shifting and cognitive flexibility, her performance was in the average range (D-KEFS Design Fluency Switching, Scaled Score=10). Her performance reflected intact set maintenance and self-monitoring needed to reduce errors. When completing a series of visual cognitive flexibility tasks requiring her to visually find information while simultaneously holding sequences in mind, her earned score was in the average range when switching between sequencing numbers and letters (1-A-2-B-3-C….; D-KEFS Trail 4, Scaled Score=11). There were no indications of deficits in reasoning, general verbal and visual fluency, or cognitive inhibitory control.

Social-Emotional/Behavioral Functioning

Scores in this domain are reflective of your child in comparison with others of the same gender and same age. This is because boys and girls are very different in how they think, feel, and act. The purpose of gathering information in this domain is twofold. The first goal is to determine whether a child is struggling to develop independence skills (lacking a necessary function) or is having excess trouble in psychological, behavioral, or social skills functions that put them at risk. The second goal is to determine perspectives from people outside of testing, including the experts (parents). Sometimes trends in this area are not clinically risky and identify areas in which a child might need support to learn different skills. Other times, high concerns noted may reflect that a psychological, behavioral, or social issues is present and may account for or even fully explain concerns and weaknesses in other areas.

Parent BASC-3 Domain	Parents	Descriptor
Externalizing Problems	44	Average
Hyperactivity	49	Average

Parent BASC-3 Domain	Parents	Descriptor
Aggression	43	Average
Conduct Problems	42	Average
Internalizing Problems	49	Average
Anxiety	49	Average
Depression	45	Average
Somatization	54	Average
Behavioral Symptoms Index	49	Average
Attention Problems	53	Average
Atypicality	50	Average
Withdrawal	57	Average
Adaptive Skills	57	Average
Adaptability	65	Average
Social Skills	54	Average
Leadership	56	Average
Functional Communication	42	Average
Activities of Daily Living	63	Average

Italicized scores are at-risk, bold scores are clinically elevated

Scores from the BASC-3 reflect a parent's observation of a range of social, emotional, behavioral, and adaptive factors. Information from parent report suggested no elevations in internalizing (anxiety, depression), externalizing (acting out, hyperactivity, conduct issues), behavioral (inattention, interpersonal struggles, withdrawal), or adaptive functions (communication, self-care, social skills). When more specific behavioral characteristics of ADHD were sampled, Mr. and Mrs. Surname reported no concerns regarding Hyperactive-Impulsive behaviors (ADDES-4 HV, Scaled Score=10) or levels of Inattentive behaviors (Scaled Score=12) when compared with neurotypical girls her age (Quotient, SS=101; average overall). Further, narrow-band assessment of anxiety symptoms was sampled in parent report on the MASC-2. Mr. and Mrs. Surname's endorsements suggested a "high" probability of clinical anxiety symptoms. The Total score was in the elevated range (T=65), Separation Anxiety/Phobias score was in the average range (T=50), Generalized anxiety scale was in the slightly elevated range (T=64), and Social Anxiety scale was in the elevated range (T=68). Parent ratings suggested that Student struggles with slightly elevated levels of concern regarding the potential for Humiliation/Rejection (T=60), very elevated Performance Fears (T=76), and very elevated levels of Panic (T=83). This suggests that Student struggles to remain calm and think effectively when stressed or faced with high levels of adversity, is concerned that others will judge her as being insufficient in her performance, and has some concerns regarding the judgments of others. Parent endorsements regarding risk factors for depressive symptoms were gathered from the CDI-2. Their ratings suggested average levels of depression overall (Total, T=53), Emotional Problems (T=54), and Functional Problems (T=52). There were no indications of concern regarding possible presentation with depression in parent ratings.

BASC-3 Domain	Self	Classification
School Problems	42	Average
Attitude to School	43	Average

BASC-3 Domain	Self	Classification
Attitude to Teachers	38	Average
Sensation Seeking	51	Average
Internalizing Problems	54	Average
Atypicality	*62*	*At-Risk*
Locus of Control	49	Average
Social Stress	58	Average
Anxiety	57	Average
Depression	46	Average
Sense of Inadequacy	43	Average
Somatization	*61*	*At-Risk*
Emotional Symptoms Index	49	Average
Attention Problems	*66*	*At-Risk*
Hyperactivity	44	Average
Personal Adjustment	56	Average
Relations with Parents	57	Average
Interpersonal Relations	51	Average
Self-Esteem	58	Average
Self-Reliance	53	Average

Italicized scores are at-risk, bold scores are clinically elevated

When rating herself on the BASC-3, Student noted at-risk elevations in several areas, but no clinically elevated concerns. Specifically, she indicated at-risk levels of physical symptoms of stress (usually linked to anxiety) and struggles with maintaining needed levels of attention and concentration. Narrow-band assessment from a self-report anxiety measure (MASC-2) suggested a "high" probability of a clinical anxiety disorder. The Total Anxiety score was in the elevated range (T=67). Scores in the Separation Anxiety/Phobias (T=49) domain were average, slight elevations were noted regarding levels of generalized anxiety (T=59), and slight elevations were noted in the total Social Anxiety (T=58) domains. Student indicated elevated levels of Obsessions & Compulsions (T=66), elevated Physical Symptoms of anxiety (T=65), and very elevated levels of Panic (T=72). Student's responses suggested increased levels of Obsessive and Compulsive thinking and behaviors (T=66) but did not note the classic symptoms of OCD including repetitive non-purposeful routines such as tapping, checking, and/or washing behaviors. Instead, she noted a tendency check and recheck the accuracy of her performance and to have increased worry regarding whether she will make mistakes or that something bad might be her fault. Student endorses a tendency to panic under duress. It may be that anxiety levels impact attention and the ability to mentally block out worries and recurrent thoughts in order to focus. Mild difficulties with attentional control were present, but not to the level typically indicated for a person presenting with clinical deficits. Narrow-band assessment of depressive symptoms was completed using the CDI-2. Student's self-report suggested an average level of Total depression (T=59), average levels of Emotional Problems (T=54), average feelings of Negative Mood and Physical Symptoms (T=57), average levels of Self-Esteem (T=48), high average Functional Problems (T=63), high average feelings of Ineffectiveness (T=63), and average difficulties with Interpersonal Problems (T=58). There were no indications of clinical concerns regarding depressive symptoms in Student's self-report.

BASC-3 Domain	History	Sports
Externalizing Problems	45	46
Hyperactivity	47	49
Aggression	44	44
Conduct Problems	43	44
Internalizing Problems	43	*62*
Anxiety	43	**75**
Depression	43	*63*
Somatization	44	44
School Problems	41	48
Attention Problems	40	45
Learning Problems	42	52
Behavioral Symptoms Index	42	56
Atypicality	45	**77**
Withdrawal	40	52
Adaptive Skills	63	--
Adaptability	62	45
Social Skills	63	47
Leadership	63	44
Study Skills	61	--
Functional Communication	62	*37*

Italicized scores are at-risk, bold scores are clinically elevated

The instructor that works closely with Student as an athletic trainer suggested clinical levels of anxiety, clinical levels of atypical behaviors, at risk levels of possible depression, and at risk struggles in functional communication. Concerns were present regarding Student's emotional control including instances of emotional outbursts, sudden mood changes, or periods of difficulty with emotional regulation. Mr. Sports's responses suggested elevated levels of anxiety that were rare in the standardization sample. Teachers of teen girls in this age range only reported anxiety levels consistent with those noted for Student in about 4.3% of the standardization sample. This profile typically indicates high levels of internal distress such as excessive worry, nervousness, intrusive or obsessive thoughts, and negative self-appraisals. Teacher endorsements suggested that Student is often easily upset, only sometimes makes decisions easily, sometimes seems lonely, and sometimes indicates that she doesn't have any friends. Her teacher also noted that she is often sad and often easily upset. The broader profile of major depressive symptoms does not appear to be present in teacher report. However, Mr. Sports noted that Student is often suspicious of others, often seems unaware of others, and often has speech that is confused or disorganized. Her history and leadership teacher Mr. History noted no concerns with internalizing, externalizing, behavioral, or adaptive functioning.

DIAGNOSTIC IMPRESSIONS

Student Surname is a 17 year and 9 month old female referred by her parents and pediatrician for neuropsychological evaluation due to a history of concussion. Just prior to turning 13, she was walking on a

treadmill when a peer turned the speed up unexpectedly. She fell while the belt was moving, striking her left jaw and side of her face on the control panel before hitting the belt and being thrown against a wall. She lost consciousness as a result of this injury and presented with fatigue and disorientation. She was not provided with immediate medical care (injury not reported to adults), but was seen by her pediatrician several days later, where a concussion was diagnosed, along with deviation of her jaw, injuries to her hip and back, and road rash on several body parts. This examiner further observed that Student is unable to fully close her right eyelid, which was not the case prior to her head injury. Given the location of injuries and the pattern of performance on the current set of assessment measures, Student likely struck her chin, jaw, and the left front-temporal portion of her skull, impacting the brain portions lying under the impact. No neuroimaging was completed as part of this process. Current testing scores suggested a bright and capable young lady. Her overall cognitive skills are typical, as are academic functions in most areas. She exhibits mild struggles with reading comprehension and retention of verbal information when she processes it directly through self-reading. Her capabilities are more effective regarding retention of verbal detail that is read aloud, particularly when it is told in the form of a story where all of the details link together in a meaningful way. She is able to recall verbal information that is less related, but is more successful when extra repetition is offered. Her visual memory skills are more effective when presented with illustrations that "told a story" in a visual form and could be cross-modally processed. Her immediate encoding of unrelated visual detail was poor, but recognition over time suggested that she is able to transfer visual detail from short-term to longer term memory stores successfully. The response demands of free recall or confrontation naming are a struggle, with Student exhibiting longer than expected latencies in pulling information, extended time to look at and work with information, and a tendency to retrieve aspects of a verbal concept versus the central target (what it does versus what it is called). Student self-reports increased distractibility in relation to sounds in her environment. Sensitivity to incoming light and sound is common after a concussion but generally resolves within a few weeks. Although she continues to be sensitive to both light and sound, the broader profile of attention and concentration deficits observed in ADHD was not present. Instead, her auditory attention is more effective when the demand to actively engage is higher. This would be similar to a highly interactive classroom lecture. Her processing speed and stamina are slightly lower than expected in the visual domain, but not to a level that would suggest consistent clinical impacts. Her struggles with motor control in her right eyelid appear to extend to issues with visual tracking (in one or both eyes), causing Student to lose her place when reading. She struggles with oral vocabulary, is slow to pull verbal information during confrontation naming tasks, sometimes slurs her word when speaking, and presents with reduced reading and listening comprehension skills.

Clinical observation of Student, along with pattern analysis in her scores, is consistent with deficits to the left frontotemporal junction, which houses the motor system that controls the right side of the face, is responsible for aspects of the speech and language systems, houses systems needed for reading comprehension, and is integral in the verbal memory and listening comprehension processes. The combination of primarily verbal/language weaknesses present after her concussion suggests unresolved impacts related to a **Post-Concussive Syndrome (PCS: ICD-10 F07.81; ICD-10 R41.841 Language-Related Cognitive Disorder).** She presents with **Aphasia (ICD-10 R47.01, mild),** or impacts to the ability to use and process language as a result of injury. Further, there are **motor control deficits in her right eyelid and suspected issues with visual tracking (ICD-10 H53.30 Binocular Dysfunction, Unspecified).** Although she is a high achieving student, this comes at the cost of hours of extra academic work time after school and on the weekends. She has gotten to the point that her ability to compensate for neurocognitive deficits associated with a concussion has resulted in

emotional and functional weaknesses. As a result, she should be offered classroom and testing accommodations under a Section 504 Plan. Recommendations for home and school are as follows:

RECOMMENDATIONS

1. Student's parent and Section 504 committee should meet and discuss provision of accommodation supports under a Section 504 Plan due to diagnosis with Post-Concussive Syndrome, mild language-related deficits and aphasia, and visual tracking weaknesses. The ability to fully access instruction is impacted without supports. Accommodations are highly recommended including the following:
    a. Extended time on class assignments, tests, benchmarks, and state and district testing, up to 50% or the end of the school day
    b. A quiet place to take high stakes tests and course exams, with a small group or individual administration
    c. The opportunity to use noise cancelling headphones to block distraction on independent work and during testing and long independent work sessions
    d. Regular breaks (forced) when extended independent work or long testing is required
    e. Preferential seating near instruction and away from distraction. Consistent proximity to the teacher and instruction
    f. Instructions in smaller pieces and provided in a written format to refer back to
    g. Provision of a teacher set of notes, permit audio recording of long classroom lectures
    h. Provision of a grading rubric for all major assignments and projects, provide an exemplar of a previous student's work product if needed
    i. Allow Student to access audiobooks for textbooks and novels
    j. Allow use of graph paper for math computation
    k. Allow use of a memory aid in the form of a cueing sheet to include formulas and mnemonics to be approved by the instructor prior to exams

2. Mr. and Mrs. Surname are encouraged to consider additional assessment with a speech language pathologist to determine her candidacy for aphasia and language-related cognitive deficits. Further, assessment with an occupational therapist may be helpful in identifying the extent to which eye musculature issues may be present and her candidacy for rehabilitation of these deficits. Finally, Student's self-report suggested that she struggles with headaches daily. She is encouraged to seek consultation with a migraine and headache specialist to determine how best to reduce or eliminate headaches.

GENERAL CLASSROOM

1. Formal test scores suggested that Student demonstrated a slow-down in her response time to visual stimuli over longer durations. Her increased response time reflects slower mental processing speed as time goes on. She starts tasks then quickly "runs out of steam." She may be slow in getting work done that she needs to do and would benefit from modification of assignment length and extended time as needed.

2. She would benefit from being provided with a teacher copy of notes. This will decrease the demand to write while listening and to allow more consistent use of a single modality for learning. Teacher lectures should include a high degree of visual aids, student involvement, and should offer consistent priming, summarization, and reinforcement of important concepts for studying.

3. Teachers should check in with Student frequently to make sure that she attends to directions and understands assignment task demands. Teachers should provide demonstrations whenever possible and should visually check progress to ensure that she is following expectations.

4. Student will need clear grading rubrics offered for larger projects and would benefit from being offered previous student work samples. She would benefit from establishing where the "bar" is for teacher expectations.

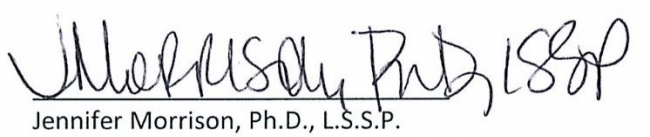
5. If during instruction it appears as if Student becomes easily distracted or needs increased redirection to stay on task, it would be helpful to provide her with a seat that is away from doors and windows and near the teacher. This will increase her ability to attend to lessons while minimizing excess distraction. Student may want to consider using a set of ear plugs or disconnected headphones/earplugs when working independently in school.

6. In order to support attention, school staff should write out and/or allow her to tape record multi-step instructions for her to access later (for homework and projects). Consider making a voice memo of homework instructions to be taken home each day unless a clear set of permanent assignment expectation is provided elsewhere.

7. Student is encouraged to use elements to assist with her studies including using mnemonics for larger amounts of verbal information, flash cards (verbal/auditory), illustrations, and clear narratives to accompany graphs, charts, and tables that she has created.

8. She is likely to perform better in learning situations when there is a high expectation for performance and when she is actively engaged in the task. Visual materials should be offered as a desk copy so that she can refer back to visual aids as much as is needed.

Thank you for the opportunity to work with Student. Please contact me if I can be of further assistance in this case.



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