



Stephanie Nelson, Ph.D., ABPdN, ABPP-CN
Board Certified Pediatric/Clinical Neuropsychologist
2800 E. Madison Street, Suite 304
Seattle WA 98005
Phone: (360) 334-6156
Fax: (425) 242-5121
info@skylightneuropsychology.com

CONFIDENTIAL NEUROPSYCHOLOGICAL EVALUATION

Child's Name: George Smith
Grade/School: 6; Local School & Personal Best Academy

Date of Birth: XX/XX/XXXX
Date of Testing: XX/XX/2019

SUMMARY AND IMPRESSIONS

George Smith is a highly gifted 12 year-old boy who is experiencing social, executive functioning, sensorimotor, and emotional concerns that are impacting his ability to function up to his considerable potential. George's diagnoses, listed below, were provided based on his profile of strengths and weaknesses, as described in more detail in the following paragraphs.

Diagnoses:

- ICD 10 Code F84.0: Autism
- ICD 10 Code F90.9: Attention-Deficit/Hyperactivity Disorder, Not Otherwise Specified
- ICD 10 Code F41.9: Anxiety, Not Otherwise Specified

What Are George's Neurocognitive Strengths?

George's test results show his most remarkable strengths are his problem-solving skills. His verbal, nonverbal, and spatial problem-solving skills are all in the very superior range (DAS-II Index Scores = 141-143). George's verbal problem-solving skills will help him take in new information through words, compare and contrast ideas, and explain what he knows about a subject. His nonverbal skills will help him solve problems using abstract concepts like patterns and sequences. George's visual-spatial problem-solving skills will help him build, solve puzzles, design, and navigate his environment. His skills in all of these areas are above the 99th percentile for his age.

When considered all together, George's overall cognitive skills are in the very superior range (DAS-II General Cognitive Abilities = 143, 99.7th percentile). This is an extraordinarily advanced level of cognitive development. Students with scores in this range can be described by terms such as "highly gifted" and "exceptionally capable." George will benefit from supports and services that meet the unique cognitive, social, and emotional needs of gifted children. This will ensure his innate talents are nurtured in a way that also supports his social and emotional well-being.

This evaluation also provided information about George's learning style. George performed at a high level on all of the problem-solving tasks presented to him. However, he seemed most oriented towards tasks that were literal, straightforward, and step-by-step. At home and at school, he thrives on rules, order, and routines, which fits well with his preferred learning style. George is also very comfortable with straightforward opportunities to learn new rote information and to show what he knows. In casual conversation, he loves sharing facts he has learned. On tests, he especially enjoys familiar, untimed academic tasks, like solving math calculation problems and reading or spelling single words. On these types of tasks, he performed at a very high level that matched his cognitive potential (all WRAT-5 scores = 145, highest possible score, 99.9th percentile). In fact, his basic academic skills were all at the level typically expected of a high school graduate. This shows that when provided with the extra time he needs and the type of assignment that best matches his learning style, George is capable of producing exceptional work.

While George's cognitive and academic skills are clearly his "stand out" strength, he also showed other strong skills during this evaluation. For example, he performed in the very superior range on measures of

his short-term memory for verbal and visual information (DAS-II Working Memory = 145, 99th percentile). This means he can easily keep information in mind while performing some task. This skill, called *working memory*, is strongly correlated with academic achievement. George's strength in working memory likely contributes to his excellent performance on untimed scholastic tasks.

George also demonstrated outstanding literal language skills. Literal language skills are the skill students use to understand language that is meant to be taken word-for-word. For example, George's single-word vocabulary and his ability to follow complex auditory instructions are in the superior range and at about the 95th percentile for his age. George's strong language skills will help him easily and effectively understand others and communicate his ideas, when the language used is straightforward and literal. George also demonstrated a very strong long-term memory for verbal information, again performing in the superior range. Once he has learned a verbal concept, he can effectively hold on to that information so that he can retrieve it again when he needs it.

Taken all together, George's test scores show he has many of the resources that he needs to be very successful at a wide variety of cognitive and academic tasks designed for middle and high school students. He is likely to be especially effective when the tasks are straightforward, rule-based, and literal or meant to be taken word-for-word. George is also likely to be most successful when the tasks are untimed, familiar to him, and step-by-step.

What Are George's Neurocognitive Vulnerabilities?

Consistent with his developmental history, George's sensorimotor skills continue to be a relative weakness. For example, he scored in the impaired range the first time he completed a basic fine-motor task. With practice, his performance improved to the average range. While this improved score is age-appropriate, it was still well below expectations given his very superior nonverbal and spatial cognitive skills. This means George's fine-motor speed and dexterity are weaknesses for him compared to his nonverbal problem-solving skills. Similarly, George's basic visual-perceptual skills are average, but below expectations given his remarkable cognitive strengths. This is consistent with his history of having required vision therapy at a young age. George also scored in the low average range on a visual-motor integration task that requires hand-eye coordination (VMI = 85, 16th percentile). Based on these scores, we can anticipate basic sensory tasks will be more difficult for George than complex problem-solving tasks. He may need more time, more practice, and more adult support to complete tasks with heavy visual-motor demands, like handwriting, drawing, arts, and athletics.

It may be helpful to consider that students with weaker sensorimotor and sensory-perceptual skills typically do not prefer tasks that are unstructured, novel, or ambiguous. Given George's weaknesses in these areas and his specific cognitive learning style, we can expect he may shy away from unfamiliar or unstructured tasks. He is likely to prefer to focus on tasks that feel more familiar to him. Or, he may feel less confident and comfortable when completing ambiguous, open-ended activities. Structure and a clear sequence of steps to follow is likely to help him feel more confident and less anxious. Students with sensorimotor and sensory-perceptual weaknesses can also demonstrate other sensory needs, like being easily overwhelmed by sensory stimuli, or avoiding unfamiliar sensory sensations. At other times, these students can be sensory seeking, looking to "balance out" the sensory input they receive.

George also has relative weaknesses in *executive functioning*. Executive functions are the skills students use to organize their thoughts, feelings, and behaviors in order to set and reach goals. George has a few executive functioning strengths, like his very strong working memory. However, he struggles on most other executive functioning tasks. Most notably, his processing speed is a very pronounced area of weakness. Qualitatively, George needed about 3 times as long to complete tasks relative to most students his age. On tests of how quickly and efficiently he can complete routine tasks, George's processing speed

was in the well below average range (DAS-II Processing Speed = 75). This is at the 5th percentile for his age. The 70-point 'gap' between George's overall IQ score and his processing speed index score is incredibly striking. Discrepancies of this magnitude occur in under 0.1% of children who take these same tests. This means there is a particularly large 'gap' between how deeply George can think, and how quickly he can complete work that reflects his potential. He will certainly need continued accommodations for his processing speed as he progresses through school.

George's slow processing speed impacts his performance on other executive functioning tasks, especially when he is not as interested in the task. While he can focus well on tasks that interest him, even on his usual medication, he struggles with attending consistently to less-engaging tasks that require sustained focus. Maintaining his motivation during these tasks is also challenging for him. George's difficulties with focus and motivation are likely due at least in part to the intense amount of time and effort he needed to expend to complete tasks. That is, George's slow processing speed almost certainly leads him to fatigue more easily than his peers. In addition, although George is rarely impulsive, he occasionally rushes through tasks in an effort to "get them over with." When this happens, he can make many impulsive errors in his effort to hurry through the task. It is quite difficult for George to balance working quickly with working accurately.

George also struggles with more emotional aspects of executive functioning. For example, he has trouble initiating tasks, or "getting started." He also has a hard time adjust to new information, like changes in test instructions, even when those changes are very clearly announced and explained. George also has difficulty ending tasks, such as when time limits expire or it is time to move on. He consistently needs more time and more adult support than other children his age to "shift gears" between tasks. George also needs a lot of adult support to help him manage the small stressors. During this evaluation, he needed a lot of help coping with the small stresses associated with testing, like when he got an item wrong did not feel a test item was "fair." On those occasions, he typically had a "meltdown" (e.g., screaming and crying; occasionally lying on the floor or hitting things). He regularly needed substantial adult help to regroup, soothe himself, and re-engage. This clearly indicates how emotionally difficult it is for George to "shift" cognitive set, adjust to new information, and control his powerful emotions.

When he needs to organize and plan, George uses a highly detail-focused approach that helps him notice and remember a lot of the details. However, he typically misses the "big picture," because of how focused he gets on the details. This is a challenge often seen in students who struggle with cognitive flexibility or "set shifting." These students can have trouble knowing when to "zoom out" to focus on the overall task instead of individual details. Parent rating scales show George demonstrates the same challenges with attention, emotional self-control, organization, planning, initiation, and shifting gears that I saw during this evaluation. His parents also reported problems with impulse control and short-term memory. These results indicate George's executive functioning skills are quite vulnerable. As he matures, he will benefit from support that helps him develop these skills.

What Is George's Social-Emotional Profile?

George is an immensely bright boy who has a lot of ideas that he likes to pursue and topics he loves to learn about. He also has great enthusiasm for his specific areas of interest, and loves to share facts he has learned. George also has a strong desire to succeed, and is curious and creative. His parents note he is funny and shows genuine affection to the small circle of people he is very close to. However, George's interests are somewhat restricted, repetitive, and unlikely to be shared by many of his peers. He also shares his interests regardless of whether the listener shares his interests. He does not invite others in to contribute their information, opinions, or ideas about the topic. This may make it difficult for him to truly "connect" with others around shared interests and experiences. George also has difficulties transitioning, shifting gears, and being flexible in his thoughts, behavior, and play ideas. These features of his social-

emotional profile will present a challenge to George as he looks to develop new friendships and to cultivate a well-rounded repertoire of *flexible* interests and hobbies.

George also has social communication challenges. While he has some good social skills and a clear sense of empathy, he struggles to fluidly weave nonverbal communication and a consideration of his audience in with verbal communication. As a result, he can engage in monologues, failing to fully recognize when others are not as interested in his preferred topics as he is. He also has difficulty with effective give-and-take in conversation. He needs support from his conversational partner to make the conversation flow comfortably. George also has some trouble making social inferences, and figurative language is difficult for him to interpret. On testing, George's pragmatic language skills and social reasoning skills fell in the low end of the average range. The 'gap' between his pragmatic language skills (25th percentile) and his vocabulary level and verbal skills (95th to 99th percentile) is quite prominent. As a result of this profile, George may have trouble "reading between the lines." He is likely to struggle with recognizing the importance of what has been left unsaid, taking hints, or otherwise learning all the unspoken rules and conventions of everyday social interaction. These social and conversational skills are likely to come less "naturally" to him than we would expect given how bright he is.

George's nonverbal communication skills are also still emerging. For example, while he can recognize basic facial expressions with broadly age-appropriate accuracy (25th percentile), he cannot match them to the context. For example, he cannot pick the "sad" face when shown a picture of someone in a sad situation. This may make it harder for George to know what to do in situations that require significant social sophistication and nuance. George is likely to have difficulty recognizing when gentle teasing is affectionate, or understanding when another's behavior is accidental rather than intentional. George might also not always be able to interpret ambiguous or contradictory social and nonverbal information. For instance, he may not always recognize or know what to do when someone says they are "fine" but is clearly conveying in other ways that they need an extra dose of empathy or support.

George's social-emotional profile leaves him vulnerable to difficulties making the types of connections and deep relationships he is looking for. In turn, this places him at risk of feeling sad, lonely, or unsuccessful in his attempts to connect with others and build social ties. This is likely even more problematic for George given his advanced cognitive development, as he may find that many of his same-age peers are not able to think as deeply or logically about things as he can. This is likely to limit the circle of peers available to him who can fully share his interests and ideas. On self-report questionnaires, George reported some awareness of his social and emotional struggles. For example, he reported feeling uncomfortable if an adult is not immediately available to help him, in case he becomes overwhelmed or confused. His parents also reported he shows symptoms of anxiety, depression, and behavioral regulation problems. This suggests George is aware of his social vulnerabilities, and is experiencing the impact of his social communication difficulties on his emotional wellbeing.

What Diagnoses Best Fit George's Profile?

While all children develop at their own pace, **George's current development is quite uneven.** He has some areas of considerable strength, and other areas where he will benefit from support. George's overall profile is one of exceptional cognitive and academic strengths, a well-developed vocabulary, a strong memory for verbal facts, and a deep enthusiasm for his areas of particular interest. However, these strengths occur in the context of less well-developed social communication, executive functioning skills, sensorimotor skills, and flexibility in his interests and behavior.

George's profile, and the social behavior he demonstrated during the Autism Diagnostic Observation Schedule (ADOS-2), and information from rating scales completed by his parents during this evaluation, is consistent with a diagnosis of **Asperger Syndrome**. With the most recent revision to the diagnostic codes

for psychiatrists and psychologists, the diagnosis of Asperger Syndrome now fits under the diagnostic label "autism." This means George officially meets criteria for the diagnosis of *Autism Spectrum Disorder, Level 1, requiring some support, without accompanying intellectual or language impairment*. However, for the purposes of finding books, websites, support groups, or other resources for children with profiles similar to George's, the older diagnostic label of Asperger Syndrome is likely to be more useful. The diagnosis of Asperger Syndrome also better communicates that George's profile includes many cognitive strengths and specific interests that will be important to recognize and build on as he moves forward.

Many children with an autism spectrum disorder experience executive functioning vulnerabilities as a feature of their profile. Based on his test results, George also meets criteria for the diagnosis of **Attention-Deficit/Hyperactivity Disorder Not Otherwise Specified** (ADHD NOS). He will be best able to demonstrate his skills in settings where he receives continued accommodations for his attention and executive functioning. George also meets criteria for **Anxiety Not Otherwise Specified** due to the amount of anxiety that he and his parents reported. He will certainly benefit from ongoing support for his emotional development in order to have the best opportunity to reach his full potential.

How Can George Best Be Supported?

George will benefit from continued support that nurtures his development in the areas highlighted above, both at home and in the school setting. In particular, he will benefit from ongoing support for (1) his social skills, (2) his behavioral and social flexibility, (3) his executive functioning, and (4) his emotional development. Because George has many strengths as well as some areas of vulnerability, it will be important to provide this support within a framework of a very high level of academic challenge, nurturance of his unique interests and experiences, and the consistent routine and structure that brings out his best.

Outside of the school setting, George will benefit from continued access to trained professionals with expertise in working with children with on the autism spectrum. These experts will guide his family in promoting his strengths while nurturing his less well-developed skills. George will also benefit from structured social activities to help him practice his developing social skills in "real time" and in increasingly more sophisticated contexts. This will also make sure he can continue refining the social skills he has learned in his social skills groups over the years. While George certainly requires support at this time, it is essential to stress that he is functioning at a high level in many respects, with several truly remarkable strengths. While he may continue to demonstrate unevenness in his developmental profile as he grows older, when provided with the support he needs, I am sure George will continue to build on his outstanding strengths while developing new skills in the years ahead.

RECOMMENDATIONS

George's cooperation during this evaluation was appreciated. Based on the information gathered through this evaluation, the following recommendations are offered:

Medical

1. George's family is encouraged to share this evaluation with his pediatrician and psychiatrist. Consideration of additional medication options that could support his executive functioning skills and/or his emotional well-being is recommended. Encouraging healthy lifestyle factors such as good sleep habits, good nutrition, and regular exercise will also be helpful in promoting George's overall development.

Educational

2. At school, George will continue to function best in an environment that provides him with clear structure, consistency, and support for his individual needs within the context of a high level of academic challenge. Based on his diagnoses and their functional impact on his ability to perform up to his fullest potential in

the areas of social, emotional, and adaptive functioning, his support should continue to be provided through an Individualized Education Program (IEP). In terms of general guiding principles for his services, his school staff is encouraged to consider his primary need to be a **high level of academic challenge that is provided at his pace**. George's current programming (half-time enrollment in the gifted program at his public school and half-time enrollment in 1:1 teaching) is highly appropriate for his needs, and it is strongly recommended that this programming be continued during his middle school and high school years. [Additional content removed to de-identify this report]

3. George typically needs 2-3 times the amount of time to complete tasks as his peers, so he should either be provided him with that extra time (as well as breaks to maintain motivation and engagement and to reduce fatigue) or modifying assignments when extra time is not preferable or practical. Although George's processing speed is a relative weakness for him, his access to academic acceleration or other programming or activities that meet his intellectual needs should not be limited by his processing speed score (or any other factors which might impact his ability to demonstrate his full potential on assignments or assessments).
4. Educators are also likely to be best able to support George's emotional, behavioral, and social functioning if he is allowed to primarily pursue topics of most interest to him, with relatively less emphasis on topics which he is unlikely to be engaged by. Teaching him in a small-group or 1:1 setting that can accommodate his need for advanced academic instruction, extended time, support for his needs, and opportunities to pursue his interests and passions will be especially helpful for him.
5. In terms of specific services he requires in the school setting, George needs support for his social perception, social communication, behavioral flexibility, and self-regulation skills. While he will benefit most from the type of 1:1 or small-group instruction described above, he will also benefit from frequent exposure to peers who can model good social skills, opportunities to share his knowledge and interests in a positive way, and very clear structure and routine built into his school day.
6. George will also benefit from the following accommodations in the school setting:
 - A classroom that is structured and predictable
 - Instruction that is explicit, and where the concepts introduced are concrete and detail-focused, with modest support as needed for making inferences, seeing the 'big picture', understanding abstract ideas, and understanding metaphorical language
 - Support for his relative weaknesses in attention and executive skills, with particular focus on providing clear prompts and structure during multistep, unfamiliar, and/or unstructured tasks
 - Strategies that capitalize on his strengths, to help his with skills that he finds more challenging – e.g., 'rules' or Social Stories (see [http://www.thegraycenter.org/social-stories/ what-are-social-stories/](http://www.thegraycenter.org/social-stories/what-are-social-stories/)) to make unfamiliar tasks more familiar and predictable
 - Supervised informal social opportunities that allow him to practice his social skills with adult support
 - Additional time to transition or switch between tasks, and support during transitions as needed
 - Accommodations for his visual-motor weaknesses, such as reduced handwriting demands, use of dictation or keyboarding, recording notes or use of a notetaker, etc.
 - Extended time (ideally 200% time) and/or modified work as needed

Outside Services

7. George will benefit from other direct services outside of the school setting that nurture his areas of developmental need. In particular, continued individual therapy is strongly recommended to support his emotional wellbeing and to help him develop his distress tolerance skills.

8. Renewed occupational therapy focusing on sensorimotor integration, sensory processing, and behavioral flexibility may be very helpful. George's occupational therapist may have excellent suggestions on how to support him in the school setting as well. George should also continue to participate in calligraphy, as this activity appears to be positively benefitting his sensorimotor development and self-confidence. At home, George should also be encouraged to pursue any other extracurricular activities he may enjoy that might strengthen his hand-eye coordination, such as art, home-improvement projects, cooking, or other activities that involve sensory skills.
9. George will benefit from continued participation in structured social skills groups in his areas of interest so continuing these activities is strongly recommended. It may also be helpful to support George's social and play skills through playing cooperative or turn-taking games, watching and discussing appropriate videos and television shows featuring children playing cooperatively and creatively, and reading stories and discussing the social-emotional themes in the stories. George is also likely to benefit from semi-structured opportunities to practice his social skills in informal ways outside of the school or therapy setting. For example, short, parent-structured, individual play-dates with peers who can model good social skills may be particularly helpful for him.
10. Regular communication between George's parents, school staff, and other treatment providers is strongly recommended to ensure consistency across environments and to help him generalize his skills.

Resources

11. Because George has experienced success at many cognitive tasks, he may exhibit strong and sometimes even inflexible reactions to being challenged to do "hard" things in social, emotional, or sensory areas. Books such as *No More Meltdowns* by Jed Baker may be helpful when supporting him through these strong reactions. George's parents are also encouraged to seek support from his psychiatrist and other providers around how to best support his emotion coping skills at home.
12. George's interests are an important part of who he is, and are likely to engage, motivate, and calm him. See the book *Just Give his the Whale*, by Paula Kluth and Patrick Schwartz for ideas on how to use George's specific interests as a way to motivate him to develop new skills and to calm him in situations that are difficult for him.
13. General Information on autism spectrum disorders may be helpful for George's parents and educators. Some general information about how Asperger Syndrome can affect a child at home, at school, and in social situations is included as an appendix to this report. Other resources include *Parenting Your Asperger Child*, by Alan Sohn and Catherine Grayson and the Online Asperger Syndrome Information and Support (OASIS), www.udel.edu/bkirby/asperger.

Follow Up

14. I would be happy to see George for a follow-up evaluation in one to two years as needed or desired, to assist with monitoring his progress and refining treatment goals.

If you have questions, feel free to contact me at (360) 334-6156.



Stephanie Nelson, Ph.D., ABPdN, ABPP-CN
Board Certified Pediatric and Clinical Neuropsychologist

RELEVANT HISTORY

- Primary Concerns:** George's parents reported he "has always been described as 'complex.'" He was first identified as needing services at age X when he began occupational therapy (OT). George was identified as very cognitively advanced at age X. During his early and middle childhood, he received a variety of supportive services, including OT, school placement for gifted children, vision therapy, social skills groups, and individual therapy. Diagnoses provided during the ages of X to X included sensory processing problems, ADHD, and anxiety. George's current pediatrician and his psychiatrist recommended further evaluation to provide more information about his complex picture of strengths and weaknesses.
- Family Living Situation:** George lives with his parents, Jane and Jon Smith, in Local City, WA. Mr. Smith is an electrical engineer and Ms. Smith is an artist. George's parents did not report any other major changes in the family living situation or major stressors over the last several years.
- Family Medical History:** Extended family medical history includes Parkinson's dementia, bladder cancer, migraine headache, anxiety, depression, and attention problems. There is also a family history of possible autism spectrum disorder.
- Birth & Developmental History:** George was born at 42 weeks gestation weighing X pounds, X ounces, following a pregnancy notable for excessive nausea and preeclampsia. Delivery was via emergency C-section due to occiput posterior position. George experienced early developmental complications that included significant colic and difficulties gaining weight despite feeding often and well. As a toddler and young child, he struggled with sensory concerns, social challenges, and a low frustration tolerance. Developmentally, George met his language milestones very early, but was on time to slightly late in meeting his motor milestones. He was identified as "fidgety and bored in school" when he started preschool, which improved with advanced school placement.
- Medical History:** George has generally enjoyed good medical health since his early childhood. His major medical history is notable only for café-au-lait spots (testing for NF has been negative). Current medical concerns include allergies and possible migraines. Regular pediatric care is provided by Gregory House, M.D.
- Treatment History & Current Services:** George participated in OT to address sensory processing and social concerns from ages X to X. He participated in vision therapy from ages X to X. He began participating in social skills groups and individual therapy weekly starting at age X. He continues to participate in a social skills group. He began participating in individual counseling weekly with his psychiatrist Michaela Quinn, MD at age X and continues to receive this service. His medication (Strattera 25 mg) is also managed by Dr. Quinn at Medicine Woman Pediatrics.

CURRENT INFORMATION

- School/Learning:** George attended a preschool starting at 18 months of age. He was placed in a gifted academy at age X and attended pre-kindergarten through kindergarten there. George was placed in the Special program for gifted children for second through fifth grade. In fifth grade, he began attending Personal Best Academy for half of his day. Currently, George is in the Special program for sixth grade at Local Middle School School. He attends Personal Best Academy for a half day and Local Middle School for the other half of his day. At Local Middle School, he receives advanced math and English/ Language Arts, executive functioning and social skills training, and accommodations (extended time, frequent breaks, modified assignments).
- Current School Info:** George's parents reported with his current services, he is performing well above average in all academic areas except handwriting and organization/ planning. They reported he is diligent when provided with 1:1 adult support, but they noted he needs this support due to his executive functioning challenges. They described his study habits as "anxious but productive" and "persistent to a fault."
- Social/Friendships:** George's parents reported he "struggles with new people and new conversations, talking mostly about himself and his interests rather than about other people." They noted once he has an established friendship, he is "thoughtful, generous, kind, and more mature." However, even when talking with family or close friends, George sometimes "lacks basic skills for social reciprocity." He does not always know how to ask about others' interests, feelings, or opinions, or know how to incorporate that information into a conversation. He also "wanders during conversations," both physically and from topic to topic. George also often "needs to be 'right' and has trouble collaborating equally." Nevertheless, his parents reported he "attaches and bonds to adults and peers easily" and "wants to please." Although he is "highly literal" he also "has a fantastic imagination."
- Emotional-Behavioral:** On an intake questionnaire, George's parents endorsed concerns about: attention, impulse control, organization, repetitive behavior, anxiety, coping skills, social skills, empathy, anger/frustration, meltdowns, disregard of rules, problems with transitions, turn-taking/sharing, and independence. His parents described also him as "emotionally immature." They reported he has a "low frustration tolerance" and a "need to be 'right'." He often argues over rules. He also has difficulty with transitions and struggles with self-regulation. He becomes "emotional when anxious or confused."
- Strengths & Interests:** George is "generous and kind" with a strong "desire to succeed." His parents reported he is genuinely connected to his small circle of friends and adults he is close with. They added he is "highly intelligent, creative, and has a great sense of humor." George is both "logical and well-reasoned" and "self-aware and able to articulate his strengths and challenges." His interests include learning about the solar system, watching/playing videogames, and tabletop board games. He also participates in Chinese lessons and calligraphy. Additional interest include dragons and reading.

BEHAVIOR OBSERVATIONS

Appearance, Mood, & Affect:

George presented as a well-groomed, casually dressed boy who appeared slightly younger than his stated age. George was tested over two test sessions. He needed the extra time for several reasons, including: (1) performing at a very high level on the tests, (2) processing speed difficulties that resulted in him struggling to complete routine tasks within expected time limits, and (3) the need for multiple breaks and a high level of adult support to maintain his engagement and manage his emotional responses to the small stressors associated with testing. On both days, George transitioned somewhat reluctantly to begin testing. He appeared to be in an anxious mood on both days, with a mood-congruent affect. George benefited from extra time to 'warm up' to the new situation and unfamiliar examiner on the first day. However, he also needed this time to adjust on the second testing day despite being familiar with me by that point.

Interview Data:

George enjoyed telling me about how he is teaching himself Chinese and calligraphy. He was less interested in talking about his feelings directly, though I had some success engaging him in conversation about emotions during a questionnaire. For example, he reported when he goes to summer camp, it is challenging for him because "basically I get really bored and annoyed and lonely – really easily and all the time." He teared up during this discussion and was able to accept adult reassurance and support. In terms of his conversational skills, throughout testing, George made frequent statements about things he had learned. For example, he made statements such as "the thing I find funny is that I taught myself multiplication", "when I was in first grade, my father taught me polynomial calculus", "I just remembered the Greek alphabet, it goes...", "Did you know leatherback turtles are the largest species of sea turtles?", and "Did you know there are more species of birds than bees?" While he seemed excited to share this information with me, he did not appear to notice my responses to these statements or questions. For example, if I answered "yes" to one of his "did you know" questions or tried to add on to what he had mentioned, he continued to talk about the subject as if I had answered "no", telling me basic facts about the subject. His conversation on these topics was almost exclusively delivered in monologue format.

Observations During Breaks in Testing:

During breaks in the testing, George played videogames on his handheld device. When I asked about the videogames or tried to make general conversation while he was playing, he almost always did not respond. However, on one occasion he showed me his device while saying "oh look!" Unfortunately, he moved the device so that the screen literally touched my face, rather than holding it out in front of me for me to see. George often had difficulty transitioning from these breaks back to testing, even with 5, 2, and 1 minute warnings.

Speech, Language & Social Presentation:

George's speech was notable for a high pitch and a mild breathing stammer, especially when anxious or excited. He did not have any difficulties expressing his ideas or understanding what was being said to him, and in fact his language skills were exceptionally advanced. Socially, George was

outgoing, but struggled with effective 'give and take' in social interactions. He had difficulty using social communication skills to truly 'connect' with others. On occasion, he engaged in some socially inappropriate behavior (e.g., picking his nose) without seeming aware of this behavior. He also found it hard use facial expressions and gestures to add meaning to his conversation. He struggled more than expected with interpreting others' facial expressions, gestures, or tone of voice. Metaphors and figures of speech also seemed difficult for him to interpret.

**Conversational Skills,
Play Skills & Humor:**

Although George was eager to share information, this information was usually unrelated to the topic at hand. He also rarely 'gauged' my response to his information. Even when given multiple opportunities to do so (e.g., during the ADOS-2), George did not ask about my feelings and opinions on any occasion. While he demonstrated an interest in humor, he was not able to share this during testing in a way others could enjoy. For example, he sometimes made statements such as "I'm just laughing because I remembered a comic I read" but did not elaborate, even when directly asked. On occasion, George appeared to be trying to tell "jokes" during testing (e.g., "One thing I find very amusing is..."), but these jokes were either statements about himself, complaints about the testing, or statements about things he has learned rather than truly shared humor. He often stated "this reminds me of something from a [video] game" but seemed to be irritated by follow-up questions about the game, unless I knew the game extremely well. George was not interested in the play scenarios introduced to him (e.g., during the ADOS-2) and generally refused to participate. He allowed me to demonstrate a play scene, but could not be encouraged to join in. He did sometimes laugh at my jokes, however.

**Attention, Executive
Functioning, Motor,
& Activity Level:**

George's focus, short-term memory, and organization skills seemed to be areas of significant challenge for him. However, his working memory was exceptionally well-developed. George displayed a typical level of activity for his age, although he seemed to fatigue easily. He also appeared to have some challenges with core strength that affected his ability to sit comfortably for reasonable lengths of time. During writing and drawing tasks, George's pencil-grip and handwriting seemed unconventional.

**Motivation, Rapport,
Cooperation, &
Validity of Results:**

George needed substantial adult support to participate effectively in testing. He required very frequent breaks and a shortened test battery overall in order to stay engaged. George also seemed somewhat worried about the testing process and what the results might reveal. He could be impatient with test instructions and 'wait time', and often tried to start tasks before the instructions had been provided. George also struggled with self-regulation throughout testing. His challenges coping with his emotions when he felt stressed or uncomfortable may have impacted his performance. That means some of the test results may underestimate his true abilities. However, as his parents report similar difficulties in other settings and as he performed at an exceptionally high level on many of the tasks, the test results are believed to be reasonably accurate estimates of the level at which he is currently comfortable functioning.

TEST RESULTS

Cognitive Skills

- Verbal Thinking:** George's verbal problem-solving skills are in the very superior range and above the 99th percentile for his age. He has exceptional skills that will help him take in verbal info, use words to compare and contrast ideas, and explain what he knows about a subject.
- Visual-Spatial Thinking:** George's visual-spatial skills are also in the very superior range and above the 99th percentile for his age. George will excel when asked to him design, draw, build, and navigate his environment.
- Nonverbal Thinking:** George's abstract nonverbal reasoning skills are also in the very superior range and above the 99th percentile for his age. He will show an extremely high level of skill when asked to think about patterns and sequences.
- Overall Cognitive:** George's overall cognitive development is exceptional and in the highly gifted range (DAS-II General Cognitive Abilities Score = 143, 99.8th percentile). He is likely to excel at a wide range of problem-solving tasks.

Executive Functioning

- Working Memory:** George's short-term memory for verbal and visual info is in the very superior range and above the 99th percentile for his age. He can easily keep info in mind while following directions or performing a task with that info.
- Processing Speed:** George's processing speed is a significant vulnerability for him, falling in the well below average range and at the 6th percentile for his age. George needs additional time to complete tasks at a level that reflects his potential.
- Attention:** On a computerized attention test, George processed information very slowly and inconsistently. He is likely to struggle with attention at times primarily due to the slow pace at which he processes. He may become fatigued or frustrated if he needs to concentrate for long periods of time.
- Inhibition:** When George needed to inhibit his impulses in order to complete a task a different way than usual, he worked very slowly and cautiously. However, he made very few errors. Although he is not usually impulsive, he is likely to work at an exceptionally slow pace, especially if the task is unfamiliar.
- Idea Generation:** George's ability to generate ideas under pressure is average, but well below expectations given his very strong cognitive skills. George may be slower than expected in coming up with something to say or something to write about. He may benefit from "starters" that help him generate ideas.
- Organization/Planning:** Although his score on an organizational drawing test fell within the average range, George approached the task in a piecemeal manner. He tends to focus excessively on the details at the expense of the 'big picture.'
- Parent Report of Executive Functioning:** George's parents reported moderate concerns about impulse control, working memory, planning, and "getting started". They reported significant concerns about emotional self-control, organization, and "shifting gears."

Language Development

- Expressive Language:** George's single-word expressive vocabulary fell in the superior range. George's expressive language skills are above average for his age.

Receptive Language: George's ability to follow complex auditory instructions is in the superior range for his age. He can easily understand literal language.

Pragmatic Language: George's ability to understand metaphors and figures of speech fell in the low end of the average range (about the 26th percentile). While this is average, it is below expectations given his exceptional verbal cognitive skills. He has a weakness in interpreting pragmatic or metaphorical language.

Memory

Verbal Memory: When listening to a passage of info read aloud to him, George easily absorbed the passage and repeated it almost verbatim. His verbal memory score fell in the superior range. He has a strong memory for factual material.

Nonverbal Memory: George's visual memory fell in the average range. Relative to expectations, he struggled a bit with recalling faces. George has a relative weakness in recalling nonverbal social information, such as people's faces.

Learning: George's learning skills fell in the superior range on a list learning task. He learns exceptionally well through repetition and may especially enjoy rote learning tasks such as memorizing a list of facts.

Sensorimotor Skills

Motor Skills: George's fine-motor speed fell in the impaired range for his dominant hand but in the average range for his non-dominant hand. His scores shows he benefits from extra practice of new motor tasks.

Visual Perception: Qualitatively, George focused on the details at the expense of the 'big picture'. He may have some challenges with cognitive flexibility or knowing when to 'zoom out' from the details in order to see the larger whole.

Sensory Integration: George's visual-motor integration skills fell in the low average range. He is likely to need extra time and support when completing tasks that require hand-eye coordination like drawing and handwriting.

Social-Emotional Skills

Social Perception: George's ability to read nonverbal social cues like facial expressions fell in the low end of the average range, and at the 25th percentile for his age. He struggles with social perception skills such as reading social cues.

Parent Report: George's parents reported moderate concerns about anxiety, aggression, adaptive behavior, and attention problems. They also endorsed concerns about his activity level, impulse control, and social communication skills.

Emotional Self-Report: George reported some separation anxiety, indicating he can feel nervous or uncomfortable if there is not an adult immediately available to help him.

Academic Skills

Achievement: George's academic achievement fell in the very superior range, in reading accuracy, reading comprehension, math calculation, and spelling. His skills in all of these areas was comparable with that of a high school graduate. George completed all academic tasks very slowly, but with exceptional accuracy.

Appendix: Information about Asperger Syndrome

Each child with Asperger Syndrome (AS) is different, with unique strengths and interests. Each child with AS will also show more or fewer needs at different points in development. Understanding George's *unique* profile of strengths and weaknesses is therefore essential for supporting him. However, a *general* understanding of how AS can affect a child can be helpful for families and teachers as they work together to meet a student's individual needs.

Due to their uneven development, children with AS can have difficulty making the friendships and social ties that they want to make. These children often have cognitive strengths and unique areas of specific interest that make them "stand out" from their peers, in both positive and potentially more problematic ways. As a result, it can be hard for them to find their "niche" or peer group, because they may not have much in common with their classmates. In addition, while their vocabulary might be strong, understanding metaphorical language can be harder for these students. They also often struggle with other social communication skills, like eye contact, gestures, facial expressions, and tone of voice. This uneven communication profile can make conversations more challenging than expected.

Children with AS often have a specific weakness in joint attention. Joint attention is ability to pay attention to and show interest in what other people are interested in or thinking about. Children with AS are typically more focused on their own ideas than they are on others' ideas, feelings, or needs. While this means these children are often independent, confident in their ideas, and willing to stand up for their own beliefs, this focus can present as problems taking others' perspectives, agreeing to someone else's plan, or tolerating differences. These students also often prefer to think of things from the perspective of objects and systems, rather than being more attuned to life's social and emotional rhythms. Their play might look systematic rather than cooperative, like a videogame or 'script' that they direct, with levels and rules they want others to follow precisely. At times, this might look like aloofness or problems playing cooperatively. It could also mean that these students have trouble showing their lively imaginations and emerging empathy in the same way that their peers do.

Children with AS also often struggle to adapt comfortably to change. Change is a little hard or scary for most people. However, children with AS experience more cognitive, emotional, and sometimes even physical discomfort than other children when they have to "switch gears." Anyone who has spent time with a child with AS knows transitions are difficult. But these students also often have trouble with many other situations that ask them to adjust their expectations. For example, it might be tough for them to go along with an agenda other than their own. They also often have a hard time controlling their feelings when they cannot follow their usual routine, or when something did not go as they expected. They might not recognize when they need to try something new, or be able to shift to a different strategy "on the fly." They can stick rigidly to specific routines, and usually perform their best on highly familiar tasks. While these students are learning how to be more flexible and adaptable, they benefit from fewer transitions to support their cognitive, emotional, and physical well-being and comfort level.

Students with AS also often have difficulty accurately processing sensory info and modulating their reaction to everyday sensory input. They may be easily bothered by small sensory details that others would not even notice. They often experience coordination difficulties that affect handwriting and production of written work. Emotionally, these students are at higher risk for anxiety, feelings of sadness, and withdrawal. Children with AS sometimes have trouble even recognizing when they are upset, and almost always have difficulty coping with their feelings. In turn, this makes them vulnerable to 'meltdowns' when overwhelmed. While the sensory and emotional needs of students with AS can be more subtle, they are just as important to support as the social and behavioral needs, and just as important to nurture as these students' many cognitive strengths and interests.