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Autism Spectrum Disorder Diagnostic Assessment Report:
John Example

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This report adheres to the diagnostic criteria outlined in the Diagnostic and Statistical Manual of Mental Disorders – Fifth Edition (DSM-5TM) for Autism Spectrum Disorder and also addresses the National Guidelines for the Assessment and Diagnosis of Autism Spectrum Disorders in Australia.

BIOGRAPHICAL DETAILS

Name:	John Example
Date of Birth:	14/11/2008
Date of Assessment:	29/04/2020
Age at Assessment:	11
Gender:	Male
School:	Primary School
Grade:	6
Home Address:	123 Fourth Street SUBIACO WA 6008
Parents:	Jenny and John Example
Parent's Email:	jennyexample@hotmail.com

REFERRAL INFORMATION

John was referred to Psychological and Educational Consultancy Services (PECS) by Dr James Smith (General Practitioner) for a *Comprehensive Psychological Assessment* and indication of whether the results are reflective of an individual with Autism Spectrum Disorder (ASD).

CURRENT CONCERNS

From a presented list, John's parents identified concerns in the following areas:

- Learning
- Social skills

BRIEF BACKGROUND INFORMATION

Background information reported by John's parent(s):

- Was born with no apparent complications
- Reached all of the major developmental milestones (e.g., walking, speaking, toileting) during the expected age ranges
- Is solely right-handed/right-footed
- No major medical or neurological conditions
- Normal auditory acuity reported (last tested in 2010)
- Requires glasses/contact lenses (last tested in 2016)
- Is prescribed Nasonex for allergies
- Has fine motor movement problems – Hypermobility
- John's Hypermobility impedes his physical activity
- OT and Physiotherapy has strengthened John's body and improved his fine/gross motor skills
- John's dominant language is Mandarin
- John has been exposed to 6 months of full time English, following 3 years of 1.5 hours English tutoring per week
- John attends the Intensive English Centre learning programme
- John has difficulty socialising and making friends – he likes to have friends, but his interpersonal skills are poor
- John likes to talk with people he is familiar with, but appears to be nervous when facing unfamiliar people under new circumstances
- John can have an unsteady temper at times

Background information reported by John's teacher:

- John tends to repeat favoured words such as “margin together” with strange facial expressions
- John used inappropriate scratching and fidgeting to suggest he wants to go to the toilet
- Calming strategies have been used to address John's fidgeting and scratching
- John has difficulties socialising, maintaining friendships, and making eye contact
- Social stories have been used to improve John's social skills and eye contact
- An IEP is in place to address John's lack of muscle control
- John has comprehension difficulties, linking literal knowledge to inferential, interpretive, and evaluative questions
- John has difficulties identifying line spacing and starting point of letters

Past testing:

- OT Assessment (at age 11 years): Further OT intervention was recommended to address fine and gross motor skills, proprioception, strength, independence and assistance in self-care tasks, organisational skills, sensory preferences, and social skills. It was recommended that John be assessed for potential ASD, support for his cultural transition, and social skill intervention.
- School Psychologist Assessment (at age 11 years): Recommendations were made that John be seen by a psychologist for a nonverbal cognitive assessment. Additionally, GP / Paediatrician consultation was recommended to address developmental concerns, particularly comprehension and social communication. Lastly, extra support was recommended to improve English skills in literacy and numeracy.

Please note that only a brief overview was obtained due to John and his parents already having provided more detailed background information to the referrer.

See checklists for more behavioural information.

COGNITIVE ASSESSMENT

Please note, a Cognitive Assessment is conducted due to Intellectual Disability/Global Developmental Delay needing to be ruled out (i.e. DSM-F Criteria D in a latter section) before an Autism Spectrum Disorder diagnosis can be given.

Cognitive Test Administered:

Wechsler Intelligence Scale for Children-Fifth Edition (WISC-V, 2016)

Date of Administration

29/04/2020

WISC-V Overview:

The Wechsler Intelligence Scale for Children- Fifth Edition (WISC-V) is an individually administered, comprehensive clinical instrument for assessing cognitive ability of children between the ages of 6 years through to 16 years 11 months.

The WISC-V provides primary index scores that represent intellectual functioning in specified cognitive areas (i.e., Verbal Comprehension Index, Visual Spatial Index, Fluid Reasoning Index, Working Memory Index, and Processing Speed Index), a composite score that represents general intellectual ability (i.e., Full Scale IQ), ancillary index scores that represent the cognitive abilities in different groupings based on clinical needs (e.g., Nonverbal Index, General Ability Index) and complementary index scores that measure additional cognitive abilities related to academic achievement and learning-related issues and disorders (e.g., Naming Speed Index).

The WISC-V has Australian norms and Australian language adaptation and takes approximately 60 minutes for the core subtests.

WISC-V Subtests:

Please see Appendix for full subtest descriptions.

WISC-V Primary Indexes:

The **Verbal Comprehension Index (VCI)** measure's the client's ability to access and apply acquired word knowledge. More specifically the VCI is designed to measure the client's ability to verbalise meaningful concepts, think about verbal information, and express themselves using words.

The **Visual Spatial Index (VSI)** measure's the client's ability to evaluate visual details and understand visual spatial relationships in order to construct geometric designs from a model. This skill requires visual spatial reasoning, integration and synthesis of part-whole relationships, attentiveness to visual detail, and visual-motor integration.

The **Fluid Reasoning Index (FRI)** measure's the client's ability to detect the underlying conceptual relationship among visual objects and use reasoning to identify and apply rules. Identification and application of conceptual relationships in the FRI requires inductive and quantitative reasoning, broad visual intelligence, simultaneous processing, and abstract thinking.

The **Working Memory Index (WMI)** measure's the client's ability to register, maintain, and manipulate visual and auditory information in conscious awareness, which requires attention and concentration, as well as visual and auditory discrimination.

The **Processing Speed Index (PSI)** measure's the client's speed and accuracy of visual identification, decision making, and decision implementation. Performance on the PSI is related to visual scanning, visual discrimination, short-term visual memory, visuomotor coordination, and concentration. The PSI assesses the client's ability to rapidly identify, register, and implement decisions about visual stimuli.

The **Full Scale (FSIQ)** is derived from seven subtests and summarises ability across a diverse set of cognitive functions. This score is typically considered the most representative indicator of general intellectual functioning, unless there is marked variability among the Index Composite Scores (ie 18+ difference between the Indexes). Subtests are drawn from five areas of cognitive ability: verbal comprehension, visual spatial, fluid reasoning, working memory, and processing speed.

WISC-V Ancillary Indexes:

The **Quantitative Reasoning Index (QRI)** is comprised of Figure Weights and Arithmetic, and measures quantitative reasoning skills. Quantitative reasoning is closely related to general intelligence and can indicate an individual's capacity to perform mental math operations and comprehend abstract relationships.

The **Auditory Working Memory Index (AWMI)** is derived from the sum of scaled scores for the Digit Span and Letter-Number Sequencing subtests. These subtests require the client to listen to numbers and letters presented verbally, then recall or sequence them aloud. This index score measures the client's ability to register, maintain, and manipulate verbally presented information.

The **Nonverbal Index (NVI)** is derived from six subtests that do not require verbal responses. This index score can provide a measure of general intellectual functioning that minimises expressive language demands for individuals with special circumstances or clinical needs. Subtests that contribute to the NVI are drawn from four of the five primary cognitive domains (i.e., Visual Spatial, Fluid Reasoning, Working Memory, and Processing Speed).

The **General Ability Index (GAI)** is comprised of five subtests that provides an estimate of general intelligence that is less impacted by working memory and processing speed, relative to the FSIQ. The GAI consists of subtests from the verbal comprehension, visual spatial, and fluid reasoning domains.

The **Cognitive Proficiency Index (CPI)** comprises of four subtests, drawn from the working memory and processing speed domains. The CPI measures the client's ability to process cognitive information in the service of learning, problem solving, and higher-order reasoning

WISC-V Examiner's Details:

TEST ADMINISTRATOR: Dr Shane Langsford

QUALIFICATIONS: Bachelor of Psychology
Bachelor of Education with First Class Honours
Doctor of Philosophy

REGISTRATION: Psychology Board of Australia and AHPRA Registered Psychologist

Test Behaviour and Clinical Presentation Observations:

John engaged in verbal stereotypy and sporadically produced laughing outbursts throughout the assessment for no apparent reason.

John found it difficult to grasp the requirements of the Block Design subtest and was quick to give up. He acknowledged this by saying, "not easy, very hard".

It is my opinion that the scores that John achieved on the WISC-V are an accurate reflection of his cognitive functioning at this particular point in time.

WISC-V Test Results:*Age at Testing: 11 years 5 months***Table 1: WISC-V Index Scores**

WISC-V Indexes	Composite Score	Percentile Rank	95% Confidence Interval	Qualitative Description
PRIMARY INDEXES				
Verbal Comprehension Index (VCI)	95	37	87-103	Average
Visual Spatial Index (VSI)	115	84	106-122	High Average
Fluid Reasoning Index (FRI)	115	84	106-122	High Average
Working Memory Index (WMI)	77	6	71-88	Very Low
Processing Speed Index (PSI)	78	7	72-91	Very Low
Full Scale Intelligence Quotient (FSIQ)	96	39	91-102	Average
ANCILLARY INDEXES				
Auditory Working Memory Index (AWMI)	78	7	73-85	Very Low
Nonverbal Index (NVI)	97	42	91-103	Average
General Ability Index (GAI)	105	63	99-111	Average
Cognitive Proficiency Index (CPI)	78	7	72-87	Very Low

*Index scores have a mean Composite Score of 100 (50th percentile) and a standard deviation of 15.**Percentile Rank refers to John's standing among 100 individuals of similar age.**Therefore, a Percentile Rank of 50 indicates that John performed exactly at the average level for his chronological age.**Composite scores and Confidence Intervals are intentionally removed from parent copies of the report as per APS policy***Table 2: WISC-V Subtest Scaled Scores**

Subtests	Scaled Score	Percentile Rank	Age Equivalent
Verbal Comprehension Index			
Similarities	10	50	12:10
Vocabulary	8	25	10:6
*Information	9	37	11:6
*Comprehension	9	37	11:6
Visual Spatial Index			
Block Design	13	84	>16:10
Visual Puzzles	11	61	11:8
Fluid Reasoning Index			
Matrix Reasoning	12	75	>16:10
Figure Weights	11	61	11:8
*Picture Concepts	12	75	>16:10
Working Memory Index			
Digit Span	7	16	8:10
Picture Span	6	9	8:03
*Letter-Number Sequencing	5	5	7:10
Processing Speed Index			
Coding	5	5	8:2
Symbol Search	9	37	11:10

*See Appendix 1 for complete subtest descriptions. * Supplementary Subtest*

ADAPTIVE BEHAVIOUR ASSESSMENT

Please note, an Adaptive Behaviour Assessment is conducted due to it providing a wealth of information to address DSM-5 Criterion D in a latter section (i.e. clinically significant impairment in important areas of functioning). It is considered by DSC an essential component of a “gold standard” assessment.

Adaptive Behaviour Tests Administered:

<i>Test</i>	<i>Date of Administration</i>
Adaptive Behaviour Assessment System–Second Edition (ABAS-II, 2008)	29/04/2020

ABAS-3 Overview:

The Adaptive Behaviour Assessment System – Third Edition provides a comprehensive, norm-referenced assessment of adaptive skills for individuals ages birth to 89 years. The ABAS-3 may be used to assess an individual’s adaptive skills for diagnosis and classification of disabilities and disorders, identification of strengths and limitations, and to document and monitor an individual’s progress over time.

ABAS-3 Qualitative Descriptions:

Standard Score	Scaled Score	Qualitative Range
120 and above	≥15	High
110-119	13-14	Above Average
90-109	8-12	Average
80-89	6-7	Below Average
70-79	4-5	Low
69 and below	≤3	Extremely Low

ABAS-3 Test Results:

(1) Parent/Primary Caregiver Form (Ages 5-21) – Completed by John’s Mother

Table 1: Sum of Scaled Scores to Composite Score Conversions

Composite	Standard Score	Percentile Rank	95% Confidence Interval	Qualitative Range
General Adaptive Composite (GAC)	64	1	60-68	Extremely Low
Conceptual	63	1	57-69	Extremely Low
Social	56	0.2	49-63	Extremely Low
Practical	75	5	68-82	Low

*Adaptive Domain scores have a mean of 100 (50th percentile) and a standard deviation of 15.
Percentile Rank refers to John’s standing among 100 individuals of a similar age.*

Table 2: Raw Score to Scaled Score Conversions

Skill Areas	Scaled Scores	Qualitative Range
Communication	5	Low
Community Use	7	Below Average
Functional Academics	2	Extremely Low
Home Living	1	Extremely Low
Health and Safety	9	Average
Leisure	2	Extremely Low
Self-Care	5	Low
Self-Direction	3	Extremely Low
Social	1	Extremely Low

*Scaled scores have a mean of 10 (50th percentile) and a standard deviation of 3.
Percentile Rank refers to John’s standing among 100 individuals of a similar age.*

(2) Teacher Provider Form (Ages 5-21) – Completed by John's Teacher

Table 1: Sum of Scaled Scores to Composite Score Conversions

Composite	Standard Score	Percentile Rank	95% Confidence Interval	Qualitative Range
General Adaptive Composite (GAC)	43	<0.1	40-46	Extremely Low
Conceptual	53	0.1	49-57	Extremely Low
Social	58	0.3	54-62	Extremely Low
Practical	45	<0.1	41-49	Extremely Low

Adaptive Domain scores have a mean of 100 (50th percentile) and a standard deviation of 15.

Percentile Rank refers to John's standing among 100 individuals of a similar age.

Table 2: Raw Score to Scaled Score Conversions

Skill Areas	Scaled Scores	Qualitative Range
Communication	1	Extremely Low
Community Use	1	Extremely Low
Functional Academics	1	Extremely Low
Home Living	1	Extremely Low
Health and Safety	1	Extremely Low
Leisure	2	Extremely Low
Self-Care	1	Extremely Low
Self-Direction	2	Extremely Low
Social	1	Extremely Low

Scaled scores have a mean of 10 (50th percentile) and a standard deviation of 3.

Percentile Rank refers to John's standing among 100 individuals of a similar age.

Adaptive Behaviour Summary:

John's overall level of adaptive behaviour is best described by his ABAS-3 General Adaptive Behaviour Composite (GAC) score, both of which fell in the **Extremely Low** category (Parent = 1st percentile; Teacher = <0.1st percentile).

ASD SYMPTOMOLOGY ASSESSMENT

Checklists Administered:

Date of *Administration*

(1) ASRS Parent Rating Scale: Long Form (ASRS -P, 2014)

04/04/2020

(2) ASRS Teacher Rating Scale: Long Form (ASRS -T, 2014)

03/04/2020

ASRS Overview:

The Autism Spectrum Rating Scales (ASRS) is a multi-informant assessment of Autism Spectrum Disorder in children and adolescents between 6 and 18 years of age. The checklists take into account aspects of the individual's home, school, and social settings to provide a focused and thorough assessment of Autism Spectrum Disorder and the co-morbid problems most commonly associated.

ASRS Subscales:

ASRS TOTAL SCORE	Measures the extent to which the individual's behavioural characteristics are similar to the behaviours of youth diagnosed with Autism Spectrum Disorder.
ASRS SCALES	
Social/Communication	Measures the extent to which the individual uses verbal and nonverbal communication appropriately to initiate, engage in, and maintain social contact. An elevated score indicates the individual has trouble using non-verbal and verbal language appropriately to initiate, participate in, and retain social interactions
Unusual Behaviours	Measures the youth's level of tolerance for changes in routine, engagement in apparently purposeless and stereotypical behaviours, and overreaction to certain sensory experiences. An elevated score indicates the individual has difficulty accepting changes in routine, overacts to particular sensory experiences, and participates in purposeless, stereotypical behaviours.
Self-Regulation	Measures how well the individual controls his behaviour and thoughts, maintains focus, and resists distraction. An elevated score indicates the individual is argumentative, has difficulties with attention, and/or deficits in impulse/motor control.
DSM-5 SCALE	Measures how closely the individual's symptoms match the DSM-5 criteria for Autism Spectrum Disorder.
TREATMENT SCALES	
Peer Socialisation	Measures the individual's willingness and capacity to successfully engage in activities that develop and maintain relationships with other youth. An elevated score indicates a decreased willingness or capacity to effectively engage in activities that cultivate and preserve relationships with other children.
Adult Socialisation	Measures the individual's willingness and capacity to successfully engage in activities that develop and maintain relationships with adults. An elevated score indicates a decreased willingness or capacity to effectively engage in activities that cultivate and preserve relationships with adults.
Social/Emotional Reciprocity	Measures the individual's ability to provide an appropriate emotional response to another person in a social situation. An elevated score indicates that the individual has difficulty providing an appropriate emotional response to another person in a specific social situation.
Atypical Language	Measures the individual ability to utilize spoken communication in a structured and conventional way. Elevated scores indicate that verbal communication may be unconventional, unstructured, or repetitive.
Stereotypy	Measures whether the individual engages in apparently purposeless and repetitive behaviours. Elevated score may indicate that they engage in repetitive or ritualistic movements, utterances, or body posture.
Behavioural Rigidity	Measures how well the individual tolerates changes in his environment, routines, activities, or behaviours. Elevated scores indicate that the individual would prefer for environments to remain unchanged. Consequently, there is a limited ability tolerating changes in behaviour, activities, or routine.
Sensory Sensitivity	Measures the level of tolerance for certain experiences sensed through touch, sound, vision, smell, or taste. May have under or over stimulated sight, hearing, touch, smell, and/or touch. Consequently, they may be over sensitive or under sensitive to temperature, clothing, light, and/or noise.
Attention	Measures whether the individual is able to appropriately focus attention on one thing while ignoring other things. Elevated scores indicate that the individual may appear disorganised or have difficulty focusing on things whilst ignoring external stimuli.

ASRS Interpretive Guidelines:

T-Score	Percentile	Interpretive Guidelines
<40	<15	Low Score
40-59	16-83	Average Score
60-64	84-92	Slightly Elevated Score
65-70	93-97	Elevated Score
>70	98-99.99	Very Elevated Score

ASRS Checklist Results:

(1) ASRS Parent Rating Scale:

ASRS Subscales	T-Score*	Percentile	Classification
ASRS TOTAL SCORE	66	95	Elevated Score
ASRS SCALES			
Social/Communication	73	99	Very Elevated Score
Unusual Behaviours	64	92	Slightly Elevated Score
Self-Regulation	57	76	Average Score
DSM-5 SCALE	66	95	Elevated Score
TREATMENT SCALES			
Peer-Socialisation	74	99	Very Elevated Score
Adult Socialisation	56	73	Average Score
Social/Emotional Reciprocity	70	98	Very Elevated Score
Atypical Language	70	98	Very Elevated Score
Stereotypy	56	73	Average Score
Behavioural Rigidity	86	96	Elevated Score
Sensory Sensitivity	47	38	Average Score
Attention	57	76	Average Score

**T-scores have a mean of 50 and a standard deviation of 10.*

**T-scores above 60 are deemed by the checklist authors to be clinically significant.*

(2) ASRS Teacher Rating Scale:

ASRS Subscales	T-Score*	Percentile	Classification
ASRS TOTAL SCORE	84	99	Very Elevated Score
ASRS SCALES			
Social/Communication	82	99	Very Elevated Score
Unusual Behaviours	83	99	Very Elevated Score
Self-Regulation	66	95	Elevated Score
DSM-5 SCALE	85	99	Very Elevated Score
TREATMENT SCALES			
Peer-Socialisation	81	99	Very Elevated Score
Adult Socialisation	71	98	Very Elevated Score
Social/Emotional Reciprocity	84	99	Very Elevated Score
Atypical Language	80	99	Very Elevated Score
Stereotypy	77	99	Very Elevated Score
Behavioural Rigidity	72	99	Very Elevated Score
Sensory Sensitivity	79	99	Very Elevated Score
Attention	63	90	Slightly Elevated Score

**T-scores have a mean of 50 and a standard deviation of 10.*

**T-scores above 60 are deemed by the checklist authors to be clinically significant.*

Summary of ASRS results:

John's T scores exceeded the cut-off for **8** subscales on the Parent-report and **13** subscales on the Teacher-report.

The ASRS Total Score is a summary score and measures the extent to which the individual's behavioural characteristics are similar to the behaviours of youth diagnosed with Autism Spectrum Disorder.

The Parent-Report ASRS yielded a T-Score of 66 (95th percentile) for the ASRS Total Score which falls within the Elevated Score category.

The Teacher-Report ASRS yielded a T-Score of 84 (99th percentile) for the ASRS Total Score which falls within the Very Elevated Score category.

AUTISM SPECTRUM DISORDER DIAGNOSTIC CRITERIA AS PER DSM-5

There are seven DSM-5™ criteria for Autism Spectrum Disorder, separated into two domains: **Social Communication and Interaction (A)** and **Restricted, Repetitive Patterns of Behaviour (B)**. To meet the diagnostic criteria for Autism Spectrum Disorder, all three criteria from the Social Communication and Interaction domain (A) and at least two criteria from the Restricted, Repetitive Patterns of Behaviour domain (B) must be met.

The difficulties must have been present in the early developmental period; cause clinically significant impairment in social, occupational, or other important area of functioning; and not be better explained by intellectual disability or global developmental delay.

These criteria are addressed below for John, based on information gathered from direct observation, parent clinical interview, and parent checklist information.

DSM-5 CRITERIA

A. PERSISTENT DEFICITS IN SOCIAL COMMUNICATION AND SOCIAL INTERACTION ACROSS MULTIPLE CONTEXTS, AS MANIFESTED BY THE FOLLOWING, CURRENTLY OR BY HISTORY:

A1. Deficits in social-emotional reciprocity (e.g., abnormal social approach; failure of normal back-and-forth conversation; reduced sharing of interests, emotions, or affect; failure to initiate or respond to social interactions).

Information collected by the Psychologist (Dr Shane Langsford) as part of his assessment:

Abnormal social approach:

- John is more socially naïve than his peers
- In the past, John has touched/approached other people inappropriately
- John uses other people's bodies to communicate
- John uses another person's hand like a tool, by grabbing and placing it on what he wants
- John tends to invade other people's personal space (e.g., being too close when he speaks to someone)

Failure to successfully participate in normal back and forth conversation:

- John does not respond to his mother's and father's voices
- John finds it difficult to take turns in a conversation
- John always needs to talk about his favourite subject
- John does not initiate conversations with others just to talk or chat
- When others make comments to John, but do not ask questions, he will not say anything in response
- John does not like to use small talk
- John has difficulty understanding what is not explicitly stated (e.g., making inferences)
- John has difficulty understanding nonliteral and ambiguous meanings of language (e.g., idioms, humour, metaphors, and multiple meanings that depend on the context for interpretations)
- John does not understand simple questions, directions, and jokes
- John uses language that is immature for his age
- John has an odd way of speaking

Reduced sharing of interests:

- John does not bring toys or books to his parents to show them what he is doing
- John does not play ball by rolling, kicking or throwing it back and forth
- John does not understand sharing/turn taking in games
- John has no interest in what games others want to play, or what others want to do
- John is not interested in other people's interests
- John does not offer to share his things

Reduced sharing of emotions/affect:

- John does not smile in greeting when approaching someone to initiate an interaction or conversation.
- John does not smile when he sees his parents for the first time after they have been away for an extended time
- John does not smile back at his mother and father when they smile at him
- John appears to have abnormalities in relation to affection
- John will not initiate a hug or kiss without having been asked to do it
- John does not share his excitement with others for example, after drawing a picture or building something that he really likes with blocks or Lego
- John does not get excited when others praise him
- In a new or disturbing situation, John does not look at his parents for comfort
- John does not change his behaviour based on others emotional responses (e.g., if others laugh, he will not necessarily try to make them laugh again, and when others frown and are quiet, he will not stop and pay attention)
- John has difficulty displaying appropriate behaviour for the different social contexts
- John finds it difficult to interpret expressions on other people's faces

Lack of empathy:

- John does not change his behaviour based on others' emotional responses (e.g., if they are sad, upset or hurt)
- John's facial expression does not change if he notices that others are upset
- When John's parents are upset, sad or ill, he will not try to comfort them
- John will only show comfort in one situation; namely,
- Overall, John rarely shows any empathy

Lack of initiation of social interaction:

- John does not ask his mother and father questions about objects, situations, or people
- John does not do things to try and make others laugh
- John does not initiate interaction unless he needs help
- John appears can be unaware of the presence of others

Poor social imitation:

- When John's parents say, "I'm going to get you" or cover their eyes for peek-a-boo, John does not get excited for what happens next
- John does not play imitative games such as pat-a-cake, peek-a-boo or "so big". Furthermore, John will not cover his face to play peek-a-boo
- John does not imitate his mother and father when they make nonsense sounds like raspberries or tongue clicking
- John does not imitate his mother and father when they stick out their tongue or make faces
- John does not imitate his mother and father when they wave bye-bye, clap their hands for pat-a-cake or shake their head "no"
- John does not play other imitative games with his parents. For example; he does not imitate his parents when they are doing housework such as dusting, sweeping or cooking. Additionally, he does not pretend to feed or take care of a dolls or stuffed animals
- John does not make hand gestures or movements to familiar songs such as "itsy-bitsy-spider" or "wheels on the bus". Additionally, John does fill in words in familiar songs like "wheels on the bus".

This criterion is rated as having been Met.

A2. Deficits in nonverbal communicative behaviours used for social interaction (e.g., poorly integrated verbal and nonverbal communication; abnormalities in eye contact and body language; deficits in understanding and use of gestures; total lack of facial expressions and nonverbal communication).

Information collected by the Psychologist (Dr Shane Langsford) as part of his assessment:

Impairment in social use of eye contact:

- In general, John does not look others in the eye when he wants something
- John does not turn his head to look at others when they start talking or doing things next to him
- John does not look at his parents as they walk into the room
- When John's parents are right in front of him, he turns his eyes to avoid looking at them
- John does not look back and forth to his parents faces as other children would

Impairment in the use and understanding of body postures:

- John rarely faces his body towards the person that is speaking to him

Impairment in the use and understanding of gestures:

- John does not use simple gestures to direct others attention or to request something (e.g., pointing at a toy, reaching up to be picked up, waving bye-bye to let others know that he wants to go)
- Additionally, John does not use other common gestures, such as blowing a kiss, clapping for job well done, or even putting his finger to his lip for quiet
- John finds it difficult interpreting gestures or facial expressions used by others to communicate with him
- John does not wave to greet people
- John does not nod his head to indicate yes and no
- When others point to show John a toy or a picture in a book, he does not appear to respond by looking

Abnormal volume, pitch, intonation, rate, rhythm, stress, prosody, in speech:

- John has an odd way of speaking; for example, - It is of unusual rate and rhythm and can be described as staccato , or monotone
- John has a tendency to speak in too high a volume
- John has a tendency to speak too fast

Abnormalities in use of facial expressions:

- John's parents have noticed that his facial expression is different than other children his age
- John's exhibits a limited range of emotional expressions that match the situation, e.g., he does not smile, frown, or raise his eyebrows in surprise
- John cannot show his parents when he feels guilty, surprised, amused, afraid, or disgusted
- John has abnormalities in terms of mood (e.g., giggling or weeping for no apparent reason)
- John does not show/display varied facial expression
- John does not effortlessly/readily exchange social smiles

Lack of coordinated verbal and nonverbal language:

- John does not have the ability to coordinate verbal and nonverbal communication; for example,
- John does not coordinate the use of common words and gestures together (e.g., pointing to an object and saying "look Mommy," waving goodbye and saying "bye-bye", and shaking his head and saying "no")

This criterion is rated as having been Met.

A3. Deficits in developing, maintaining, and understanding relationships (e.g., difficulties in adjusting behaviour to suit various social contexts; difficulties in sharing imaginative play or in making friends; absence of interest in peers).

Information collected by the Psychologist (Dr Shane Langsford) as part of his assessment:

Absence of interest in others:

- John is not interested in making friends
- John prefers to be involved in solitary activities
- John appears to be in his own world most the time
- John does not seem to care what other people think of him

Deficits in developing and maintaining relationships/friendships, appropriate to developmental level:

- John has zero friends
- John does not talk about other children; or ask about inviting children over to play
- John does not watch other children while they are playing
- John does not try to talk to or join other children in their play; for example, at the park and school
- John will not go over and play close to other children
- John has been observed to actively avoid other children
- When there are more than two people playing with John, it is in a parallel fashion or not very interactive
- John's relationships with both children and adults is described as "abnormal"; for example, John attempts to but is unsuccessful in developing friendships

Difficulties adjusting behaviour to suit social contexts:

- John needs to direct play when he is with other children and adults
- John has trouble following cooperative rules for games, unless they are his own
- John has difficulty with adjusting his behaviour to suit the varying social contexts
- John does not appear to notice when others lack interest in an activity
- John does not appear to realise when he is not welcome in a play or conversational setting
- John does not realise that certain things he does bother other people
- John does not seem to understand when he is being teased and/or bullied
- John tends to ask socially inappropriate questions (e.g., asks personal questions and makes personal statements or comments inappropriate to the social context)
- John does not adhere to social conventions or codes of conduct
- John has been observed to laugh or smile in situations that do not seem funny to most people
- John tends to be intrusive (e.g., barges into peoples' rooms)

Difficulties with imagination:

- John does not engage in "dress-up" and/or "make-believe" play
- John does not have a good imagination and does not like fiction books

This criterion is rated as having been Met.

B. RESTRICTED, REPETITIVE PATTERNS OF BEHAVIOUR, INTERESTS, OR ACTIVITIES, AS MANIFESTED BY AT LEAST TWO OF THE FOLLOWING, CURRENTLY OR BY HISTORY:

B1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypes; lining up toys or flipping objects; echolalia; idiosyncratic phrases).

Information collected by the Psychologist (Dr Shane Langsford) as part of his assessment:

Stereotyped or repetitive speech:

- John appears to mix up the pronouns, for example, “you want...” when he means “I want...” or “he wants...” instead of “I want...”
- John uses odd, indirect, idiosyncratic phrases when communicating
- John uses language that can only be understood by family or those that are close to them
- John will often immediately repeat what others say (immediate echolalia)
- John will repeat the same phrase over and over in exactly the same way, or use scripted language
- John makes nonsense/meaningless noises and words during play (i.e., jibberish)
- John uses the same tone of voice each time he speaks
- John often gives a running commentary on what he is doing

Stereotyped or repetitive motor movements:

- John has physical mannerisms that look the same each time (e.g., flapping hands when excited, walking on his toes, flicking his fingers, spinning or rocking his body, walking or pacing in a pattern, waving hands in front of face)
- John displays this pacing when he is upset more than any other situation

Stereotyped or repetitive use of objects:

- John does not play with toys as expected
- John collects sticks and rocks
- John does not appear to pretend toys or objects are something else; for example, a banana as a phone or a block as an airplane
- John plays with toys in an unusual way (e.g., rolling or dropping objects over and over)
- John always plays with toys in the same way (e.g., lining Lego and blocks by colour and size).
- John often engages in repetitive play (doing something over and over)

This criterion is rated as having been Met.

- B2. Insistence on sameness, inflexible adherence to routines, or ritualised patterns of verbal or nonverbal behaviour (e.g., extreme distress at small changes; difficulties with transitions; rigid thinking patterns; greeting rituals; need to take same route or eat same food every day).**

Information collected by the Psychologist (Dr Shane Langsford) as part of his assessment:

Insistence on sameness:

- Has to have the same as his brother

Adherence to routine:

- John has rigid rituals and routines he must follow
- If John's routine is interrupted, or he cannot complete it, he will throw a tantrum
- John sits in the same seat at the dining table and /or in the car

Ritualised patterns of verbal and nonverbal behaviour:

- John repetitively asks questions about particular topics
- John needs to touch toys/objects in a certain way

Excessive resistance to change:

- John has great trouble with transitions; for example, if his parents tell him that he has to do something else, he will go into a panic and start waving his hands and hitting his head
- John parents usually give John a 30-minute warning prior to needing to transition to allow him to prepare
- John reacts to changes in his schedule or changes in his environment by panicking and getting upset
- Minor changes in eating routines cause difficulty for John
- John won't let anyone change his room

Rigid thinking:

- John is unable to understand humour
- John is unable to understand non-literal aspects of speech such as irony or implied meaning; for example, 'looks could kill'
- John excessively rigid, inflexible, and rule bound in behaviour; for example, when playing board games, the rules must be followed to a T
- John will also tell other children in the classroom not to call out

This criterion is rated as having been Met.

B3. Highly restricted, fixated interests that are abnormal in intensity or focus (e.g., strong attachment to or preoccupation with unusual objects; excessively circumscribed or perseverative interests).

Information collected by the Psychologist (Dr Shane Langsford) as part of his assessment:

Interests that are abnormal in intensity:

- John has a special interest in one toy, activity, and subject that is unusual in its intensity

Interests that are abnormal in focus:

- John has interests that seem unusual for his age and intelligence

Focus on the same few objects, topics or activities:

- John is fixated by toys or objects that are shiny or that light up and spin

Preoccupation with numbers, letters, and/or symbols:

- John has a preoccupation with numbers, letters, and symbols

Being overly perfectionistic:

- John exhibits perfectionistic traits in almost all that he does
- If he can't do something perfectly the first time, he gets enormously upset

Excessive focus on nonrelevant or non-functional parts of objects:

- John only pays attention to part of his toys
- John has a preoccupation with parts of objects
- John tends to dismantle objects, for example, he is often unscrewing things so he can see what is on the inside

Unusual memory profile:

- John has an unusually good long-term memory for the details of special interests, family activities, vacations, and/or movies
- John has difficulty with short-term memory and / or working memory

Attachment to an unusual inanimate object:

- In the past, John has been highly attached to an inanimate object
- John often takes it to bed

Insistence on carrying around or hold specific or unusual objects:

- John always/often insists on keeping certain objects with him
- John tends to play with objects that are not usually toys

Unusual fears

- John has abnormalities in relation to fear

This criterion is rated as having been Met.

- B4. Hyper- or hypo-reactivity to sensory input or unusual interest in sensory aspects of the environment (e.g., apparent indifference to pain/temperature; adverse response to specific sounds or textures; excessive smelling or touching of objects; visual fascination with lights or movement).**

Information collected by the Psychologist (Dr Shane Langsford) as part of his assessment:

Abnormal tolerance for pain:

- John appears to have a high pain threshold

Unusual sensory exploration with objects:

- John tends to play with toys by touching them to his lips, smelling, sniffing and licking them

Difficulties with texture or touch:

- John is overly sensitive to touch
- John forcefully presses his face, head, and body against people and furniture
- John is overly interested in the way things feel, and enjoys touching and rubbing certain surfaces
- John dislikes wearing certain clothes, for example, won't wear tight clothes, won't wear long sleeves or short sleeves, resists tags in clothes, or seams in socks
- John does not like having his teeth or hair brushed
- John does not like having his hair or face washed
- John does not like having his hair, fingernails, and/or toenails cut
- John will only eat certain types of foods, for example, he refuses to eat certain textures, or refuses to eat foods that are touching or mixed, or foods that are a specific temperature, or will only eat food that comes out of a specific carton or package
- John prefers to avoid messy activities such as hand painting

Unusual visual exploration / activity:

- John tends to peer or look at things for long periods of time
- John brings toys very close to his face, look out of the side of his eyes, or lay his head on the floor and look from the side at toys such as the wheels turning on a toy car

Visual sensitivity:

- John avoids swings, jungle gyms, and being thrown in the air

Sensitivity to smell:

- Nil

Sensitivity to sound:

- John seems to notice every small noise in the environment
- John is fearful of some loud sounds, for example, vacuum, lawnmower
- John regularly puts his hands over his ears in response to ordinary sounds
- John's parents have reported having to adjust what they do because John is so upset by particular noises
- John often gets unusually irritated by particular sounds such as people coughing

Engages in self-injurious behaviour:

- John engages in self-injurious behaviour, for example, he hits his head with his hand
- When younger, John used to run himself into a wall and bang his head on benches

This criterion is rated as having been Met.

C. SYMPTOMS MUST BE PRESENT IN THE EARLY DEVELOPMENTAL PERIOD (BUT MAY NOT BECOME FULLY MANIFEST UNTIL SOCIAL DEMANDS EXCEED LIMITED CAPACITIES, OR MAY BE MASKED BY LEARNED STRATEGIES IN LATER LIFE):

John's parents reported that they had become concerned about John's social skills and restricted routine from a very early age

This criterion is rated as having been Met.

D. SYMPTOMS CAUSE CLINICALLY SIGNIFICANT IMPAIRMENT IN SOCIAL, OCCUPATIONAL, OR OTHER IMPORTANT AREAS OF CURRENT FUNCTION.

Observations, parental information and checklist results (i.e. ABAS) indicate that John's difficulties cause significant impairment in multiple important areas of his current functioning.

This criterion is rated as having been Met.

E. THE DISTURBANCE IS NOT BETTER ACCOUNTED FOR BY INTELLECTUAL DISABILITY OR GLOBAL DEVELOPMENTAL DELAY.

John's cognitive profile (VSI=84th percentile, FRI=84th percentile, and GAI=63rd percentile) illustrates that he does not have an intellectual disability.

This criterion is rated as having been Met.

F. SPECIFIERS:

Intellectual Impairment: **Without accompanying Intellectual Impairment**

Language Impairment: **Without accompanying Language Impairment**

G. SEVERITY LEVELS:

Severity Levels	Criteria A: Social Communication	Criteria B: Restricted and Repetitive Behaviours
Level 3: Requiring Very Substantial Support	Severe deficits in verbal and nonverbal social communication skills cause severe impairments in functioning, very limited initiation of social interactions, and minimal response to social overtures from others.	Inflexibility of behaviour, extreme difficulty coping with change, or other restricted/ repetitive behaviours markedly interfere with functioning in all spheres. Great distress/difficulty changing focus or action.
Level 2: Requiring Substantial Support	Marked deficits in verbal and nonverbal social communication skills; social impairments apparent even with supports in place; limited initiation of social interactions and reduced or abnormal response to social overtures from others.	Inflexibility of behaviour, difficulty coping with change, or other restricted/repetitive behaviours appear frequently enough to be obvious to the casual observer and interfere with functioning in a variety of contexts. Distress and/ or difficulty changing focus or action.
Level 1: Requiring Support	Without supports in place, deficits in social communication cause noticeable impairments. Has difficulty initiating social interactions and demonstrates clear examples of atypical or unsuccessful responses to social overtures of others. May appear to have decreased interest in social interactions.	Inflexibility of behaviour causes significant interference with functioning in one or more contexts. Difficulty switching between activities. Problems of organisation and planning hamper independence.

Criteria A-Social Communication Severity:

Level 2: Requiring Substantial Support

Criteria B-Restricted and Repetitive Behaviours Severity:

Level 2: Requiring Substantial Support

SUMMARY OF THE ASD DSM-5 CRITERIA AND LEVEL OF SUPPORT REQUIRED

A. Social Communication and Interaction		B. Restricted, Repetitive Patterns of Behaviour	
1.	Criterion Met	1.	Criterion Met
2.	Criterion Met	2.	Criterion Met
3.	Criterion Met	3.	Criterion Met
		4.	Criterion Met
Total Met	3	Total Met	4
Severity	Level 2-Requiring substantial support	Severity	Level 2-Requiring substantial support
C. Present in Early Developmental Period		D. Symptoms Cause Clinically Significant Impairment	
1.	Criterion Met	1.	Criterion Met
E. No Intellectual Disability/Global Delay		F. Specifiers	
1.	Criterion Met	1.	Without accompanying Intellectual Impairment
			Without accompanying Language Impairment

As indicated in the summary table above, John meets sufficient DSM-5 criteria for a diagnosis of Autism Spectrum Disorder.

The level of severity for both Social Communication and Restricted and Repetitive Behaviours is Level 2-Requiring substantial support.

Neither Intellectual Impairment, nor Language Impairment is present.

COMORBIDITY AND DIFFERENTIAL DIAGNOSIS SCREENING ASSESSMENT

Global Screening Test Administered:

Date of Administration

**child & adolescent psychProfiler* (CAPP; Langsford, Houghton, & Douglas, 2014)

20/04/2020

CAPP Outline:

The CAPP is a reliable and valid 126 item instrument that utilises three separate screening forms; the Self-Report Form (SRF), Parent-report Form (PRF), and Teacher-report Form (TRF) for the simultaneous screening of 14 of the most prevalent disorders in children and adolescents.

The CAPP has been continually developed over the past 20 years, including validation against large mainstream and clinical samples, as well against other well-known instruments (e.g., Beck, Conners, etc).

The CAPP comprises screening criteria that mirror the symptom count and diagnostic criteria of the *Diagnostic and Statistical Manual of Mental Disorders–Fifth Edition* (DSM-5: American Psychiatric Association: APA, 2013). For example, a positive screen for Attention-Deficit/Hyperactivity Disorder: Predominantly Inattentive Presentation indicates that the symptom count was 6 or more of the 9 DSM-5 Inattentive items.

For more information about the PsychProfiler, please see <https://www.psychprofiler.com>

Disorders included in the CAPP:

Anxiety Disorders:

- ★ Generalised Anxiety Disorder
- ★ Separation Anxiety Disorder

Attention-Deficit/Hyperactivity Disorder:

- ★ Attention-Deficit/Hyperactivity Disorder

Autism Spectrum Disorder:

- ★ Autism Spectrum Disorder

Communication Disorders:

- ★ Language Disorder
- ★ Speech Sound Disorder

Depressive Disorders:

- ★ Persistent Depressive Disorder

Disruptive, Impulse-Control, & Conduct Disorders:

- ★ Conduct Disorder
- ★ Oppositional Defiant Disorder

Feeding and Eating Disorders:

- ★ Anorexia Nervosa
- ★ Bulimia Nervosa

Obsessive-Compulsive and Related Disorders:

- ★ Obsessive-Compulsive Disorder

Specific Learning Disorders:

- ★ Specific Learning Disorder – Reading, Mathematics, and Written Expression

Trauma and Stressor-Related Disorders:

- ★ Posttraumatic Stress Disorder

CAPP Results:

John self-reported positive screens for:

- Attention-Deficit/Hyperactivity Disorder: Combined Presentation
- Autism Spectrum Disorder
- Language Disorder
- Speech Sound Disorder
- Specific Learning Disorder – with Impairment in Reading
- Specific Learning Disorder – with Impairment in Written Expression

John's parents reported positive screens for:

- Separation Anxiety Disorder
- Attention-Deficit/Hyperactivity Disorder: Predominantly Inattentive Presentation
- Autism Spectrum Disorder
- Speech Sound Disorder
- Specific Learning Disorder – with Impairment in Reading
- Specific Learning Disorder – with Impairment in Written Expression

John's teacher reported positive screens for:

- Attention-Deficit/Hyperactivity Disorder: Combined Presentation
- Autism Spectrum Disorder
- Language Disorder
- Speech Sound Disorder
- Specific Learning Disorder – with Impairment in Reading

Please note that any indication of a positive screen on the CAPP does not constitute a formal diagnosis. A positive screen merely indicates that the individual has met sufficient criteria for a disorder to warrant further investigation.

Please refer to the CAPP Report(s) for the individual behaviours which were responsible for the positive screens elicited.

ADHD BEHAVIOURAL ASSESSMENT

Checklists Administered:

	<i>Date of Administration</i>
(1) Conners' 3 Self-Report: Long Form (Conners 3-SR, 2014)	03/04/2020
(2) Conners' 3 Parent Rating Scale: Long Form (Conners 3-P, 2014)	03/04/2020
(3) Conners' 3 Teacher Rating Scale: Long Form (Conners 3-T, 2014)	03/04/2020

Conners' 3 Overview:

The Conners 3 is a multi-informant (Self, Parent, and Teacher) assessment of Attention Deficit/Hyperactivity Disorder in children and adolescents between 6 and 18 years of age. The checklists take into account aspects of the individual's home, school, and social settings to provide a focused and thorough assessment of Attention Deficit/Hyperactivity Disorder and the co-morbid problems most commonly associated with it in children and adolescents. Parents and teachers can rate youth from ages 6 to 18 years. Self-reports can be completed by youth aged 8 to 18 years.

Conners' 3 Interpretive Guidelines for Conners' T-Scores and Percentiles:

<i>T-Score</i>	<i>Percentile</i>	Interpretive Guidelines Conners' T-Scores and Percentiles
<30	<2	Markedly Atypical (Low Scores are Good: Not a Concern)
30-34	2-5	Moderately Atypical (Low Scores are Good: Not a Concern)
35-39	6-15	Mildly Atypical (Low Scores are Good: Not a Concern)
40-44	16-26	Slightly Atypical (Low Scores are Good: Not a Concern)
45-55	27-73	Average (Typical Score: Should Not Raise a Concern)
56-60	74-85	Slightly Atypical (Borderline: Should Raise a Concern)
61-65	86-94	Mildly Atypical (Possibly Significant Problem)
66-70	95-98	Moderately Atypical (Indicates Significant Problem)
>70	>98	Markedly Atypical (Indicates Significant Problem)

The authors of the Conners' 3 Rating Scales (Conners' 3) state that *T*-Scores greater than 60 are usually taken to indicate a **clinically significant problem**.

Furthermore, the greater number of subscales that show clinically relevant elevation (i.e *T*-Scores above 60), the greater likelihood that the Conners 3 scores indicate a moderate to severe problem.

High scores on the ADHD Index are considered by the checklist authors to be useful for differentiating **clinical ADHD** individuals from **non-clinical** individuals. Please note, that the ADHD Index score reported is a probability % figure, not a *T*-score like the other Indexes.

Checklist Results:

(1) Conners' 3 Self-Report:

Conners' 3 Self-Report Subscales	T-Score*
Inattention	88
Hyperactivity/Impulsivity	58
Learning Problems	89
Defiance/Aggression	61
Family Relations	56
DSM-5 Symptoms: Inattentive	77
DSM-5 Symptoms: Hyperactive-Impulsive	52
DSM-5 Symptoms: Conduct Disorder	55
DSM-5 Symptoms: Oppositional Defiant Disorder	69
ADHD Index[#]	96% probability
# the ADHD Index score reported is a probability % figure, not a T-score like the other Indexes.	

DSM-5 Symptom Scale – Self Report	Symptom Count
ADHD – Predominantly Hyperactive/Impulsive Presentation	3
ADHD – Predominantly Inattention Presentation	7

(2) Conners' 3 Parent Rating Scale:

Conners' 3 Parent- Report Subscales	T-Score*
Inattention	69
Hyperactivity/Impulsivity	58
Learning Problems	88
Executive Functioning	76
Defiance/Aggression	73
Peer Relations	53
DSM-5 Symptoms: Inattentive	76
DSM-5 Symptoms: Hyperactive-Impulsive	52
DSM-5 Symptoms: Conduct Disorder	65
DSM-5 Symptoms: Oppositional Defiant Disorder	75
Connors Global Index: Restless-Impulsive	61
Connors Global Index: Emotional Lability	65
Connors Global Index: Total	63
ADHD Index[#]	77% probability
# the ADHD Index score reported is a probability % figure, not a T-score like the other Indexes.	

DSM-5 Symptom Scale – Parent Report	Symptom Count
ADHD – Predominantly Hyperactive/Impulsive Presentation	2
ADHD – Predominantly Inattention Presentation	7

(3) Conners' 3 Teacher Rating Scale:

Conners' 3 Teacher Subscales	T-Score*
Inattention	75
Hyperactivity/Impulsivity	54
Learning Problems/ Executive Functioning Total	68
Learning Problems	77
Executive Functioning	67
Defiance/Aggression	64
Peer Relations	68
DSM-5 Symptoms: Inattentive	82
DSM-5 Symptoms: Hyperactive-Impulsive	55
DSM-5 Symptoms: Conduct Disorder	75
DSM-5 Symptoms: Oppositional Defiant Disorder	72
Connors Global Index: Restless-Impulsive	74
Connors Global Index: Emotional Lability	78
Connors Global Index: Total	74
ADHD Index[#]	98% probability

the ADHD Index score reported is a probability % figure, not a T-score like the other Indexes.

DSM-5 Symptom Scale – Teacher Report	Symptom Count
ADHD – Predominantly Hyperactive/Impulsive Presentation	5
ADHD – Predominantly Inattention Presentation	9

DSM-5 CRITERIA ADHD ASSESSMENT:

Checklists Administered:

Date of Administration

(1) ADHD DSM-5 Criteria–Parent Completion (American Psychiatric Association, 2013) 10/04/2020

	INATTENTION (Only behaviours occurring for 6 months or more are ticked)	Yes (✓)
A1	Often fails to give close attention to details or makes careless mistakes in schoolwork, at work, or during other activities (e.g., overlooks or misses details, work is inaccurate).	✓
A2	Often has difficulty sustaining attention in tasks or play activities (e.g., has difficulty remaining focused during lectures, conversations, or lengthy reading).	
A3	Often does not seem to listen when spoken to directly (e.g., mind seems elsewhere, even in the absence of any obvious distraction).	✓
A4	Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (e.g., starts tasks but quickly loses focus and is easily side-tracked).	✓
A5	Often has difficulty organizing tasks and activities (e.g., difficulty managing sequential tasks; difficulty keeping materials and belongings in order; messy, disorganised work; has poor time management; fails to meet deadlines).	✓
A6	Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (e.g., schoolwork or homework; for older adolescents and adults preparing reports, completing forms, reviewing lengthy papers).	✓
A7	Often loses things necessary for tasks or activities (e.g., school materials, pencils, books, tools, wallets, keys, paperwork, eyeglasses, mobile telephones).	
A8	Is often easily distracted by extraneous stimuli (for older adolescents and adults, may include unrelated thoughts).	✓
A9	Is often forgetful in daily activities (e.g., doing chores, running errands; for older adolescents and adults, returning calls, paying bills, keeping appointments).	✓
	TOTAL	7

	HYPERACTIVITY AND IMPULSIVITY (Only behaviours occurring for 6 months or more are ticked)	Yes (✓)
A10	Often fidgets with or taps hands or feet or squirms in seat.	
A11	Often leaves seat in situations when remaining seated is expected (e.g., leaves his or her place in the classroom, in the office or other workplace, or in other situations that require remaining in place).	✓
A12	Often runs about or climbs in situations where it is inappropriate. (Note: In adolescents or adults, may be limited to feeling restless).	
A13	Often unable to play or engage in leisure activities quietly.	✓
A14	Is often “on the go,” acting as if “driven by a motor” (e.g., is unable to be or uncomfortable being still for extended time, as in restaurants, meetings; may be experienced by others as being restless or difficult to keep up with).	
A15	Often talks excessively.	
A16	Often blurts out an answer before a question has been completed (e.g., completes people’s sentences; cannot wait for turn in conversation).	
A17	Often has difficulty waiting his or her turn (e.g., while waiting in line).	✓
A18	Often interrupts or intrudes on others (e.g. butts into conversations, games or activities; may start using other people’s things without asking or receiving permission; for adolescents and adults, may intrude into or take over what others are doing).	
	TOTAL	3

	Clinically significant symptoms	Yes	No	NA
B	Have the several inattentive or hyperactive-impulsive symptoms been present prior to age 12 years?	✓		
C	Are the several inattentive or hyperactive-impulsive symptoms present in two or more settings (e.g., at home, school, or work; with friends or relatives; in other activities)?	✓		
D	Is there clear evidence that the inattentive or hyperactive-impulsive symptoms interfere with, or reduce the quality of, social, academic, or occupational functioning?	✓		
E	Do the symptoms occur exclusively during the course of schizophrenia or another psychotic disorder; and/or are not better explained by another mental disorder (e.g., mood disorder, anxiety disorder, dissociative disorder, personality disorder, substance intoxication or withdrawal)?			

SUMMARY OF CRITERIA:

Criteria A: Six or more inattention and/or hyperactive-impulsive symptoms have persisted for at least 6 months to a degree that is inconsistent with developmental level and that significantly impacts directly on social and academic/occupational activities.

Total number of Inattention criterion met = 7

Total number of Hyperactive-Impulsive criterion met = 3

This criterion is rated as having been Met.

Criteria B: The inattentive or hyperactive-impulsive symptoms have been present prior to age 12 years?

This criterion is rated as having been Met.

Criteria C: The inattentive or hyperactive-impulsive symptoms present in two or more settings (e.g., at home, school, or work; with friends or relatives; in other activities)?

This criterion is rated as having been Met.

Criteria D: There is clear evidence that the inattentive or hyperactive-impulsive symptoms interfere with, or reduce the quality of, social, academic, or occupational functioning?

This criterion is rated as having been Met.

Criteria E: The disturbance is not better explained by another mental disorder.

This criterion is rated as having been Met.

DSM-5 CRITERIA CONCLUSION:

John meets the DSM-5 criteria for a diagnosis of Attention-Deficit/Hyperactivity Disorder: Predominantly Inattentive Presentation (ADHD-PIP).

Any comorbidity and/or differential diagnosis implications are to be considered by the Medical Specialist.

Please note: The DSM-5 ADHD checklist is not administered to teachers as they have multiple other forms to complete and the DSM-5 ADHD criteria can be found in both the Conners and the PsychProfiler. Furthermore, the PsychProfiler follows the same scoring as the DSM-5, so a positive screen for Attention-Deficit/Hyperactivity Disorder: Predominantly Hyperactive/Impulsive Presentation indicates that the symptom count was 6 or more of the 9 DSM-5 Inattentive items.

OBSERVATIONS AND CLINICAL PRESENTATION

Rapport:

- The examiner was able to establish good rapport with John

General Appearance:

- John's physical appearance was neat

Psychomotor Behaviour:

- John's coordination of movements and posture were observed to be normal

Mood/Affect:

- Was observed as having normal affect

Speech:

- No speech problems were observed

Cognitive:

- No obvious behaviours were observed that suggest cognitive deficiencies

Attention:

- John put in a reasonable amount of effort throughout the assessment

SUMMARY

REASON FOR REFERRAL:

John was referred to Psychological and Educational Consultancy Services (PECS) by Dr James Smith (General Practitioner) for a *Comprehensive Psychological Assessment* and indication of whether the results are reflective of an individual with Autism Spectrum Disorder (ASD).

CURRENT CONCERNS:

From a presented list, John's parents identified concerns in the following areas:

- Learning
- Social skills

COGNITIVE ASSESSMENT:

WISC-V Indexes	Composite Score	Percentile Rank	95% Confidence Interval	Qualitative Description
PRIMARY INDEXES				
Verbal Comprehension Index (VCI)	95	37	87-103	Average
Visual Spatial Index (VSI)	115	84	106-122	High Average
Fluid Reasoning Index (FRI)	115	84	106-122	High Average
Working Memory Index (WMI)	77	6	71-88	Very Low
Processing Speed Index (PSI)	78	7	72-91	Very Low
Full Scale Intelligence Quotient (FSIQ)	96	39	91-102	Average
ANCILLARY INDEXES				
Auditory Working Memory Index (AWMI)	78	7	73-85	Very Low
Nonverbal Index (NVI)	97	42	91-103	Average
General Ability Index (GAI)	105	63	99-111	Average
Cognitive Proficiency Index (CPI)	78	7	72-87	Very Low

These results clearly indicate that an Intellectual Disability is not present.

ADAPTIVE BEHAVIOUR ASSESSMENT:

(1) Parent/Primary Caregiver Form (Ages 5-21) – Completed by John's Mother

Composite	Standard Score	Percentile Rank	95% Confidence Interval	Qualitative Range
General Adaptive Composite (GAC)	64	1	60-68	Extremely Low
Conceptual	63	1	57-69	Extremely Low
Social	56	0.2	49-63	Extremely Low
Practical	75	5	68-82	Low

(2) Teacher Provider Form (Ages 5-21) – Completed by John's Teacher

Composite	Standard Score	Percentile Rank	95% Confidence Interval	Qualitative Range
General Adaptive Composite (GAC)	43	<0.1	40-46	Extremely Low
Conceptual	53	0.1	49-57	Extremely Low
Social	58	0.3	54-62	Extremely Low
Practical	45	<0.1	41-49	Extremely Low

The results clearly indicate significant impairment in multiple important areas of functioning.

ASD SYMPTOMOLOGY ASSESSMENT (ASRS):

John's T scores exceeded the cut-off for **8** subscales on the Parent-report and **13** subscales on the Teacher-report.

The ASRS Total Score is a summary score and measures the extent to which the individual's behavioural characteristics are similar to the behaviours of youth diagnosed with Autism Spectrum Disorder.

The Parent-Report ASRS yielded a *T*-Score of 66 (95th percentile) for the ASRS Total Score which falls within the Elevated Score category.

The Teacher-Report ASRS yielded a *T*-Score of 84 (99th percentile) for the ASRS Total Score which falls within the Very Elevated Score category.

SUMMARY OF THE DSM-5 ASD CRITERIA AND LEVEL OF SUPPORT REQUIRED:

John meets sufficient DSM-5 criteria for a diagnosis of Autism Spectrum Disorder.

The level of severity for both Social Communication and Restricted and Repetitive Behaviours is Level 2- Requiring substantial support.

Neither Intellectual Impairment, nor Language Impairment is present.

COMORBIDITY AND DIFFERENTIAL DIAGNOSIS BEHAVIOURAL ASSESSMENT:

John self-reported positive screens for:

- Attention-Deficit/Hyperactivity Disorder: Combined Presentation
- Autism Spectrum Disorder
- Language Disorder
- Speech Sound Disorder
- Specific Learning Disorder – with Impairment in Reading
- Specific Learning Disorder – with Impairment in Written Expression

John's parents reported positive screens for:

- Separation Anxiety Disorder
- Attention-Deficit/Hyperactivity Disorder: Predominantly Inattentive Presentation
- Autism Spectrum Disorder
- Speech Sound Disorder
- Specific Learning Disorder – with Impairment in Reading
- Specific Learning Disorder – with Impairment in Written Expression

John's teacher reported positive screens for:

- Attention-Deficit/Hyperactivity Disorder: Combined Presentation
- Autism Spectrum Disorder
- Language Disorder
- Speech Sound Disorder
- Specific Learning Disorder – with Impairment in Reading

ADHD BEHAVIOURAL ASSESSMENT:

The authors of the Conners' 3 state that *T*-Scores greater than 60 are usually taken to indicate a clinically significant problem. Furthermore, the greater number of subscales that show clinically relevant elevation (i.e *T*-Scores above 60), the greater likelihood that the Conners' 3 scores indicate a moderate to severe problem.

John's scores exceeded the cut-off for **5** subscales on the Self-report Conners' checklist, **10** on the Parent-report, and **12** subscales on the Teacher-report.

John's self-report score on the ADHD Index indicates that there is a **96% probability** that he has ADHD, (unless another factor/diagnosis better explains the behaviours reported).

John's parent-report score on the ADHD Index indicates that there is a **77% probability** that he has ADHD, (unless another factor/diagnosis better explains the behaviours reported).

John's teacher-report score on the ADHD Index indicates that there is a **98% probability** that he has ADHD, (unless another factor/diagnosis better explains the behaviours reported).

The DSM-5 Symptom Counts were:

DSM-5 Symptom Scale	Symptom Count
Self-Report	
ADHD – Predominantly Hyperactive/Impulsive Presentation	3
ADHD – Predominantly Inattention Presentation	7
Parent-Report	
ADHD – Predominantly Hyperactive/Impulsive Presentation	2
ADHD – Predominantly Inattention Presentation	7
Teacher-Report	
ADHD – Predominantly Hyperactive/Impulsive Presentation	5
ADHD – Predominantly Inattention Presentation	9

DSM-5 ADHD CRITERIA ASSESSMENT:

John meets the DSM-5 criteria for a diagnosis of Attention-Deficit/Hyperactivity Disorder: Predominantly Inattentive Presentation (ADHD-PIP).

Any comorbidity and/or differential diagnosis implications are to be considered by the Medical Specialist.

MAIN OBSERVATIONS AND CLINICAL PRESENTATION:

- The examiner was able to establish good rapport with John
- John's physical appearance was neat
- John's coordination of movements and posture were observed to be normal
- Was observed as having normal affect
- No speech problems were observed
- No obvious behaviours were observed that suggest cognitive deficiencies
- John put in a reasonable amount of effort throughout the assessment

CONCLUSION AND STATEMENT OF DIAGNOSIS

John meets sufficient DSM-5 criteria for a provisional diagnosis of Autism Spectrum Disorder; requiring substantial support for both deficits in social communication, as well as restricted and repetitive patterns of behaviour.

Observations, parental information and checklist results (i.e. ABAS) indicate that John's difficulties cause significant impairment in multiple important areas of his current functioning.

Neither Intellectual Impairment, nor Language Impairment is present.

A formal diagnosis requires a Paediatrician or Child Psychiatrist to concur with this ASD finding.

John should now be seen again by a Paediatrician or Child Psychiatrist for their formal finding on ASD and also for the assessment and management of possible comorbidities that have been identified by the PsychProfiler (e.g., ADHD, Language Disorder, SLD).

None of these aforementioned comorbidities are considered to carry any primary diagnostic implications.

RECOMMENDATIONS

Please note, PECS does not provide micro-strategies (e.g., sit student at front of classroom, etc) as part of their recommendations. PECS provides recommendations on what further assessment is required, what intervention is necessary, and who is the most appropriate to provide the assessment/intervention recommended.

GP INVOLVEMENT

- (1) John should once again be seen by Dr Smith (General Practitioner) now that this new information is available for incorporation into his overall assessment.
- (2) Due to the large degree of information supporting ASD, it is recommended that John be seen by a Paediatrician / Child Psychiatrist for the purpose of a formal decision on the presence of ASD.

Please note that a GP referral is required to see a Medical Specialist.

CHILD PSYCHIATRIST/PAEDIATRIC INVOLVEMENT:

- (1) John should be seen by a Child Psychiatrist/Paediatrician for the purpose of a formal decision of a diagnosis of Autism Spectrum Disorder, and consideration of the comorbidity and differential diagnosis implications identified.

SPEECH PATHOLOGIST INVOLVEMENT:

- (1) John should undergo an ASD assessment with a Speech Pathologist, prior to going to the Paediatrician/Child Psychiatrist.
- (2) A copy of this report should be provided to the Speech Pathologist.
- (3) John should continue Speech Pathology to further develop his receptive and expressive language skills.

NDIS INVOLVEMENT:

- (1) Should the Child Psychiatrist/Paediatrician concur with the Autism Spectrum Disorder diagnosis, confirmation of that in writing should be sent to NDIS, along with a copy of this report and the Speech Pathologist's report.

OCCUPATIONAL THERAPIST INVOLVEMENT:

- (1) John should see an Occupational Therapist to assist with sensory sensitivity issues.

SCHOOL INVOLVEMENT:

- (1) A case-conference involving John's parents and the key school personnel should be held to discuss John's individual learning requirements.

SOCIAL SKILLS DEVELOPMENT:

- (1) John would benefit from a programme of Social Skills training and engaging in more social activities.

Behaviour Tonics

352d Cambridge Street, WEMBLEY WA 6014

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Email: info@behaviourtonics.com.au

www.behaviourtonics.com.au

Behaviour Tonics offers advice, courses and training to parents, teachers and to those professionals who work with families and have done so for the last 14 years. They help adults to manage kids' behaviour calmly and effectively.

Connect for Kids

99 Loftus Street, LEEDERVILLE WA 6007

Phone: 0402 101 060

www.connectforkids.com.au

HEALTH & WELL-BEING:

- (1) John needs to continue/implement regular exercise and maintain a healthy diet.

Please note, the above is a generic recommendation that should be followed by all and is not a recommendation specific to John due to any of his results or reported behaviours.

Dr Shane Langsford

Managing Director -PECS

Registered Psychologist

Date of Report

APS College of Educational & Developmental Psychologists Academic Member

Clinical Cohort: Autism Spectrum Disorder:

With the publication of DSM-5, Autistic Disorder and Asperger's Disorder were conceptualised under a single diagnosis, autism spectrum disorder. Children diagnosed with autism spectrum disorder are characterized by deficits in verbal and nonverbal communication and in social communication and interactions. They also exhibit restricted patterns of behaviour, interests, or activities. Specifiers can be used to more clearly describe a child's symptomology, including severity of symptoms, the presence of intellectual or language impairment, and the presence of other medical, genetic, or environmental factors, or neurodevelopmental, mental, or behavioural disorders. WISC-V was administered to two groups of children with autism spectrum disorder, those with accompanying language impairment (previously classified as Autistic Disorder) and those without accompanying language impairment (previously classified as Asperger's Disorder).

ASD with accompanying language impairment (Autistic Disorder):

A large study comparing children with autism across WISC-III indexes, found that as a group they displayed a profile of **lower Processing Speed Index (PSI) and Freedom Form Distractibility (FDI;** a measure of basic attention, concentration and working memory), relative to their Verbal Comprehension Index (VCI) and Perceptual Organisation Index (POI) scores (Calhoun, & Dickerson Mayes, 2005). Furthermore, a pattern of lower performance on the Coding subtest, relative to the Symbol Search subtest (both of which comprise the Processing Speed Index), has been consistently found, at a group level. This would tend to suggest that these children are more likely to display weaknesses in processing speed, basic attention, as well as writing. Given this it is of importance to assess a child's writing ability, if they are identified as having Autistic Disorder.

There is a high rate of comorbidity between Autistic Disorder and learning disorders, with one study finding that 75% of children with Autistic Disorder also had at least one learning disorder.

WISC-IV Index Interpretation:

When compared with matched controls (n=19) as part of the WISC-IV norming process, children with Autistic Disorder were found to present with significantly lower scores ($p < .01$) and substantially different ($ES > 1.00$) than their matched controls on all of the WISC-IV Composites.

WISC-IV Subtest Interpretation:

The scaled score differences were significant for **all subtests** except Arithmetic ($p = .80$) and Block Design ($p = .07$). In particular, large effect sizes (effect sizes indicate the substantiveness of the significant result) were found between the children with Autistic Disorder and the matched controls for (in descending order) Letter-Number Sequencing ($ES = 1.83$), Comprehension ($ES = 1.72$), and Symbol Search ($ES = 1.60$). Of the core subtests, only the three PRI subtests (ie Block Design, Picture Concepts, and Matrix Reasoning) failed to elicit an ES of greater than 1.

WISC-V Index Interpretation:

Results from studies conducted as part of the WISC-V norming process illustrated that children with ASD with accompanied language impairment have an average composite score of 80.4 for VCI, 82.8 for VSI, 84.3 for FRI, 77.6 for WMI, 75.8 for PSI, and 76.3 for FSIQ. When compared with matched controls, children with ASD with accompanied language impairment were found to present with **significantly lower** ($p = \geq .05$) average scores for all primary indexes. Consistent with previous findings, the FRI and VSI are relatively higher and produce smaller effect sizes, than the VCI. When compared with matched controls, the average VCI (23.68 points lower), and WMI (26.47 points lower) had large effect sizes.

WISC-V Subtest Interpretation:

When compared with matched controls as part of the WISC-V norming process, children with ASD with accompanied language impairment were found to present with **significantly lower scores** ($p = \geq .05$) than their matched control on all primary and secondary subtests. The largest effect size is observed on Comprehension, followed by Letter-Number Sequencing, Arithmetic, Information, and Digit Span. The smallest effect sizes are observed on Figure Weights, Matrix Reasoning, and Block Design.

ASD without accompanying language impairment (Asperger's Disorder – no longer in DSM-5):

WISC-IV Index Interpretation:

When compared with matched controls (n=27) as part of the WISC-IV norming process, children with Asperger's Disorder were found to present with **significantly lower scores** ($p < .01$) and substantially different ($ES = 0.94$) than their matched controls for the WISC-IV PSI Composites.

WISC-IV Subtest Interpretation:

The scaled score differences were significant ($p < .05$) for the subtests of Picture Concepts, Coding, Comprehension, and Symbol Search. In particular, large effect sizes (effect sizes indicate the substantiveness of the significant result) were found between the children with Asperger's Disorder and the matched controls for (in descending order) Coding ($ES = 1.06$), Comprehension ($ES = 1.72$), and Symbol Search ($ES = 1.60$). Similarities ($p = .36$; ASD group actually scored higher than the matched controls) and Arithmetic ($p = 1.00$) were found to be the subtests **least effected** by Asperger's Disorder and in this case it was found that John performed very well on these subtests.

Please note that only small sample sizes were used in the above studies, therefore, empirical findings are difficult.

WISC-V Index Interpretation:

Results from studies conducted as part of the WISC-V norming process illustrated that children with ASD without accompanied language impairment have an average composite scores of 102.5 for VCI, 100.7 for VSI, 100.9 for FRI, 95.4 for WMI, 89.4 for PSI, and 98.3 for FSIQ. When compared with matched controls, children with ASD with accompanied language impairment were found to present with non-significant average scores for all primary indexes, except for Working Memory (8.81 points lower). Both the WMI and PSI illustrate medium effect sizes. The results are consistent with previous findings, demonstrating less severe deficits in children with Asperger's than in children with Autistic Disorder (Barbeau et al., 2013 Gilchrist et al., 2001).

WISC-V Subtest Interpretation:

When compared with matched controls as part of the WISC-V norming process, children with ASD without accompanied language impairment were found to present with **significantly lower scores** ($p = \geq .05$) on Vocabulary, Block Design, Picture Span, Letter-Number Sequencing, and Coding. Consistent with previous research, Similarities produced the highest score within the VCI, whilst Comprehension was the lowest.

APPENDIX 2: WISC-V SUBTEST DESCRIPTIONS

VERBAL COMPREHENSION	
Similarities (PIS, FSIQ, GAI)	The Similarities subtest involves the child being presented with two words that represent common objects or concepts and describing how they are similar. It is designed to measure verbal concept formation and abstract reasoning. It also involves crystallized intelligence, word knowledge, cognitive flexibility, auditory comprehension, long-term memory, associative and categorical thinking, distinction between nonessential and essential features, and verbal expression.
Vocabulary (PIS, FSIQ, GAI)	The Vocabulary subtest comprises both picture and verbalised items. For picture items, the individual names the depicted object. For verbal items, the individual defines the word that is read aloud. Vocabulary is designed to measure word knowledge and verbal concept formation. It also measures crystallized intelligence, fund of knowledge, learning ability, verbal expression, long-term memory, and degree of vocabulary development. Other abilities that may be used during this task include auditory perception and comprehension, and abstract thinking.
Comprehension	The Comprehension subtest requires the individual to answer questions based on their understanding of general principles and social situations. Comprehension is designed to measure verbal reasoning and conceptualization, verbal comprehension and expression, the ability to evaluate and use past experience, and the ability to demonstrate practical knowledge and judgement. It also involves crystallized intelligence, knowledge of conventional standards of behaviour, social judgment, long-term memory, and common sense.
Information	The Information subtest involves the individual answering verbally presented questions that address a broad range of general knowledge topics. The subtest is designed to measure a individual's ability to acquire, retain, and retrieve general factual knowledge. It involves crystallized intelligence, long-term memory, and the ability to retain and retrieve knowledge from the environment and/or formal instruction. Other skills used include verbal perception, comprehension, and expression
VISUAL SPATIAL	
Block Design (PIS, FSIQ, GAI)	All items of the Block Design subtest require the individual to view a constructed model and/ or a picture on the client's iPad/ Stimulus Book and use red-and-white blocks to re-create the design within a specified time limit. This subtest measures the individual's ability to analyses and synthesise abstract visual stimuli. It also involves nonverbal concept formation and reasoning, broad visual intelligence, visual perception and organisation, simultaneous processing, visual-motor coordination, learning, and the ability to separate figure-ground in visual stimuli.
Visual Puzzles (PIS)	The Visual Puzzles subtest requires the individual to view a completed puzzle and select three response options that together would reconstruct the puzzle. The subtest is designed to measure mental, non-motor construction ability, which requires visual and spatial reasoning, mental rotation, visual working memory, understanding part-whole relationships, and the ability to analyse and synthesize abstract visual stimuli. Visual Puzzles measures visual processing and acuity, spatial relations, integration and synthesis of part-whole relationships, nonverbal reasoning, and trial-and-error learning.

FLUID REASONING	
Matrix Reasoning (PIS, FSIQ, GAI)	The individual views an incomplete matrix and selects the missing portion from five response options on the Matrix Reasoning test. The task requires the individual to use visual-spatial information to identify the underlying conceptual rule that links all the stimuli and then apply the underlying concept to select the correct response. The subtest is designed to measure fluid intelligence, broad visual intelligence, classification, and spatial ability, knowledge of part-whole relationships, and simultaneous processing. Additionally, the subtest requires attention to visual detail and working memory.
Figure Weights (PIS, GAI)	The Figure Weights subtest involves the individual viewing a scale, which is missing weight(s) and then they have to select the response option which balances that scale. This task requires the individual to apply the quantitative concept of equality to understand the relationship among objects and apply the concepts of matching, addition, and/or multiplication to identify the correct response. The subtest measures quantitative fluid reasoning and induction. Quantitative reasoning tasks involve reasoning processes that can be expressed mathematically, emphasising inductive or deductive logic.
Picture Concepts	Picture Concepts involves the individual being presented with two or three rows of pictures and then choosing one picture in each row to form a group with a common characteristic. This test requires the individual to use the semantic representations of nameable objects to identify the underlying conceptual relationship among the objects and to apply that concept to select the correct answer. No image appears more than once within the subtest. The subtest is designed to measure fluid and inductive reasoning, visual-perceptual recognition and processing, and conceptual thinking. Additionally, this task requires visual scanning, working memory, and abstract reasoning. It may also involve crystallized knowledge.
Arithmetic	The individual mentally solves a series of orally presented Arithmetic problems within a specified time limit on the Arithmetic subtest. For both the picture and verbal items, Arithmetic involves mental manipulation, concentration, brief focussed attention, working memory, short- and long- term memory, numerical reasoning ability, applied computational ability, and mental alertness. It may also involve sequential processing; fluid, quantitative, and logical reasoning; and quantitative knowledge. Additionally, this task requires intact auditory/ linguistic processes, including auditory discrimination and comprehension, and to a lesser degree verbal expression.

WORKING MEMORY	
Digit Span (PIS, FSIQ)	For Digit Span, the individual is read a sequence of numbers and recalls the numbers in the same order (Forward task), reverse order (Backward task), and ascending order (Sequencing task). The shift from one Digit Span task to another requires cognitive flexibility and mental alertness. All Digit Span tasks require registration of information, brief focussed attention, auditory discrimination, and auditory rehearsal. Digit Span Forward measures auditory rehearsal and temporary storage capacity in working memory. Digit Span Backward involves working memory, transformation of information, mental manipulation, and may involve visuospatial imaging. Digit Span Sequencing is designed to measure working memory and manipulation. Digit Span Sequencing is included to increase the cognitive complexity demands of the subtest. Both the backward and sequencing tasks require the resequencing of information; the primary difference is how the sequence is determined. In the backward task, the location of the number in the sequence must be maintained in working memory for proper resequencing to occur. In the sequencing task, the quantitative value of the number must be maintained in working memory and compared to numbers before and after its occurrence. In this task, the individual does not know where the number will occur in the response until all numbers are administered.
Picture Span (PIS)	The Picture Span subtest requires the individual to memorise one or more pictures presented on the client's iPad/ stimulus book and then identify the correct pictures (in sequential order, if possible) from options on a response page. Picture Span measures visual working memory and working memory capacity. Similar tasks also involve attention, visual processing, visual immediate memory, and response inhibition. The subtest is constructed similarly to existing visual working memory tasks but is relatively novel in its use of semantically meaningful stimuli. The use of these stimuli may activate verbal working memory as well.
Letter-Number Sequencing	Letter-Number Sequencing requires the individual to read a sequence of numbers and letters and recall the numbers in ascending order and the letters in alphabetical order. Like the Digit Span tasks, Letter-Number Sequencing requires some basic cognitive processes, such as auditory discrimination, brief focussed attention, concentration, registration, and auditory rehearsal. Additionally, the task involves sequential processing, the ability to compare stimuli based on quantity or alphabetic principles, working memory capacity, and mental manipulation. It may also involve information processing, cognitive flexibility, and fluid intelligence. The higher order skills represent executive control and resource allocation functions in working memory.
PROCESSING SPEED	
Coding (PIS, FSIQ)	The Coding subtest involves the individual using a key to copy symbols that correspond with simple geometric shapes. Using a key, the individual selects each symbol in its corresponding box within a specified time limit. In addition to processing speed, the subtest measures short-term memory, visual-motor coordination, visual scanning ability, cognitive flexibility, attention, concentration, and motivation. It may also involve visual sequential processing and fluid intelligence.
Symbol Search	The Symbol Search subtest requires the individual to scan a group of symbols and indicate whether the target symbol is present within a specified time limit. In addition to visual-perception and decision-making speed, the subtest involves short-term visual memory, visual-motor coordination, inhibitory control, visual discrimination, psychomotor speed, sustained attention, and concentration. It may also measure perceptual organization, fluid intelligence, and planning and learning ability.
Cancellation	For Cancellation, the individual scans two arrangements of objects (one random, one structured) and marks target objects while working within a specified time limit. The subtest measures rate of test taking, speed of visual-perceptual processing and decision making, visual scanning ability, and visual-perceptual recognition and discrimination. It may also involve attention, concentration, and visual recall.