



# **ETS Policy Statement for Documentation of Autism Spectrum Disorder in Adolescents and Adults**

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## **Preface**

The number of individuals with Autism Spectrum Disorder (ASD) pursuing higher education is increasing. Recent estimates suggest that as many as 1:88 children have ASD (Centers for Disease Control, 2012). Increased awareness on the part of parents, medical professionals, and the educational system has resulted in an increased number of referrals of individuals with these profiles. Changes in the DSM-5 have also broadened this diagnostic category. Although the exact numbers of students with ASD in college are hard to predict, those numbers are on the rise. Many college-bound individuals with ASD have average to above-average cognitive capabilities; therefore, we can expect a portion of these individuals to pursue post-baccalaureate degrees.

The intention of this premier edition of *ETS' Policy Statement for the Documentation of Autism Spectrum Disorder in Adolescents and Adults* is to synthesize current knowledge about ASD and to provide test takers and evaluators with clear guidelines for documenting this disorder and the need for reasonable accommodations. Finally, these guidelines may be useful to secondary and postsecondary disability services personnel as well as other testing agencies and licensing boards when considering accommodations for individuals with ASD.

## **Definition**

"Autism Spectrum Disorder" (ASD) is a neurodevelopmental disorder ranging from mild to severe and characterized by core features of social/communication deficits, repetitive/restrictive behaviors, and a lack of emotional reciprocity. The source for understanding the exact nature of ASD is the most recent edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5). The DSM-5 combines into one category previously distinct but overlapping subtypes (i.e., Autistic Disorder, Asperger's Disorder, and Pervasive Developmental Disorder). While all people with ASD share the core features of the disorder, specific manifestations in developmental, cognitive, emotional, and/or behavioral domains are unique to each individual.

## **Introduction**

This document provides individuals with ASD, secondary-school personnel, diagnosticians, and postsecondary disability service providers with a common knowledge base regarding documentation necessary to support an Autism Spectrum Disorder (ASD) in adolescents and adults for the various Educational Testing Service programs, including the College Board. Our intent is not to be overly burdensome but to provide test takers, as well as their evaluators, with guidance about the specific information that is needed to support requests for accommodations on high-stakes examinations.

Under the Americans with Disabilities Amendments Act (ADA AA) of 2008 and Section 504 of the Rehabilitation Act of 1973, individuals with Autism Spectrum Disorders are guaranteed certain protections and rights to equal access to programs and services. In order to receive testing accommodations, a test taker needs to provide ETS with current and comprehensive documentation. This documentation should support the need for reasonable accommodations that allow equal access to the testing environment without fundamentally altering any essential component of the test. According to the law, impairment due to a disability must “substantially limit a major life activity.” Major life activities include, but are not limited to, caring for oneself, performing manual tasks, seeing, hearing, eating, sleeping, walking, standing, lifting, bending, speaking, breathing, learning, reading, working, concentrating, thinking, communicating, and the operation of bodily functions.

Individuals with ASD may experience difficulties with remembering, learning, reading, concentrating, and/or thinking, which may interfere directly with the test-taking process. In addition, the use of psychotropic medications has become increasingly common in the treatment of Autism Spectrum Disorder. Therefore, it is important that documentation address possible medication side effects which may impact an individual's performance during clinical and standardized testing. Furthermore, individuals with Autism Spectrum Disorder may experience co-occurring psychiatric manifestations (e.g., anxiety, depression, etc.), learning disabilities (LD), and/or physical or chronic health conditions along with their primary diagnosis. Often, individuals with ASD exhibit behaviors affecting communication and social pragmatics. It is important that the documentation demonstrate need for accommodations for test-taking situations in which social engagement is minimal. In instances in which there may be multiple diagnoses including LD and/or psychiatric disabilities, evaluators should consult the appropriate ETS companion documentation guidelines found at <http://www.ets.org/disabilities>.

## **Confidentiality Statement**

ETS takes the confidential, private, and sensitive nature of disability documentation very seriously. ETS will not release any information regarding an individual's diagnosis or condition without his or her informed consent or under compulsion of legal process. Information will be disclosed only on a "need to know" basis except where otherwise required by law. Furthermore, to safeguard the confidentiality of individuals with disabilities, evaluators may withhold or redact any portion of the documentation that is not directly relevant to ETS's criteria for establishing both (1) a disability as defined by the Americans with Disabilities Amendments Act (ADA AA) and (2) a rationale for all requested testing accommodations. If a section of a report has been redacted, the evaluator should provide an acknowledgement and rationale for this action.

### **I. A Qualified professional must conduct the evaluation**

Qualified evaluators are defined as those licensed individuals who are competent to evaluate and diagnose ASD or who may serve as members of the diagnostic team. Professionals conducting evaluations, rendering diagnoses of ASD, and making recommendations for reasonable accommodations should have at least five years of clinical experience with this population. It is essential to provide ETS with information about the qualified professional's (1) comprehensive training and relevant expertise in the diagnosis of ASD, and (2) appropriate licensure/certification. The name, title, and signature of the licensed qualified professional writing the evaluation report must be included. Information regarding the area of specialization, employment, and state or province in which the individual practices must also be clearly stated in the documentation. All reports should be written in English, typed or printed on professional letterhead, and dated.

Given the profound impact this disorder may have on daily life, documentation should be provided from more than one source, as this type of diagnosis warrants a clinical approach involving educational, medical, and mental health professionals. A multi-disciplinary assessment approach is often critical for the diagnosis and treatment of the individual with ASD. Optimally, the team should include a psychologist, a speech and language therapist, and/or an occupational therapist. Additionally, if psychiatric co-morbidity is involved, a psychiatrist should be part of the team. Team members may include any of the following:

- Neuropsychologists
- Licensed psychologists
- Psychiatrists
- Other relevantly trained medical doctors such as developmental pediatricians or child neurologists
- Clinical social workers

- School psychologists
- Speech and language therapists
- Occupational therapists

A diagnosis of Autism Spectrum Disorder by a family member will not be accepted due to professional and ethical considerations, even if the family members are otherwise qualified by virtue of their training and licensure/certification.

## **II. Documentation necessary to support the diagnosis and accommodations**

Documentation should be based on a comprehensive diagnostic protocol that includes objective as well as subjective data and adheres to the guidelines outlined in this document. It may be particularly relevant for the evaluator to conduct a clinical interview with parents or knowledgeable informants. This can help to document that manifestations of the disorder originated in early childhood, even if a formal diagnosis was not rendered at that time. The diagnostic report should include the following components:

- Specific diagnosis or diagnoses
- Description of current symptoms in the testing environment as well as across other settings (e.g., high school, college, employment, or daily life activities)
- Relevant information regarding the test taker's prescribed use of psychotropic medications that will be taken on the day of the test
- Relevant information regarding educational interventions as well as current treatment and their impact
- A narrative discussion of all relevant information, including results of standardized assessment measures. Recommendations for accommodations must include a rationale.

In most cases, a neuropsychological or psycho-educational evaluation will be useful in clarifying the functional impact of the diagnosed disability and in supporting the underlying rationale for accommodations on a high-stakes test. For example, information that is solely concerned with social functioning and communication may have very little relevance to taking a standardized test and will usually be insufficient to support accommodations requests. Deficits in social functioning and/or communication should be directly tied to the high-stakes testing setting. Sections A and B provide more detailed information regarding historical and diagnostic information that may be helpful to evaluators.

## **A. Historical Information, Diagnostic Interview, and/or Psychological Assessment**

Behavioral observations, combined with the clinician's professional judgment and expertise, are often critical in helping to formulate a diagnostic impression. The evaluator should specifically indicate the relevant test-taking behaviors that impact the examinee's performance. The evaluator should indicate if the behaviors noted during testing are consistent with the diagnosis, and if not, why not. This section of the diagnostic report should include the following:

- history of presenting symptoms and evidence of impairment in early childhood;
- severity of symptoms;
- relevant developmental, historical, familial, and psycho-social data;
- relevant medical and medication history, including the individual's current medication regimen and compliance, side effects (if relevant), and positive and negative responses to medication;
- evidence of current impairment in two or more settings;
- coexisting conditions, if any.

## **B. Specific Diagnosis or Diagnoses**

The report must include a diagnosis, or diagnoses, of ASD as stipulated in the DSM-5\* or the ICD-10\* and of any co-morbid conditions, preferably with the accompanying numerical code(s). Evaluators are encouraged also to provide meaningful contextual information (e.g., associated medical diagnoses, current stressors, and sociocultural factors), as well as statements regarding general level of functioning. The evaluators should avoid ambiguous wording such as "is consistent with," "has problems with," or "may indicate possibility of."

To the extent possible, the evaluator should investigate and rule out other potential diagnoses that may affect the expression of an autism spectrum disorder. These diagnoses, such as bipolar disorder, social anxiety disorder, reactive attachment disorder, generalized anxiety disorder, or obsessive-compulsive disorder should be identified and ruled out as appropriate. If the co-morbid condition is relevant to the need for accommodations, this condition should be explored and discussed fully in the narrative report.

\*DSM-IV and ICD 9 diagnostic criteria will be accepted through 2015.

### **III. The currency requirements for documentation**

The provision of reasonable accommodations and services is based upon ETS' assessment of the current impact of the individual's disability on his or her academic performance, particularly in testing situations. It is in a candidate's best interest to provide recent and appropriate documentation. As with many other developmental disorders and psychiatric diagnoses, ASD is an enduring disorder that exists across the lifespan. Functional limitations of the disorder, however, may change depending upon the test-taker's age as well as on environmental demands. Therefore, documentation needs to be from within the last five years.

A documentation update for ASD is a brief report or a narrative by a qualified professional that includes a summary of the previous disability documentation findings as well as additional clinical and observational data to establish the candidate's current need for the requested testing accommodations. Observational data gathered during the recent clinical interview, including affect, concentration, attentional fatigue, executive functioning, personal hygiene, and response to questions, may be helpful. The updated evaluation need not include a full battery of tests but should include selected neuropsychological and adaptive measures deemed appropriate, along with academic measures to support functional limitations and requested accommodations. A documentation update can be submitted if the candidate was diagnosed in childhood and their documentation exceeds our five-year currency policy.

### **IV. Relevant Testing Domains**

ETS acknowledges that a clinical discussion of symptoms may be more valuable than a score on a standardized test. It is not uncommon for an ASD diagnosis to be supported by one or more evaluations by different evaluators. The domains described below frequently can provide vital information concerning the impact of ASD on daily life as well as on the types of accommodations needed in the testing environment. Not all of these domains need to be included in a diagnostic report, but it is hoped that noting them will help evaluators in selection of areas that are most relevant, depending on the individual. (See Appendix III – Tests for Assessing Adolescents and Adults with ASD.)

#### **Cognitive assessment**

Cognitive assessment refers to the portion of a psychological test battery that examines global skills, such as the way individuals process information and thought. This might include testing of intelligence (IQ), problem solving, concept formation, and/or abstract reasoning.

#### **Executive Functioning**

Executive functioning refers to the cognitive aspects of behavioral control and is closely linked to self-regulation, the control over the social and emotional

components of behavior (e.g. self-monitoring, frustration tolerance, etc.). This subset within the cognitive assessment battery focuses on the ability of an individual to plan, initiate, and sustain actions and to evaluate and shift behavior to match intent. Executive functioning develops gradually from childhood well into early adulthood.

### **Expressive and receptive language and communication**

Expressive language is the ability to use age-appropriate speech and prosody to communicate meaning, to speak coherently and cogently to get one's message across. Receptive language is the ability to comprehend speech, including attending in a developmentally appropriate manner, following directions and the pace of delivery, and understanding both literal and figurative aspects of language. Communication skills, in turn, cover a broad spectrum of skills, including the linguistic ones cited above as well as listening to, interpreting, and partaking in dialogue and exchange, which may involve both verbal and non-verbal communication (e.g., gestures and non-verbal expressions).

Social pragmatics is a key component of language and communication skill development and refers to our ability to (1) use language for different purposes such as to greet, make a promise, or inform; (2) change language according to the needs of the listener (e.g., baby vs. adult) or the situation; and (3) follow rules of conversation and story-telling, such as taking turns, using facial expressions and eye contact, and so on.

### **Psychiatric, personality, and behavioral assessment**

Psychiatric, personality, and behavioral assessments should address the impairment of social interaction and communication as they impact the individual's ability to adapt and be flexible in daily life activities. Assessment should include objective data as well as subjective observations. Secondary reporting of mood issues, such as depression and anxiety, is necessary to provide a fuller clinical picture. Most important, a summary is needed to explain how all of these individual vulnerabilities translate into a disabling condition that warrants accommodations for test taking in particular.

### **Sensory-motor integration**

This refers to the way the nervous system receives messages from the senses and turns them into appropriate motor output and subsequent behavioral responses. Successful completion of activities such as reading a book, writing a class essay, or giving a speech requires integration of input from multiple senses to process the information. Sensory integration refers to the brain's ability to interpret and use information from a variety of senses, including visual, auditory, tactile, and olfactory. When the brain interprets sensory input inappropriately, an individual will find it difficult to process and act upon information received through the senses, which creates challenges in performing everyday tasks and possible disruptions to behavior. Sensory features are recognized in the revision of the *Diagnostic and*

*Statistical Manual (DSM-5)* as part of autism spectrum disorders: hyper-sensitivity and hypo-sensitivity.

### **Attention/Memory/Learning**

Attention is an aspect of mental control that involves the ability to maintain alertness, to focus selectively, and to shift focus as needed.

In general, memory refers to the brain's ability to store or hold onto information that it receives through the senses. Three primary categories of memory have been identified: short-term, long-term, and working memory. Even if information is stored appropriately, there may be difficulty with on-demand retrieval.

In psychological assessment, learning tasks are typically those in which information, such as a list of words, is presented several times to measure how quickly and how well an individual remembers them. A comprehensive assessment of memory gives an impression of the full range of memory skills.

### **Visual-perceptual motor skills**

Visual-perceptual motor skills enable one to make sense of visual information and then use it appropriately for a variety of motor tasks, including handwriting, playing sports, and using tools or utensils.

### **Academic Achievement**

Academic achievement refers to school-related areas such as reading, writing, and math. Proficiency in an academic domain typically involves mastery of basic skills, applied skills, and fluency or automaticity of skills. Achievement scores are usually obtained by comparing an individual's performance to that of others of the same age and/or the same educational level.

It is important that clinical impressions and test results from each of the relevant domains be communicated in a clear and straightforward manner in the report. Standard scores and percentile ranks should be reported for all measures. Findings should be integrated into a narrative that provides an interpretive summary along with relevant recommendations for accommodations specific to the test taker.

In conclusion, many of the core features of ASD are not captured easily in test scores. In some instances this occurs because an individual reaches the ceiling on certain cognitive, academic and neuropsychological tests. In other cases, individual tests were not designed to capture subtle but relevant aspects of social communication or social-emotional regulation. Therefore, it is useful to have an interpretative summary that goes beyond the test scores and provides a flavor of the way an individual approaches tasks, the quality

of their thought processes, and their motivation as they approach the task. An interpretive summary might also provide important historical or observational data that would not be reflected in standardized test scores alone. Information about psychiatric symptoms that are ongoing during the assessment or in the individual's current life is important as well. Anxiety, lack of motivation, and social withdrawal certainly merit discussion, both as potential factors affecting the testing and as separate domains that might warrant accommodation.

**V. Rationale for each requested accommodation must be provided**

The evaluator must describe the degree of current impact of the diagnosed ASD on a specific major life activity as well as the degree of impact on the individual in a testing situation. A link must be established between the requested accommodations and the manifested symptomatology of the disorder that is pertinent to the anticipated testing situation. Accommodations can be provided only when a convincing rationale is made for their necessity to provide equal access. A diagnosis of ASD in and of itself does not automatically warrant approval of requested accommodations. For example, if there is a prior history of accommodations without demonstration of current need, the provision of accommodations needs further support. Also, the manifestation of specific characteristics such as poor oral communication skills, repetitive motor behaviors, and/or lack of social or emotional reciprocity is insufficient to support requests for testing accommodations. However, characteristics of co-morbid conditions, such as OCD or ADHD, may be used in support of the need for accommodations if fully documented in the narrative report.

Also, since ASD is typically recognized and accommodated at an early age, a strong rationale is needed if there is no history of accommodations. The evaluator and/or the test taker must include a detailed explanation of why accommodations were not needed in the past and why they are currently being requested.

**VI. Additional sources of information**

Other sources of documentation can be used to corroborate symptoms of the disorder and support the need for the requested accommodation(s). Relevant information from these sources should be summarized by the evaluator in the current disability documentation and/or included as an attachment by the applicant. Depending on the degree and scope of the information it contains, a school-based document such as an Individualized Education Program (IEP), a Section 504 Plan, a Summary of Performance (SOP), or transition documentation can be included as part of a more comprehensive documentation packet. Prior evaluation reports should be reviewed by the evaluator and summarized in the history section or attached to the documentation packet. Teachers' comments from any of these documents may be relevant to the need for accommodations. Such documents may provide useful supplemental information about a test taker's educational

history as well as her or his history of eligibility for services, limitations to academic achievement, and accommodation use.

Other supplemental forms of documentation may include evidence of a reduced course load or the number of incompletes or dropped courses in school, a copy of an accommodation letter to faculty, a letter from a content area teacher, and/or official scores on national standardized tests (e.g., SAT® or ACT®) taken with or without accommodations. A detailed letter from a college disability services provider, a vocational rehabilitation counselor, or a human resources professional describing current limitations and use of accommodations also can be helpful to supplement comprehensive documentation.

A personal letter from the applicant in his/her own words explaining academic difficulties and coping strategies may be helpful. The applicant's personal letter should highlight any relevant additional information that further supports the current need for accommodations. The personal letter should not exceed one page and may include information regarding the date of the initial diagnosis, accommodations history in a variety of settings, a statement explaining the need for the accommodations that are presently requested, and any additional supporting information for the requested accommodations. In some instances additional insights regarding the students' disability and use of accommodations could be provided by the disability services coordinator at their campus.

For additional information contact:

ETS  
Disability Services  
P.O. Box 6054  
Princeton, NJ 08541-6054

Phone: 1-866-387-8602 (toll free) from U.S., U.S. Territories\* and Canada  
1-609-771-7780 (all other locations)

TTY: 1-609-771-7714

Fax: 1-609-771-7165

Email: [stassd@ets.org](mailto:stassd@ets.org)

\*Includes American Samoa, Guam, Puerto Rico and U.S. Virgin Islands.

## **Appendix I. DSM-5 Diagnostic Criteria for Autism Spectrum Disorder (ASD)\***

The following diagnostic criteria for ASD are specified in the DSM-5:

- A. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history (examples are illustrative, not exhaustive; see text):
1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.
  2. Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.
  3. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

*Specify current severity:*

Severity is based on social communication impairments and restricted, repetitive patterns of behavior.

- B. Restrictive, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following, currently or by history (examples are illustrative, not exhaustive; see text):
1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases).
  2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior (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).
  3. 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).
  4. Hyper- or hyporeactivity 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).

*Specify current severity:*

Severity is based on social communication impairments and restricted, repetitive patterns of behavior.

- 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).
- D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.
- E. These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and autism spectrum disorder frequently co-occur; to make comorbid diagnoses of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level.

**Note:** Individuals with a well-established DSM-IV diagnosis of autistic disorder, Asperger's disorder, or pervasive developmental disorder not otherwise specified should be given the diagnosis of autism spectrum disorder. Individuals who have marked deficits in social communication, but whose symptoms do not otherwise meet criteria for autism spectrum disorder, should be evaluated for social (pragmatic) communication disorder.

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## **Appendix II. Recommendations for Consumers**

1. For assistance in finding a qualified professional:
  - a. contact the school counselor or disability services coordinator at the institution you attend(ed) or one that is similar to the institution you plan to attend;
  - b. discuss your future plans with the school counselor or disability service coordinator at the institution you attend(ed) or plan to attend; and
  - c. refer to the attached list of resources and organizations for ASD.
  
2. In selecting a qualified professional:
  - a. ask what his or her credentials are;
  - b. ask what experience he or she has had working with adolescents or adults with ASD;
  - c. ask if he or she has ever worked with the service provider at your institution.
  
3. In working with the professional:
  - a. take a copy of this policy to the professional; encourage him or her to clarify questions with ETS.
  - b. provide the evaluator with a copy of the ETS "Tips for Evaluators" brochure or the web link: <http://www.ets.org/disabilities>
  - c. If you were evaluated in the past, bring a copy of your original documentation to the evaluator. Provide the evaluator with copies of any previous assessments and available educational records (e.g., report cards, transcripts, standard test scores, etc.). This will assist your evaluator in understanding your educational history and guide the scope and direction of this re-evaluation.
  - d. be prepared to be forthcoming, thorough, and honest with requested information; and
  - e. know that professionals must maintain confidentiality with respect to your records and testing information.
  
4. As follow-up to the assessment by the professional:
  - a. request a written copy of the assessment report;
  - b. request the opportunity to discuss the results and recommendations;
  - c. request additional resources if you need them; and
  - d. maintain a personal file of your records and reports.

### **Appendix III. Tests for Assessing Adolescents and Adults with ASD**

When selecting a battery of tests, it is critical to consider the technical adequacy of instruments, including their reliability, validity, and standardization on an appropriate norm group. The professional judgment of an evaluator in choosing tests is important. Whenever feasible, the most recent version of the test should be used. The following list includes a variety of popular standardized measures for diagnosing ASD. It is meant to be a helpful resource to evaluators but is not a definitive or exhaustive listing.

#### **Tests of Intellectual Functioning**

- *Kaufman Adolescent and Adult Intelligence Test*
- *Reynolds Intellectual Assessment Scales (RIAS)*
- *Stanford-Binet 5 (SB5)*
- *Test of Non-Verbal Intelligence (TONI-3)*
- *Wechsler Adult Intelligence Scale - IV (WAIS-IV)*
- *Woodcock-Johnson -III - Tests of Cognitive Ability*

The *Slosson Intelligence Test - Revised*, *Wechsler Abbreviated Scale of Intelligence (WASI)* and the *Kaufman Brief Intelligence Test (K-BIT-2)* are primarily screening devices and are not comprehensive enough to provide the kinds of information necessary to make accommodation(s) decisions.

#### **Executive Functioning (EF):**

- *BRIEF*
- *California Verbal Learning Test-Clustering score*
- *Delis Kaplan Executive Functioning System*
- *Go-No-Go CPTs*
- *Porteus Mazes*
- *Rey Osterrieth Complex Figure organization score*
- *Tower tests (Tower of London, Tower of Hanoi)*
- *Verbal, category and design fluency tests*
- *Wisconsin Card Sorting Test*

#### **Language and Communication Skill Assessment**

- *Comprehensive Test of Phonological Processing (CTOPP)*
- *Autism Diagnostic Interview-Revised*
- *Autism Diagnostic Observation Schedule*
- *Test of Adolescent and Adult Language*
- *Autism Diagnostic Interview-Revised*

## **Psychiatric, personality and behavioral assessments**

- *Adaptive Behavior Assessment System-2*
- *Beck Depression Inventory II (BDI-II)*
- *Childhood Autism Rating Scale-2*
- *Gilliam Autism Rating Scale*
- *Gilliam Asperger's Disorder Scale*
- *Informal assessments (e.g., empathy tests, Reading the Mind in the Eyes)*
- *Millon Clinical Multiaxial Personality Inventory-III (MCMI-III)*
- *Minnesota Multiphasic Personality Inventory-Adolescent (MMPI-A)*
- *Minnesota Multiphasic Personality Inventory-2 (MMPI-2)*
- *NEPSY-II (Theory of Mind, Affect Recognition subtests)*
- *Personality Assessment Inventory (PAI)*
- *Personality Assessment Inventory-Adolescent (PAI-A)*
- *Roberts Apperception Test*
- *State-Trait Inventory for Cognitive and Somatic Anxiety (STICSA)*
- *Thematic Apperception Test*
- *The Yale-Brown Obsessive Compulsive Scale (Y-BOCS)*
- *Vineland-II*

## **Sensory Processing and Integration**

- *Adolescent/Adult Sensory Profile*
- *Sensory Integration Inventory-Revised (SII-R)*

## **Developmental/Sensory Histories**

- *Adult Sensory History (Kumar et al., 1996)*
- *Adult Sensory Profile (Brown et al., 2001)*
- *Adult Sensory Questionnaire (Kinnealey & Oliver, 2002)*
- *ADULT-SI (Kinnealey & Oliver, 1999)*
- *Coping Inventory—Adult Version (Zeitlan, 1985)*

## **Motor Skills**

- *BOT-2 (Bruininks & Bruininks, 2005)*
- *Sensory Integration and Praxis Tests (SIPT) (Ayres, 1989): Postural Praxis and Oral Praxis, Standing Balance*

## **Sensory**

- *Sensory Integration and Praxis Tests (SIPT) (Ayres, 1989): Finger Identification and Graphesthesia*
- *SCAN-A*
- *Motor-Free Visual Perceptual Test, 3rd Edition (MVPT-3)*
- *Post-rotatory nystagmus: upright and side lying*

## **Clinical Observations**

- *Diadokokinesis*
- *Gravitational insecurity*
- *Muscle tone*
- *Oculo-motor control*
- *Postural alignment*
- *Prone extension*
- *Sequential thumb–finger*
- *Supine flexion*

Clinical observations and previous sensory history will be highly relevant in providing insight into patterns of documented or suspected sensory-motor integrative dysfunction.

## **Attention/Memory/Learning**

- *Brown Attention Deficit Disorder Scales for Adolescents or Adults (BADDS)*
- *California Verbal Learning Test (CVLT-II)*
- *Children’s Memory Scale*
- *Conners’ Adult ADHD Rating Scale — Self Report (CAARS)*
- *Conners’ Continuous Performance Test-II (CPT-II)*
- *Conners 3*
- *Continuous Visual Memory Test (CVMT)*
- *Detroit Test of Learning Aptitude - 4 (DTLA-4)*
- *Halstead-Reitan Neuropsychological Test Battery*
- *Integrated Visual and Auditory Continuous Performance Test (IVA+Plus)*
- *Neuropsychological Assessment Battery (NAB)*
- *NEPSY-II*
  - *Attention and Executive Functioning*
  - *Memory and Learning*
- *Rey Auditory Verbal Learning Test*
- *Rey Osterrieth Complex Figure Test*
  - *Immediate and Delayed Recall*
- *Test of Variable Attention (TOVA)*
- *WAIS-IV Working Memory Index (WMI)*
- *Wechsler Memory Scales – IV (WMS-IV)*
- *Wide Range Assessment of Memory and Learning - Second Edition (WRAML-2)*
- *Wisconsin Card Sorting Test (WCST)*
- *Woodcock Johnson III Tests of Cognitive Abilities (WJ III)*
  - *Working Memory Cluster*
  - *Delayed Recall Cluster*
  - *Long Term Retrieval Cluster*
  - *Short Term Memory Cluster*

## **Visual/Perceptual Motor**

- *Beery-Buktenica Developmental Test of Visual Motor Integration (DTVMI)*
- *Benton Judgment of Line Orientation*
- *Benton Visual Form Discrimination*
- *Bender Gestalt II*
- *Finger-Tapping*
- *Grip Strength (hand dynamometer)*
- *Grooved Pegboard*
- *Purdue Pegboard*
- *Rey-Osterreith Complex Figure Test, Copy*
- *Wide Range Assessment of Visual Motor Ability (WRAVMA)*

## **Achievement**

- *Gray Oral Reading Test (GORT 4th Ed.)*
- *Nelson-Denny Reading Test*
- *Scholastic Abilities Test for Adults (SATA)*
- *Stanford Diagnostic Mathematics Test*
- *Stanford Test of Academic Skills (TASK)*
- *Test of Adolescent and Adult Word Finding (TAWF)*
- *Test of Written Language - 3 (TOWL-4)*
- *Wechsler Individual Achievement Test - III (WIAT-III)*
- *Woodcock-Johnson-III - Tests of Achievement*
- *Woodcock Reading Mastery Tests - Revised*

Specific achievement tests are useful instruments when administered under standardized conditions and when the results are interpreted within the context of other diagnostic information. Results from these instruments must include standard scores, at a minimum, and may be supplemented by percentiles; however, age and grade equivalents are not appropriate. The *Wide Range Achievement Test - 4* (WRAT-4) is not a comprehensive measure of achievement and therefore should not be used as the sole measure of achievement.

## **Appendix IV. Social Cognition and the Autism Spectrum**

The story of human survival is that of a highly interdependent species in which members of groups execute prescribed steps in the service of mutual cooperation. Most individuals within a group are born with the innate ability to grasp those steps necessary for cooperation within their group and to extrapolate to other groups through observation and learning.

Some have termed this “social cognition,” a maturational process through which an infant moves through stages beginning with the awareness that it is a separate being through working with complex symbols to create communication and thought (Nowicki, 1992). Along the way children come to differentiate others’ actions and feelings from their own, to evaluate whether or not someone is kindly disposed to them, to process linguistic and nonlinguistic cues, to take another’s perspective, and to know the appropriate responses to a wide variety of interactions (Bushnell, et al., 1993). Understanding how others feel allows us to predict how they are going to behave, which may underlie social success as an adult.

Many terms have been used to describe the innate ability to tell what other people are thinking or feeling and to use that knowledge to predict or understand their behavior. Social sensitivity and social perception refer to the ability to pick up overt and subtle interpersonal cues (including face, gesture, language, and situational cues). This is largely an input stage of gathering information. The related output domain involves appraisal and action, often called social skills and (more recently) social cognition, in which an individual uses input cues to evaluate, predict, and generate appropriate behavioral responses (Bushnell et al., 1993; Blakemore et al., 2001).

### **Social Cognition in ASD:**

It has been suggested that ASD individuals vary in the degree to which they understand the social world (social perception) and possess the skills with which to interact and predict (social cognition) and that this dichotomy may underline symptom severity across the spectrum (Tager Flusberg, 2003; Joseph et al., 2002; Baron Cohen, 2009).

Individuals with ASD may appear naïve and clueless, suggesting that social awareness and perception are impaired. There may be problems recognizing, interpreting, and responding to cues sent by conversation partners, especially in unstructured or unfamiliar situations. The child or adult with ASD desires contact but is typically socially awkward. Others may see him or her as uninterested, withdrawn, peculiar, or just different. He or she often has limited use of social language and poor understanding of nonverbal cues or may not be able to adjust behavior to match different situations or contexts. For example, he or she may enter an interaction but fail to appreciate cues (such as age, gender, or social status) that might indicate the need for a different approach. Following an inappropriate behavior, he or she may not recognize cues from the other individual that signal a blunder has been made and may lack the skill to correct the behavior (see Wolf et al., 2009 review). Such difficulties might underlie the problems

individuals with ASD have in complex social situations, where the behavior of others is unpredictable (Rajendran & Mitchell, 2007). The individual with AS may try to work out the interaction in a literal fashion, as he or she cannot look beyond the obvious in understanding what is going on (Baron Cohen, 1999; Klin et al., 2002).

Klin (2003) further proposes that the ASD brain is simply not wired to process and interpret social situations automatically (Klin et al., 2003; Rajendran & Mitchell, 2007) and that the child with an autistic disorder is not cued into the social world from the outset. This leads to difficulties in the development of important social skills that depend on accurate processing of social cues.

The social world moves quickly. Stimuli and situations must be processed automatically to predict behavior. We use context to further our understanding of a cue in order to arrive at a fast analysis. For example, certain gestures and cues might be appropriate within the context of a football game that would be hostile or inappropriate in a different context. In other words, we need to be able to separate what is contextually relevant from what is not to process quickly and accurately. Individuals with ASD, however, tend to see situations in fixed, absolute terms rather than relative to context (Frith, 2004). It has been suggested (Vermuelen, 2013) that a developmental brain anomaly related to sensitivity to social context is the underlying domain of deficit.

#### The Social Brain:

Much recent work has examined brain regions involved in social cognition, including those for facial recognition and analysis, perceiving feeling states in self and others, and predicting others' actions. The "social brain" is not a single brain region but a large network of brain regions. Limbic areas related to memory and emotion (amygdala, ventral medial frontal lobes) in both hemispheres are involved in processing feelings of self and others, while analyzing cues regarding motivation and intention is more related to the operations of the lateral and medial frontal lobes and posterior cortical areas (Hadjikani et al., 2006). Because of this wide distribution, deficits in social cognition are not unique to any single medical or mental condition but can be disrupted across many conditions (of which ASD may be the best example).

Developmental abnormalities in the right hemisphere have been demonstrated in ASD (McKelvy et al., 1995). Many studies have shown abnormalities in brain regions thought to be involved in empathy and social behavior (see Dawson et al., 2002). In addition, the right hemisphere is especially skilled at perceiving and interpreting faces (Klin et al., 2002). Abnormal development of these regions may underlie the early development of autism. Dawson and colleagues have speculated that autistic infants do not pay attention to faces because they lack the neural circuitry to make sense of that information, which compromises the child's subsequent development of the ability to understand and relate to other people (Dawson et al., 1998, 2002; Klin et al., 2002).

Conclusions:

ASD is a developmental disorder comprised (in large part) of deficits in social cognition. It appears that specialized brain regions support social perception, including gaze information, face discrimination, and motion/intention cues and that early disruption impacts the ability of infant to engage the social world. This developmental failure limits social and cognitive development of the young child and may contribute to emergence of ASD symptoms. Deficits thus include both the input of social cues and the output of socially appropriate behavior. It is important to note that these are clearly domains which vary independently along a scale from mild to severe (as with all ASD symptoms) and that much remains to be understood about individual and group differences, prognostic signs, and response to various treatment which might address core deficits in social cognition.

(L. Wolf, 2013)

[\\*References cited.](#)

## **Appendix V. Resources and Organizations**

### **Advancing Futures for Adults with Autism (AFAA)**

917- 475- 5071 voice

Internet: <http://www.afa-us.org>

AFAA is a national consortium of organizations working together, led by the vision of individuals with autism and their families, to promote a collaborative spirit and develop both public and private sector support that improve the lives of adults living with autism.

### **Association on Higher Education and Disability (AHEAD)**

107 Commerce Center Drive  
Suite 204

Huntersville, NC 28078

704-947-7779 voice

704-948-7779 fax

Internet: <http://www.AHEAD.org>

*An excellent organization to contact for individuals with disabilities who are planning to attend college training programs, workshops, and conferences.*

### **Autism Society**

4340 East-West Hwy  
Suite 350

Bethesda, Maryland 20814

301-657-0881 voice

1-800-328-8476 voice toll free

Internet: <http://www.autism-society.org>

The Autism Society is the leading voice and resource of the entire autism community in education, advocacy, services, research and support. The Autism Society is committed to meaningful participation and self-determination in all aspects of life for individuals on the autism spectrum and their families. The Autism Society accomplishes its ongoing mission through close collaboration with a successful network of affiliates, members and supporters.

### **Autism Speaks**

1 East 33<sup>rd</sup> Street

4<sup>th</sup> Floor

New York, NY 10016

212- 252- 8584 voice

888-288-4762 voice toll free

212- 252- 8676 fax

Internet: <http://www.autismspeaks.org>

At Autism Speaks, our goal is to change the future for all who struggle with autism spectrum disorders. We are dedicated to funding global biomedical research into the causes, prevention, treatments and a possible cure for autism. We strive to raise public awareness about autism and its effects on individuals, families, and society: and we work to bring hope to all who deal with the hardships of this disorder.

### **Easter Seals**

233 South Wacker Drive

Suite 2400

Chicago, IL 60606

800-221-6827 voice toll free

Internet: [www.easterseals.com](http://www.easterseals.com)

*Easter Seals is the leading non-profit provider of services for individuals with autism, developmental disabilities, physical disabilities and other special needs. For more than 85 years, we have been offering help and hope to children and adults living with disabilities, and to the families who love them. Through therapy, training, education and support services, Easter Seals creates life-changing solutions so that people with disabilities can live, learn, work and play.*

**National Autism Resources &  
Information Center Autism NOW**

1825 K Street NW

Suite 1200

Washington, DC 20006

1-855-828-8476 voice toll free

202-534-3731 fax

Internet: <http://autismnow.org>

The Autism NOW Center provides high quality resources and information in core areas across the lifespan to individuals with Autism Spectrum Disorders (ASD) and other developmental, their families, caregivers, and professional in the field.

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